



Alternate KiCad Library

Version 3

User Manual

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1. Introduction

Alternate KiCad Library is a symbol and footprint library for KiCad EDA Software. Symbol libraries contain various analog integrated circuits, discrete semiconductors and passive components. Footprint libraries contain passives, diode, transistor and IC packages. All symbols and footprints are either improved versions of standard KiCad components or have been created from scratch.

Chapter 1 contains an overview of the new features added to AKL 3.0, provides detailed installation instructions and shows the license under which the library is provided.

Chapter 2 provides detailed description of every single symbol library present in Alternate KiCad Library.

Chapter 3 provides detailed description of every single footprint library present in Alternate KiCad Library.

Chapter 4 contains version history of the library and this document.

1.1. Version 3.0: New Features

1.1.1. New symbols

AKL 3.0 adds 12 new symbol libraries with over 10000 symbols in total:

- **Difference Amplifier Library** – 95 symbols for difference (subtracting) amplifiers with integrated precision resistor networks. Refer to [Section 2.2](#) for more details.
- **Differential Amplifier Library** – 49 symbols for fully differential amplifiers and ADC drivers (differential input, differential output). See [Section 2.3](#) for details.
- **Instrumentation Amplifier Library** – 245 symbols for precision instrumentation amplifiers (differential input, single-ended output). Refer to [Section 2.4](#) for more details.
- **Isolation Amplifier Library** – 39 symbols for isolated amplifiers (used to provide isolation to analog signals). See [Section 2.5](#) for details.
- **Operational Amplifier Library** – 4276 symbols for operational amplifiers. Refer to [Section 2.6](#) for more details.
- **Programmable Gain Amplifier Library** – 69 symbols for operational amplifiers and instrumentation amplifiers with digitally programmable gain. See [Section 2.7](#) for details.
- **Miscellaneous Analog IC Library** – 30 symbols for various analog integrated circuits (Sample-and-Hold amplifiers, variable gain amplifiers, logarithmic amplifiers etc.). Refer to [Section 2.8](#) for more details.
- **Analog Comparator Library** – 802 symbols for voltage comparators. See [Section 2.9](#) for details.
- **Capacitor Library (European Symbol)** – 519 capacitor symbols with pre-assigned footprints. Refer to [Section 2.10](#) for more details.
- **Capacitor Library (US Symbol)** – 519 capacitor symbols with pre-assigned footprints. Polarized capacitor symbols have a different graphical style. See [Section 2.11](#) for details.
- **Resistor Library (European Symbol)** – 191 resistor and resistor network symbols with pre-assigned footprints. Refer to [Section 2.26](#) for more details.
- **Resistor Library (US Symbol)** – 191 resistor and resistor network symbols with pre-assigned footprints. Resistor symbols have a different graphical style. See [Section 2.27](#) for details.

1.1.2. New footprints

AKL 3.0 adds 20 new footprint libraries containing 2662 footprints in total:

- **SMD Capacitor US-style Handsoldering Library** containing 102 footprints – variant of the standard SMD capacitor library with US-style symbols on the silkscreen layer for polarized capacitors. See [Section 3.2](#) and [Section 3.1.7](#) for more details.

- **SMD Tantalum Capacitor US-style Handsoldering Library** containing 56 footprints – variant of the standard SMD tantalum capacitor library with US-style symbols on the silkscreen layer. Refer to [Section 3.3](#) and [Section 3.1.7](#) for details.
- **THT Capacitor US-style Library** containing 597 footprints –variant of the standard THT capacitor library with US-style symbols on the silkscreen layer. See [Section 3.4](#) and [Section 3.1.7](#) for details.
- **THT Capacitor US-style Library with double-sided Silkscreen** containing 597 footprints –variant of a US-style THT capacitor library with symbols on both the top and bottom silkscreen layers. Refer to [Section 3.4](#) and [Section 3.1.7](#) for more details.
- **Crystal Resonator Handsoldering Library** containing 103 footprints – variant of the standard crystal resonator library containing SMD footprints with symbols on the silkscreen layer. See [Section 3.4](#) and [Section 3.1.7](#) for details.
- **Crystal Resonator Library with double-sided Silkscreen** containing 56 footprints – variant of the standard crystal resonator library containing THT footprints with symbols on both the top and the bottom silkscreen layer. See [Section 3.4](#) and [Section 3.1.7](#) for details.
- **THT Ferrite Library with double-sided Silkscreen** containing 198 footprints – variant of the standard ferrite library containing symbols on both the top and the bottom silkscreen layer. See [Section 3.9](#) and [Section 3.1.7](#) for details.
- **Fuse US-style Library** containing 104 footprints –variant of the standard fuse library with US-style symbols on the silkscreen layer (standard library has European symbols instead). See [Section 3.10](#) and [Section 3.1.7](#) for details.
- **Fuse US-style Handsoldering Library** containing 41 footprints – variant of the US-style fuse library with SMD footprints containing silkscreen symbols under the parts. See [Section 3.10](#) and [Section 3.1.7](#) for details.
- **Fuse US-style Library with double-sided Silkscreen** containing 61 footprints – variant of the US-style fuse library with symbols on both the bottom and top silkscreen layer. See [Section 3.10](#) and [Section 3.1.7](#) for details.
- **SIP Package Library** containing 17 footprints – modified version of the standard KiCad SIP Package library, brought up to AKL standard. See [Section 3.20](#) for more details.
- **SMD Potentiometer Library** containing 26 footprints – modified version of the standard KiCad potentiometer library, brought up to AKL standard. See [Section 3.25](#) for more details.
- **SMD Potentiometer Handsoldering Library** containing 26 footprints – variant of the standard SMD potentiometer library containing symbols on the silkscreen layer. See [Section 3.25](#) and [Section 3.1.7](#) for more details.
- **SMD Potentiometer US-Style Handsoldering Library** containing 26 footprints – variant of the standard SMD potentiometer library containing US-style symbols on the silkscreen layer. See [Section 3.25](#) and [Section 3.1.7](#) for more details.
- **THT Potentiometer Library** containing 110 footprints – modified version of the standard KiCad potentiometer library, brought up to AKL standard. See [Section 3.26](#) for more details.

- **THT Potentiometer Library with double-sided Silkscreen** containing 104 footprints – variant of the standard THT potentiometer library with symbols on both the top and bottom silkscreen layers. See [Section 3.26](#) for and [Section 3.1.7](#) more details.
- **THT Potentiometer US-style Library** containing 110 footprints – variant of the standard THT potentiometer library with US-style symbols on the silkscreen layer. See [Section 3.26](#) for and [Section 3.1.7](#) more details.
- **THT Potentiometer US-style Library with double-sided Silkscreen** containing 105 footprints – variant of the US-style THT potentiometer library with symbols on both the top and bottom silkscreen layers. See [Section 3.26](#) for and [Section 3.1.7](#) details.
- **THT Resistor US-style Library** containing 129 footprints – variant of the standard THT resistor library with US-style symbols on the silkscreen layer. See [Section 3.28](#) for and [Section 3.1.7](#) more details.
- **THT Resistor US-style Library with double-sided Silkscreen** containing 94 footprints – variant of the US-style THT resistor library with symbols on both the top and bottom silkscreen layers. See [Section 3.28](#) for and [Section 3.1.7](#) details.

Existing libraries had additional footprints added:

- **DFN and QFN Package Library ([Section 3.16](#)):**
 - Added DFN-8-1EP_3x3mm_P0.5mm_EP1.2x2mm
 - Added Texas_RSV_UQFN16_1.8x2.6mm_P0.4mm
 - Added DFN-6_1.3x1.6_P0.4mm
 - Added QFN-16_3x3mm_P0.5mm
 - Added Diodes_UDFN-6_1.4x1.0mm_P0.5mm
 - Added Texas_X2QFN-8_1.5x1.5mm
- **SO Package Library ([Section 3.22](#)):**
 - Added TSSOP-14-1EP_4.4x5mm_P0.65mm_EP2.31x2.46mm
 - Added TSSOP-20-1EP_4.4x6.5mm_P0.65mm_EP2.4x3.4mm
 - Added SSOP-8_4.4x3.5mm_P0.65mm
 - Added SO-8_5x5mm_P1.27mm
- **SON Package Library ([Section 3.21](#)):**
 - Added Texas_X2SON_6_1x1mm_P0.35mm
- **THT Capacitor Libraries – All Variants ([Section 3.4](#)):**
 - Added C_Rect_L15mm_W15mm_P10x10mm
 - Added C_Rect_L17mm_W8.5mm_P12.50mm
 - Added C_Rect_L36.5mm_W15mm_P32.50mm
- **THT Resistor Libraries – Standard and US-style Variants ([Section 3.28](#)):**
 - Added R_Array_SIP4_BigPads
 - Added R_Array_SIP5_BigPads
 - Added R_Array_SIP6_BigPads
 - Added R_Array_SIP7_BigPads
 - Added R_Array_SIP8_BigPads
 - Added R_Array_SIP9_BigPads
 - Added R_Array_SIP10_BigPads
 - Added R_Array_SIP11_BigPads

- Added R_Array_SIP12_BigPads
- Added R_Array_SIP13_BigPads
- Added R_Array_SIP14_BigPads

1.1.3. SMD Footprint Revamp

All SMD footprints were modified to comply with these new guidelines:

- All SMD pads need to have rounded corners with radius of either 25% of shortest pad dimension or 0.25mm whichever is smaller.
- Fabrication layer needs to reflect physical appearance of the device (pins included) and have a dot marking the pin 1. "Value" text is hidden from the fabrication layer to improve assembly drawing clarity.
- Silkscreen outline needs to snap to 0.1mm grid (0.5mm in some small components) and be further away than component courtyard. This forms a secondary courtyard that enables quick and even component placement.
- SMD pads hidden underneath the component body need to have specially shaped solder paste apertures to include channels for escaping gasses during reflow soldering.

See [Section 3.1.3](#) for more details.

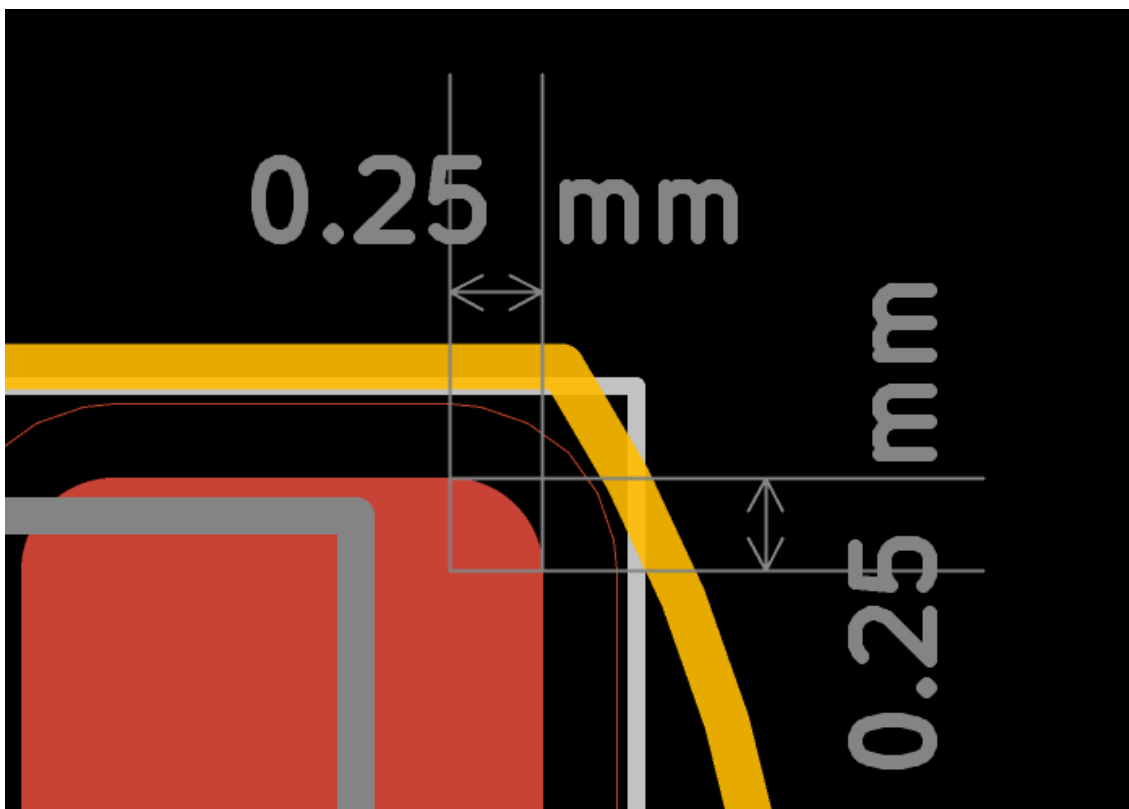


Figure 1.1. Closeup of an SMD pad with corner radius indicated.

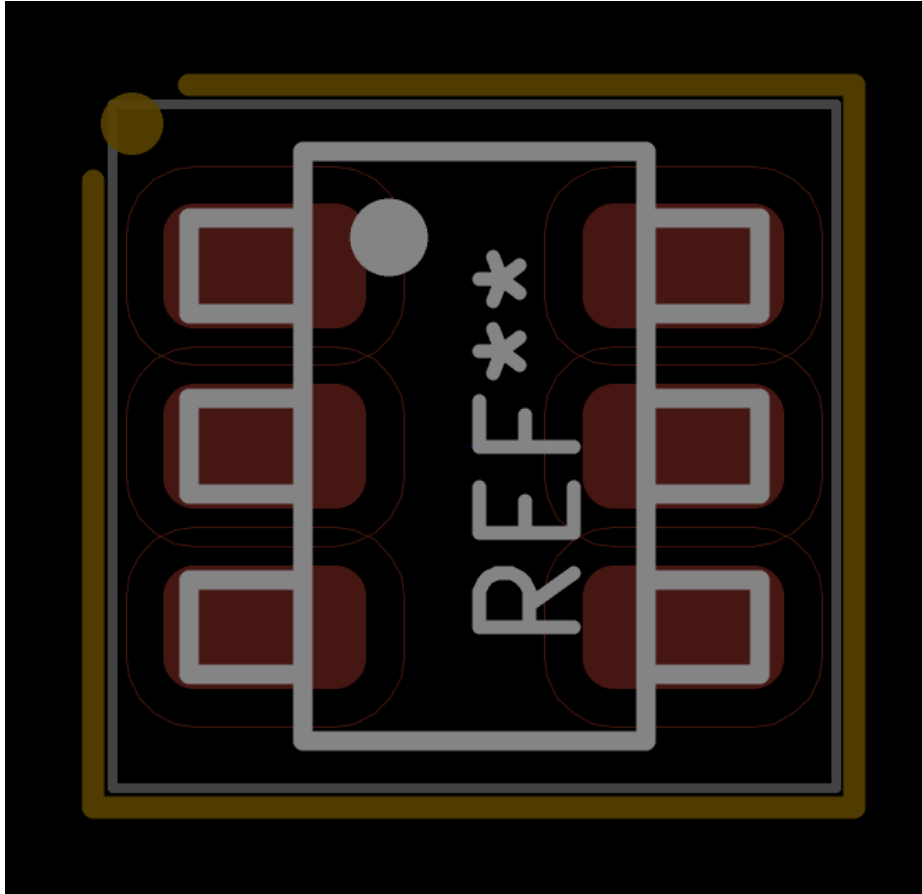


Figure 1.2. SOT-23-6 footprint fabrication layer.

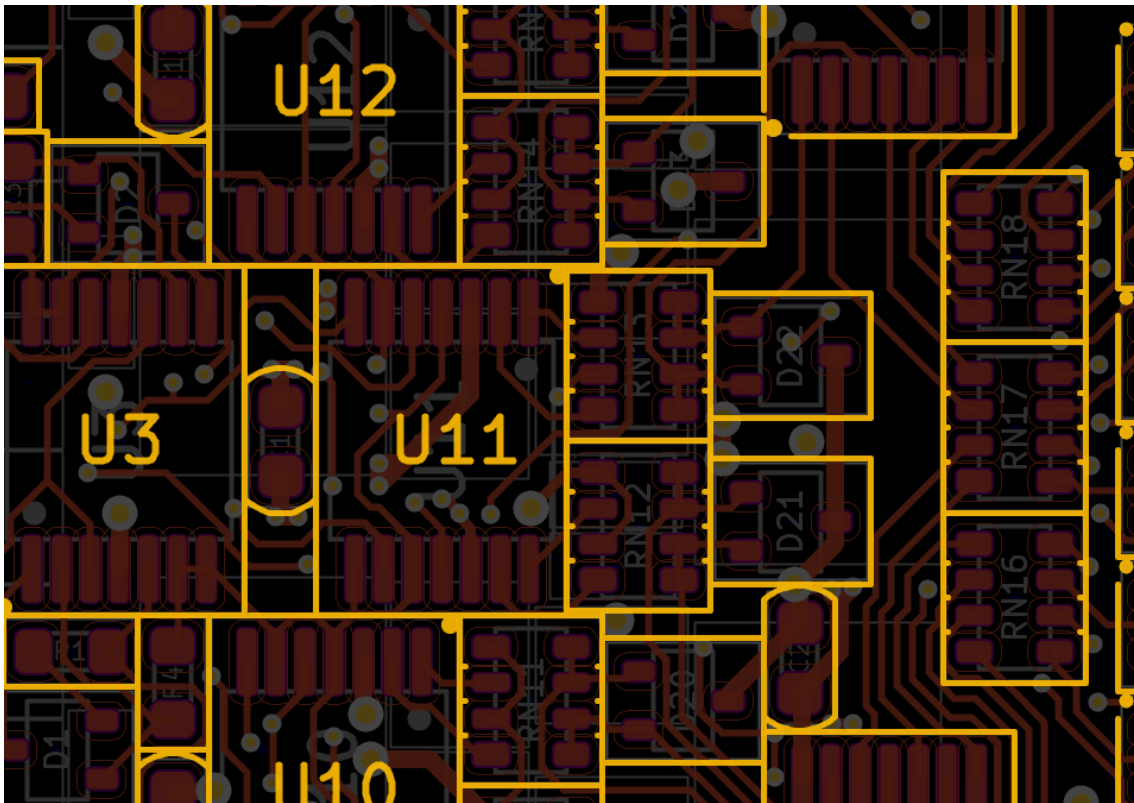


Figure 1.3. Layout example making use of the new silkscreen outline grid snap.

1.2. Installation Instructions

1.2.1. KiCad's Plugin and Content Manager

KiCad's Plugin and Content Manager provides semi-automated installation of the Alternate KiCad Library. User needs to add the downloaded libraries to their library tables manually.

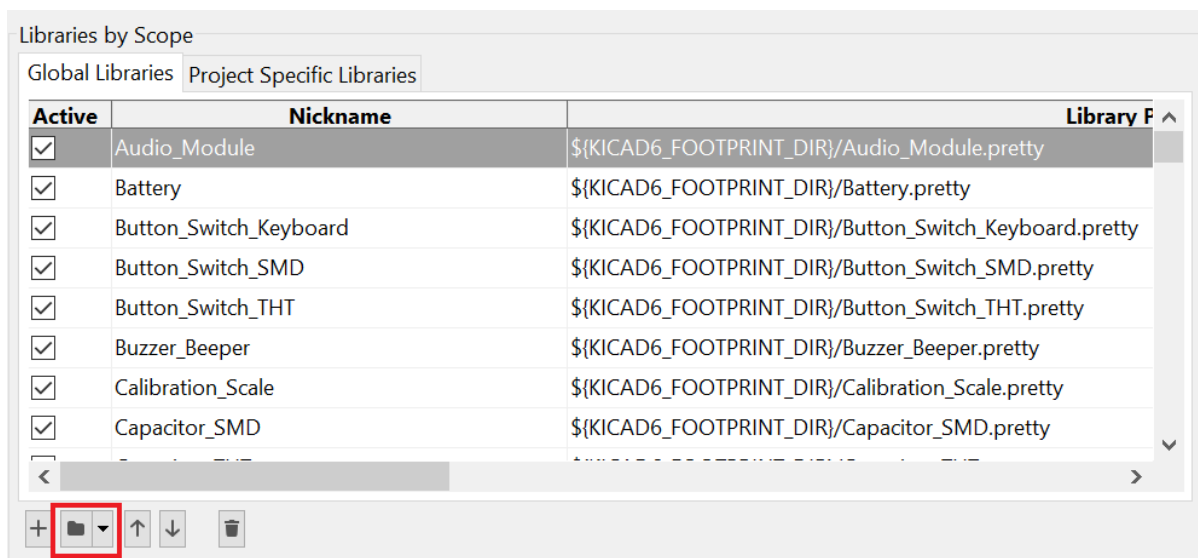
Step-by-Step Installation Instructions:

In the "Libraries" tab search for "Alternate KiCad Library" and install it.

KiCad uses library tables to keep track of installed libraries.

Content Manager DOES NOT automatically update these library tables.

To do it manually, open the main KiCad window and go to "Manage Footprint Libraries" in the preferences tab.



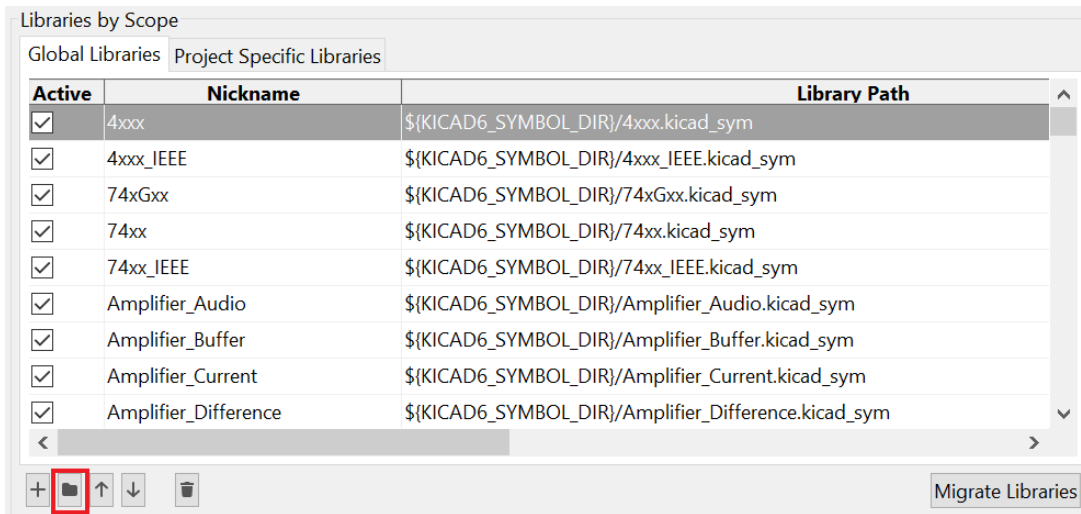
Press the folder icon (highlighted in red) and locate the folder:

<KiCAD 6 user/home directory>\3rdparty\footprints\alternate-kicad-library

Multiple folders ending in .Pretty should be visible. Each of these is a separate footprint library. Select all the libraries (Shift+Click or Ctrl+Click) that you want to install and press "Select Folder".

You can select which libraries are active and modify their searchable names (Nickname) as desired.

Next, open the main KiCad window and go to **“Manage Symbol Libraries”** in the preferences tab.



Press the folder icon (highlighted in red) and locate the folder:

```
<KiCAD 6 user/home directory>\3rdparty\symbols\alternate-kicad-library
```

Multiple files ending in .kicad_sym should be visible. Each of these is a separate symbol library. Select all the libraries (Shift+Click or Ctrl+Click) that you want to install and press **“Open”**.

You can select which libraries are active and modify their searchable names (Nickname) as desired.

All of the installed libraries should be now accessible.

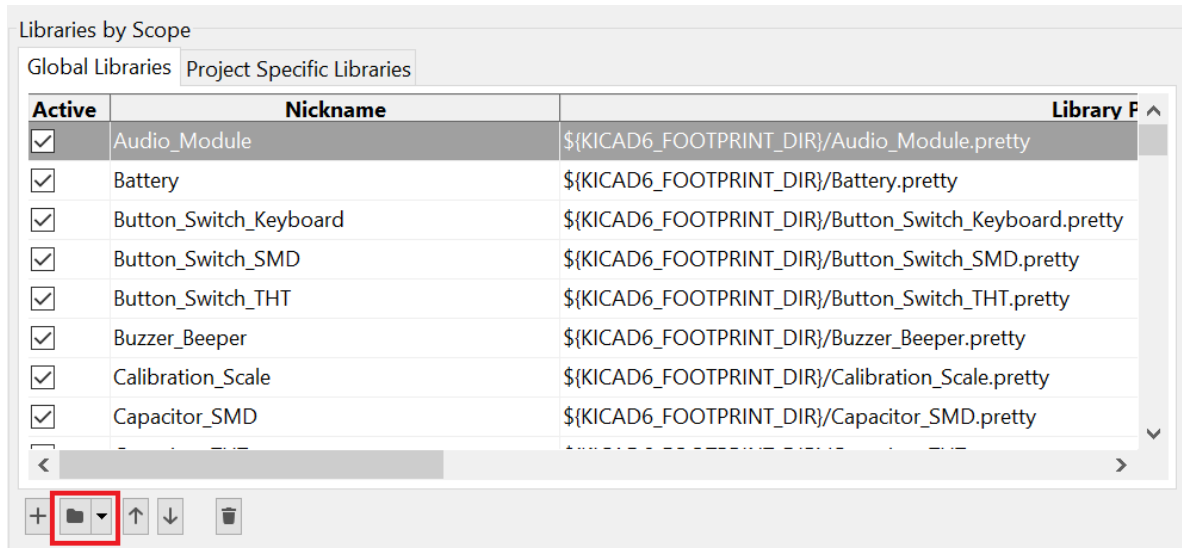
1.2.2. Manual Installation

Use this guide if you're downloading the library from [GitHub](#) or sources other than KiCad's Plugin and Content Manager.

Extract the downloaded AKL files into any desired location (it is recommended to avoid windows protected folders such as "Program Files").

KiCad uses library tables to keep track of installed libraries.

To install libraries manually, open the main KiCad window and go to "**Manage Footprint Libraries**" in the preferences tab.

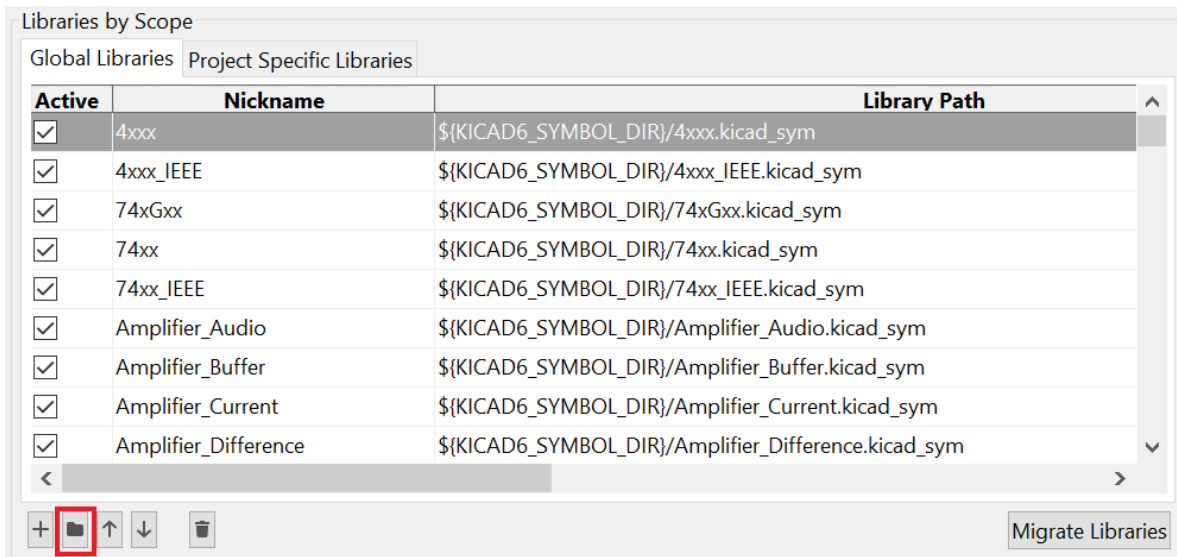


Press the folder icon (highlighted in red) and locate the folder with the extracted footprint library files.

Multiple folders ending in .Pretty should be visible. Each of these is a separate footprint library. Select all the libraries (Shift+Click or Ctrl+Click) that you want to install and press "**Select Folder**".

You can select which libraries are active and modify their searchable names (Nickname) as desired.

Next, open the main KiCad window and go to “**Manage Symbol Libraries**” in the preferences tab.



Press the folder icon (highlighted in red) and locate the folder with the extracted symbol library files.

Multiple files ending in .kicad_sym should be visible. Each of these is a separate symbol library. Select all the libraries (Shift+Click or Ctrl+Click) that you want to install and press “Open”.

You can select which libraries are active and modify their searchable names (Nickname) as desired.

All the installed libraries should be now accessible.

1.2.3. Customizing Library Tables

KiCad stores information about installed symbol and footprint libraries in library tables. You can review and edit the table contents in the "Symbol Library Manager" and "Footprint Library Manager".

Nickname Field contains the name of each library, by default it is identical to the file name. This name will be displayed in library browsers while adding symbols/footprints.

Library Path is the full path to the library file, usually used with a path substitution (KICAD6_SYMBOL_DIR for default KiCad libraries, KICAD6_3RD_PARTY for libraries downloaded using the content manager). You can edit or add your own path substitution in the "Configure Paths" option in the "Preferences" tab.

Description contains short description of the library contents. It's blank by default for third party libraries.

On windows you can find the library tables here:

C:\Users\\AppData\Roaming\kicad\6.0

To access the appdata folder you need to either:

- Type "%appdata%" in windows search.
- Enable "Show Hidden Files" in windows explorer options.

Library table files have no file extension but can be edited with any text editor (Notepad):

fp-lib-table: Footprint library table

sym-lib-table: Symbol library table

Typical library table entry:

```
(lib (name "Filter") (type "KiCad")
(uri "${KICAD6_FOOTPRINT_DIR}/Filter.pretty") (options ""))
(descr "Filter footprints"))
```

name "<library name>" is the Nickname field.

uri "<library path>" is the path to the library file.

descr "<description>" is the description field.

You can paste multiple entries into the library table directly to edit multiple fields at once. Make sure to delete any duplicate entries during pasting.

Footprint library table contents:

```
(fp_lib_table
  Entry 1
  Entry 2
  ...
  Entry x
  <- Paste Here
)
```

In the "Tables" folder of the AKL Github repository:

<https://github.com/DawidCislo/Alternate-KiCad-Library>

there are different library table fragments that you can paste into your library table files:

- **Description_Symbols.txt** and **Description_Footprints.txt**

Adds short descriptions to all AKL symbol and footprint libraries

- **Prefix_Symbols.txt** and **Prefix_Footprints.txt**

All AKL libraries have their nickname changed so the AKL is before the name. Descriptions from the previous files are also present.

Example:

AKL_Diode instead of Diode_AKL.

1.3. License

Alternate KiCad Library by Dawid Cisko is a derivative of [KiCad Library](#) made by KiCad community (see: [KiCad library GitLab](#)), used under [Creative Commons CC-BY-SA 4.0 License](#), with the following exception:

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Additional information can be found here: [KiCad libraries license](#)

What does this mean?

You can freely use Alternate KiCad Library data for commercial, closed and non-commercial projects without any restrictions. There is no need to attribute this library or original KiCad libraries within your design and no obligation to share any project files under this or any other license agreement.

If you wish to redistribute the Alternate KiCad Library, or its parts (including in modified form) as a collection you need to share it under the same license agreement. Libraries must also retain attribution information and license documents which are distributed with the library files.

2. Symbol libraries

Electrical schematics are drawn with symbols, abstract representations of electronic components indicating their function and electrical properties. Alternate KiCad Library provides 34 symbol libraries totaling over 30 thousand symbols of analog ICs, discrete semiconductors, optocouplers and passives.

Section 2.1 provides general information on AKL symbol library structure, relationship between symbols and footprints, multi-unit symbols and their role, best practices for drawing schematics, shows how AKL facilitates following them, reviews compatibility with KiCad's Electrical Rules Checker (ERC) and lists default reference designators.

Following sections (2.2 to 2.35) relate to each symbol library and contain detailed description of the library contents, symbol examples, symbol count, schematic examples that use said symbols and a complete list of all devices included in each library.

2.1. Symbol Library Features

2.1.1. Symbol Library Structure

Each symbol library consists of generic and specific symbols. Specific symbols are often derived from generic symbols, have the correct footprint pre-assigned, include datasheet link and a short description.

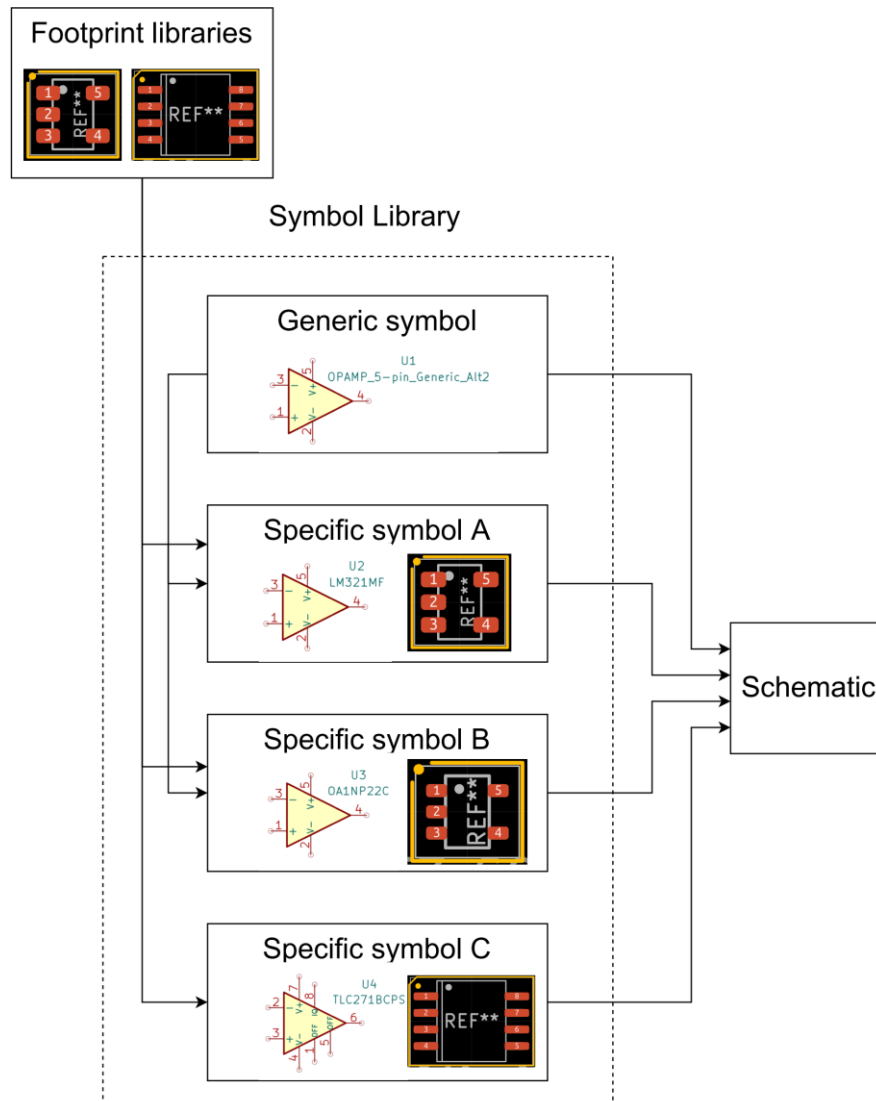


Figure 2.1 Typical symbol library structure

Figure 2.1 presents an example of a symbol library containing one generic symbol with no footprint and three specific symbols. Specific symbols A and B are derived from the generic symbol (They have the same graphical body and pin configuration as the generic symbol). Symbol A is a LM321MF operational amplifier in a SOT-23-5 package and has the correct footprint already pre-assigned when placed on a schematic. Symbol B is also an operational amplifier but this time it has a SOT-353 footprint. Symbol C has a different pin configuration than the generic symbol therefore it is a standalone symbol. It also has a footprint pre-assigned.

2.1.2. Link Between Symbols and Footprints

Symbol is an abstract representation of a component and represents its electrical characteristics (it usually does not visually resemble the component itself). All pins of a symbol have numbers that will correspond to the footprint pad numbers when laying out the PCB. Two examples showing the symbol - footprint links are shown on figures 2.2 and 2.3. Devices with only two pins will usually not have the pin number visible, refer to detailed library descriptions for more information.

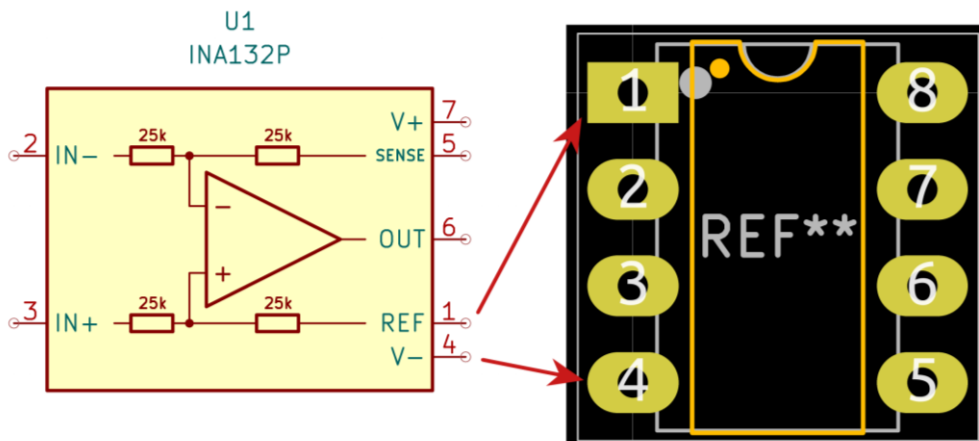


Figure 2.2 Difference amplifier symbol and its footprint with pin-pad number association shown by red arrows.

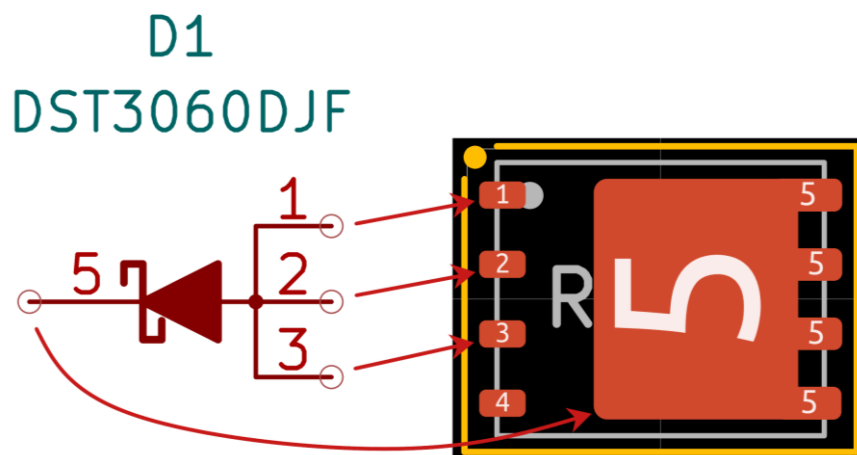


Figure 2.3 Schottky diode in a TDSO 5x6mm Package with anode connected internally to three pads (pad 1, pad 2, pad 3) and cathode connected to the large pad 5. Symbol has separate pins (pin 1, pin 2, pin 3) that correspond to the footprint pads.

2.1.3. Multi-unit Symbols

Some devices are made up of multiple identical functional blocks (example: Quad NAND logic gate – contains four identical NAND gates). There are two approaches to making symbols for devices with multiple identical functional blocks:

- standard (aggregated) symbol contains all the functional blocks of a device in a single unit,
- multi-unit (disaggregated) symbol contain multiple “sub-symbols” that can be placed anywhere on the schematic. Units of a symbol are denoted by an uppercase letter suffix on their reference designator (example: U12A is a first unit of the U12 device).

Multi-unit symbols usually provide more flexibility to the designer and result in cleaner and more readable schematics, but aggregated symbols can provide better results in some scenarios. See figures 2.4 2.5 and 2.6 for multi-unit symbol examples.



Figure 2.4 Triple diode symbol that has two variants:

- a standard, aggregated symbol (D1) with all three diodes in a single unit,
- a multi-unit, disaggregated symbol (D2) with three separate units (D2A, D2B, D2C), each diode being a separate object that can be placed anywhere on a schematic.

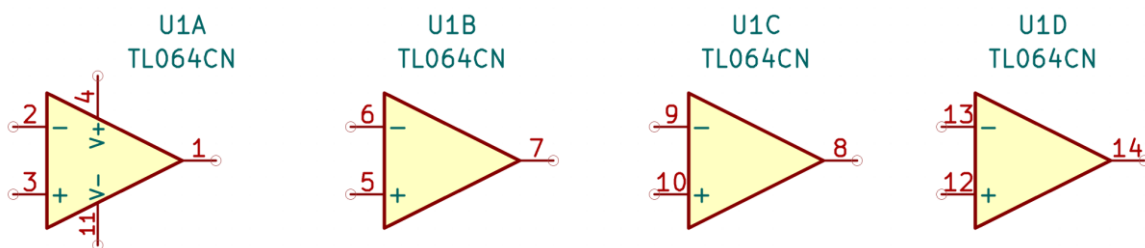


Figure 2.5 Quad operational amplifier symbol as an example of a multi-unit symbol. First unit (U1A) also has power pins included.

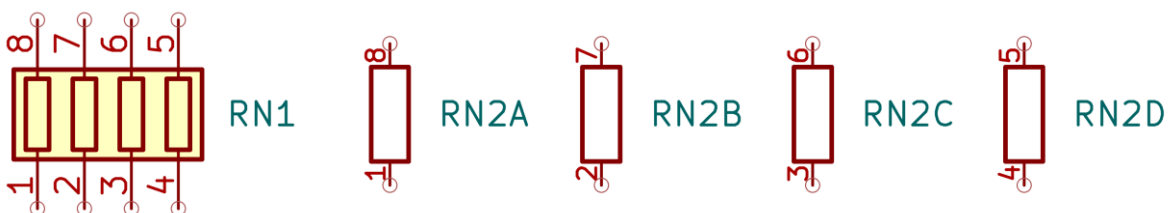


Figure 2.6 Resistor network with single- and multi-unit symbols.

2.1.4. Reviewing and Editing Symbol Properties

Symbol properties can be edited by opening **Symbol Properties** ("E" hotkey).

In the symbol properties window component reference designator, value, footprint and datasheet link can be reviewed and edited in the "Fields" table. Additional fields can be added to a symbol (internal part number, replacement components etc.).

WARNING: Editing multi-unit symbols via symbol properties might lead to problems (Each unit gets different reference designators instead of a single one), use the "Bulk-edit fields of all symbols on a schematic" tool instead.

SPICE simulation model can also be assigned here, since AKL symbols don't come with any models by default.

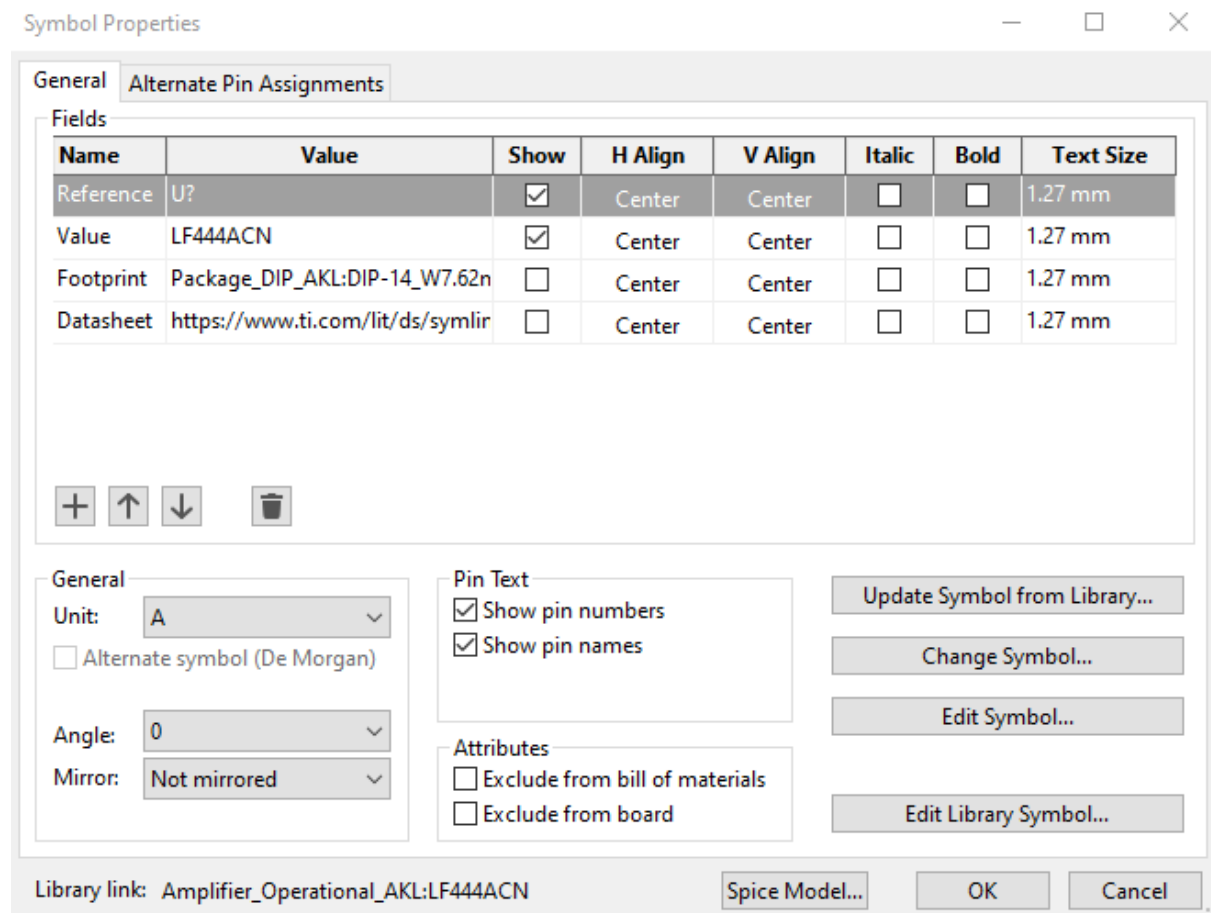


Figure 2.7. Symbol properties window of the first unit of LF444ACD symbol with visible associated footprint and datasheet link.

2.1.5. Schematic Drawing Best Practices

A schematic is not just an input method for PCB design, it is the most important piece of documentation that tells how exactly the circuit is supposed to operate. This information is invaluable during troubleshooting, modification or maintenance of the device and therefore it needs to be easy to read and understand. To make the schematic readable, apply the following advice whenever possible:

- All signals must flow from left to right, with the exception of feedback loops. Physical input connector symbols are to be located near the left border of the schematic sheet and output connectors near the right border. This ensures that a signal on a schematic travels along a chain of logically aligned functional blocks responsible for its processing that can be easily understood.
- Nets with a DC bias or power symbols should be arranged vertically in the order of their value (example: 5V, GND, -5V) inside previously mentioned functional blocks. Situations where power symbol for a positive supply voltage points downwards or a symbol for a negative voltage points upwards should be avoided.
- Space out the symbols while laying out the schematic and split up the schematic into hierarchical sheets if needed. It is literally impossible to run out of space for a schematic so congestion needs to be avoided at all cost. Spacing out symbols makes it easy to modify the schematic without completely redrawing it and leaves space for additional documentation.
- Use graphical tools (text, lines) to convey important information about the circuit operation such as bias voltages, currents, resistor divider attenuation ratios, amplifier gains, clock frequencies, waveform shapes etc. Use lines to indicate functional blocks and then label their function with text. Schematic graphics are just as important for electronics design as comments are for programming.

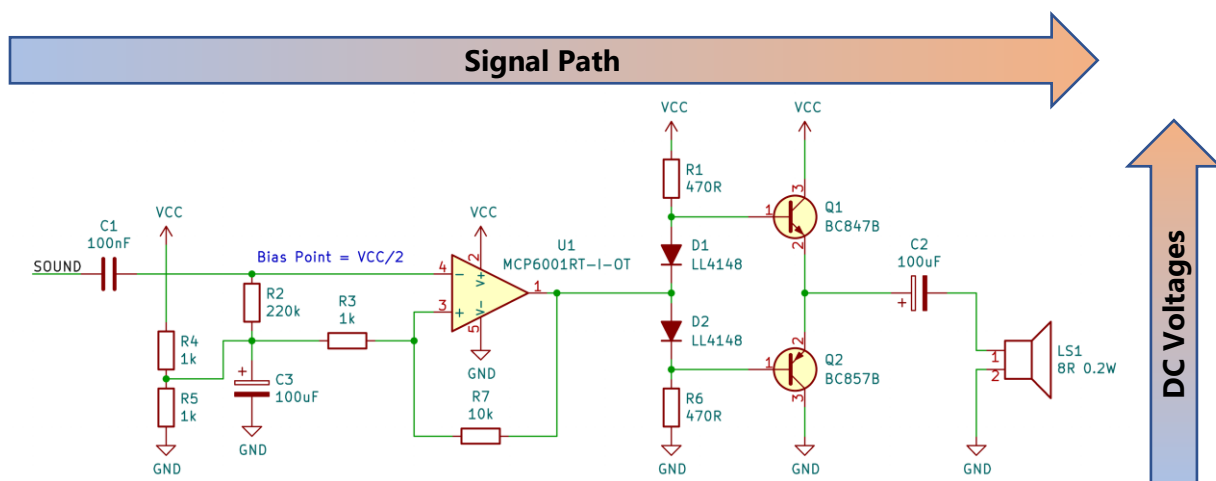


Figure 2.8 Schematic of a power amplifier with clearly visible signal path (bias network → voltage amplifier → power stage → speaker) and two supply nets (VCC, GND) with VCC generally being placed above all other symbols, and GND below all other symbols.

Alternate KiCad Library contains multiple features to help schematic readability and facilitate good schematic drawing practices.

All PNP transistors and P-Channel enhancement-mode MOSFETs are oriented in a way that the collector or drain is below the emitter or source by default. This comes from the fact, that these devices usually need the voltage on the collector (or drain) to be lower than on the emitter (or source). Figure 2.8 compares NPN and PNP transistors in their typical application.

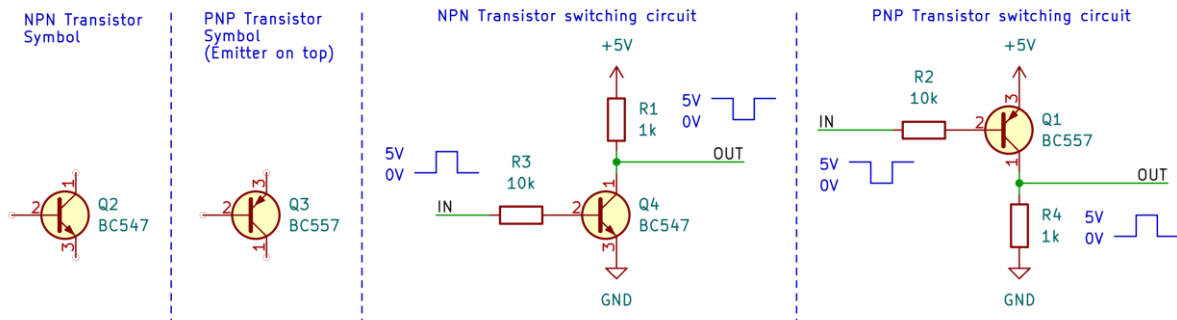


Figure 2.9 NPN and PNP transistor symbols and their typical application (transistor switch).

Certain symbols have multiple variants that provide more flexibility while drawing a schematic. Matched transistor pairs have up to four different symbol variants, each best suited for a different scenario (figure 2.9).

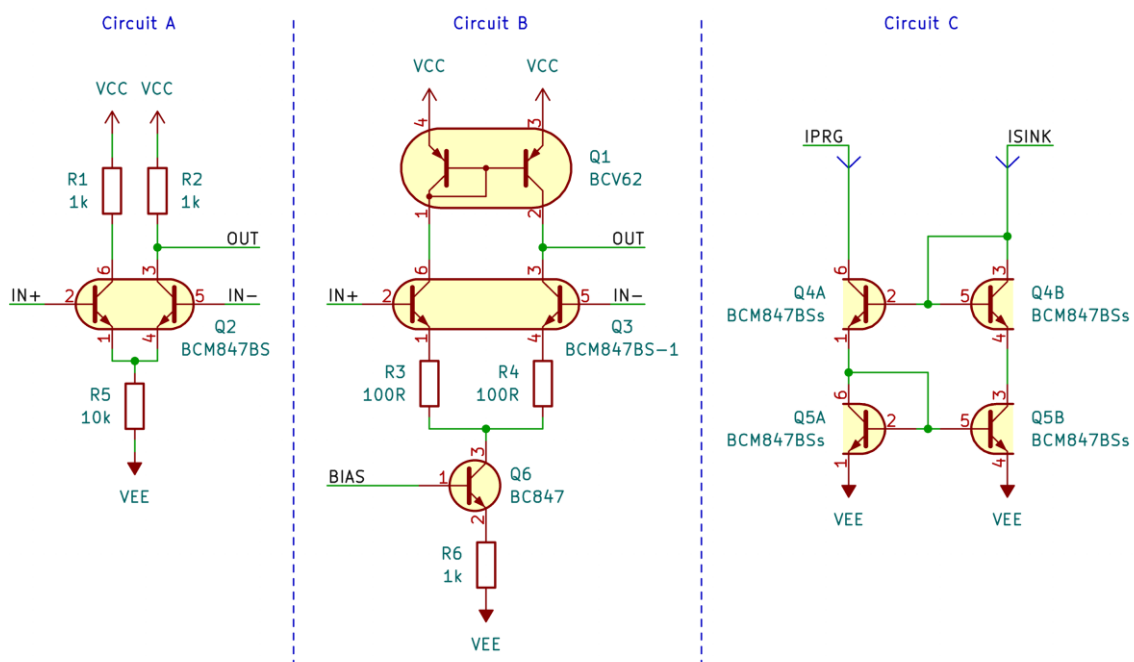


Figure 2.10 Three different circuits using the BCM847BS dual matched NPN transistor. Circuit A is a differential pair amplifier with a standard BCM847BS symbol. Circuit B is an advanced differential pair amplifier with a BCV62 current mirror as a load and is using the '-1' variant of the BCM847BS symbol. Circuit C is a Wilson current mirror using multi-unit 's' variant of the BCM847BS. In all those cases using a different variant of the symbol would make the schematic less readable.

Integrated circuits can serve a wide variety of different functions, and thus make it hard to understand a schematic without analyzing their respective datasheets as well. To make the function of an IC easier to follow from a schematic level some symbols incorporate the simplified internal diagram as it is provided in the manufacturer's datasheet, see figure 2.10 for examples.

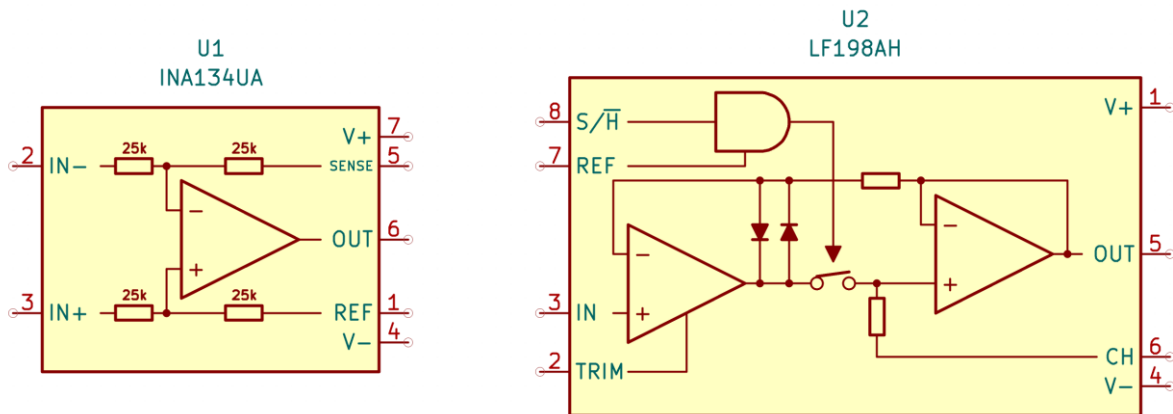


Figure 2.11 Symbols of analog ICs with their respective internal diagrams visible from the schematic level. By looking at the symbol of an INA134UA it can be easily gathered that it is a difference amplifier with a gain of 1. LF198AH symbol shows the internal architecture of the sample-and-hold amplifier.

All symbols are designed in a way to convey as much useful information about their electrical characteristics as possible, see figure 2.11 for some examples.

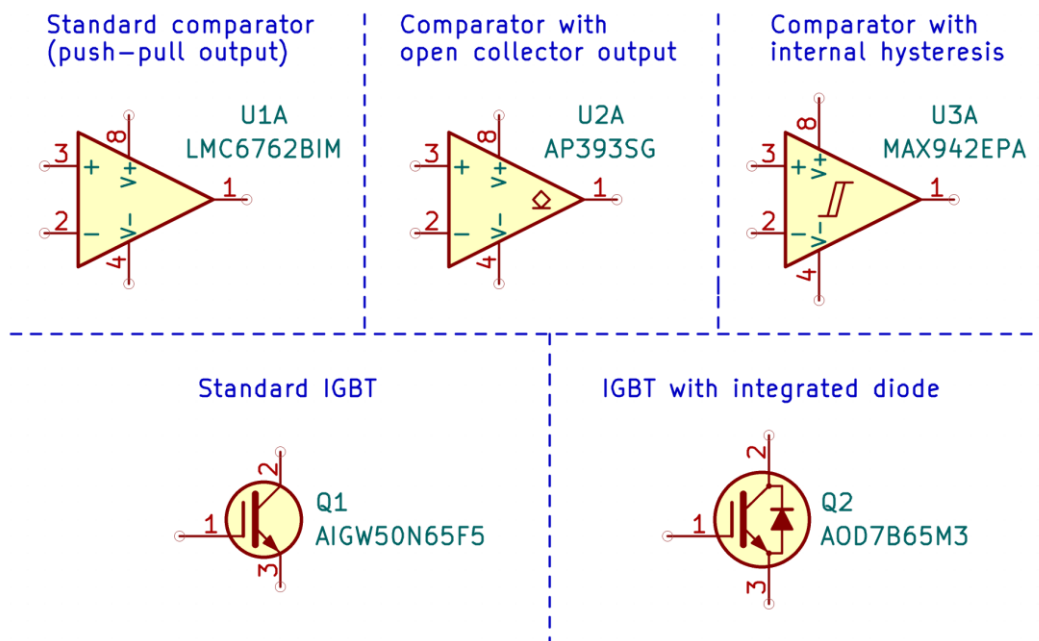


Figure 2.12. Top: Comparator symbols with different properties as indicated on the symbol body. Bottom: IGBT (Insulated Gate Bipolar Transistor) symbols showing whether or not the device has an integrated protection diode.

2.1.6. Electrical Rule Check (ERC) Compatibility

KiCad's schematic editor contains an ERC tool that examines the schematic for improperly connected pins. Each pin on a symbol can have a number of different electrical types with 'input', 'output', 'passive', 'open collector', 'power input' and 'power output' being the most common. ERC then flags warnings and errors according to the pin conflict map shown on figure 2.12. This map can be reviewed and adjusted as needed in the schematic setup.

	Input Pin	Output Pin	Bidirectional Pin	Tri-State Pin	Passive Pin	Free Pin	Unspecified Pin	Power Input Pin	Power Output Pin	Open Collector	Open Emitter	No Connection
Input Pin	Green	Red !	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Output Pin	Green	Red !	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Bidirectional Pin	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Tri-State Pin	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Passive Pin	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Free Pin	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Unspecified Pin	Yellow ?	Yellow ?	Yellow ?	Yellow ?	Yellow ?	Yellow ?	Yellow ?	Green	Yellow ?	Green	Green	Green
Power Input Pin	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Power Output Pin	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Open Collector	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Open Emitter	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
No Connection	Red !	Red !	Red !	Red !	Red !	Red !	Red !	Red !	Red !	Red !	Red !	Red !

Figure 2.13 KiCad's default pin conflict map. Yellow question marks will generate warnings and red exclamation marks – errors.

AKL symbols always have defined pin electrical types that best suit their intended role. You can always review the pin type either by opening the symbol in the symbol editor, or by selecting the pin and reading information on the bottom of the screen as shown on figure 2.13.

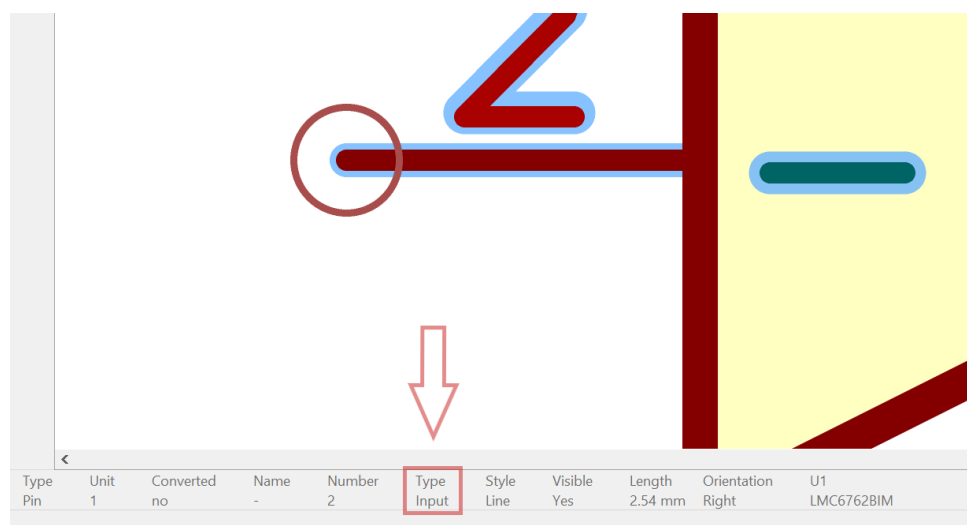
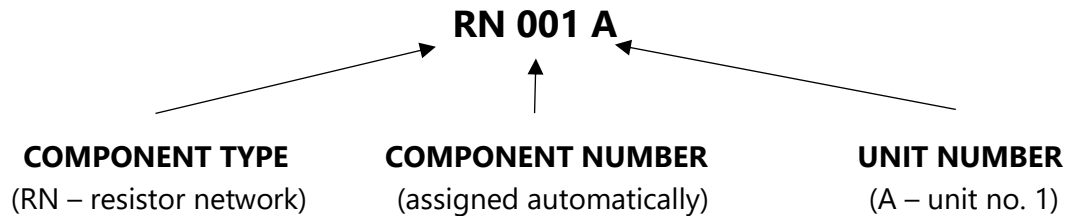


Figure 2.14 After selecting the pin, its electrical type is indicated near the bottom of the screen.

2.1.7. Default Reference Designators

Reference designator is a unique string of letters and digits referring to a single, specific component on a schematic or a PCB.

Standard syntax of a reference designator in KiCad:



Component types and their respective reference designators as used by AKL symbols.

Reference Designator	Component Type(s)
C	Capacitors, Polarized Capacitors, Trimmer Capacitors
D	Diodes, Diode Arrays, Diode Bridges, Capacitance Diodes, Current Limiting Diodes, Schottky Diodes, TVS Diodes, DIACs
DZ	Zener Diodes
F	Fuses, Dual Fuses
FB	Ferrite Beads, Ferrite Bead Arrays, Ferrite Filters
OC	Optocouplers, Optically Isolated Gate Drivers
Q	Transistors, Thyristors, TRIACs
R	Resistors
RN	Resistor Networks
U	Integrated Circuits (Includes: Isolation Amplifiers)

2.2. Difference Amplifier Library

This symbol library contains integrated difference amplifiers. Difference amplifiers are integrated circuits performing differential to single-ended voltage amplification, usually consisting of a single operational amplifier and a resistor network that sets a fixed gain.

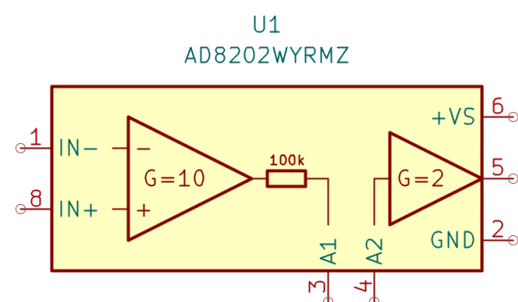
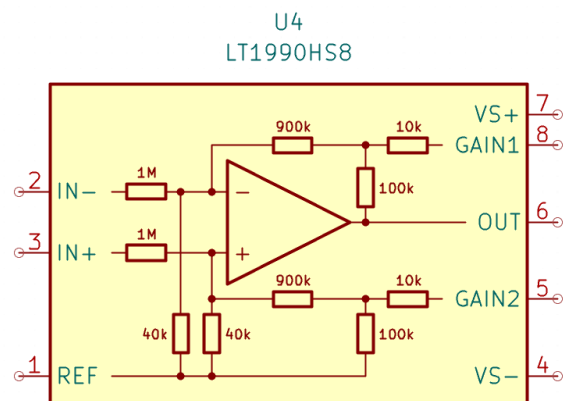
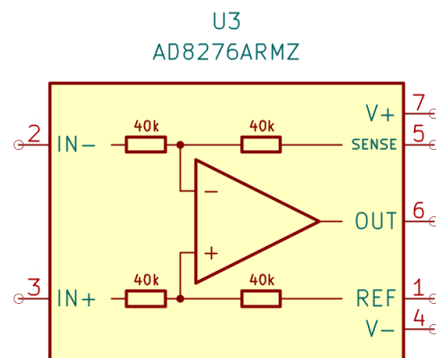
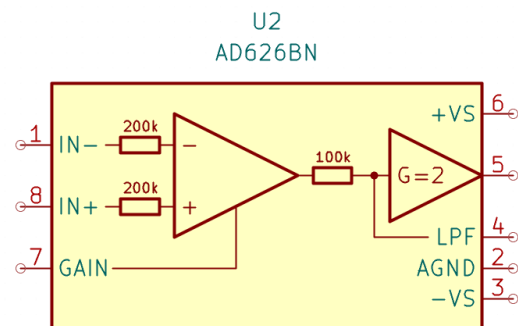
Simplified internal circuit diagram is incorporated into all of the symbols (if available).

All dual difference amplifiers are included as multi-unit symbols with power pins on the first unit (Unit A).

All available orderable part numbers for each device with different package, temperature range and accuracy grade have separate specific symbols.

THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

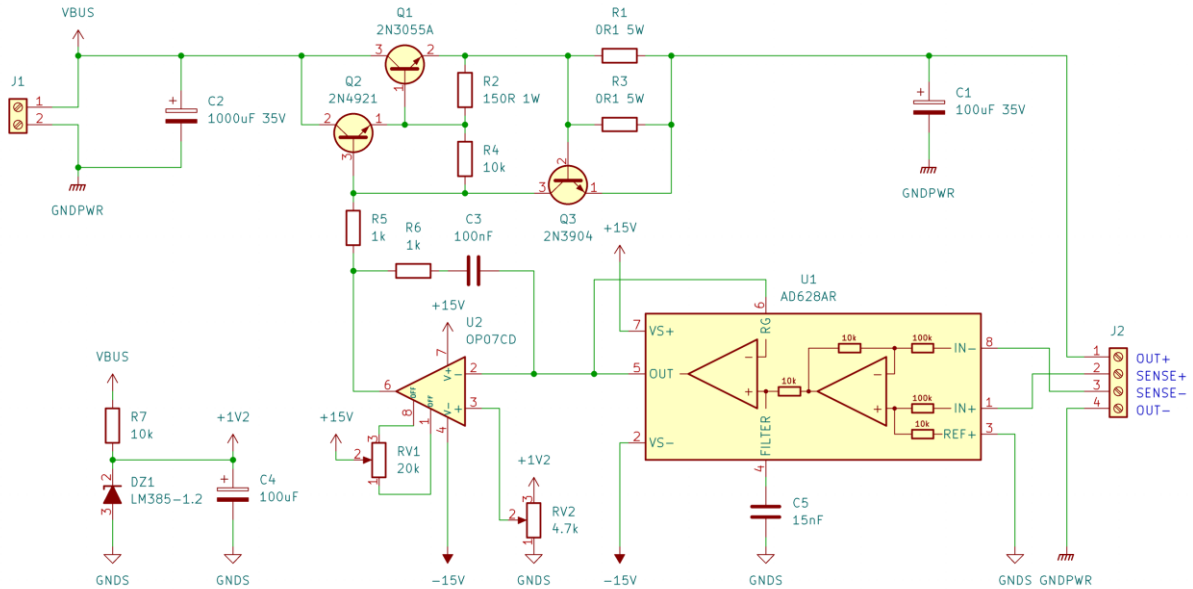
Filename: Amplifier_Difference_AKL	
Total symbols:	95
Generic symbols:	0
Specific symbols:	95



Schematic examples

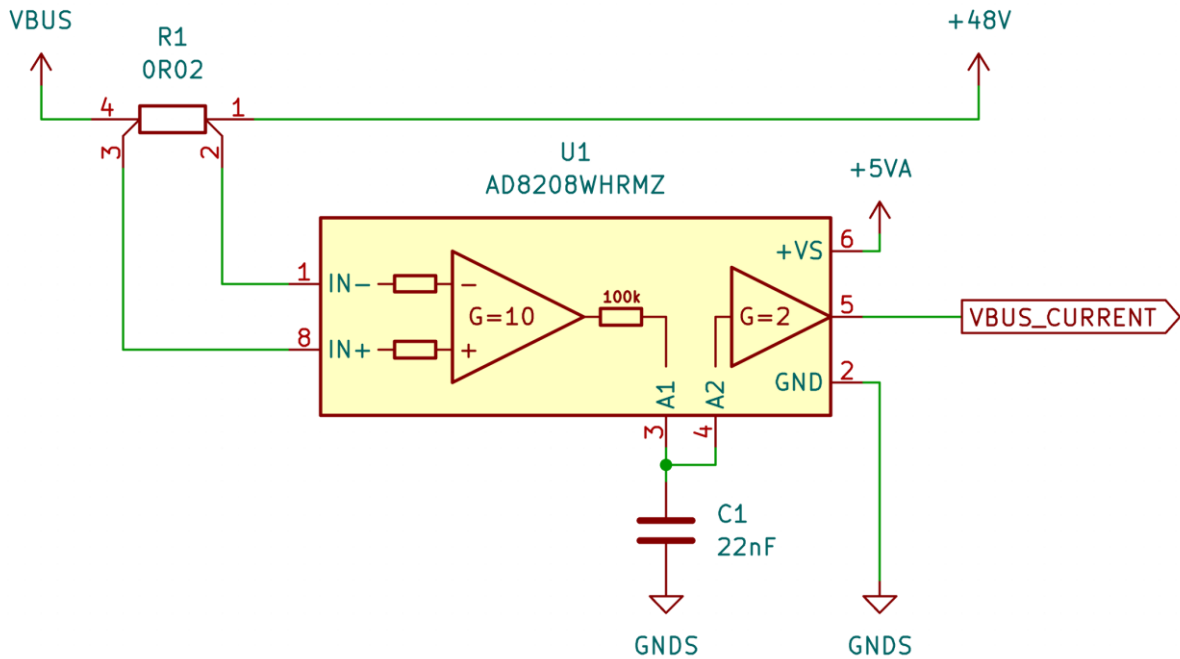
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Power supply with external voltage sensing using AD628 difference amplifier.



Example 2

Power monitoring circuit using AD8208 difference amplifier.

Table list of all devices included in this library

Device	No. of symbols
AD626	4
AD628	2
AD629	4
AD8202	4
AD8203	2
AD8208	4
AD8209	2
AD8216	2
AD8271	2
AD8275	2
AD8276	3
AD8277	2
AD8278	4
AD8279	4
AD22057	1
AMP03	4
INA105	4
INA106	2
INA117	4
INA132	4
INA133	2
INA134	2
INA137	2
INA143	2
INA145	1
INA146	1
INA149	1
INA154	2
INA157	2
INA592	3
INA2132	2
INA2133	2
INA2134	2
INA2137	2
INA2143	2
LTC1990	6

2.3. Differential Amplifier Library

This library contains integrated fully differential amplifiers. Differential amplifiers perform differential voltage amplification (differential input, differential output).

Common mode voltage of the output stage usually needs to be set externally via the 'VCM' terminal.

Differential amplifiers might have integrated resistor network allowing for a fixed gain or a couple of selectable gains. Most differential amplifiers need external gain setting resistors. Any internal gain resistors are incorporated into a symbol.

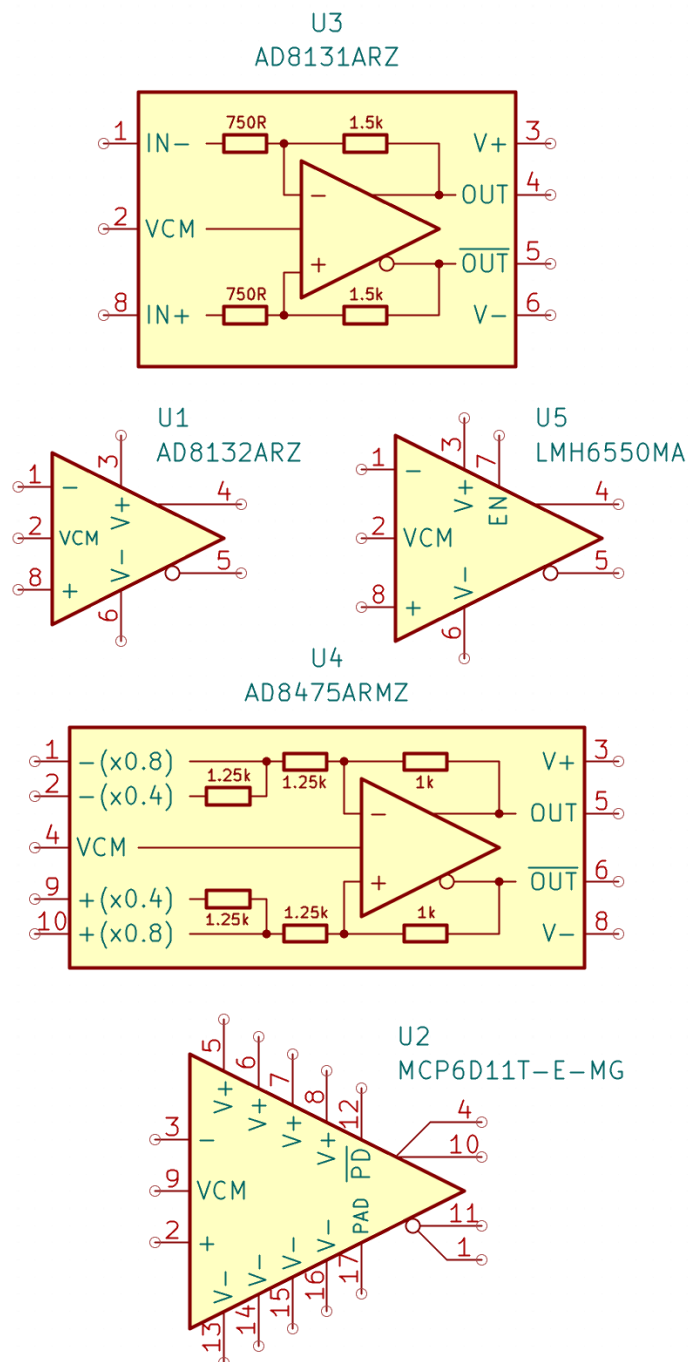
All available orderable part numbers for each device with different package, gain configuration, temperature range and accuracy grade have separate specific symbols.

THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

Table list of all devices included in this library

Device	No. of symbols
AD8131	2
AD8132	2
AD8137	2
AD8138	2
AD8139	2
AD8475	3
AD8476	4
LMH6550	2
LT1994	5
LTC1992	15
LTC6362	6
MCP6D11	2
OPA1632	2

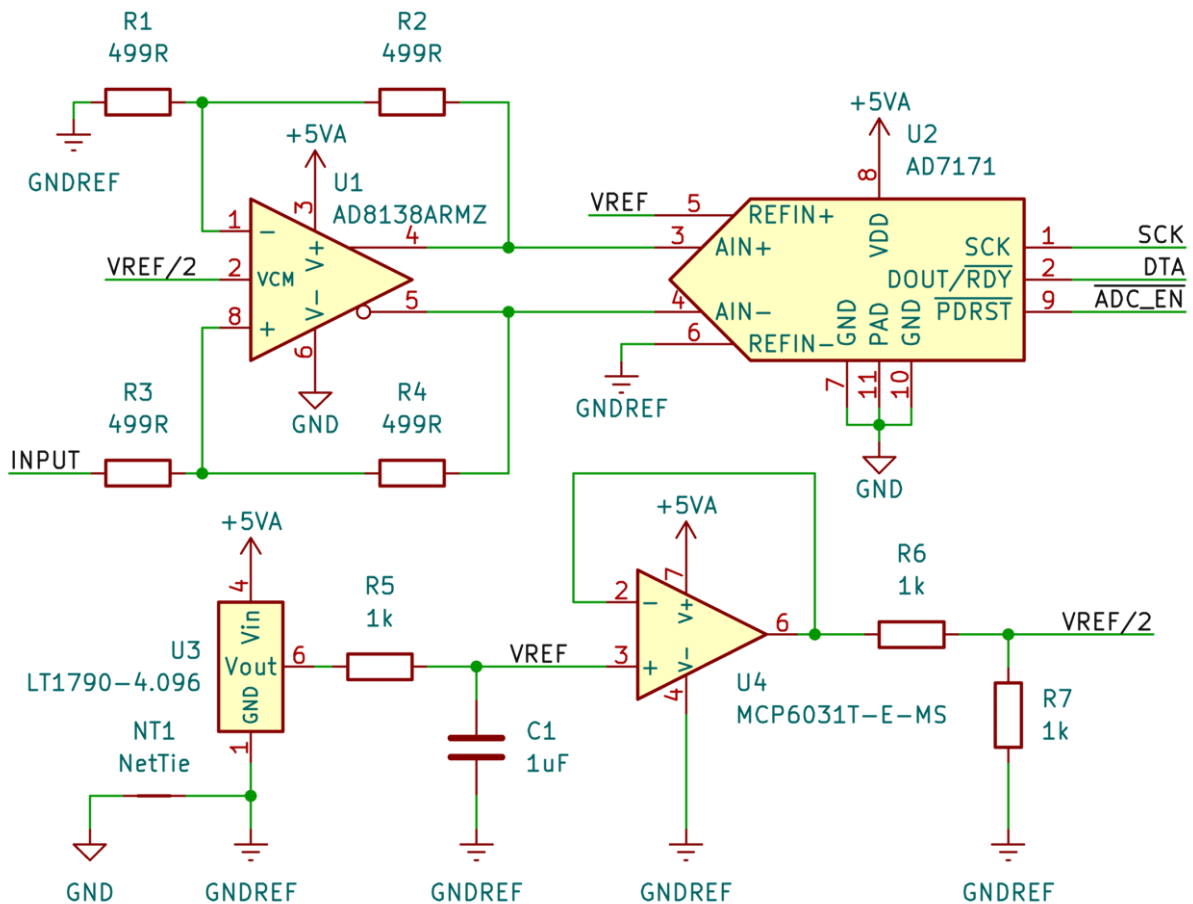
Filename: Amplifier_Differential_AKL	
Total symbols:	49
Generic symbols:	0
Specific symbols:	49



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Differential ADC driver using AD8138 differential amplifier.

2.4. Instrumentation Amplifier Library

This library contains integrated instrumentation amplifiers.

Instrumentation amplifiers perform differential to single-ended voltage multiplication, but have significantly better performance and gain-setting flexibility than standard difference amplifiers.

Most instrumentation amplifiers require a single gain-setting resistor. Symbols have been created in a way that allows for a convenient placement of the gain-setting resistor close to the amplifier symbol.

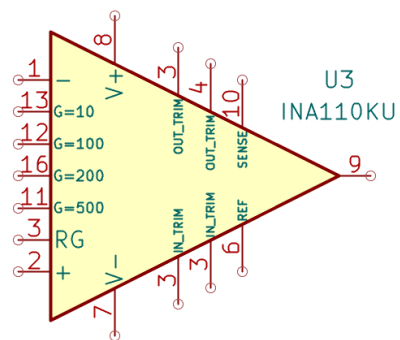
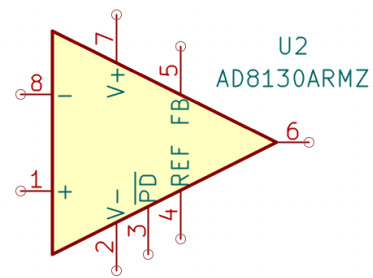
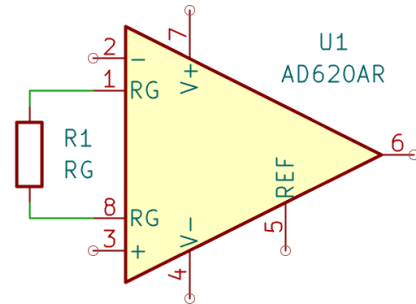
All dual instrumentation amplifiers are included as a multi-unit symbol with power pins on the first unit (Unit A).

Instrumentation amplifiers that have non-standard internal architecture (that is indicated in the part's respective datasheet), have simplified internal diagrams incorporated into the symbol.

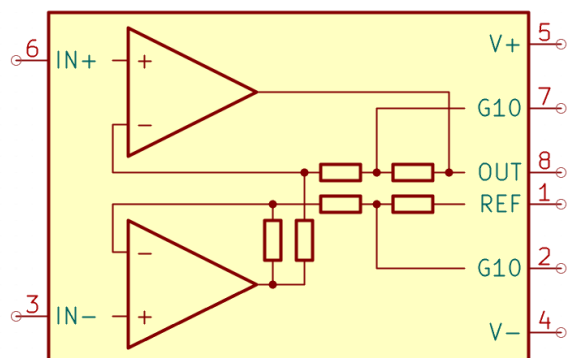
All available orderable part numbers for each device with different package, gain range, temperature range and accuracy grade have separate specific symbols.

THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

Filename: Amplifier_Instrumentation_AKL	
Total symbols:	245
Generic symbols:	0
Specific symbols:	245



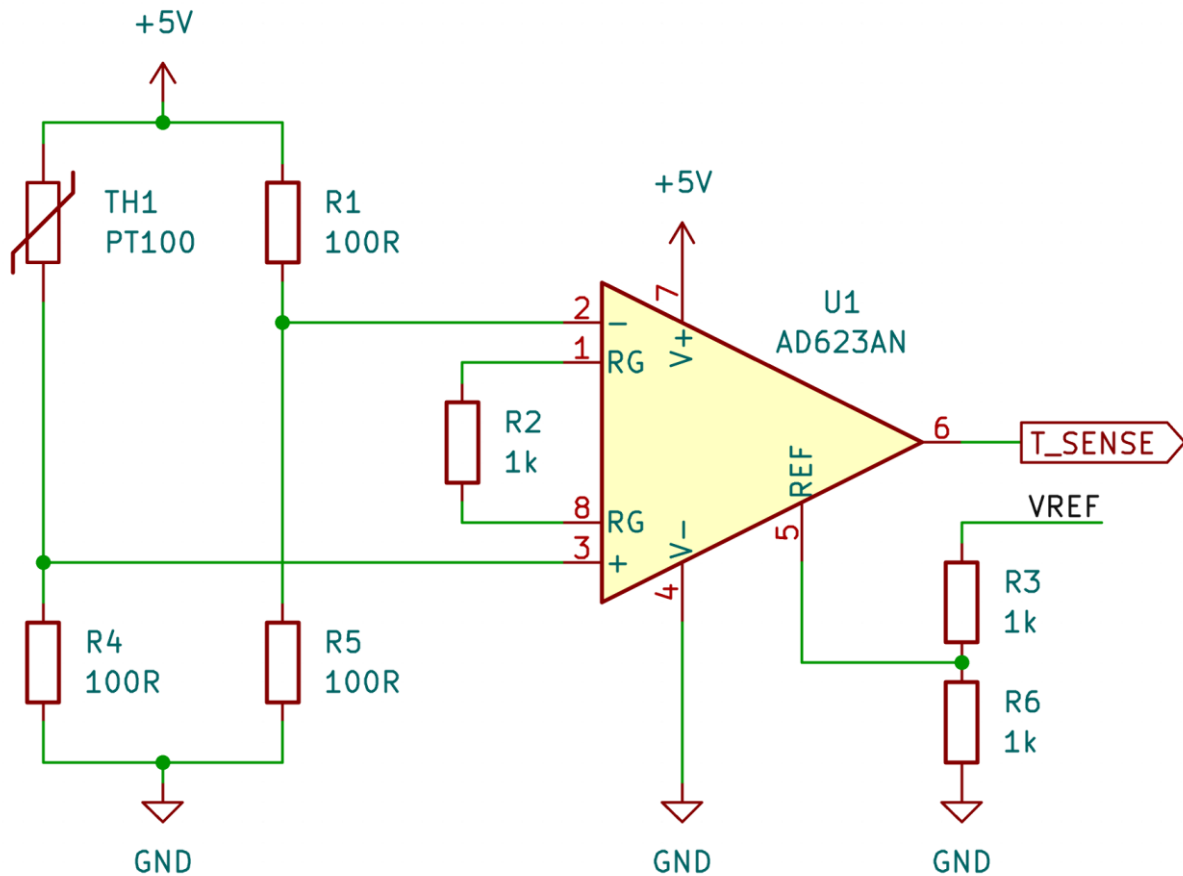
U4
LT1101CN8



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

RTD temperature sensor analog front-end using AD623 instrumentation amplifier.

Table list of all devices included in this library

Device	No. of symbols
AD521	1
AD620	4
AD621	4
AD622	2
AD623	5
AD627	4
AD8129	2
AD8130	2
AD8220	3
AD8221	3
AD8222	4
AD8223	4
AD8226	4
AD8227	4
AD8230	1
AD8237	1
AD8420	1
AD8421	4
AD8422	4
AD8428	2
AD8429	2
AD8553	1
AMP01	5
AMP04	4
INA101	6
INA103	2
INA110	2
INA111	4
INA114	4
INA115	2
INA116	2
INA118	4
INA121	4
INA122	4
INA125	4
INA126	6
INA128	4
INA129	4
INA131	2
INA141	4
INA155	4
INA163	1
INA166	1

Device	No. of symbols
INA188	2
INA217	2
INA321	2
INA322	1
INA332	1
INA333	2
INA337	1
INA338	1
INA818	1
INA819	3
INA821	3
INA826	3
INA828	1
INA2126	4
INA2321	1
INA2332	1
LT1101	6
LT1167	8
LT1168	8
LT1789	4
LT1920	4
LTC2053	8
MAX4194	1
MAX4195	1
MAX4196	1
MAX4197	1
MAX4208	1
MAX4209	1
MAX4460	3
MAX4461	9
MAX4462	9
MCP6N11	10
MCP6N16	6

2.5. Isolation Amplifier Library

This library contains isolated amplifiers. Isolated amplifiers provide galvanic isolation for analog signals.

Isolated amplifiers can either have a fully differential output or single-ended output referenced to a pin on the output side.

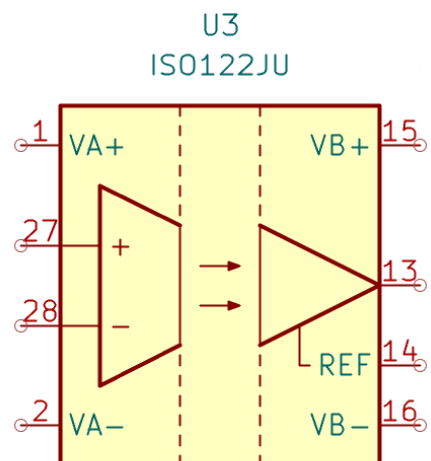
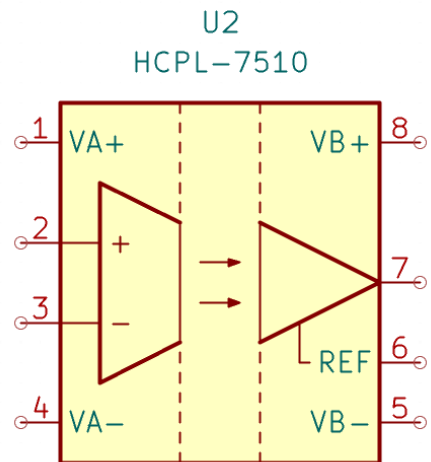
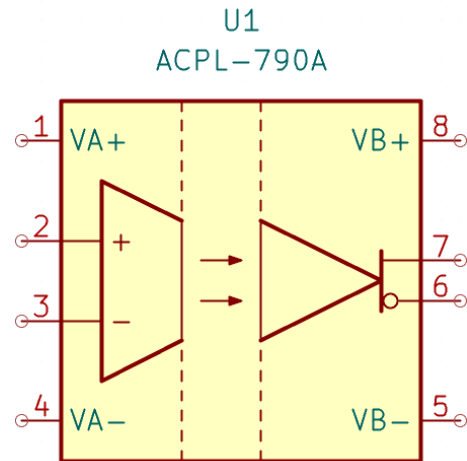
All available orderable part numbers for each device with different package and gain tolerance have separate specific symbols.

THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

Table list of all devices included in this library

Device	No. of symbols
ACPL-782	2
ACPL-790	6
ACPL-78	3
HCPL-7510	2
HCPL-7520	2
HCPL-7800	4
HCPL-7840	2
ISO122	4
ISO124	2
Si8920	4
TLP7820	3
TLP7920	3

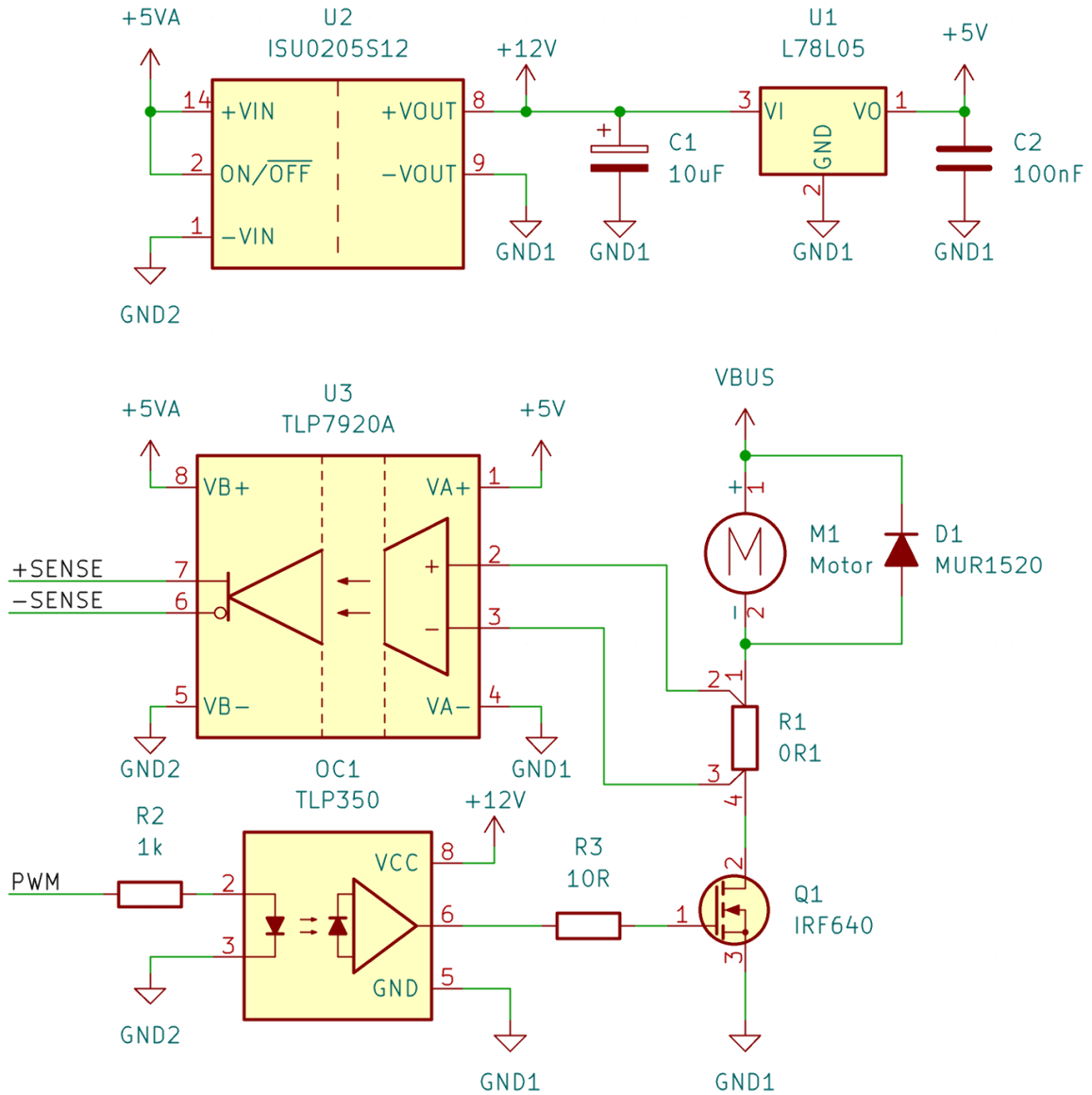
Filename: Amplifier_Isolation_AKL	
Total symbols:	39
Generic symbols:	2
Specific symbols:	37



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Isolated motor driver with current sensing circuit using TLP7920A isolation amplifier.

2.6. Operational Amplifier Library

This library contains operational amplifiers, current feedback amplifiers, Norton amplifiers and operational transconductance amplifiers (OTA).

Inverting input of the operational amplifier is placed on the top side, with the non-inverting input on the bottom side of the symbol.

All dual/triple/quad operational amplifiers are added as a multi-unit symbol. Most multi-unit symbols have the power pins on the first unit (Unit A) of the symbol, however if there are enable or chip select pins affecting more than one unit, then an additional unit is included with all power and control pins.

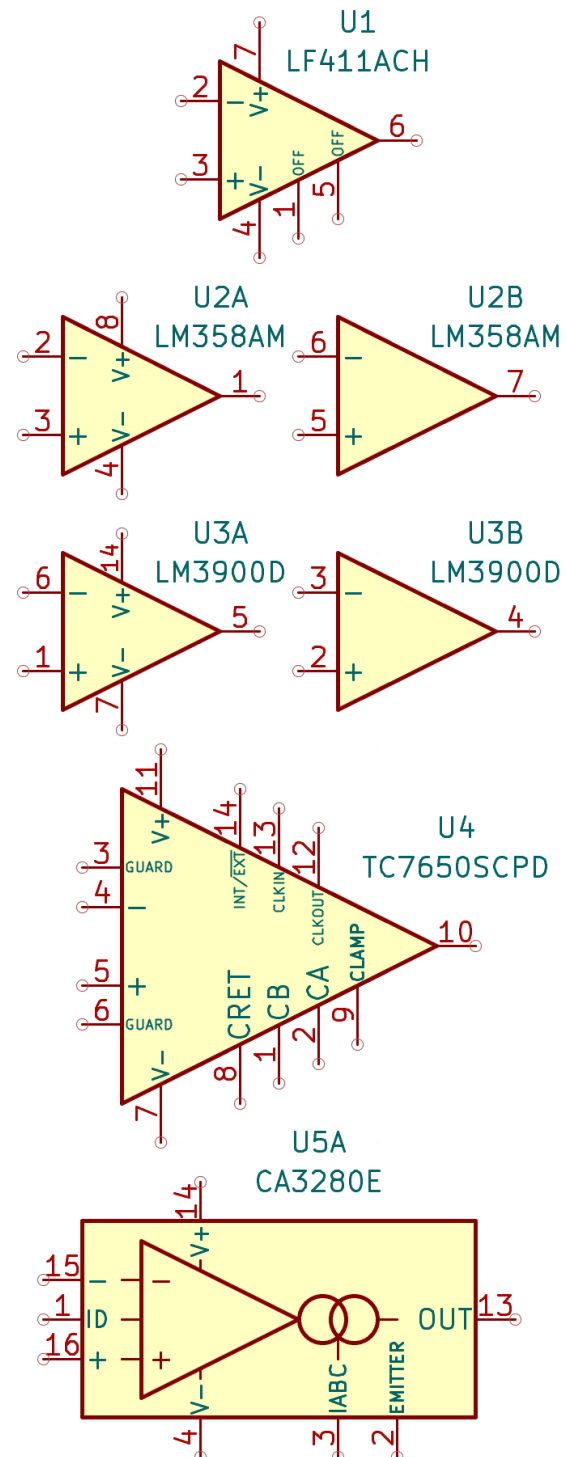
Operational transconductance amplifiers and other complex devices in this library have their simplified internal diagram incorporated into the symbol.

All available orderable part numbers for each device with different package, temperature range and accuracy grade have separate specific symbols.

Certain parts with '/' (slash) in the name caused issues with the symbol editor. Symbols were renamed to replace '/' (slash) with '-' (dash).

THT integrated circuits in DIP and SIP packages use 'LongPads' footprint variants by default.

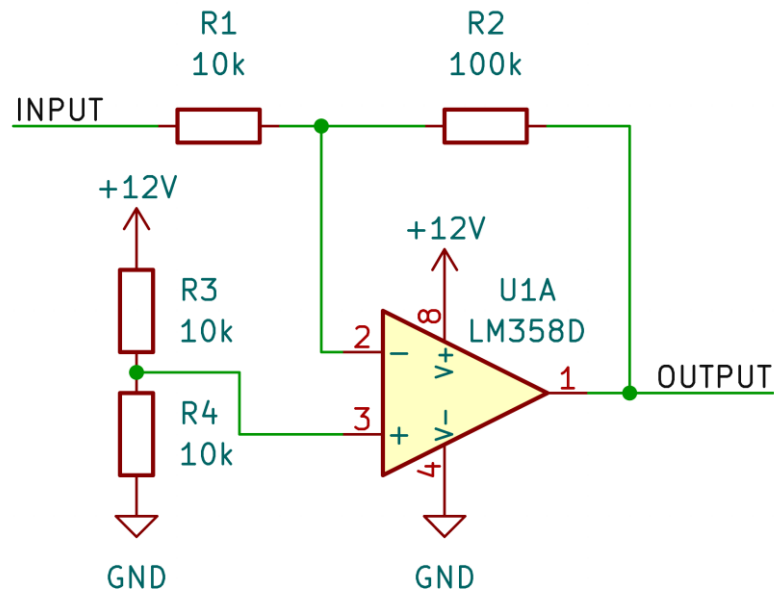
Filename:	Amplifier_Operational_AKL
Total symbols:	4276
Generic symbols:	12
Specific symbols:	4264



Schematic examples

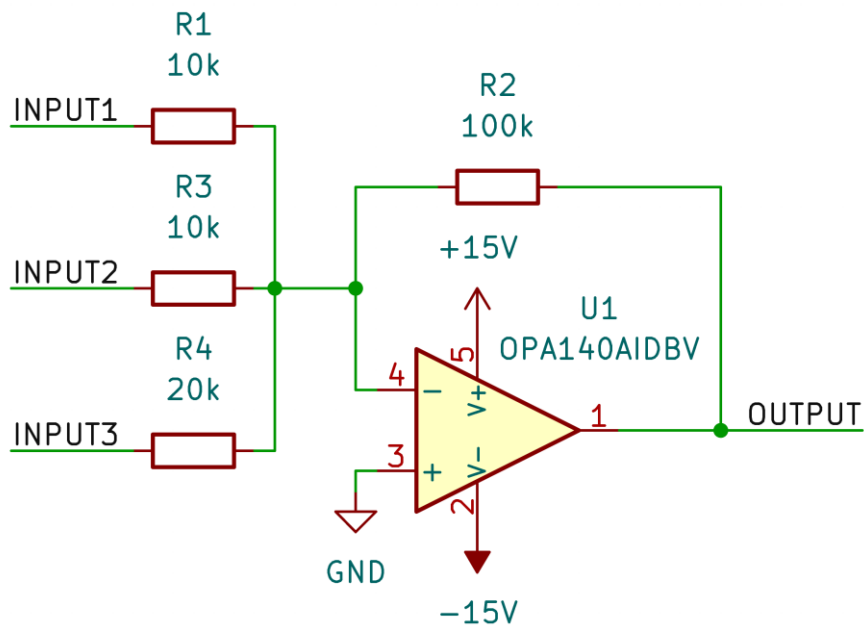
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



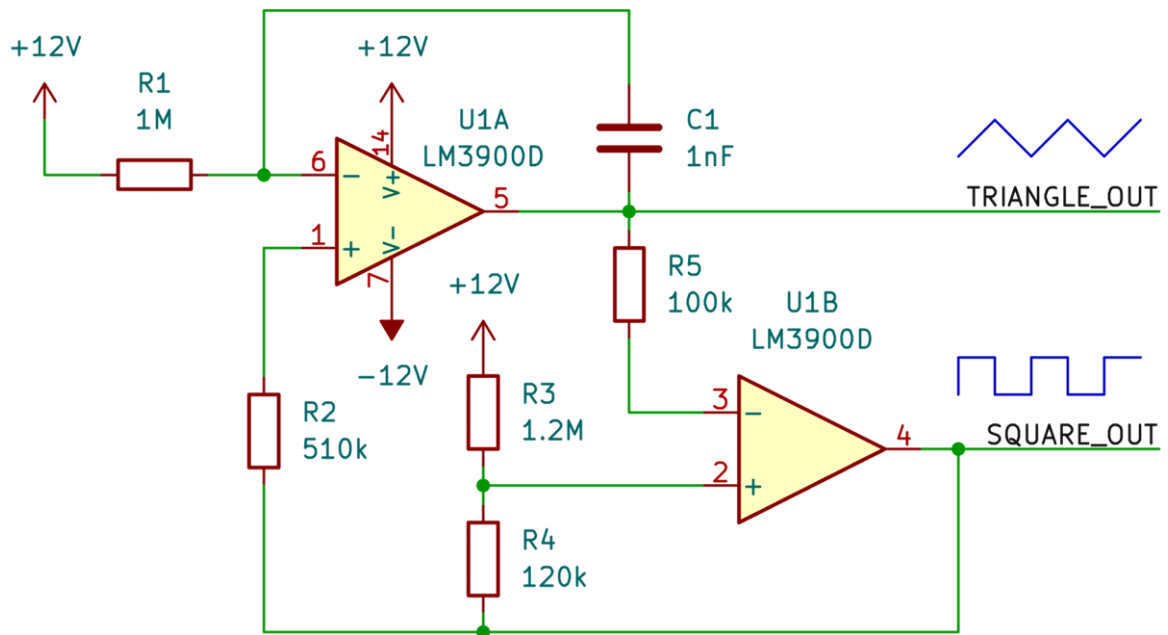
Example 1

Single-supply inverting amplifier using LM358 operational amplifier with the common-mode voltage set to $\frac{1}{2}$ of supply voltage.



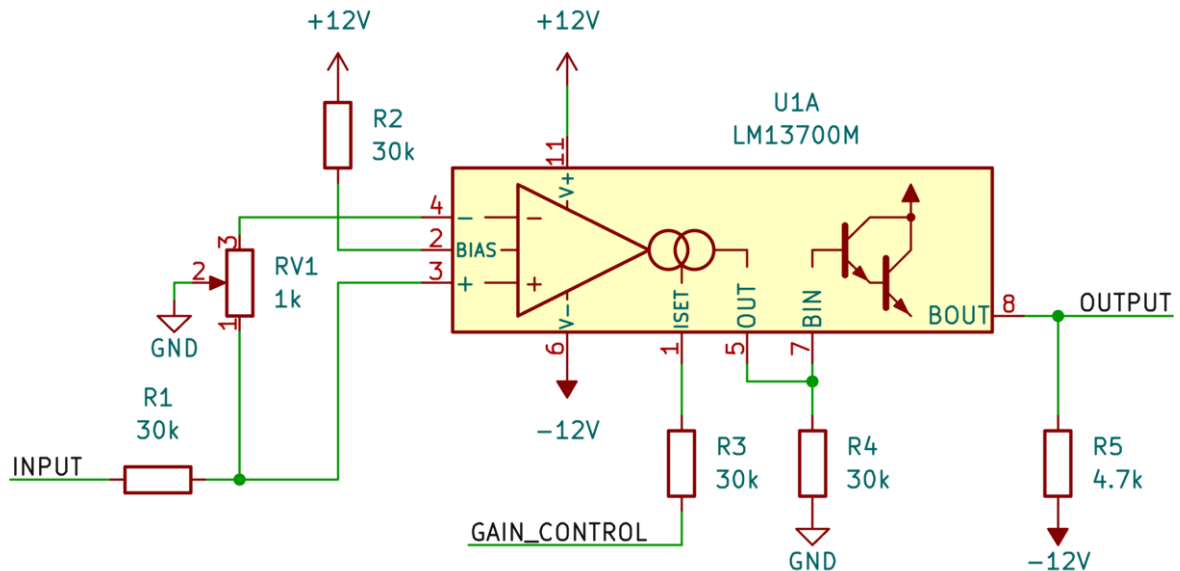
Example 2

Summing amplifier based on OPA140 operational amplifier.



Example 3

Square and triangle wave oscillator based on LM3900 Norton operational amplifiers.



Example 4

Voltage Controlled Amplifier using LM13700 Operational Transconductance Amplifier (OTA).

Table list of all devices included in this library

Device	No. of symbols
AD548	4
AD648	4
AD704	5
AD706	3
AD708	3
AD711	8
AD712	5
AD713	5
AD744	7
AD795	1
AD797	4
AD810	2
AD811	4
AD812	2
AD817	2
AD818	1
AD820	4
AD822	4
AD823	2
AD824	2
AD825	1
AD826	1
AD828	1
AD829	4
AD847	4
AD8000	2
AD8001	4
AD8002	2
AD8004	1
AD8005	3
AD8007	2
AD8008	2
AD8009	2
AD8011	2
AD8012	2
AD8013	2
AD8014	2
AD8021	2
AD8022	2
AD8024	1
AD8027	2
AD8028	2
AD8029	2

Device	No. of symbols
AD8030	2
AD8031	5
AD8032	5
AD8033	2
AD8034	2
AD8038	2
AD8039	2
AD8040	2
AD8041	2
AD8042	2
AD8045	2
AD8047	2
AD8048	2
AD8051	2
AD8052	2
AD8054	2
AD8055	3
AD8056	3
AD8057	2
AD8058	2
AD8061	2
AD8062	2
AD8063	2
AD8065	2
AD8066	2
AD8091	2
AD8092	2
AD8099	2
AD8397	2
AD8510	3
AD8512	3
AD8513	2
AD8531	3
AD8532	3
AD8534	2
AD8538	3
AD8539	2
AD8541	3
AD8542	3
AD8544	3
AD8551	2
AD8552	2
AD8554	2

Table list of all devices included in this library (cont.)

Device	No. of symbols
AD8571	2
AD8572	2
AD8574	2
AD8597	2
AD8599	1
AD8601	3
AD8602	5
AD8603	1
AD8604	4
AD8605	2
AD8606	3
AD8607	2
AD8608	2
AD8609	2
AD8610	3
AD8614	1
AD8615	1
AD8616	2
AD8618	2
AD8620	2
AD8622	2
AD8624	2
AD8625	2
AD8626	2
AD8627	2
AD8628	6
AD8629	3
AD8630	2
AD8638	2
AD8639	4
AD8641	2
AD8642	2
AD8643	2
AD8644	2
AD8646	2
AD8647	1
AD8648	2
AD8651	2
AD8652	2
AD8655	3
AD8656	3
AD8661	2
AD8662	2

Device	No. of symbols
AD8663	2
AD8664	2
AD8667	2
AD8669	2
AD8671	2
AD8672	2
AD8674	2
AD8675	2
AD8676	4
AD8691	3
AD8692	3
AD8694	3
ADA4001-2	1
ADA4075-2	2
ADA4084-1	2
ADA4084-2	3
ADA4084-4	2
ADA4091-2	2
ADA4091-4	2
ADA4096-2	2
ADA4096-4	2
ADA4522-1	2
ADA4522-2	2
ADA4522-4	2
ADA4528-1	2
ADA4528-2	2
ADA4622-1	2
ADA4622-2	4
ADA4622-4	2
ADA4638-1	2
ADA4700-1	1
ADA4817-1	2
ADA4817-2	1
ADA4857-1	2
ADA4857-2	1
ADA4891-1	2
ADA4891-2	3
ADA4891-3	3
ADA4891-4	3
ADA4896-2	2
ADA4897-1	2
ADA4897-2	1
ADA4898-1	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
ADA4898-2	1
ADA4899-1	2
AP358	2
APX321	2
APX324	1
APX358	2
APX4558	1
AS321	1
AS358	7
AZ4558	2
AZ4580	3
AZV831	2
AZV832	2
BA4560	10
BA4564	2
CA3130	4
CA3140	4
CA3160	2
CA3240	2
CA3280	2
CA5620	2
HFA1130	1
ICL7611	2
ICL7612	3
ICL7621	2
ICL7650	3
ISL28117	6
ISL28134	2
ISL28217	5
ISL28417	4
ISL55001	1
ISL55002	1
ISL55004	1
L272	3
LA6515	1
LF147	2
LF151	2
LF156	1
LF247	2
LF251	2
LF256	1
LF347	4
LF351	2

Device	No. of symbols
LF353	2
LF356	2
LF411	8
LF412	3
LF444	3
LM10	5
LM101	2
LM108	4
LM118	1
LM124	4
LM148	1
LM158	5
LM201	3
LM224	6
LM248	2
LM258	7
LM301	3
LM308	5
LM318	5
LM321	1
LM324	10
LM348	3
LM358	12
LM392	3
LM675	1
LM741	4
LM833	4
LM2900	2
LM2902	9
LM2904	11
LM3900	2
LM4562	3
LM6132	3
LM6134	3
LM6142	3
LM6144	3
LM6152	2
LM6154	1
LM6171	3
LM6172	2
LM7121	2
LM7321	3
LM7322	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
LM8261	1
LM13600	3
LM13700	2
LMC660	4
LMC662	4
LMC6001	3
LMC6032	2
LMC6034	1
LMC6041	3
LMC6042	4
LMC6044	3
LMC6061	2
LMC6062	3
LMC6064	3
LMC6081	3
LMC6082	4
LMC6084	2
LMC6462	4
LMC6464	3
LMC6482	5
LMC6484	4
LMC7101	2
LMC7111	1
LMH6611	1
LMH6612	1
LMH6618	1
LMH6619	1
LMH6645	2
LMH6646	2
LMH6647	2
LMH6672	1
LMH6702	2
LMP7701	2
LMP7702	2
LMP7704	2
LMP7715	1
LMP7716	1
LMP7721	1
LMV321	13
LMV324	13
LMV341	2
LMV342	2
LMV344	2

Device	No. of symbols
LMV358	18
LMV721	2
LMV722	2
LMV751	1
LMV771	1
LMV772	3
LMV774	1
LMV821	2
LMV822	3
LMV824	4
LMV931	2
LMV932	2
LMV934	2
LMV981	2
LMV982	1
LP324	5
LP358	1
LP2902	4
LP2904	1
LT1001	5
LT1006	3
LT1007	6
LT1013	7
LT1014	6
LT1028	4
LT1037	6
LT1055	3
LT1056	3
LT1057	7
LT1058	4
LT1077	7
LT1078	5
LT1079	7
LT1112	6
LT1114	5
LT1115	2
LT1122	6
LT1124	5
LT1125	3
LT1126	3
LT1127	3
LT1128	3
LT1178	6

Table list of all devices included in this library (cont.)

Device	No. of symbols
LT1179	4
LT1206	4
LT1210	3
LT1211	5
LT1212	4
LT1213	3
LT1214	2
LT1218	4
LT1219	4
LT1222	3
LT1223	2
LT1229	2
LT1230	2
LT1253	2
LT1254	2
LT1259	4
LT1260	4
LT1352	4
LT1353	1
LT1354	2
LT1355	2
LT1356	2
LT1357	2
LT1358	4
LT1359	4
LT1360	2
LT1361	2
LT1362	2
LT1363	2
LT1364	2
LT1365	2
LT1366	2
LT1367	1
LT1368	2
LT1369	1
LT1395	3
LT1396	3
LT1397	4
LT1398	1
LT1399	5
LT1413	3
LT1468	4
LT1469	4

Device	No. of symbols
LT1490	5
LT1491	4
LT1492	2
LT1493	1
LT1494	7
LT1495	5
LT1496	5
LT1498	4
LT1499	2
LT1636	9
LT1637	10
LT1638	9
LT1639	5
LT1677	4
LT1678	2
LT1679	2
LT1722	4
LT1723	4
LT1724	2
LT1782	6
LT1783	6
LT1806	4
LT1807	4
LT1813	10
LT1814	4
LT1881	8
LT1882	2
LT6003	6
LT6004	6
LT6005	6
LT6015	3
LT6016	3
LT6017	3
LT6202	4
LT6203	6
LT6204	4
LT6220	4
LT6221	4
LT6222	1
LT6230	4
LT6231	4
LT6232	2
LT6233	4

Table list of all devices included in this library (cont.)

Device	No. of symbols
LT6234	4
LT6235	2
LT6274	2
LT6275	2
LTC1047	2
LTC1049	2
LTC1050	6
LTC1051	2
LTC1052	3
LTC1053	2
LTC1150	2
LTC1152	4
LTC1250	2
LTC2050	16
LTC2051	20
LTC2052	12
LTC6240	12
LTC6241	10
LTC6242	10
LTC6244	11
MAX406	8
MAX407	4
MAX409	7
MAX417	4
MAX418	4
MAX419	4
MAX492	4
MAX494	4
MAX495	5
MAX4040	3
MAX4041	2
MAX4042	2
MAX4043	2
MAX4044	1
MAX4162	2
MAX4163	2
MAX4164	1
MAX4212	1
MAX4213	2
MAX4216	2
MAX4218	2
MAX4220	2
MAX4236	5

Device	No. of symbols
MAX4237	5
MAX4238	3
MAX4239	3
MAX4249	2
MAX4250	2
MAX4251	2
MAX4252	2
MAX4253	2
MAX4254	1
MAX4255	1
MAX4256	2
MAX4257	2
MAX4464	2
MAX4470	2
MAX4471	2
MAX4472	2
MAX4474	3
MAX4493	2
MAX4494	3
MAX4495	2
MAX9910	1
MAX9911	1
MAX9912	1
MAX9913	1
MC1458	3
MC4558	4
MC33071	4
MC33072	4
MC33074	6
MC33078	5
MC33079	2
MC33171	2
MC33172	3
MC33174	4
MC33178	3
MC33179	3
MC33201	2
MC33202	3
MC33204	3
MC33272	2
MC33274	3
MC34071	4
MC34072	7

Table list of all devices included in this library (cont.)

Device	No. of symbols
MC34074	6
MCP6H01	2
MCP6H02	2
MCP6H71	2
MCP6H72	2
MCP6H74	2
MCP6H81	2
MCP6H82	2
MCP6H84	2
MCP6H91	2
MCP6H92	2
MCP6H94	2
MCP6L01	4
MCP6L02	2
MCP6L04	2
MCP6L1	4
MCP6L2	2
MCP6L4	2
MCP6L71	4
MCP6L72	2
MCP6L74	2
MCP6L91	4
MCP6L92	2
MCP6L94	2
MCP6V01	2
MCP6V02	2
MCP6V03	2
MCP6V06	2
MCP6V07	2
MCP6V08	2
MCP6V11	3
MCP6V12	2
MCP6V14	1
MCP6V16	3
MCP6V17	2
MCP6V19	1
MCP6V26	3
MCP6V27	3
MCP6V28	2
MCP6V31	3
MCP6V32	2
MCP6V34	1
MCP6V36	3

Device	No. of symbols
MCP6V37	2
MCP6V39	1
MCP6V51	2
MCP6V61	3
MCP6V62	2
MCP6V64	1
MCP6V66	3
MCP6V67	2
MCP6V69	1
MCP6V71	3
MCP6V72	2
MCP6V74	1
MCP6V76	3
MCP6V77	2
MCP6V79	1
MCP6V81	3
MCP6V91	3
MCP6V92	2
MCP6V94	1
MCP601	10
MCP602	6
MCP603	8
MCP604	6
MCP606	8
MCP607	6
MCP608	6
MCP609	6
MCP616	6
MCP617	6
MCP618	6
MCP619	6
MCP621	3
MCP622	2
MCP623	1
MCP624	2
MCP625	2
MCP629	1
MCP631	3
MCP632	2
MCP633	2
MCP634	2
MCP635	2
MCP639	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
MCP651	3
MCP652	2
MCP653	1
MCP654	2
MCP655	2
MCP659	1
MCP660	2
MCP661	2
MCP662	3
MCP663	2
MCP664	2
MCP665	2
MCP669	1
MCP6001	4
MCP6002	5
MCP6004	4
MCP6006	5
MCP6007	2
MCP6009	2
MCP6021	8
MCP6022	6
MCP6023	6
MCP6024	6
MCP6031	4
MCP6032	2
MCP6033	3
MCP6034	2
MCP6041	8
MCP6042	6
MCP6043	8
MCP6044	6
MCP6051	3
MCP6052	2
MCP6054	2
MCP6061	3
MCP6062	2
MCP6064	2
MCP6071	3
MCP6072	2
MCP6074	2
MCP6141	6
MCP6142	6
MCP6043	8

Device	No. of symbols
MCP6144	6
MCP6231	15
MCP6232	8
MCP6234	6
MCP6241	16
MCP6242	6
MCP6244	6
MCP6271	10
MCP6272	6
MCP6273	8
MCP6274	6
MCP6275	6
MCP6281	10
MCP6282	6
MCP6283	8
MCP6284	6
MCP6285	6
MCP6286	1
MCP6291	10
MCP6292	6
MCP6293	8
MCP6294	6
MCP6295	6
MCP6401	5
MCP6402	3
MCP6404	3
MCP6406	1
MCP6407	1
MCP6409	1
MCP6421	2
MCP6422	2
MCP6424	2
MCP6441	2
MCP6442	2
MCP6444	2
MCP6471	2
MCP6472	3
MCP6474	2
MCP6476	5
MCP6477	2
MCP6479	1
MCP6481	2
MCP6482	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
MCP6484	2
MCP6491	2
MCP6492	3
MCP6494	2
MIC863	1
MIC6211	1
MIC7300	2
NSC20071	2
NCS20072	3
NCS20074	2
NSV20071	2
NCV20072	3
NCV20074	2
NE5532	6
NE5534	4
NJM2902	3
NJM2904	6
NJM3403	3
NJM4556	4
NJM4558	5
NJM4559	3
NJM4565	5
NJM13403	4
NJM13404	6
OA1MPA	1
OA2MPA	2
OA4MPA	1
OA1NP	1
OA2NP	2
OA4NP	1
OA1ZHA	1
OA2ZHA	2
OA4ZHA	1
OP07	7
OP27	8
OP37	7
OP77	5
OP90	4
OP97	3
OP113	2
OP162	1
OP177	4
OP179	1

Device	No. of symbols
OP184	2
OP191	1
OP193	1
OP196	1
OP200	4
OP213	3
OP221	1
OP249	4
OP262	3
OP270	4
OP275	2
OP279	2
OP281	2
OP282	2
OP284	3
OP290	1
OP291	1
OP293	2
OP295	2
OP296	3
OP297	5
OP400	7
OP413	2
OP462	2
OP467	4
OP470	5
OP481	2
OP482	2
OP484	3
OP490	4
OP491	3
OP495	2
OP496	3
OP497	4
OP727	2
OP747	2
OP777	2
OP1177	2
OP2177	4
OP4177	2
OPA27	2
OPA37	2
OPA128	4

Table list of all devices included in this library (cont.)

Device	No. of symbols
OPA130	1
OPA131	3
OPA132	2
OPA134	2
OPA137	4
OPA140	3
OPA141	2
OPA145	3
OPA170	3
OPA171	3
OPA177	3
OPA187	3
OPA188	3
OPA192	3
OPA196	3
OPA227	4
OPA228	4
OPA234	6
OPA237	2
OPA241	2
OPA244	2
OPA251	1
OPA277	5
OPA300	2
OPA301	2
OPA313	2
OPA320	2
OPA330	3
OPA333	3
OPA336	5
OPA337	3
OPA338	2
OPA340	3
OPA341	2
OPA342	2
OPA343	2
OPA344	3
OPA345	2
OPA347	4
OPA348	3
OPA350	3
OPA353	2
OPA355	2

Device	No. of symbols
OPA357	1
OPA363	4
OPA364	4
OPA365	2
OPA379	3
OPA388	3
OPA404	5
OPA445	4
OPA541	4
OPA544	2
OPA547	2
OPA548	2
OPA549	1
OPA551	3
OPA552	3
OPA602	3
OPA604	2
OPA606	3
OPA627	6
OPA637	6
OPA656	4
OPA683	2
OPA703	3
OPA704	2
OPA725	2
OPA726	2
OPA734	2
OPA735	2
OPA847	2
OPA1611	1
OPA1612	2
OPA2107	2
OPA2130	1
OPA2131	2
OPA2132	2
OPA2134	2
OPA2137	6
OPA2140	2
OPA2141	2
OPA2145	2
OPA2156	2
OPA2170	4
OPA2171	4

Table list of all devices included in this library (cont.)

Device	No. of symbols
OPA2187	2
OPA2188	2
OPA2192	2
OPA2196	2
OPA2227	4
OPA2228	4
OPA2234	4
OPA2237	2
OPA2241	2
OPA2244	3
OPA2251	2
OPA2277	5
OPA2300	1
OPA2301	2
OPA2313	3
OPA2320	4
OPA2330	3
OPA2333	3
OPA2336	6
OPA2337	3
OPA2338	2
OPA2340	2
OPA2341	1
OPA2342	2
OPA2343	2
OPA2344	2
OPA2345	1
OPA2347	2
OPA2348	3
OPA2350	2
OPA2343	2
OPA2355	1
OPA2357	1
OPA2363	3
OPA2364	4
OPA2365	1
OPA2379	2
OPA2388	2
OPA2677	3
OPA2703	2
OPA2704	2
OPA2725	2
OPA2726	1

Device	No. of symbols
OPA2734	1
OPA2735	2
OPA2889	2
OPA3355	1
OPA4130	1
OPA4131	5
OPA4132	2
OPA4134	2
OPA4137	4
OPA4140	2
OPA4141	2
OPA4170	2
OPA4171	2
OPA4187	3
OPA4192	2
OPA4196	1
OPA4227	2
OPA4228	2
OPA4234	3
OPA4241	2
OPA4244	1
OPA4251	1
OPA4277	2
OPA4313	1
OPA4330	3
OPA4336	1
OPA4340	2
OPA4342	2
OPA4343	2
OPA4344	1
OPA4345	1
OPA4347	2
OPA4348	2
OPA4350	2
OPA4353	1
OPA4364	2
OPA4379	1
OPA4388	2
OPA4703	2
OPA4704	2
RC4136	2
RC4558	9
RC4560	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
RV4136	2
SA5532	4
SA5534	5
SN10501	4
SN10502	3
SN10503	2
SSM2135	1
TC913	4
TC7650	2
TC7652	2
THS4061	4
THS4062	4
THS4081	4
THS4082	4
THS4281	3
TJM4558	6
TL022	3
TL031	4
TL032	9
TL034	10
TL051	4
TL052	9
TL054	8
TL061	16
TL062	19
TL064	16
TL071	20
TL072	22
TL074	16
TL081	12
TL082	17
TL084	15
TL3414	2
TL3472	4
TLC27L1	6
TLC27L2	16
TLC27L4	15
TLC27L7	5
TLC27L9	5
TLC27M2	16
TLC27M4	15
TLC27M7	5
TLC27M9	4

Device	No. of symbols
TLC070	6
TLC071	8
TLC072	8
TLC073	5
TLC074	7
TLC075	5
TLC080	7
TLC081	8
TLC082	8
TLC083	6
TLC084	8
TLC085	5
TLC271	17
TLC272	15
TLC274	18
TLC277	5
TLC279	4
TLC2262	10
TLC2264	9
TLC2272	17
TLC2274	18
TLC4501	4
TLC4502	6
TLE2021	10
TLE2022	13
TLE2024	12
TLE2061	10
TLE2062	10
TLE2064	11
TLE2071	9
TLE2072	8
TLE2074	8
TLE2081	8
TLE2082	8
TLE2084	5
TLE2141	9
TLE2142	9
TLE2144	7
TLV172	3
TLV271	4
TLV272	4
TLV341	5
TLV342	5

Table list of all devices included in this library (cont.)

Device	No. of symbols
TLV2172	2
TLV2370	3
TLV2371	3
TLV2372	3
TLV2373	3
TLV2374	3
TLV2375	3
TLV2381	2
TLV2382	1
TLV2401	5
TLV2402	5
TLV2404	5
TLV2442	8
TLV2444	6
TLV2450	7
TLV2451	8
TLV2452	7
TLV2453	4
TLV2454	9
TLV2455	6
TLV2460	9
TLV2461	8
TLV2462	11
TLV2463	7
TLV2464	9
TLV2620	2
TLV2621	2
TLV2622	2
TLV2623	1
TLV2624	2
TLV2770	6
TLV2771	5
TLV2772	11
TLV2773	3
TLV2774	9
TLV2775	5
TLV2780	3
TLV2781	3
TLV2782	6
TLV2783	2
TLV2784	4
TLV2785	4
TLV2785	4

Device	No. of symbols
TLV2785	4
TLV4110	3
TLV4111	4
TLV4112	6
TLV4113	3
TLV4172	2
TS27L2	18
TS27L4	12
TS27M2	18
TS27M4	12
TS271	9
TS272	18
TS274	12
TS321	5
TS461	2
TS462	3
TS464	2
TS507	4
TS512	2
TS514	4
TS522	2
TS524	2
TS912	5
TS914	2
TS921	3
TS922	4
TS924	4
TS931	6
TS932	3
TS934	6
TS941	6
TS942	6
TS944	6
TS951	3
TS952	2
TS954	2
TS971	2
TS972	3
TS974	2
TS982	1
TS1851	4
TS1852	6
TS1854	4

Table list of all devices included in this library (cont.)

Device	No. of symbols
TS1871	4
TS1872	6
TS1874	4
TS9222	2
TS9224	2
TS9511	2
TSB571	1
TSB572	3
TSB611	1
TSB612	2
TSB711	2
TSB712	4
TSB714	4
TSB7191	2
TSB7192	4
THS22	2
THS24	2
THS80	2
THS81	1
THS82	2
THS84	1
TSM103	2
TSU101	4
TSU102	2
TSU104	2
TSU111	2
TSU112	2
TSU114	2
TSV321	2
TSV324	2
TSV358	5
TSV521	2
TSV522	4
TSV524	4
TSV611	4
TSV612	4
TSV620	4
TSV621	4
TSV622	4
TSV623	2
TSV624	2
TSV625	2
TSV630	6

Device	No. of symbols
TSV631	4
TSV632	8
TSV633	2
TSV634	3
TSV635	2
TSV731	1
TSV732	2
TSV734	2
TSV791	1
TSV792	3
TSV911	2
TSV912	5
TSV914	2
TSV991	5
TSV992	5
TSV994	4
TSV6191	4
TSV6192	4
TSV7721	1
TSV7722	3
TSV7723	1
TSX631	2
TSX632	3
TSX634	3
TSZ121	2
TSZ122	3
TSZ124	2
TSZ181	2
TSZ182	3
μA702	2
μA709	3
μA715	2
μA725	2
μA741	6
μA747	2
μA776	3

2.7. Programmable Gain Amplifier Library

This library contains operational and instrumentation amplifiers with digitally programmable or selectable gain.

Each programmable gain amplifier (PGA) has its simplified internal diagram incorporated into the symbol (if available).

Dual or quad PGAs are included as multi-unit symbols with power pins on the first unit (Unit A).

All available orderable part numbers for each device with different package, temperature range and accuracy grade have separate specific symbols.

THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

Filename: Amplifier_Programmable_AKL	
Total symbols:	69
Generic symbols:	0
Specific symbols:	69

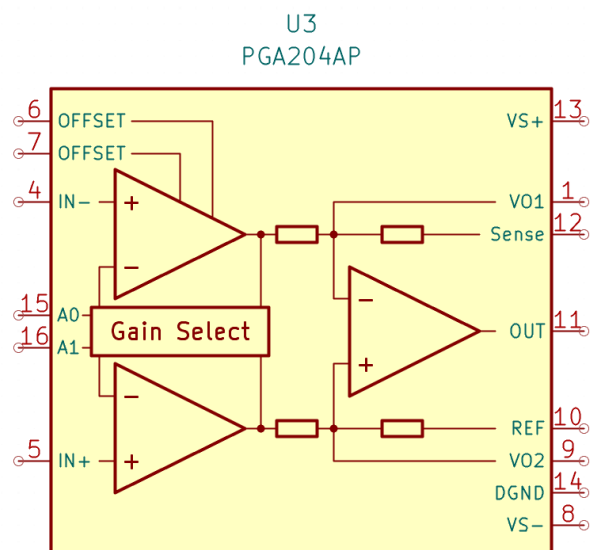
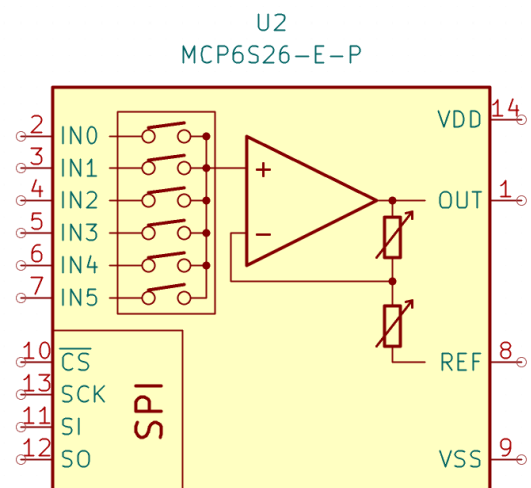
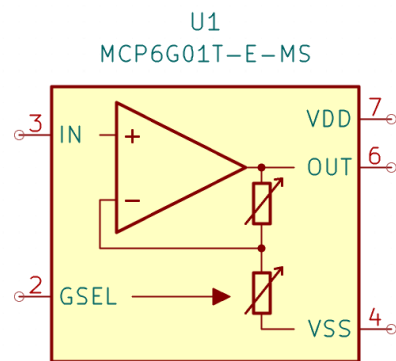


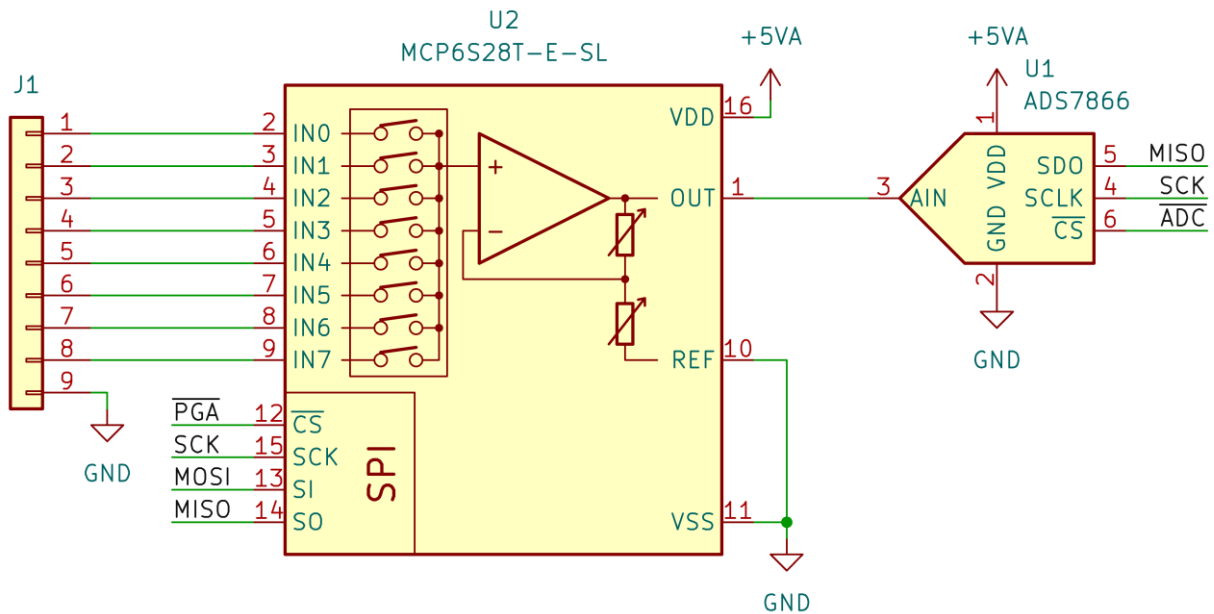
Table list of all devices included in this library

Device	No. of symbols
AD8231	2
AD8250	1
AD8251	1
AD8253	1
MCP6G01	5
MCP6G02	2
MCP6G03	2
MCP6G04	2
MCP6S21	6
MCP6S22	6
MCP6S26	6
MCP6S28	4
MCP6S91	6
MCP6S92	6
MCP6S93	2
PGA103	1
PGA202	1
PGA203	1
PGA204	4
PGA205	4
PGA206	2
PGA207	1

Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Analog front-end using MCP6S28 programmable gain amplifier with 8-input multiplexer.

2.8. Miscellaneous Analog IC Library

This library contains sample-and-hold circuits, logarithmic amplifiers, variable gain amplifiers and other analog ICs.

All symbols have the simplified internal diagram incorporated (if available).

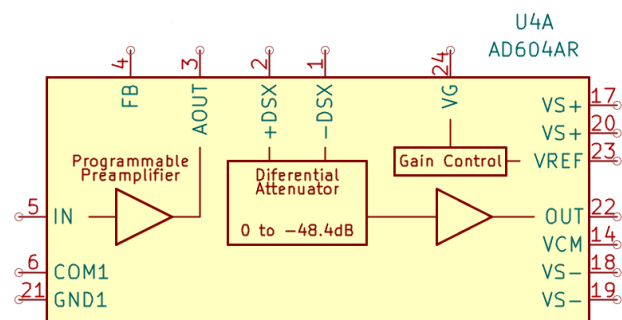
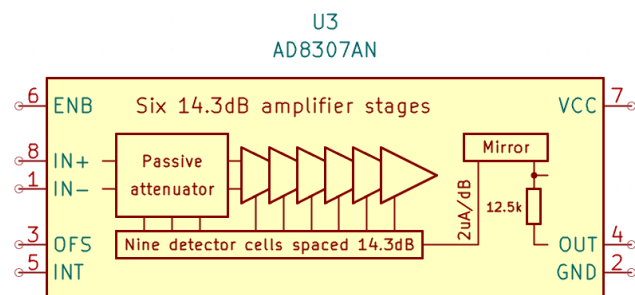
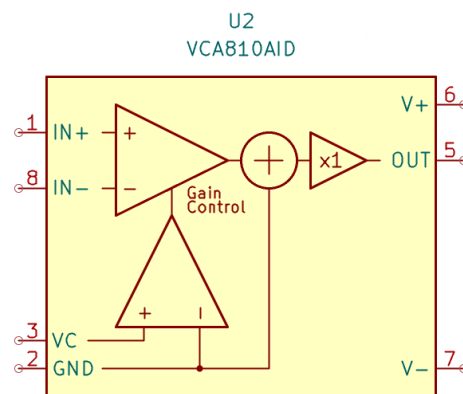
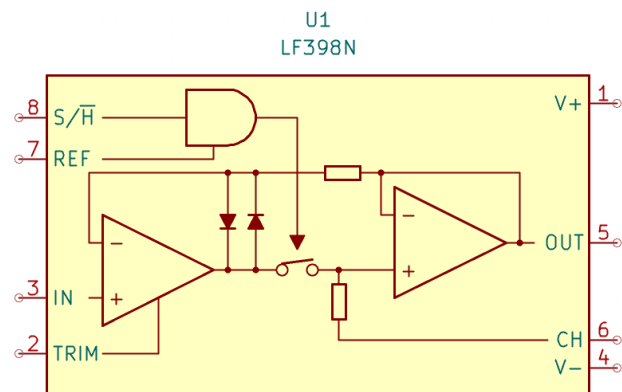
All available orderable part numbers for each device with different package, temperature range and accuracy grade have separate specific symbols.

THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

Table list of all devices included in this library

Device	No. of symbols
AD585	3
AD603	2
AD604	3
AD781	3
AD8015	1
AD8307	2
AD8310	1
AD8330	2
LF198	2
LF298	1
LF398	4
LT1228	4
VCA810	2

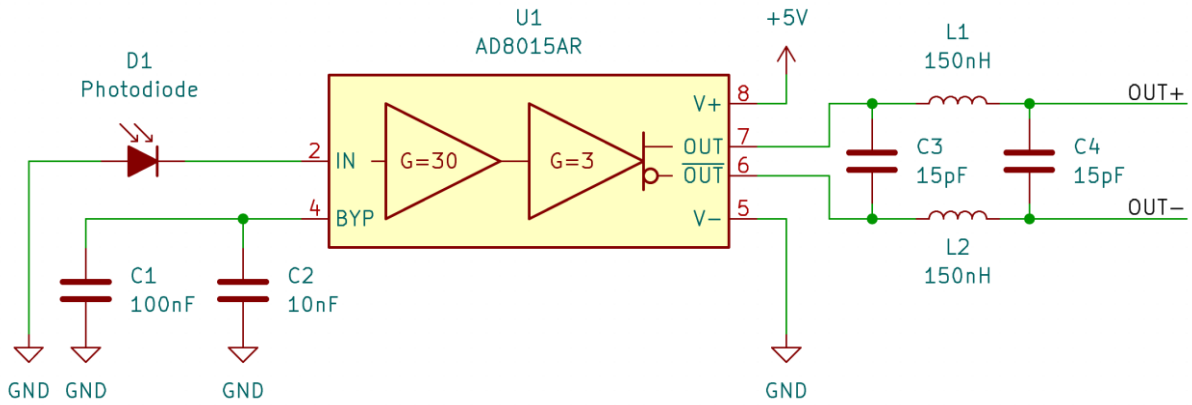
Filename: Analog_AKL	
Total symbols:	30
Generic symbols:	0
Specific symbols:	30



Schematic examples

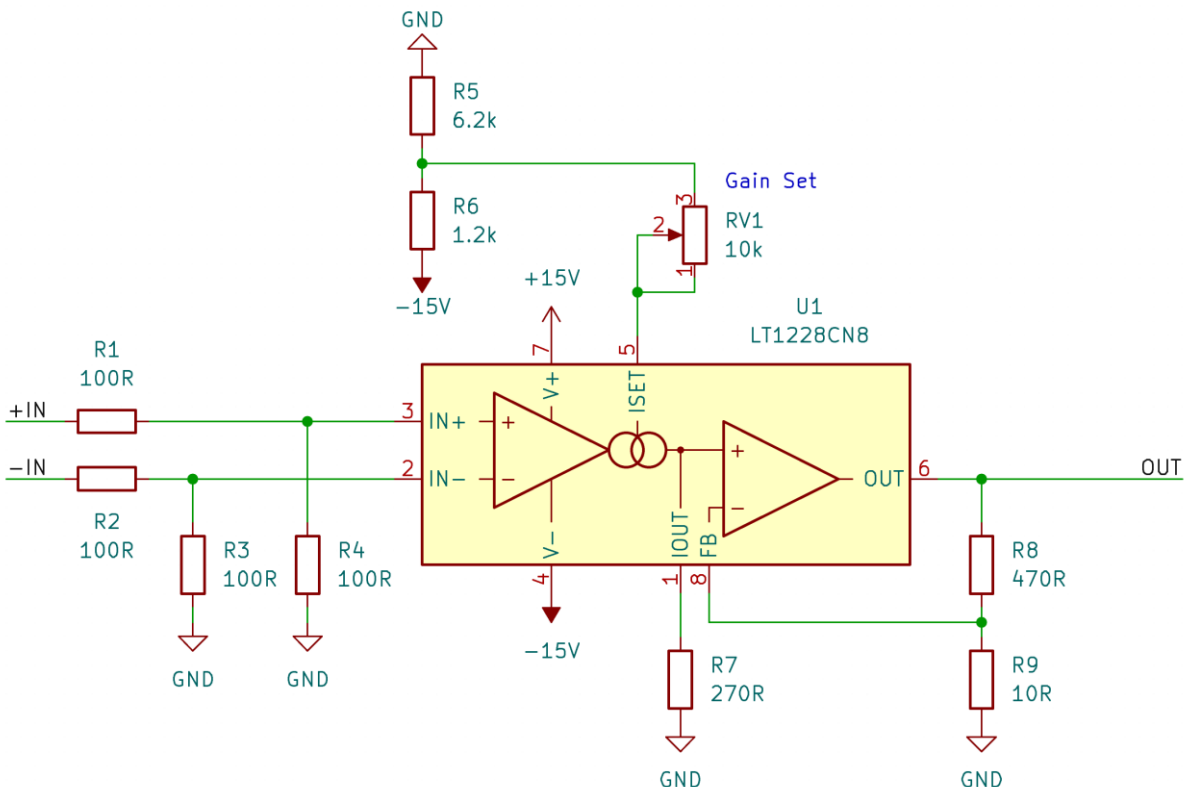
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Fiber optic receiver using AD8015 transimpedance amplifier.




Example 2

Fast difference amplifier with variable gain using LT1228.

2.9. Analog Comparator Library

This library contains analog voltage comparators.

Non-inverting input is on the top side of the comparator symbol, inverting input is on the bottom side. This is opposite of the standard operational amplifier inputs.

Comparators with open collector or open drain outputs have a  symbol near the output.

Comparators with built-in internal hysteresis have a hysteresis indication in the middle of the symbol.

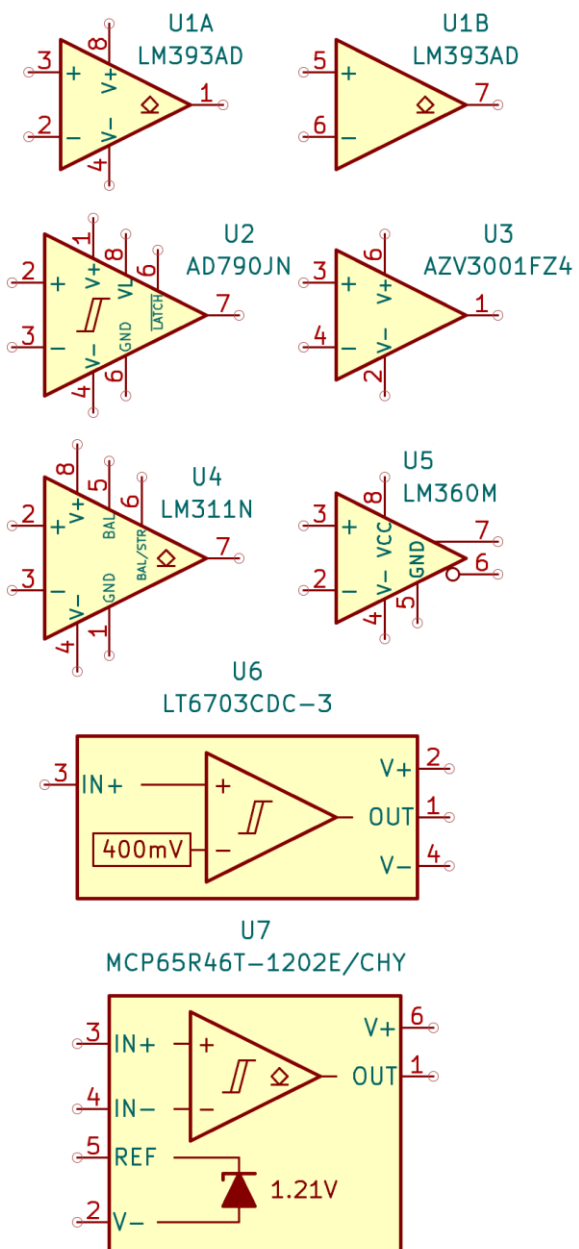
Comparators with internal references or complex internal structure have their simplified internal diagrams incorporated into the symbol.

Dual/triple/quad comparators are included as multi-unit symbols with power pins on the first unit (Unit A). Devices with single internal reference or shutdown input per multiple comparators have all the common pins (power, reference etc.) on an additional unit instead.

All available orderable part numbers for each device with different package, temperature range and accuracy grade have a separate specific symbol.

THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

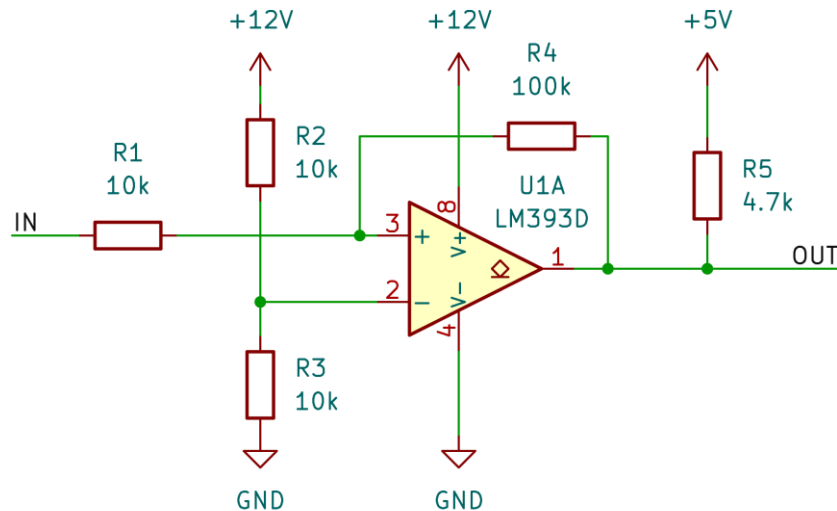
Filename: Analog_Comparator_AKL	
Total symbols:	802
Generic symbols:	30
Specific symbols:	772



Schematic examples

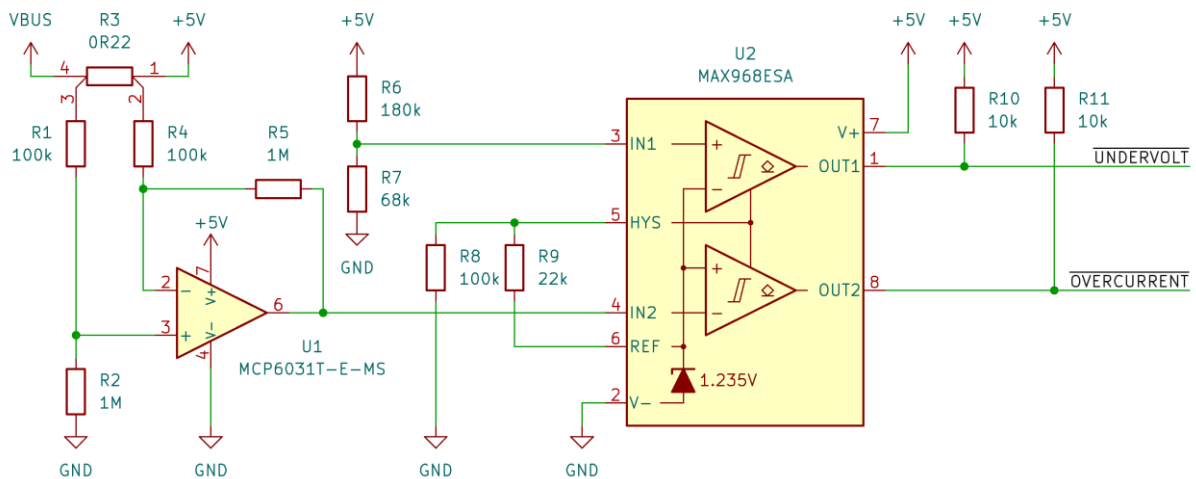
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



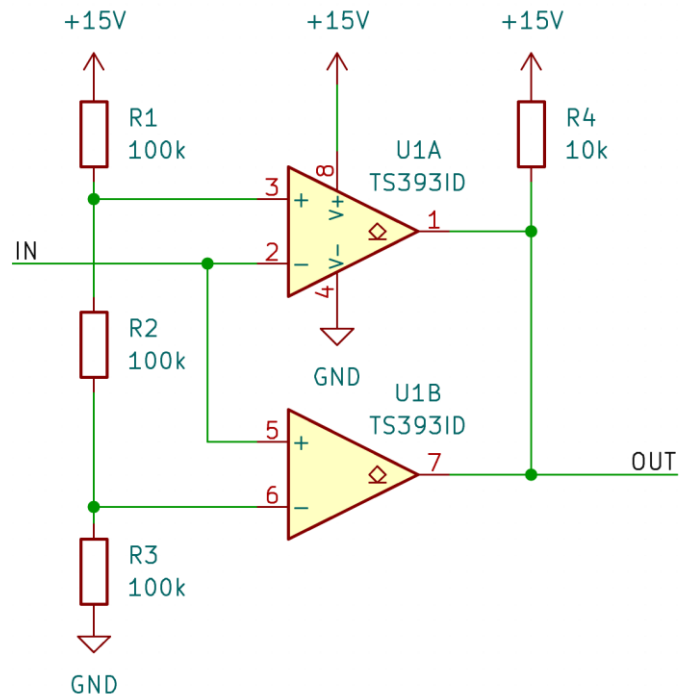
Example 1

Non-inverting single-supply comparator with hysteresis using LM393.



Example 2

Power supply monitoring circuit based on MAX968 dual comparator with integrated reference and internal hysteresis.

**Example 3**

Window comparator using TS393 dual comparator.

Table list of all devices included in this library

Device	No. of symbols
AD790	3
AD8469	1
AD8561	3
AD8611	2
AD8612	1
ADCMP391	1
ADCMP392	1
ADCMP393	2
ADCMP394	1
ADCMP395	1
ADCMP396	1
ADCMP551	1
ADCMP552	1
ADCMP553	1
AP331	2
AP393	2
AS339	4
AS393	7
AZV331	2
AZV393	3
AZV3001	1
AZV3002	1
LM111	2
LM119	4
LM139	4
LM160	1
LM193	2
LM211	2
LM219	2
LM239	15
LM306	2
LM311	4
LM319	4
LM339	12
LM360	2
LM361	3
LM393	17
LM397	1
LM2901	9
LM2903	19
LM6511	1
LMC6762	2
LMC6772	4

Device	No. of symbols
LMC7211	4
LMC7215	2
LMC7221	4
LMC7225	1
LMP7300	2
LMV331	8
LMV339	6
LMV393	10
LMV761	2
LMV762	2
LMV7219	2
LMV7235	2
LMV7239	2
LMV7271	2
LMV7275	2
LMV7291	1
LP339	2
LP2901	2
LPV7215	2
LT1011	5
LT1016	4
LT1017	5
LT1018	4
LT1394	1
LT1711	2
LT1712	2
LT1713	2
LT1714	2
LT1715	2
LT1716	3
LT1719	4
LT1720	6
LT1721	4
LT6700	33
LT6703	12
LTC1042	1
LTC1440	8
LTC1441	4
LTC1442	2
LTC1443	6
LTC1444	6
LTC1445	6
LTC1540	6

Table list of all devices included in this library (cont.)

Device	No. of symbols
LTC1841	2
LTC1842	2
LTC1843	2
MAX907	5
MAX908	4
MAX909	4
MAX921	5
MAX922	5
MAX923	5
MAX924	4
MAX931	5
MAX932	5
MAX933	5
MAX934	4
MAX941	6
MAX942	6
MAX944	4
MAX961	2
MAX962	2
MAX963	1
MAX964	1
MAX965	2
MAX966	2
MAX967	2
MAX968	2
MAX969	2
MAX970	2
MAX971	5
MAX972	5
MAX973	5
MAX974	4
MAX981	5
MAX982	5
MAX983	5
MAX984	4
MAX997	2
MAX999	2
MAX9015	1
MAX9016	1
MAX9017	2
MAX9018	2
MAX9019	1
MAX9020	1

Device	No. of symbols
MAX9021	2
MAX9022	3
MAX9024	2
MAX9030	2
MAX9031	2
MAX9032	4
MAX9075	2
MAX9077	3
MAX9600	1
MAX9601	1
MAX9602	1
MC3302	3
MCP65R41	2
MCP65R46	2
MCP6541	6
MCP6542	3
MCP6543	2
MCP6544	4
MCP6546	6
MCP6547	3
MCP6548	3
MCP6549	4
MCP6561	4
MCP6562	2
MCP6564	2
MCP6566	4
MCP6567	2
MCP6569	2
TA75S393	1
TC75S57	2
TL331	3
TL391	1
TL3016	4
TL3116	4
TLC339	9
TLC352	6
TLC372	6
TLC374	6
TLC393	7
TLC3702	7
TLC3704	7
TLV1391	2
TLV1701	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
TLV1702	2
TLV1704	1
TLV3011	2
TLV3012	2
TLV3201	2
TLV3202	2
TLV3401	5
TLV3402	5
TLV3404	5
TLV3491	2
TLV3492	2
TLV3494	2
TLV3501	2
TLV3502	2
TLV3691	2
TLV3701	5
TLV3702	5
TLV3704	5
TLV7211	6
TLV7256	1
TS331	3
TS332	3
TS334	3
TS339	3
TS372	4
TS374	4
TS391	4
TS393	5
TS861	4
TS862	4
TS864	4
TS881	2
TS882	2
TS884	3
TS3011	2
TS3021	3
TS3022	2
TS3702	5
TS3704	5
TS7211	2
TS7221	2
TSM109	4
TSX393	4

Device	No. of symbols
TSX3702	4
TSX3704	3

2.10. Capacitor Library (European Symbol)

This library contains capacitor symbols with pre-assigned footprints.

Specific capacitor symbols have the footprint pre-assigned, but the user still needs to fill in the correct value. This helps reduce time spent assigning footprints before transferring to PCB layout.

Polarized capacitor symbol name prefix has been shortened to CP instead of C_POL.

Trimmer symbol has pin 1 on the side of the arrow, and pin 2 away from the arrow. On all AKL trimmer footprints external electrode of the variable capacitor is connected to pad 2 and it is recommended to connect it to a low impedance net (ground) to provide shielding.

Capacitor symbol names mostly correspond to their respective capacitor footprint names.

Capacitor symbol library grabs footprints from

- Capacitor_SMD_AKL,
- Capacitor_Tantalum_SMD_AKL,
- Capacitor_THT_AKL.

Capacitor_AKL symbol library is functionally equivalent to Capacitor_US_AKL with the only difference being the graphical shape of the electrolytic capacitor symbol and linked footprint libraries. You can omit installation of this library if you want to use capacitor library with US symbols instead. Linked footprint libraries are also inter-changeable, see [Section 3.1.7](#) for more details.

Filename: Capacitor_AKL	
Total symbols:	519
Generic symbols:	3
Specific symbols:	516



Footprint:
Capacitor_THT_AKL:CP_Radia_LD7.5mm_P2.50mm



Footprint:
Capacitor_THT_AKL:CP_Radia_LD8.0mm_P3.50mm_H40mm_Horizontal1



Footprint:
Capacitor_SMD_AKL:CP_Elec_5x5.9



Footprint:
Capacitor_Tantalum_SMD_AKL:CP_EIA-2012-12_Kemet-R



Footprint:
Capacitor_SMD_AKL:C_0603_1608Metric



Footprint:
Capacitor_THT_AKL:C_Disc_D5.0mm_W2.5mm_P5.00mm



Footprint:
Capacitor_SMD_AKL:C_Trimmer_Murata_TZR1

Axial polarized capacitors

Symbol count: 55

Symbol naming convention:

CP_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm**

Name examples:

CP_Axial_L10.0mm_D4.5mm_P15.00mm

CP_Axial_L18mm_D8.0mm_P25.00mm

Corresponding footprints:

Capacitor_THT_AKL:CP_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_Horizontal**

Keywords:

cap capacitor polarized eu tht axial electrolytic <length>x<diameter> <pitch>

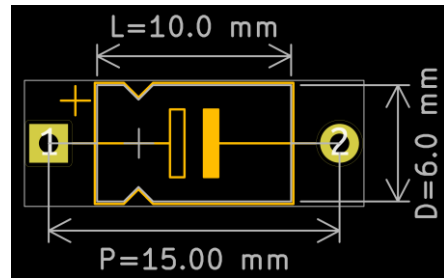
Length and diameter values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching 'axial electrolytic 10x4.5' will yield all axial capacitors with 10mm body length and 4.5mm diameter as results

Searching 'axial electrolytic 15.00' will yield all axial polarized capacitors with pin pitch equal to 15mm as results.



Axial polarized capacitor footprint with length, diameter and pin pitch indicated.

Radial polarized capacitors

Symbol count: 28

Symbol naming convention:

CP_Radial_D<diameter>**mm_P**<pitch>**mm**

Name examples:

CP_Axial_L10.0mm_D4.5mm_P15.00mm

CP_Axial_L18mm_D8.0mm_P25.00mm

Corresponding footprints:

Capacitor_THT_AKL:CP_Radial_D<diameter>**mm_P**<pitch>**mm**

Keywords:

cap capacitor polarized eu tht radial electrolytic <diameter> <pitch>

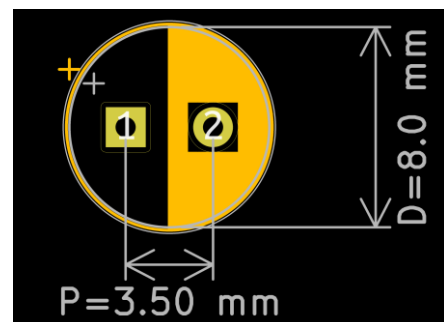
Diameter values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching 'radial electrolytic 4' will yield radial capacitors with 4mm diameter as a result.

Searching 'radial electrolytic 1.50' will yield all radial polarized capacitors with pin pitch equal to 1.5mm.



Radial polarized capacitor footprint with length and pin pitch indicated

Radial horizontal polarized capacitors

Symbol count: 34

Symbol naming convention:

CP_Radial_Horizontal_D<diameter>mm_**P**<pitch>mm_
H<height>mm

Name examples:

CP_Radial_Horizontal_D8.0mm_P3.50mm_H20mm

CP_Radial_Horizontal_D12.5mm_P5.00mm_H30mm

Corresponding footprints:

Capacitor_THT_AKL:CP_Radial_D<diameter>mm_**P**<pitch>mm_**H**<height>mm_**Horizontal1**

Keywords:

cap capacitor polarized eu tht radial electrolytic horizontal <diameter>x<height> <pitch>

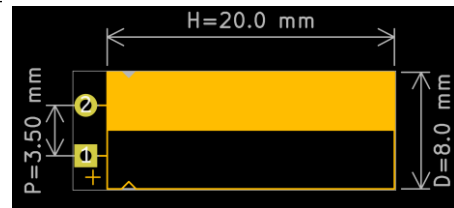
Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**radial electrolytic horizontal 12.5x30**' will yield radial horizontal polarized capacitors with 12.5mm diameter and 30mm height as a result.

Searching '**radial electrolytic horizontal 5.00**' will yield all radial polarized capacitors with pin pitch equal to 5mm.



Radial polarized capacitor footprint with diameter, height and pin pitch indicated.

Radial Snap-In polarized capacitors

Symbol count: 14

Symbol naming convention:

CP_Radial_Snap-in_D<diameter>mm_**P**<pitch>mm
With optional **_3-Pin** suffix

Name examples:

CP_Radial_Snap-in_D22.0mm_P10.00mm

CP_Radial_Snap-in_D25.0mm_P10.00mm_3-Pin

Corresponding footprints:

Capacitor_THT_AKL:CP_Radial_D<diameter>mm_**P**<pitch>mm_**SnapIn** (or 3-pin_SnapIn)

Keywords:

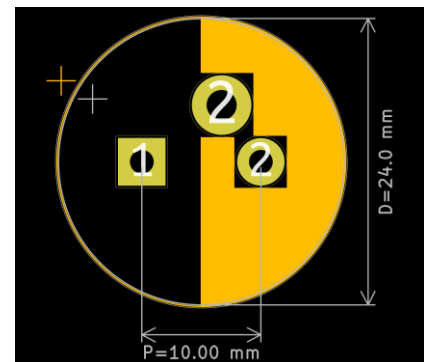
cap capacitor polarized eu tht radial electrolytic snapin snap in <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**radial electrolytic snap in 40**' will yield radial snap-in polarized capacitors with 40mm diameter as a result.



Radial 3-pin Snap-In capacitor footprint with diameter and pin pitch indicated

SMD Aluminum Electrolytic Capacitors

Symbol count: 40

Symbol naming convention:

CP_SMD_D<diameater>**mm_H**<height>**mm**

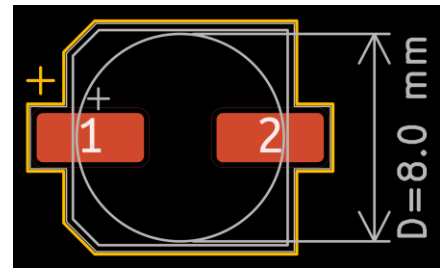
Name examples:

CP_SMD_D6.3mm_H5.4mm

CP_SMD_D10.0mm_H12.5mm

Corresponding footprints:

Capacitor_SMD_AKL:CP_Elec_<diameater>**x**<height>



SMD polarized capacitor footprint with diameter indicated.

Keywords:

cap capacitor polarized eu smd electrolytic <diameater>x<height> <diameater>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Search examples:

Searching 'smd electrolytic 5x5.4' will yield SMD polarized capacitors with 5mm diameter and 5.4mm height as a result.

Searching 'smd electrolytic 5' will yield all SMD polarized capacitors with 5mm diameter.

SMD Tantalum Electrolytic Capacitors

Symbol count: 26

Symbol naming convention:

CP_SMD_Tantalum_<manufacturer>-<size code>

With the code consisting of a letter and 4-digit metric size.

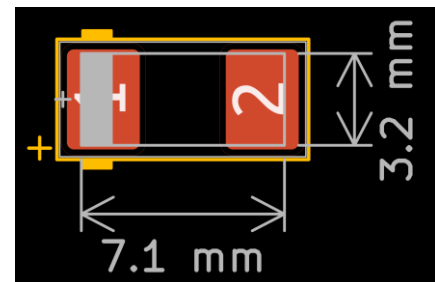
Name examples:

CP_SMD_Tantalum_AVX-C_7132

CP_SMD_Tantalum_Kemet-T_3528

Corresponding footprints:

Capacitor_THT_AKL:CP_EIA-<metric size code>_<manufacturer>-<letter size code>



SMD Tantalum capacitor footprint, AVX-C 7132 with case size indicated.

Keywords:

cap capacitor polarized eu smd tantalum electrolytic <size code>

Search examples:

Searching 'smd tantalum kemet-r' will yield Kemet size R tantalum capacitor as a result.

Searching 'smd tantalum 2012' will yield all tantalum capacitors with 2x1.2mm body size.

THT Tantalum Electrolytic Capacitors

Symbol count: 16

Symbol naming convention:

CP_Tantalum_D<diameter>**mm_P**<pitch>**mm**

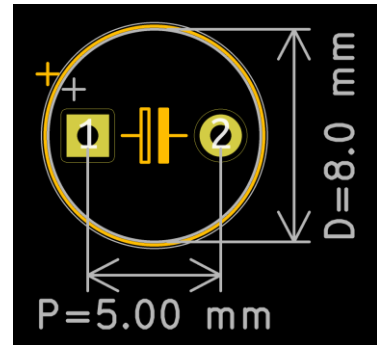
Name examples:

CP_Tantalum_D4.5mm_P2.50mm

CP_Tantalum_D7.0mm_P5.00mm

Corresponding footprints:

Capacitor_THT_AKL:CP_Radial_Tantal_D<diameter>**mm_P**<pitch>**mm**



Tantalum capacitor footprint with diameter and pin pitch indicated

Keywords:

cap capacitor polarized eu tht radial electrolytic tantalum <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**tht tantalum 5**' will yield tantalum capacitors with 5mm diameter as a result.

Searching '**tht tantalum 2.50**' will yield all tantalum capacitors with pin pitch equal to 2.5mm.

SMD Chip Capacitors

Symbol count: 17

Symbol naming convention:

C_<imperial size code>

Name examples:

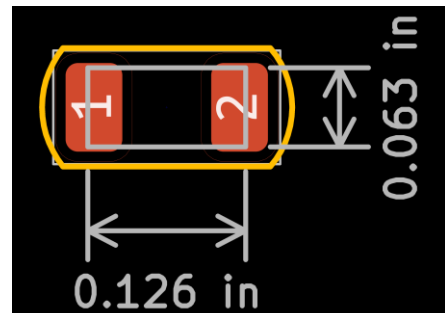
C_0603

C_1206

C_2220

Corresponding footprints:

Capacitor_SMD_AKL:C_<imperial size code>_**metric size code** **Metric**



SMD Chip capacitor footprint with size code of 1206 with dimensions in inches.

Keywords:

cap capacitor ceramic chip mlcc smd <imperial size code>

Search examples:

Searching '**capacitor 0805**' will yield SMD chip capacitor with the imperial size code of 0805 as a result.

Searching '**smd capacitor chip**' will yield all SMD chip capacitors.

Axial Capacitors

Symbol count: 19

Symbol naming convention:

C_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm**

Name examples:

C_Axial_L3.0mm_D2.3mm_P5.00mm

C_Axial_L17.0mm_D6.5mm_P20.00mm

Corresponding footprints:

Capacitor_THT_AKL:C_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_Horizontal**

Keywords:

cap capacitor tht axial <length>x<diameter> <pitch>

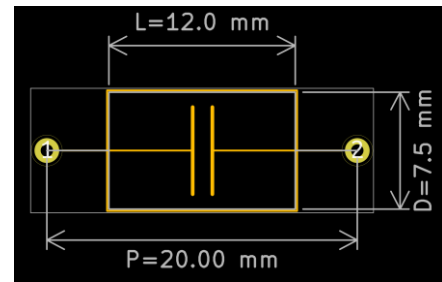
Diameter and length values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**capacitor axial 19x9.5**' will yield axial capacitors with 19mm length and 9.5mm diameter as a result.

Searching '**capacitor axial 25.00**' will yield all axial capacitors with 25mm pin pitch.



Axial capacitor footprint with length, diameter and pin pitch indicated.

Radial bipolar electrolytic capacitors

Symbol count: 18

Symbol naming convention:

C_Bipolar_D<diameter>**mm_H**<height>**mm_P**<pitch>**mm**

Name examples:

C_Bipolar_D4.0mm_H5.0mm_P1.50mm

C_Bipolar_D8.0mm_H11.5mm_P3.50mm

Corresponding footprints:

Capacitor_THT_AKL:C_Radial_D<diameter>**mm_H**<height>**mm_P**<pitch>**mm**

Keywords:

cap capacitor tht bipolar electrolytic <diameter>x<height> <pitch>

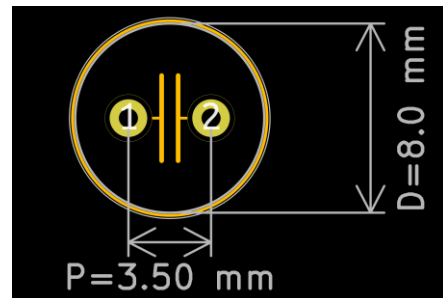
Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**bipolar electrolytic 4**' will yield bipolar capacitors with 4mm diameter as a result.

Searching '**bipolar electrolytic 1.50**' will yield all bipolar polarized capacitors with pin pitch equal to 1.5mm.



Bipolar electrolytic capacitor footprint with diameter and pin pitch indicated.

SMD Bipolar Electrolytic Capacitors

Symbol count: 9

Symbol naming convention:

C_Bipolar_SMD_D<diаметer>**mm_H**<height>**mm**

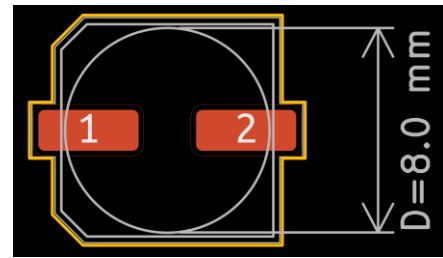
Name examples:

C_Bipolar_SMD_D5.0mm_H5.8mm

C_Bipolar_SMD_D10.0mm_H10.2mm

Corresponding footprints:

Capacitor_SMD_AKL:C_Elec_<diаметer>**x**<height>



SMD non-polarized (bipolar) capacitor footprint with diameter indicated.

Keywords:

cap capacitor smd electrolytic bipolar <diаметer>x<height> <diаметer>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Search examples:

Searching '**smd bipolar 8x5.4**' will yield SMD bipolar capacitors with 8mm diameter and 5.4mm height as a result.

Searching '**smd bipolar 5**' will yield all SMD bipolar capacitors with 5mm diameter.

Ceramic disc capacitors

Symbol count: 39

Symbol naming convention:

C_Disc_D<diаметer>**mm_W**<width>**mm_P**<pitch>**mm**

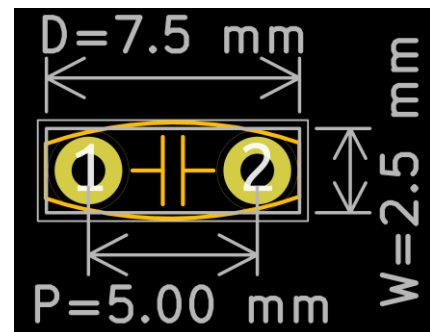
Name examples:

C_Disc_D3.0mm_W1.6mm_P2.50mm

C_Disc_D6.0mm_W2.5mm_P5.00mm

Corresponding footprints:

Capacitor_THT_AKL: C_Disc_D<diаметer>**mm_W**<width>**mm_P**<pitch>**mm**



Ceramic capacitor footprint with diameter, width and pitch indicated.

Keywords:

cap capacitor tht ceramic disc <diаметer>x<width> <pitch>

Diameter and width values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**disc ceramic 3.8x2.6**' will yield ceramic disc capacitors with 3.8mm diameter and 2.6mm width as a result.

Searching '**disc ceramic 2.50**' will yield all ceramic disc capacitors with pin pitch equal to 2.5mm.

Rectangular (box) capacitors

Symbol count: 178

Symbol naming convention:

C_Rect_L<length>**mm_W**<width>**mm_P**<pitch>**mm**

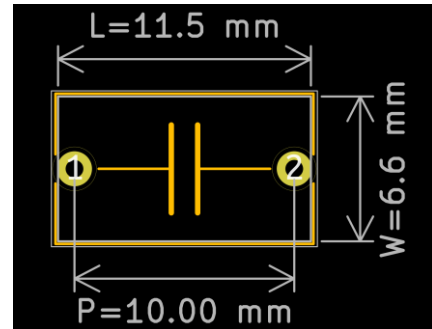
Name examples:

C_Rect_L4.6mm_W3.0mm_P2.50mm

C_Disc_D9.0mm_W3.6mm_P7.50mm

Corresponding footprints:

Capacitor_THT_AKL: C_Rect_L<length>**mm_W**<width>**mm_P**<pitch>**mm**



Ceramic capacitor footprint with diameter, width and pitch indicated.

Keywords:

cap capacitor polarized tht film rect <length>x<width> <pitch>

Length and width values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**capacitor rect 9x7.7**' will yield rectangular capacitors with 9mm length and 7.7mm width as a result.

Searching '**capacitor rect 7.50**' will yield all rectangular capacitors with pin pitch equal to 7.5mm.

Trimmers

Symbol count: 11

Symbol naming convention:

C_Trim_<manufacturer>_<device family>

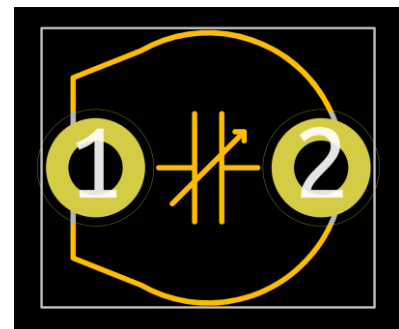
Name examples:

C_Trim_Sprague_GKT

C_Trim_Vishay_BFC2-808_D7.5mm

Corresponding footprints:

Capacitor_THT_AKL: C_Trimmer_<device family>_**L**<length>**mm_W**<width>**mm_P**<pitch>**mm**



GKG15 Series trimmer footprint

Keywords:

cap capacitor tht trimmer variable <device family> <manufacturer>

Search examples:

Searching '**tht trimmer vishay**' will yield all THT Vishay trimmers as a result.

SMD Trimmers

Symbol count: 12

Symbol naming convention:

C_Trim_SMD_<manufacturer>_<device family>

Name examples:

C_Trim_SMD_Murate_TZB4-A

C_Trim_SMD_Voltronics_JV

Corresponding footprints:

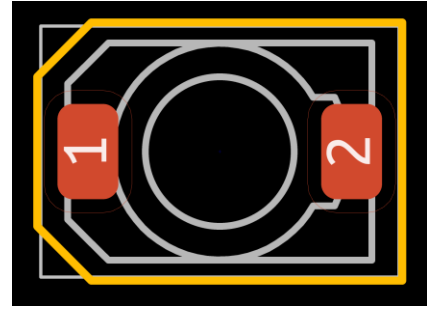
Capacitor_SMD_AKL: C_Trimmer_<manufacturer>_<device family>

Keywords:

cap capacitor variable smd trimmer <manufacturer> <device family>

Search examples:

Searching '**smd trimmer murata**' will yield all SMD Murata trimmers as a result.



JZ series SMD trimmer footprint

2.11. Capacitor Library (US Symbol)

This library contains capacitor symbols with pre-assigned footprints.

Specific capacitor symbols have the footprint pre-assigned, but the user still needs to fill in the correct value. This helps reduce time spent assigning footprints before transferring to PCB layout.

Polarized capacitor symbol name prefix has been shortened to CP instead of C_POL.

Capacitor symbol names mostly correspond to their respective capacitor footprint names.

Trimmer symbol has pin 1 on the side of the arrow, and pin 2 away from the arrow. On all AKL trimmer footprints external electrode of the variable capacitor is connected to pad 2 and it is recommended to connect it to a low impedance net (ground) to provide shielding.

Capacitor symbol library grabs footprints from

- Capacitor_SMD_AKL,
- Capacitor_Tantalum_SMD_AKL,
- Capacitor_THT_US_AKL.

Capacitor_US_AKL symbol library is functionally equivalent to Capacitor_AKL with the only difference being the graphical shape of the electrolytic capacitor symbol and linked footprint libraries. You can omit installation of this library if you want to use capacitor library with European symbols instead. Linked footprint libraries are also inter-changeable, see [Section 3.1.7](#) for more details.

Filename: Capacitor_US_AKL	
Total symbols:	519
Generic symbols:	3
Specific symbols:	516



Footprint:
Capacitor_THT_US_AKL:CP_RadiaLD7.5mm_P2.50mm



Footprint:
Capacitor_THT_US_AKL:CP_RadiaLD8.0mm_P3.50mm_H40mm_Horizontal1



Footprint:
Capacitor_SMD_AKL:CP_Elec_5x5.9



Footprint:
Capacitor_Tantalum_SMD_AKL:CP_EIA-2012-12_Kemet-R



Footprint:
Capacitor_SMD_AKL:C_0603_1608Metric



Footprint:
Capacitor_THT_US_AKL:C_Disc_D5.0mm_W2.5mm_P5.00mm



Footprint:
Capacitor_SMD_AKL:C_Trimmer_Murata_TZR1

Axial polarized capacitors

Symbol count: 55

Symbol naming convention:

CP_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm**

Name examples:

CP_Axial_L10.0mm_D4.5mm_P15.00mm

CP_Axial_L18mm_D8.0mm_P25.00mm

Corresponding footprints:

Capacitor_THT_US_AKL:CP_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_Horizontal**

Keywords:

cap capacitor polarized us tht axial electrolytic <length>x<diameter> <pitch>

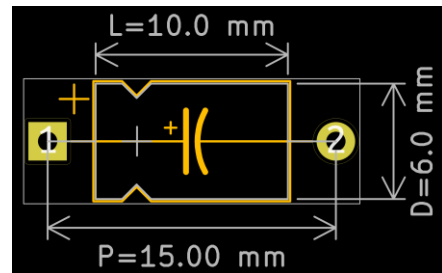
Length and diameter values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching 'axial electrolytic 10x4.5' will yield all axial capacitors with 10mm body length and 4.5mm diameter as results

Searching 'axial electrolytic 15.00' will yield all axial polarized capacitors with pin pitch equal to 15mm as results.



Axial polarized capacitor footprint with length, diameter and pin pitch indicated.

Radial polarized capacitors

Symbol count: 28

Symbol naming convention:

CP_Radial_D<diameter>**mm_P**<pitch>**mm**

Name examples:

CP_Axial_L10.0mm_D4.5mm_P15.00mm

CP_Axial_L18mm_D8.0mm_P25.00mm

Corresponding footprints:

Capacitor_THT_US_AKL:CP_Radial_D<diameter>**mm_P**<pitch>**mm**

Keywords:

cap capacitor polarized us tht radial electrolytic <diameter> <pitch>

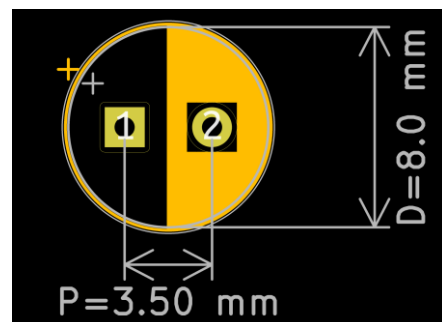
Diameter values always have no trailing zeroes (4 instead of 4.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching 'radial electrolytic 4' will yield radial capacitors with 4mm diameter as a result.

Searching 'radial electrolytic 1.50' will yield all radial polarized capacitors with pin pitch equal to 1.5mm.



Radial polarized capacitor footprint with length and pin pitch indicated

Radial horizontal polarized capacitors

Symbol count: 34

Symbol naming convention:

CP_Radial_Horizontal_D<diameter>**mm_P**<pitch>**mm_H**<height>**mm**

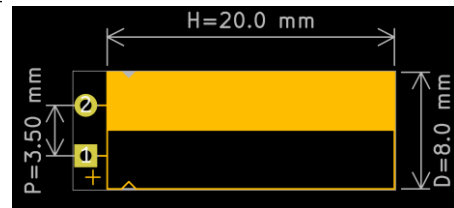
Name examples:

CP_Radial_Horizontal_D8.0mm_P3.50mm_H20mm

CP_Radial_Horizontal_D12.5mm_P5.00mm_H30mm

Corresponding footprints:

Capacitor_THT_US_AKL:CP_Radial_D<diam.>**mm_P**<pitch>**mm_H**<height>**mm_Horizontal1**



Radial polarized capacitor footprint with diameter, height and pin pitch indicated.

Keywords:

cap capacitor polarized us tht radial electrolytic horizontal <diameter>x<height> <pitch>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**radial electrolytic horizontal 12.5x30**' will yield radial horizontal polarized capacitors with 12.5mm diameter and 30mm height as a result.

Searching '**radial electrolytic horizontal 5.00**' will yield all radial polarized capacitors with pin pitch equal to 5mm.

Radial Snap-In polarized capacitors

Symbol count: 14

Symbol naming convention:

CP_Radial_Snap-in_D<diameter>**mm_P**<pitch>**mm**
With optional **_3-Pin** suffix

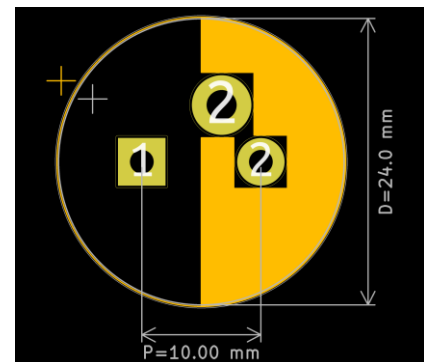
Name examples:

CP_Radial_Snap-in_D22.0mm_P10.00mm

CP_Radial_Snap-in_D25.0mm_P10.00mm_3-Pin

Corresponding footprints:

Capacitor_THT_US_AKL:CP_Radial_D<diameter>**mm_P**<pitch>**mm_SnapIn** (or 3-pin_SnapIn)



Radial 3-pin Snap-In capacitor footprint with diameter and pin pitch indicated

Keywords:

cap capacitor polarized us tht radial electrolytic snapin snap in <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**radial electrolytic snap in 40**' will yield radial snap-in polarized capacitors with 40mm diameter as a result.

SMD Aluminum Electrolytic Capacitors

Symbol count: 40

Symbol naming convention:

CP_SMD_D<diameater>**mm_H**<height>**mm**

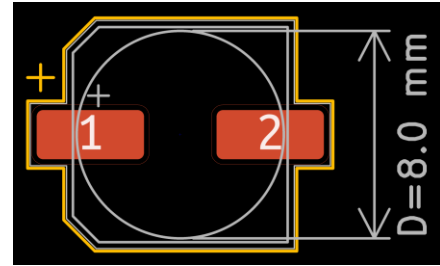
Name examples:

CP_SMD_D6.3mm_H5.4mm

CP_SMD_D10.0mm_H12.5mm

Corresponding footprints:

Capacitor_SMD_AKL:CP_Elec_<diameater>**x**<height>



SMD polarized capacitor footprint with diameter indicated.

Keywords:

cap capacitor polarized us smd electrolytic <diameater>x<height> <diameater>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Search examples:

Searching 'smd electrolytic 5x5.4' will yield SMD polarized capacitors with 5mm diameter and 5.4mm height as a result.

Searching 'smd electrolytic 5' will yield all SMD polarized capacitors with 5mm diameter.

SMD Tantalum Electrolytic Capacitors

Symbol count: 26

Symbol naming convention:

CP_SMD_Tantalum_<manufacturer>-<size code>

With the code consisting of a letter and 4-digit metric size.

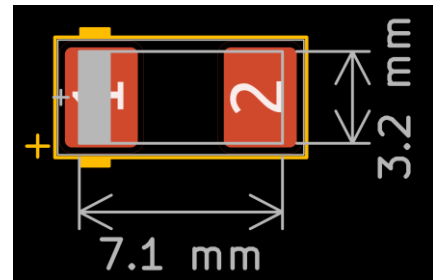
Name examples:

CP_SMD_Tantalum_AVX-C_7132

CP_SMD_Tantalum_Kemet-T_3528

Corresponding footprints:

Capacitor_THT_US_AKL:CP_EIA-<metric size code>_<manufacturer>-<letter size code>



SMD Tantalum capacitor footprint, AVX-C 7132 with case size indicated.

Keywords:

cap capacitor polarized us smd tantalum electrolytic <size code>

Search examples:

Searching 'smd tantalum kemet-r' will yield Kemet size R tantalum capacitor as a result.

Searching 'smd tantalum 2012' will yield all tantalum capacitors with 2x1.2mm body size.

THT Tantalum Electrolytic Capacitors

Symbol count: 16

Symbol naming convention:

CP_Tantalum_D<diameter>**mm_P**<pitch>**mm**

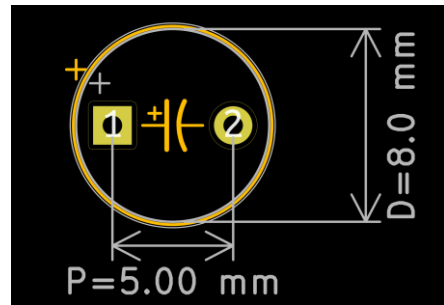
Name examples:

CP_Tantalum_D4.5mm_P2.50mm

CP_Tantalum_D7.0mm_P5.00mm

Corresponding footprints:

Capacitor_THT_US_AKL:CP_Radial_Tantal_D<diameter>**mm_P**<pitch>**mm**



Tantalum capacitor footprint with diameter and pin pitch indicated.

Keywords:

cap capacitor polarized us tht radial electrolytic tantalum <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**tht tantalum 5**' will yield tantalum capacitors with 5mm diameter as a result.

Searching '**tht tantalum 2.50**' will yield all tantalum capacitors with pin pitch equal to 2.5mm.

SMD Chip Capacitors

Symbol count: 17

Symbol naming convention:

C_<imperial size code>

Name examples:

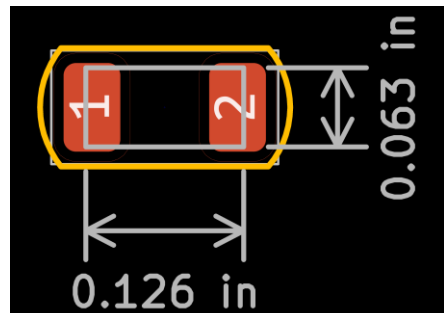
C_0603

C_1206

C_2220

Corresponding footprints:

Capacitor_SMD_AKL:C_<imperial size code>**_**<metric size code>**Metric**



SMD Chip capacitor footprint with size code of 1206 with dimensions in inches.

Keywords:

cap capacitor ceramic chip mlcc smd <imperial size code>

Search examples:

Searching '**capacitor 0805**' will yield SMD chip capacitor with the imperial size code of 0805 as a result.

Searching '**smd capacitor chip**' will yield all SMD chip capacitors.

Axial Capacitors

Symbol count: 19

Symbol naming convention:

C_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm**

Name examples:

C_Axial_L3.0mm_D2.3mm_P5.00mm

C_Axial_L17.0mm_D6.5mm_P20.00mm

Corresponding footprints:

Capacitor_THT_US_AKL:C_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_Horizontal**

Keywords:

cap capacitor tht axial <length>x<diameter> <pitch>

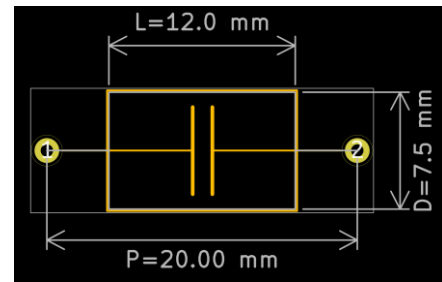
Diameter and length values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**capacitor axial 19x9.5**' will yield axial capacitors with 19mm length and 9.5mm diameter as a result.

Searching '**capacitor axial 25.00**' will yield all axial capacitors with 25mm pin pitch.



Axial capacitor footprint with length, diameter and pin pitch indicated.

Radial bipolar electrolytic capacitors

Symbol count: 18

Symbol naming convention:

C_Bipolar_D<diameter>**mm_H**<height>**mm_P**<pitch>**mm**

Name examples:

C_Bipolar_D4.0mm_H5.0mm_P1.50mm

C_Bipolar_D8.0mm_H11.5mm_P3.50mm

Corresponding footprints:

Capacitor_THT_US_AKL:C_Radial_D<diameter>**mm_H**<height>**mm_P**<pitch>**mm**

Keywords:

cap capacitor tht bipolar electrolytic <diameter>x<height> <pitch>

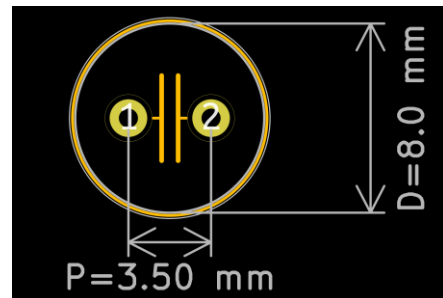
Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**bipolar electrolytic 4**' will yield bipolar capacitors with 4mm diameter as a result.

Searching '**bipolar electrolytic 1.50**' will yield all bipolar polarized capacitors with pin pitch equal to 1.5mm.



Bipolar electrolytic capacitor footprint with diameter and pin pitch indicated.

SMD Bipolar Electrolytic Capacitors

Symbol count: 9

Symbol naming convention:

C_Bipolar_SMD_D<diаметer>**mm_H**<height>**mm**

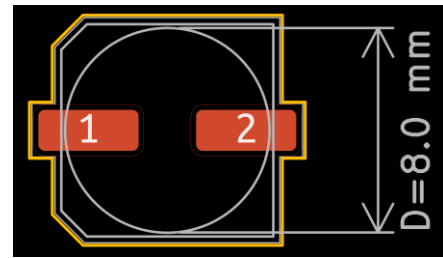
Name examples:

C_Bipolar_SMD_D5.0mm_H5.8mm

C_Bipolar_SMD_D10.0mm_H10.2mm

Corresponding footprints:

Capacitor_SMD_AKL:C_Elec_<diаметer>**x**<height>



SMD non-polarized (bipolar) capacitor footprint with diameter indicated.

Keywords:

cap capacitor smd electrolytic bipolar <diаметer>x<height> <diаметer>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Search examples:

Searching '**smd bipolar 8x5.4**' will yield SMD bipolar capacitors with 8mm diameter and 5.4mm height as a result.

Searching '**smd bipolar 5**' will yield all SMD bipolar capacitors with 5mm diameter.

Ceramic disc capacitors

Symbol count: 39

Symbol naming convention:

C_Disc_D<diаметer>**mm_W**<width>**mm_P**<pitch>**mm**

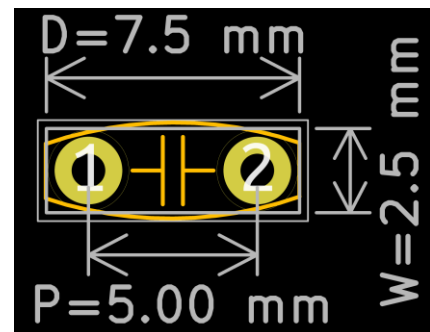
Name examples:

C_Disc_D3.0mm_W1.6mm_P2.50mm

C_Disc_D6.0mm_W2.5mm_P5.00mm

Corresponding footprints:

Capacitor_THT_US_AKL: C_Disc_D<diаметer>**mm_W**<width>**mm_P**<pitch>**mm**



Ceramic capacitor footprint with diameter, width and pitch indicated.

Keywords:

cap capacitor tht ceramic disc <diаметer>x<width> <pitch>

Diameter and width values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**disc ceramic 3.8x2.6**' will yield ceramic disc capacitors with 3.8mm diameter and 2.6mm width as a result.

Searching '**disc ceramic 2.50**' will yield all ceramic disc capacitors with pin pitch equal to 2.5mm.

Rectangular (box) capacitors

Symbol count: 178

Symbol naming convention:

C_Rect_L<length>**mm_W**<width>**mm_P**<pitch>**mm**

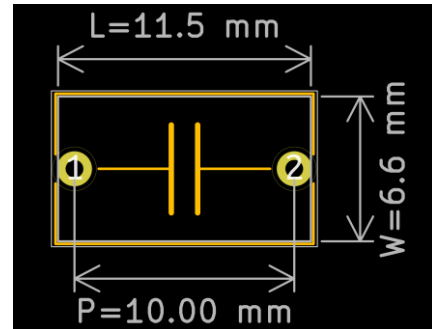
Name examples:

C_Rect_L4.6mm_W3.0mm_P2.50mm

C_Disc_D9.0mm_W3.6mm_P7.50mm

Corresponding footprints:

Capacitor_THT_US_AKL: C_Rect_L<length>**mm_W**<width>**mm_P**<pitch>**mm**



Ceramic capacitor footprint with diameter, width and pitch indicated.

Keywords:

cap capacitor polarized tht film rect <length>x<width> <pitch>

Length and width values always have no trailing zeroes (10 instead of 10.00).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**capacitor rect 9x7.7**' will yield rectangular capacitors with 9mm length and 7.7mm width as a result.

Searching '**capacitor rect 7.50**' will yield all rectangular capacitors with pin pitch equal to 7.5mm.

Trimmers

Symbol count: 11

Symbol naming convention:

C_Trim_<manufacturer>_<device family>

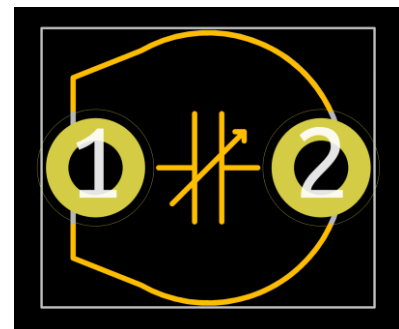
Name examples:

C_Trim_Sprague_GKT

C_Trim_Vishay_BFC2-808_D7.5mm

Corresponding footprints:

Capacitor_THT_US_AKL:C_Trimmer_<device family>**_L**<len.>**mm_W**<wid>**mm_P**<pitch>**mm**



GKG15 Series trimmer footprint

Keywords:

cap capacitor tht trimmer variable <device family> <manufacturer>

Search examples:

Searching '**tht trimmer vishay**' will yield all THT Vishay trimmers as a result.

SMD Trimmers

Symbol count: 12

Symbol naming convention:

C_Trim_SMD_<manufacturer>_<device family>

Name examples:

C_Trim_SMD_Murate_TZB4-A

C_Trim_SMD_Voltronics_JV

Corresponding footprints:

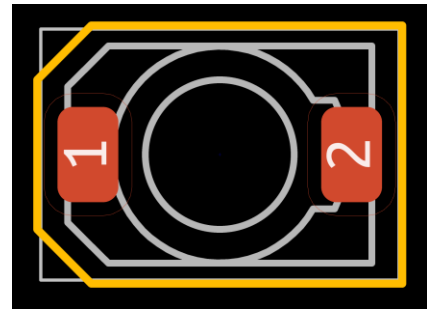
Capacitor_SMD_AKL: C_Trimmer_<manufacturer>_<device family>

Keywords:

cap capacitor variable smd trimmer <manufacturer> <device family>

Search examples:

Searching '**smd trimmer murata**' will yield all SMD Murata trimmers as a result.



JZ series SMD trimmer footprint

2.12. Diac Library

This library contains AC trigger diodes (Diacs).

Diacs switch on after a certain breakover voltage across it was reached and are often used to trigger triacs and other AC switching circuits.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT Diac symbols use the 'Diac' variants of THT diode footprints by default.

SMD Diac symbols use the 'TVS' variants of SMD diode footprints by default.

Filename: Diac_AKL	
Total symbols:	12
Generic symbols:	2
Specific symbols:	10



D1
DB3



D2
DLDB3



D3
DB4



D4
DLDB4



D5
DB6



D6
DLDB6



D7
DB34



D8
DLDB34



D9
SMDB3

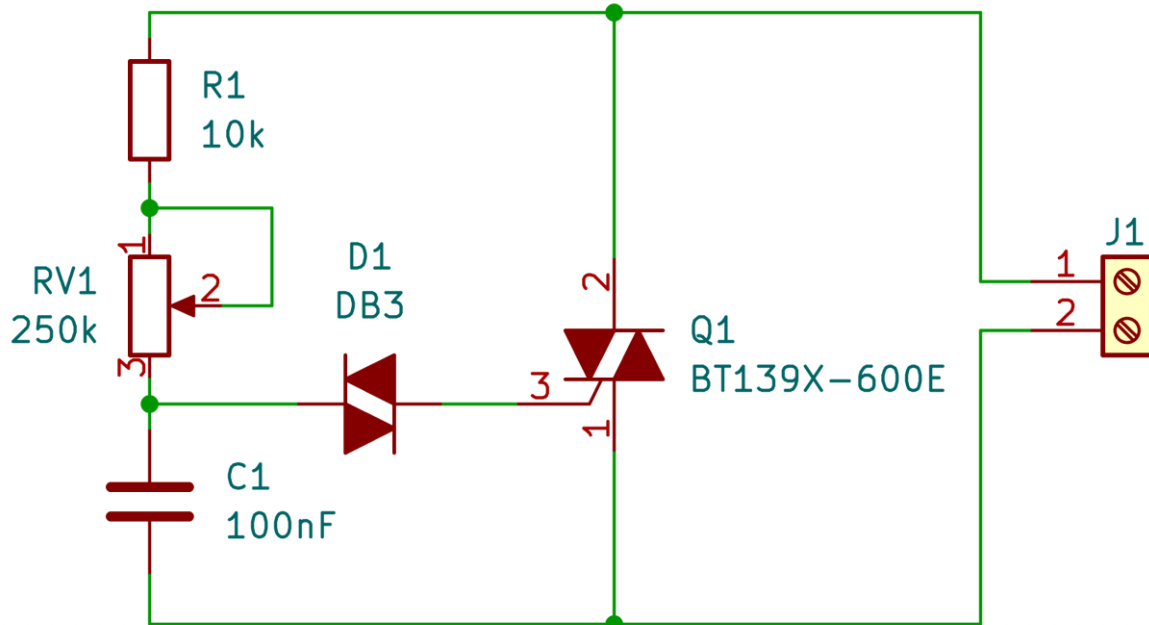


D10
TMMDB3

Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

AC power control using DB3 Diac triggering a Triac.

Table list of all devices included in this library

Diac Family	Example symbol names	No. of symbols
DBx	DB3, DB34, DB4, DB6	4
DLDBx	DLDB3, DLDB34, DLDB4, DLDB6	4
SMDB3	SMDB3	1
TMMDB3	TMMDB3	1

2.13. Diode Library

This library contains rectifier, switching and PIN diodes and diode arrays.

Dual and triple isolated diodes have 2 variants of their symbol. Standard symbol is a single-unit symbol with all diodes in one place. Disaggregated symbol ends in a lowercase 's' and is a multi-unit symbol.

Parts with two dual diode common cathode/anode/series arrays always have multi-unit symbols.

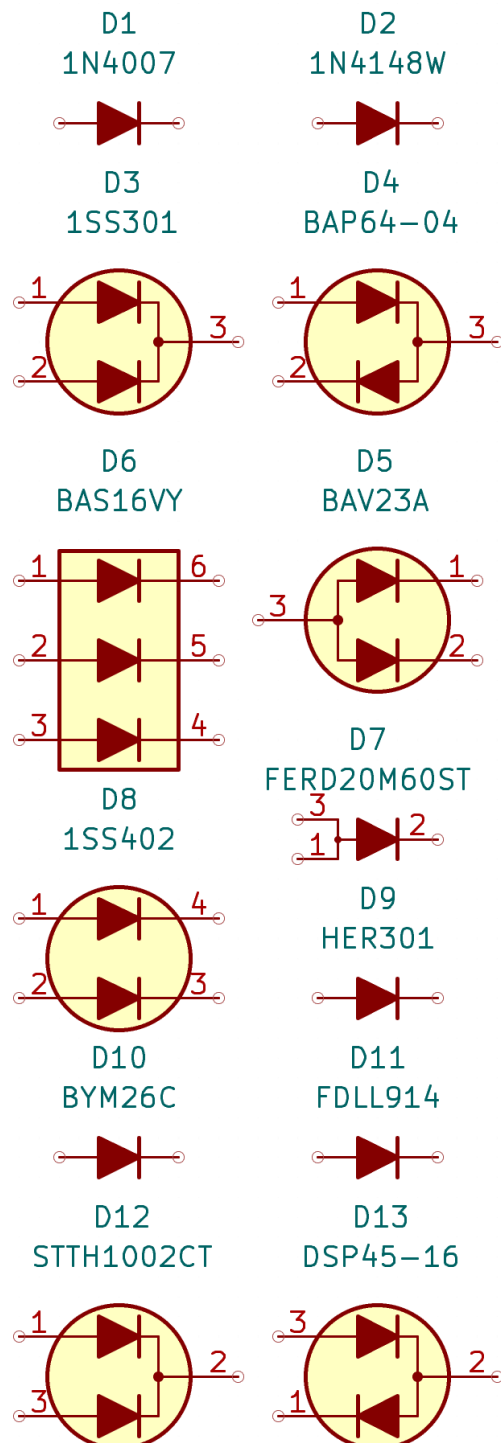
Diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol. Parts with multiple pads connected to cathode or anode have multiple pins on the symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT Diode symbols use the standard variants of THT diode footprints by default.

SMD Diode symbols use the standard variants of SMD diode footprints by default.

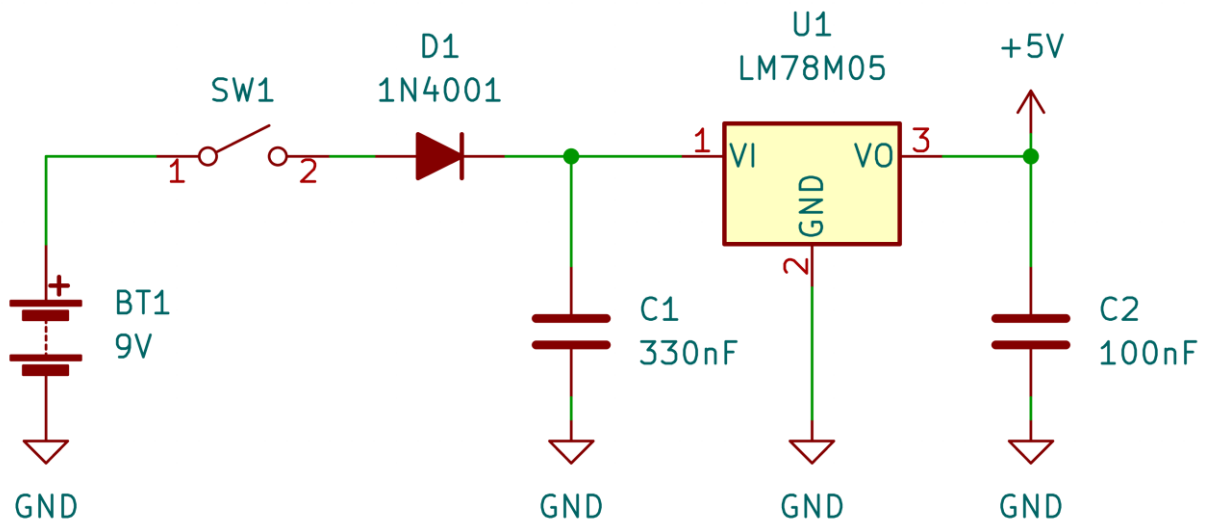
Filename: Diode_AKL	
Total symbols:	2115
Generic symbols:	44
Specific symbols:	2071



Schematic examples

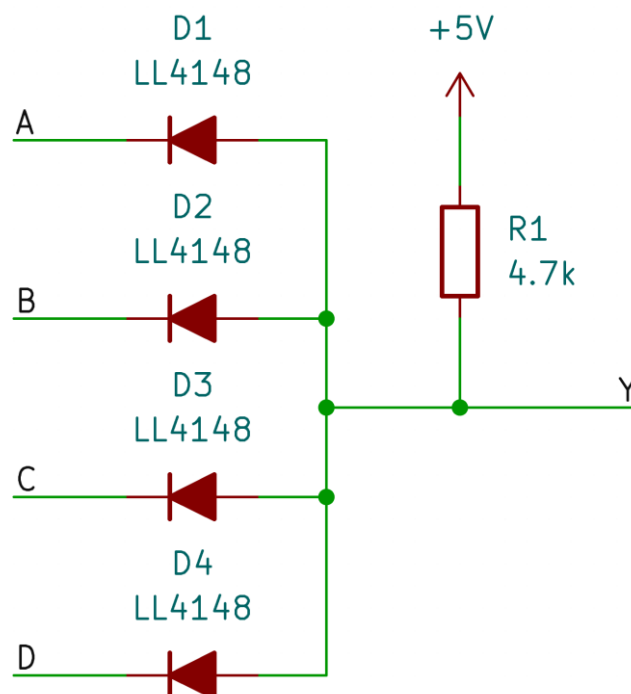
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



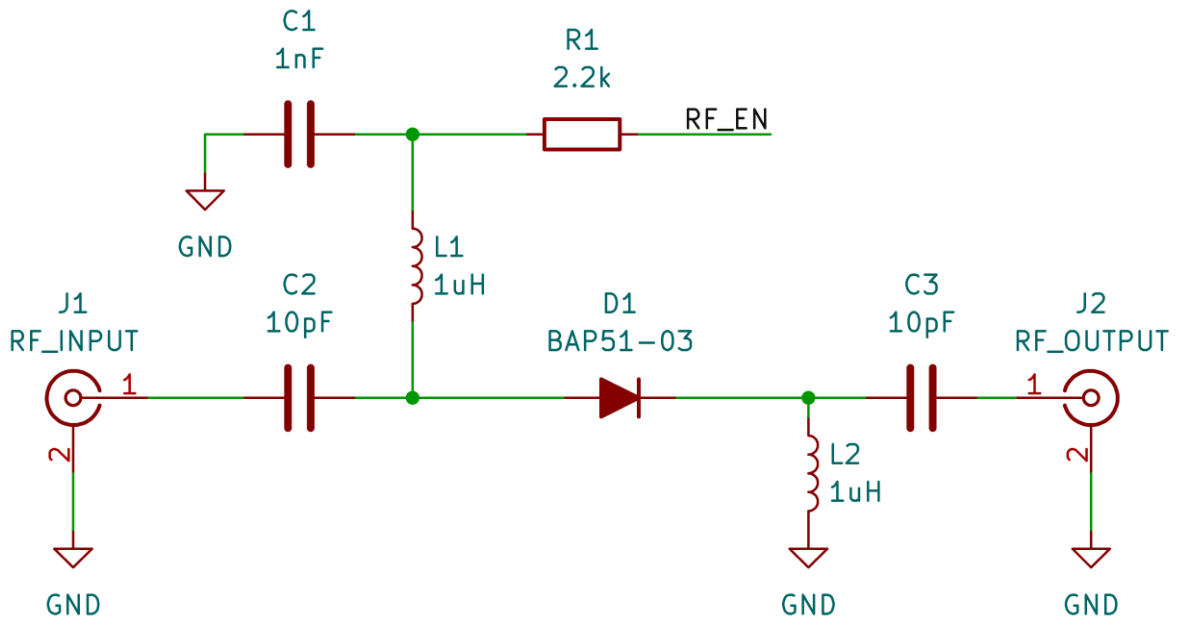
Example 1

Reverse battery protection using 1N4001 rectifier diode.



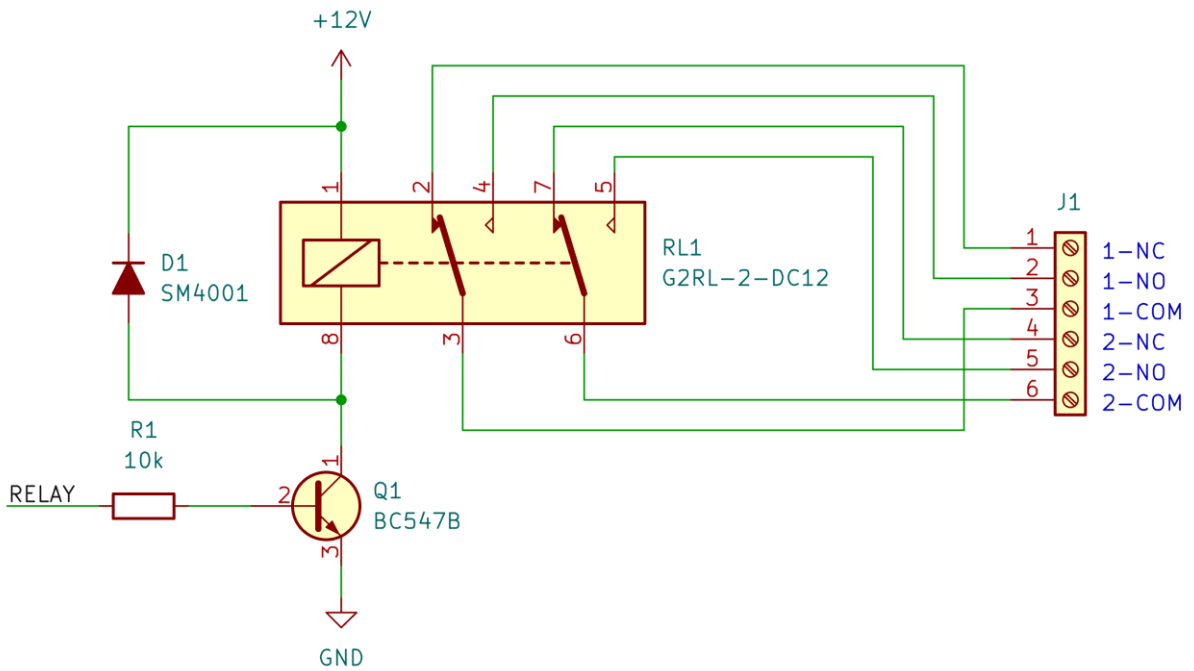
Example 2

Diode-Resistor Logic 4-input AND gate using LL4148 switching diodes.



Example 3

RF voltage-controlled switch using BAP51-03 RF PIN diode.



Example 4

Relay back EMF protection using SM4001 diode.

Table list of all devices included in this library

Diode Family	Example symbol names	No. of symbols
1N457	1N457	1
1N914	1N914	1
1N914BW	1N914BW	1
1N914BWS	1N914BWS	1
1N2069-71	1N2069, 1N2070, 1N2071	3
1N3595	1N3595	1
1N3595UR	1N3595UR	1
1N400x	1N4001, 1N4002, 1N4003, 1N4004, 1N4005 ...	7
1N4148	1N4148	1
1N4148W	1N4148W	1
1N4148WF	1N4148WF	1
1N4148WS	1N4148WS	1
1N4148WSF	1N4148WSF	1
1N4148WT	1N4148WT	1
1N4149	1N4149	1
1N4150	1N4150	1
1N4150W	1N4150W	1
1N4151	1N4151	1
1N4151W	1N4151W	1
1N4154	1N4154	1
1N4448	1N4448	1
1N4448HWS	1N4448HWS	1
1N4448HWT	1N4448HWT	1
1N4448W	1N4448W	1
1N4448WS	1N4448WS	1
1N4531	1N4531	1
1N4532	1N4532	1
1N493x	1N4933, 1N4934, 1N4935, 1N4936, 1N4937	5
1N494x	1N4942, 1N4944, 1N4946, 1N4947, 1N4948	5
1N5059-62	1N5059-DO15, 1N5059-SOD57, 1N5060-DO15 ...	8
1N539x	1N5391, 1N5392, 1N5393, 1N5394, 1N5395 ...	9
1N540x	1N5400, 1N5401, 1N5402, 1N5403, 1N5404 ...	9
1N562x	1N5624, 1N5625, 1N5626, 1N5627	4
1N6478-84	1N6478, 1N6479, 1N6480, 1N6481, 1N6482 ...	7
1PS30x	1PS300, 1PS301, 1PS302	3
1SS181	1SS181	1
1SS184	1SS184	1
1SS193	1SS193	1
1SS226	1SS226	1
1SS250	1SS250	1
1SS30x	1SS300, 1SS301, 1SS302	3
1SS307	1SS307	1
1SS314	1SS314	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
1SS352	1SS352	1
1SS355	1SS355	1
1SS361	1SS361	1
1SS362	1SS362	1
1SS362FV	1SS362FV	1
1SS370	1SS370	1
1SS381	1SS381	1
1SS387	1SS387	1
1SS387CT	1SS387CT	1
1SS400	1SS400	1
1SS402	1SS402, 1SS402s	2
1SS403	1SS403	1
1SS427	1SS427	1
2A0x	2A01, 2A02, 2A03, 2A04, 2A05, 2A06, 2A07	7
6Ax	6A05, 6A1, 6A2, 6A4, 6A6, 6A8, 6A10	7
10Ax	10A05, 10A1, 10A2, 10A4, 10A6, 10A8, 10A10	7
31DFx	31DF4, 31DF6	2
31GF6	31GF6	1
40EPSxx	40EPS08, 40EPS12	2
AL1x	AL1A, AL1B, AL1D, AL1G, AL1J, AL1K, AL1M	7
AM2000	AM2000	1
AS3Bx	AS3BD, AS3BG, AS3BJ	3
AU1Px	AU1PD, AU1PG, AU1PJ, AU1PK, AU1PM	5
BA15x	BA157, BA158, BA159, BA159D	4
BA28x	BA282, BA283	2
BA48x	BA482, BA483, BA484	3
BA591	BA591	1
BA592	BA592	1
BA595	BA595	1
BA679	BA679	1
BA78x	BA782, BA783	2
BA885	BA885	1
BA891	BA891	1
BA892	BA892	1
BA895	BA895	1
BAx74	BAL74, BAR74	2
BAL99	BAL99	1
BAP50	BAP50-02, BAP50-03, BAP50-04, BAP50-05	4
BAP51	BAP51-02, BAP51-03	2
BAP64	BAP64-02, BAP64-03, BAP64-04, BAP64-05 ...	5
BAP65	BAP65-03, BAP65-05	2
BAP70	BAP70-02, BAP70-03, BAP70-05	3
BAQ3x	BAQ33, BAQ34, BAQ35	3

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
BAQ33x	BAQ333, BAQ334, BAQ335	3
BAR1x	BAR14, BAR15, BAR16	3
BAR61	BAR61	1
BAR63	BAR63-04, BAR63-05, BAR63-06	3
BAR63W	BAR63-02W, BAR63-03W, BAR64-04W,	5
BAR66	BAR66	1
BAR81W	BAR81W	1
BAS16	BAS16	1
BAS16G	BAS16G	1
BAS16H	BAS16H	1
BAS16HT	BAS16HT	1
BAS16J	BAS16J	1
BAS16L	BAS16L	1
BAS16T	BAS16T	1
BAS16VV	BAS16VV, BAS16VVs	2
BAS16VY	BAS16VY, BAS16VYs	2
BAS16W	BAS16W	1
BAS19	BAS19	1
BAS19DW5	BAS19DW5, BAS19DW5s	2
BAS20	BAS20	1
BAS20DW5	BAS20DW5, BAS20DW5s	2
BAS20H	BAS20H	1
BAS21	BAS21	1
BAS21AH	BAS21AH	1
BAS21DW5	BAS21DW5, BAS21DW5s	2
BAS21H	BAS21H	1
BAS21J	BAS21J	1
BAS21U	BAS21U, BAS21Us	2
BAS28	BAS28, BAS28s	2
BAS28W	BAS28W, BAS28Ws	2
BAS31	BAS31	1
BAS32	BAS32	1
BAS33-4	BAS33, BAS34	2
BAS35	BAS35	1
BAS45	BAS45	1
BAS45AL	BAS45AL	1
BAS56	BAS56, BAS56s	2
BAS101	BAS101, BAS101S	2
BAS116	BAS116	1
BAS116H	BAS116H	1
BAS116T	BAS116T	1
BAS216WT	BAS216WT	1
BAS316	BAS316	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
BAS321	BAS321	1
BAS416	BAS416	1
BAS516	BAS516	1
BAS521	BAS521	1
BAS716	BAS716	1
BAT18	BAT18-04, BAT18-05	2
BAV16WS	BAV16WS	1
BAV17-21	BAV17, BAV18, BAV19, BAV20, BAV21	5
BAV19-21W	BAV19W, BAV20W, BAV21W	3
BAV19-21WS	BAV19WS, BAV20WS, BAV21WS	3
BAV23	BAV23, BAV23s, BAV23A, BAV23C, BAV23S	5
BAV70	BAV70	1
BAV70M	BAV70M	1
BAV70S	BAV70S	1
BAV70T	BAV70T	1
BAV70W	BAV70W	1
BAV74	BAV74	1
BAV99	BAV99	1
BAV99S	BAV99S	1
BAV99W	BAV99W	1
BAV10x	BAV100, BAV101, BAV102, BAV103	4
BAV170	BAV170	1
BAV170T	BAV170T	1
BAV199	BAV199	1
BAV199DWQ	BAV199DWQ	1
BAV199T	BAV199T	1
BAV199W	BAV199W	1
BAV20x	BAV200, BAV201, BAV202, BAV203	4
BAV30x	BAV300, BAV301, BAV302, BAV303	4
BAV756DW	BAV756DW	1
BAV3004W	BAV3004W	1
BAW56	BAW56	1
BAV56M	BAV56M	1
BAV56S	BAV56S	1
BAV56T	BAV56T	1
BAW56W	BAW56W	1
BAW101	BAV101, BAV101s	2
BAV101S	BAV101S, BAV101Ss	2
BAV156	BAV156	1
BAV156T	BAV156T	1
BAX18	BAX18	1
BAY4x	BAY44, BAY45, BAY46	3
BGX50A	BGX50A	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
BY13x	BY133, BY134, BY135	3
BY203	BY203-12, BY203-16, BY203-20	3
BY228	BY228	1
BY25x	BY251, BY252, BY253, BY254, BY255	5
BY26x	BY268, BY269	2
BY29x	BY296, BY297, BY298, BY299	4
BY359	BY359-1500	1
BY39x	BY396, BY397, BY398, BY399	4
BY448	BY448-DO15, BY448-SOD57	2
BY458	BY458	1
BY500	BY500-50, BY500-100, BY500-200, BY500-400 ...	7
BY527	BY527	1
BY550	BY550-50, BY550-100, BY550-200, BY550-400 ...	7
BY880	BY880-50, BY880-100, BY880-200, BY550-400 ...	9
BY1600-BY2000	BY1600, BY1800, BY2000	3
BYC5	BYC5-600	1
BYC5B	BYC5B-600	1
BYC5D	BYC5D-500	1
BYC5DX	BYC5DX-500	1
BYC5X-600	BYC5X-600	1
BYC8	BYC8-600	1
BYC8B	BYC8B-600	1
BYC8D	BYC8D-600	1
BYC8DX	BYC8DX-600	1
BYC8X	BYC8X-600	1
BYC10	BYC10-600, BYC10-600CT	2
BYC10B	BYC10B-600	1
BYC10D	BYC10D-600	1
BYC10DX	BYC10DX-600	1
BYC10X	BYC10X-600	1
BYC15	BYC15-600	1
BYC15X	BYC15X-600	1
BYC20	BYC20-600	1
BYC20D	BYC20D-600	1
BYC20DX	BYC20DX-600	1
BYC20X	BYX20X-600	1
BYC30	BYC30-600	1
BYC30W	BYC30W-600	1
BYC30WT	BYC30WT-600	1
BYC30X	BYC30X-600	1
BYC60W	BYC60W-600	1
BYD33x	BYD33D, BYD33G, BYD33K, BYD33M, BYD33U ...	7
BYG10x	BYG10D, BYG10G, BYG10J, BYG10K, BYG10J ...	6

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
BYG20x	BYG20D, BYG20G, BYG20J	3
BYG21x	BYG21K, BYG21M	2
BYG22x	BYG22A, BYG22B, BYG22D	3
BYG23x	BYG23M, BYG23T	2
BYM10	BYM10-50, BYM10-100, BYM10-200, BYM10-400 ...	7
BYM11	BYM11-50, BYM11-100, BYM11-200, BYM11-400 ...	7
BYM12	BYM12-50, BYM12-100, BYM12-150, BYM12-200 ...	6
BYM26x	BYM26A, BYM26B, BYM26C, BYM26D, BYM26E ...	7
BYM36x	BYM36A, BYM36B, BYM36C, BYM36D, BYM36E	5
BYQ28E	BYQ28E-100, BYQ28E-150, BYQ28E-200	3
BYQ28EB	BYQ28EB-100, BYQ28EB-150, BYQ28EB-200	3
BYQ28EF	BYQ28EF-100, BYQ28EF-150, BYQ28EF-200	3
BYQ30E	BYQ30E-200	1
BYR16W	BYR16W-1200	1
BYR29	BYR29-500, BYR29-600, BYR29-700, BYR29-800	4
BYR29X	BYR29X-600, BYR29X-800	2
BYT28	BYT28-300, BYT28-400, BYT28-500	3
BYT28B	BYT28B-300, BYT28B-400	2
BYT28F	BYF28F-300, BYT28F-400	2
BYT42x	BYT42A, BYT42B, BYT42D, BYT42G, BYT42J, BYT42K ...	7
BYT51x	BYT51A, BYT51B, BYT51D, BYT51G, BYT51J, BYT51K ...	7
BYT52x	BYT52A, BYT52B, BYT52D, BYT52G, BYT52J, BYT52K ...	7
BYT53x	BYT53A, BYT53B, BYT53C, BYT53D, BYT53F, BYT53G	6
BYT54x	BYT54A, BYT54B, BYT54D, BYT54G, BYT54J, BYT54K, ...	7
BYT56x	BYT56A, BYT56B, BYT56D, BYT56G, BYT56J, BYT56K ...	7
BYT77	BYT77	1
BYT78	BYT78	1
BYT79	BYT79-300, BYT79-400, BYT79-500, BYT79-600	4
BYT79X	BYT79X-600	1
BYV1x	BYV12, BYV13, BYV14, BYV15, BYV16	5
BYV25D	BYV25D-600	1
BYV25F	BYV25F-600	1
BYV25FB	BYV25VB-600	1
BYV25FD	BYV25FD-600	1
BYV25FX	BYV25FX-600	1
BYV25G	BYV25G-600	1
BYV25X	BYV25X-600	1
BYV26x	BYV26A, BYV26B, BYV26C, BYV26D, BYV26E	5
BYV27	BYV27-50, BYV27-100, BYV27-150, BYV27-200 ...	5
BYV28	BYV28-50, BYV28-100, BYV28-150, BYV28-200 ...	5
BYV29	BYV29-300, BYV29-400, BYV29-500, BYV29-600	4
BYV29B	BYV29B-300, BYV29B-400, BYV29B-600	3
BYV29FX	BYV29FX-600	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
BYV29G	BYV29G-600	1
BYV29X	BYV29X-300, BYV29X-400, BYV29X-500, BYV29X-600	4
BYV32	BYV32-50, BYV32-100, BYV32-150, BYV32-200	4
BYV34	BYV34-400, BYV34-500, BYV34-600	3
BYV34X	BYV34X-600	1
BYV3x	BYV37, BYV38	2
BYV44	BYV44-300, BYV44-400, BYV44-500	3
BYV60W	BYV60W-600	1
BYV79E	BYV79E-150, BYV79E-200	2
BYV95x	BYV95A, BYV95B, BYV95C	3
BYV98	BYV98-50, BYV98-100, BYV98-150, BYV98-200	4
BYV410	BYV410-600	1
BYV410X	BYV410X-600	1
BYV415J	BYV415J-600	1
BYW27	BYW27-50, BYW27-100, BYW27-200, BYW27-400	7
BYW29	BYW29-50, BYW29-100, BYW29-150, BYW29-200	4
BYW29B	BYW29B-50, BYW29B-100, BYW29B-150 ...	4
BYW29F	BYW29F-50, BYW29F-100, BYW29F-150 ...	4
BYW3x	BYW32, BYW33, BYW34, BYW35, BYW36	5
BYW51	BYW51-200	1
BYW5x	BYW52, BYW53, BYW54, BYW55, BYW56	5
BYW7x	BYW72, BYW73, BYW74, BYW75, BYW76	5
BYW80	BYW80-200	1
BYW8x	BYW82, BYW83, BYW84, BYW85, BYW86	5
BYW95	BYW95A, BYW95B, BYW95C	3
BYW172x	BYW172D, BYW172F, BYW172G	3
BYW178	BYW178	1
CD4148W	CD4148W	1
CD4148WS	CD4148WS	1
CD4148WT	CD4148WT	1
CMMR1	CMMR1-02, CMMR1-04, CMMR1-06, CMMR1-08 ...	5
Dxx15L	D4015L, D6015L, D8015L	3
Dxx20L	D4020L, D6020L, D8020L	3
Dxx25L	D4025L, D6025L, D8025L	3
DAA10EM1800	DAA10EM1800	1
DAA10P1800	DAA10EM1800	1
DFE10I600PM	DFE10I600PM	1
DFE25I600HA	DFE25I600HA	1
DFLR1x00	DFLR1200, DFLR1400, DFLR1600, DFLR1800	4
DFLU1x00	DFLU1200, DFLU1400	2
DH20	DH20-18A	1
DH40	DH40-18A	1
DH60	DH60-14A, DH60-16A, DH60-18A	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
DHG5I600PA	DHG5I600PA	1
DHG5I600PM	DHG5I600PM	1
DHG10C600PB	DHG10C600PB	1
DHG10I600PA	DHG10I600PA	1
DHG10I600PM	DHG10I600PM	1
DHG10I1200PM	DHG10I1200PM	1
DHG10I1800PA	DHG10I1800PA	1
DHG20C600PB	DHG20C600PB	1
DHG20C600QB	DHG20C600QB	1
DHG20C1200PB	DHG20C1200PB	1
DHG20I600HA	DHG20I600HA	1
DHG20I600PA	DHG20I600PA	1
DHG20I1200HA	DHG20I1200HA	1
DHG20I1200PA	DHG20I1200PA	1
DHG30I600HA	DHG30I600HA	1
DHG30I600PA	DHG30I600PA	1
DHG30I1200HA	DHG30I1200HA	1
DHG30IM600	DHG30IM600	1
DHG40C600HB	DHG40C600HB	1
DHG40C1200HB	DHG40C1200HB	1
DHG60C600HB	DHG60C600HB	1
DHC60I600HA	DHC60I600HA	1
DHC60I1200HA	DHC60I1200HA	1
DK0xxL	DK015L, DK020L, DK025L	3
DLA5P800UC	DLA5P800UC	1
DLA10IM800UC	DLA10IM800UC	1
DLA20IM800PC	DLA20IM800PC	1
DLA40IM800PC	DLA40IM800PC	1
DLA60I1200HA	DLA60I1200HA	1
DMA60I1600PA	DMA60I1600PA	1
DMA10IM1200UZ	DMA10IM1200UZ	1
DMA10IM1600UZ	DMA10IM1600UZ	1
DMA10P1200HR	DMA10P1200HR	1
DMA10P1200UZ	DMA10P1200UZ	1
DMA10P1600PZ	DMA10P1600PZ	1
DMA10P1600UZ	DMA10P1600UZ	1
DMA10P1800PZ	DMA10P1800PZ	1
DMA30IM1600PZ	DMA30IM1600PZ	1
DMA30P1600HR	DMA30P1600HR	1
DMA50P1200HR	DMA50P1200HR	1
DMV1500M	DMV1500M	1
DNA33E2200PA	DNA33E2200PA	1
DNA33E2200PZ	DNA33E2200PZ	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
DNA30EM2200PZ	DNA30EM2200PZ	1
DPF30P600HR	DPF30P600HR	1
DPG10I400PA	DPG10I400PA	1
DPG10IM300UC	DPG10IM300UC	1
DPG20C400PC	DPG20C400PC	1
DPG30C200PC	DPG30C200PC	1
DPG30C300PC	DPG30C300PC	1
DPG30IM300PC	DPG30IM300PC	1
DPG60C300HB	DPG60C300HB	1
DPG60C300PC	DPG60C300PC	1
DPG60I400HA	DPG60I400HA	1
DSDI60	DSDI60-14, DSDI60-16, DSDI60-18	3
DSEC16-12AS	DSEC16-12AS	1
DSEC30-06	DSEC30-06	1
DSEI8-06	DSEI8-06	1
DSEI8-06AS	DSEI8-06AS	1
DSEI12	DSEI12-06, DSEI12-12	2
DSEI12-12AZ	DSEI12-12AS	1
DSEI19-06AS	DSEI19-06AS	1
DSEI20-12	DSEI20-12	1
DSEI25-06	DSEI25-06	1
DSEI30	DSEI30-06, DSEI30-10, DSEI30-12	3
DSEI36-06AS	DSEI36-06AS	1
DSEI60	DSEI60-02, DSEI60-06, DSEI60-10, DSEI60-12	4
DSEI120	DSEI120-06, DSEI120-12	2
DSEI120-12AZ	DSEI120-12AZ	1
DSEK60-06	DSEK60-06	1
DSEP6-06AS	DSEP6-06AS	1
DSEP6-06BS	DSEP6-06BS	1
DSEP8-12	DSEP8-12	1
DSEP12-12	DSEP12-12	1
DSEP12-12AZ	DSEP12-12AZ	1
DSEP12-12BZ	DSEP12-12BZ	1
DSEP15	DSEP15-06, DSEP15-12	2
DSEP29	DSEP29-06, DSEP29-12	2
DSEP29-06AS	DSEP29-06AS	1
DSEP30	DSEP30-06, DSEP30-12	2
DSEP40-03AS	DSEP40-03AS	1
DSEP60	DSEP60-06, DSEP60-12	2
DSEP60-06AT	DSEP60-06AT	1
DSI30	DSI30-08, DSI30-12, DSI30-16	3
DSI30-xxAS	DSI30-08AS, DSI30-12AS, DSI30-16AS	3
DSI45	DSI45-08, DSI45-12, DSI45-16	3

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
DSP8-08AS	DSP8-08AS	1
DSP8-12	DSP8-12	1
DSP8-12AS	DSP8-12AS	1
DSP25-12	DSP25-12	1
DSP25-12AT	DSP25-12AT	1
DSP25-16AT	DSP25-16AT	1
DSP45-12	DSP45-12	1
DSP45-12AZ	DSP45-12AZ	1
DSP45-16	DSP45-16	1
DSP45-16AZ	DSP45-16AZ	1
DTV1500MD	DTV1500MD	1
DTV1500MFP	DTV1500MFP	1
EGL1x	EGL1A, EGL1B, EGL1D, EGL1G, EGL1J, EGL1K, EGL1M	7
EGL34x	EGL34A, EGL34B, EGL34D, EGL34G	4
EGL41x	EGL41A, EGL41B, EGL41C, EGL41D, EGL41F, EGL41G	6
EPG10x	EGP10A, EGP10B, EGP10C, EGP10D, EGP10F, EGP10G	6
EGP20x	EGP20A, EGP20B, EGP20C, EGP20D, EGP20F, EGP20G	6
EGP50x	EGP50A, EGP50B, EGP50C, EGP50D, EGP50F, EGP50G	6
EGP51x	EGP51A, EGP51B, EGP51C, EGP51D, EGP51F, EGP51G	6
EM5xx	EM513, EM516, EM518	3
ER1x	ER1A, ER1B, ER1D, ER1G, ER1J, ER1K, ER1M	7
ER2x	ER2A, ER2B, ER2D, ER2G, ER2J, ER2K, ER2M	7
ER3x	ER3A, ER3B, ER3D, ER3G, ER3J, ER3K, ER3M	7
ER30x	ER300, ER301, ER301A, ER302, ER303, ER304, ER306	7
ES1x	ES1A, ES1B, ES1C, ES1D, ES1F, ES1G, ES1J	7
ES2x	ES2A, ES2B, ES2C, ES2D, ES2F, ES2G, ES2J	7
ES3x	ES3A, ES3B, ES3C, ES3D, ES3F, ES3G, ES3J	7
ESH3x	ESH3B, ESH3C, ESH3D	3
F5K120	F5K120	1
F12K120	F12K120	1
F1200x	F1200A, F1200B, F1200D, F1200G	4
FDH300	FDH300	1
FDH333	FDH333	1
FDLL300	FDLL300	1
FDLL333	FDLL333	1
FDLL914	FDLL914	1
FE1x	FE1A, FE1B, FE1D, FE1G	4
FE2x	FE2A, FE2B, FE2D, FE2G	4
FE3x	FE3A, FE3B, FE3D, FE3G	4
FE6x	FE6A, FE6B, FE6D, FE6F, FE6G	5
FEP16xT	FEP16AT, FEP16BT, FEP16CT, FEP16DT, FEP16FT ...	8
FEP30xP	FEP30AP, FEP30BP, FEP30CP, FEP30DP, FEP30F ...	8
FEPB16xT	FEPB16AT, FEPB16BT, FEPB16CT, FEPB16DT ...	8

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
FEPF16xT	FEPF16AT, FEPF16BT, FEPF16CT, FEPF16DT	8
FERD20M60SR	FERD20M60SR	1
FERD20M60ST	FERD20M60ST	1
FERD20S100SB	FERD20S100SB-TR	1
FERD20S100SH	FERD20S100SH	1
FERD20S100STS	FERD20S100STS	1
FERD30H60CG	FERD30H60CG	1
FERD30H60CTS	FERD30H60CTS	1
FERD30H100SB	FERD30H100SB-TR	1
FERD30H100SH	FERD30H100SH	1
FERD30H100STS	FERD30H100STS	1
FERD30M45CG	FERD30M45CG	1
FERD30M45CR	FERD30M45CR	1
FERD30M45CT	FERD30M45CT	1
FERD30SM100S	FERD30SM100S	1
FERD40H100SFP	FERD40H100SFP	1
FERD40H100SG	FERD40H100SG-TR	1
FERD40H100STS	FERD40H100STS	1
FERD30M45CG	FERD30M45CG-TR	1
FERD30M45CR	FERD30M45CR	1
FERD30M45CT	FERD30M45CT	1
FERD30SM100S	FERD30SM100S	1
FERD40H100SFP	FERD40H100SFP	1
FERD40H100SG	FERD40H100SG-TR	1
FERD40H100STS	FERD40H100STS	1
FERD40L60CG	FERD40L60CG-TR	1
FERD40L60CTS	FERD40L60CTS	1
FERD40M45CG	FERD40M45CG-TR	1
FERD40M45CT	FERD40M45CT	1
FERD40U45CG	FERD40U45CG-TR	1
FERD40U45CT	FERD40U45CT	1
FERD40U50CFP	FERD40U50CFP	1
FERD60M45CT	FERD60M45CT	1
FERD60U45CT	FERD60U45CT	1
FES8xT	FES8AT, FES8BT, FES8CT, FES8DT, FES8FT, FES8GT ...	8
FES16xT	FES16AT, FES16BT, FES16CT, FES16DT, FES16FT ...	8
FESB8xT	FESB8AT, FESB8BT, FESB8CT, FESB8DT ...	8
FESB16xT	FESB16AT, FESB16BT, FESB16CT, FESB16DT ...	8
FFA60UP30DN	FFA60UP30DN	1
FFPF30UP20S	FFPF30UP20S	1
FMG-G2CS	FMG-G2CS	1
FMMD2836	FMMD2836	1
FR1x	FR1A, FR1B, FR1D, FR1G, FR1J, FR1K, FR1M	7

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
FR2x	FR2A, FR2B, FR2D, FR2G, FR2J, FR2K, FR2M	7
FR2xSMA	FR2TSMA, FR2WSMA, FR2XSMA, FR2TSMA	4
FR3x	FR3A, FR3B, FR3D, FR3G, FR3J, FR3K, FR3M	7
FR05xFL	FR05AFL, FR05BFL, FR05DFL, FR05GFL, FR05JFL ...	7
FR10x	FR101, FR102, FR103, FR104, FR105, FR105P, FR106 ...	9
FR15x	FR151, FR152, FR153, FR154, FR155, FR156, FR157	7
FR20x	FR201, FR202, FR203, FR204, FR205, FR205P, FR206 ...	9
FR30x	FR301, FR302, FR303, FR304, FR305, FR305P, FR306 ...	9
FS1x	FS1A, FS1B, FS1D, FS1G, FS1J, FS1K, FS1M	7
FT2000Ax	FT2000AA, FT2000AB, FT2000D, FT2000G	4
FT2000Kx	TF2000KA, FT2000KB, FT2000KD, FT2000KG	4
FX2000x	FX2000A, FX2000B, FX2000D, FX2000F, FX2000G	5
GF1x	GF1A, GF1B, GF1D, GF1G, GF1J, GF1K, GF1M	7
GI75x	GI750, GI751, GI752, GI754, GI756, GI758	6
GL1x	GL1A, GL1B, GL1D, GL1G, GL1J, GL1K, GL1M	7
GL34x	GL34A, GL34B, GL34D, GL34G, GL34J, GL34K, GL34M	7
GL41x	GL41A, GL41B, GL41D, GL41G, GL41J, GL41K ...	9
GP02	GP02-20, GP02-25, GP02-30, GP02-35, GP02-40	5
GS1x	GS1A, GS1B, GS1D, GS1G, GS1J, GS1K, GS1M	7
GUF20x	GUF20A, GUF20B, GUF20D, GUF20F, GUF20G ...	8
GUF30x	GUF30A, GUF30B, GUF30D, GUF30F, GUF30G ...	8
HER10x	HER101, HER102, HER103, HER104, HER105 ...	8
HER15x	HER151, HER152, HER153, HER154, HER155 ...	8
HER20x	HER201, HER202, HER203, HER204, HER205 ...	8
HER30x	HER301, HER302, HER303, HER304, HER305 ...	8
HER50x	HER501, HER502, HER503, HER504, HER505 ...	8
HER80x	HER801, HER802, HER803, HER804, HER805 ...	6
HER160x	HER1601, HER1602, HER1603, HER1604, HER1605 ...	6
HER300x	HER3001, HER3002, HER3003, HER3004, HER3005 ...	6
HFA08TB60	HFA08TB60	1
IDB15E60	IDB15E60	1
IDB30E60	IDB30E60	1
IDB30E120	IDB30E120	1
IDD06E60	IDD06E60	1
IDD15E60	IDD15E60	1
IDFW40E65D1E	IDFW40E65D1E	1
IDP08E65D1	IDP08E65D1	1
IDP15E60	IDP15E60	1
IDP15E65D1	IDP15E65D1	1
IDP15E65D2	IDP15E65D2	1
IDP18E120	IDP18E120	1
IDP30E60	IDP30E60	1
IDP30E120	IDP30E120	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
IDP40E65D2	IDP40E65D2	1
IDV08E65D2	IDV08E65D2	1
IDV15E65D2	IDV15E65D2	1
IDW15E65D2	IDW15E65D2	1
IDW30E60	IDW30E60	1
IDW30E65D1	IDW30E65D1	1
IDW40E65D1	IDW40E65D1	1
IDW40E65D2	IDW40E65D2	1
IDW50E60	IDW50E60	1
IDW75E60	IDW75E60	1
IDW100E60	IDW100E60	1
ISL9K3060G3	ISL9K3060G3	1
ISL9R860P2	ISL9860P2	1
ISL9R860S3ST	ISL9R860S3ST	1
ISL9R1560G2	ISL9R1560G2	1
ISL9R1560P2	ISL9R1560P2	1
ISL9R1560S2	ISL9R1560S2	1
ISL9R1560S3S	ISL9R1560S3S	1
ISL9R3060G2	ISL9R3060G2	1
ISL9R3060P2	ISL9R3060P2	1
LL4148	LL4148	1
LL4150	LL4150	1
LL4151	LL4151	1
LL4154	LL4154	1
LL4448	LL4448	1
Mx	M1, M2, M3, M4, M5, M6, M7	7
M1MA141WAT1	M1MA141WAT1G	1
M1MA142WAT1	M1MA142WAT1G	1
MCL4148	MCL4148	1
MCL4151	MCL4151	1
MCL4448	MCL4448	1
MMBD914	MMBD914	1
MMBD1501	MMBD1501	1
MMBD1503	MMBD1503	1
MMBD1504	MMBD1504	1
MMBD1505	MMBD1505	1
MMBD1701	MMBD1701	1
MMBD1703	MMBD1703	1
MMBD1704	MMBD1704	1
MMBD1705	MMBD1705	1
MMBD2837	MMBD2837	1
MMBD2838	MMBD2838	1
MMBD3004	MMBD3004A, MMBD3004C, MMBD3004S	3

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
MMBD4148	MMBD4148, MMBD4148CA, MMBD4148CC ...	4
MMBD4148TW	MMBD4148TW, MMBD4148TWs	2
MMBD4448	MMBD4448	1
MMBD4448DW	MMBD4448DW, MMBD4448DWs	2
MMBT4448HW	MMBD4448HW	1
MMBD6100	MMBD6100	1
MMBD7000	MMBD7000	1
MMDL914	MMDL914	1
MMSD914	MMSD914	1
MR82x	MR820, MR821, MR822, MR824, MR826, MR828	6
MRA400xT3G	MRA4003T3G, MRA4004T3G, MRE4005T3G ...	5
MSE1Px	MSE1PB, MSE1PD, MSE1PG, MSE1PJ	4
MUR1xx	MUR105, MUR110, MUR115, MUR120, MUR130 ...	8
MUR4xx	MUR405, MUR410, MUR415, MUR420, MUR440 ...	7
MUR8xx	MUR805, MUR810, MUR815, MUR820, MUR840 ...	7
MUR1100E	MUR1100E	1
MUR15xx	MUR1510, MUR1515, MUR1520, MUR1540 ...	5
MUR16xxCT	MUR1610CT, MUR1615CT, MUR1620CT ...	5
MUR30xxWTG	MUR3020WTG, MUR3040WTG, MUR3060WTG	3
MUR4100EG	MUR4100EG	1
MUR8100E	MUR8100E	1
MURD620CTG	MURD620CTG	1
MURF860	MURF860	1
MURF1560	MURF1560	1
MURF2060CT	MURF2060CT	1
MURS1x0	MURS120, MURS140, MURS160	3
MURS2x0	MURS220, MURS240, MURS260	3
MURS3x0	MURS320, MURS340, MURS360	3
NSD914	NSD914	1
NSD914F3T5G	NSD914F3T5G	1
P600x	P600A, P600B, P600D, P600G, P600J, P600K ...	9
P1000x	P1000A, P1000B, P1000D, P1000G, P1000J, P1000K ...	8
P2000x	P2000A, P2000B, P2000D, P2000G, P2000J, P2000K ...	7
P2500x	P2500A, P2500B, P2500D, P2500G, P2500J, P2500K ...	11
PR100x	PR1001, PR1002, PR1003, PR1004, PR1005, PR1006 ...	7
PT800x	PT800A, PT800B, PT800D, PT800G, PT800J, PT800K ...	7
PX1500x	PX1500A, PX1500B, PX1500D, PX1500G, PX1500J ...	7
Rxx00	R1200, R1500, R1800, R2000, R2500, R3000, R4000 ...	8
RAL1x	RAL1A, RAL1B, RAL1D, RAL1G, RAL1J, RAL1K, RAL1M	7
RGF1x	RGF1A, RGF1B, RGF1D, RGF1G, RGF1J, RGF1K, RGF1M	7
RGL1x	RGL1A, RGL1B, RGL1D, RGL1G, RGL1J, RGL1K, RGL1M	7
RGL34x	RGL34A, RGL34B, RGL34D, RGL34G, RGL34J ...	7
RGL41x	RGL41A, RGL41B, RGL41D, RGL41G, RGL41J ...	7

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
RGP02	RGP02-12, RGP02-14, RGP02-15, RGP02-16 ...	7
RGP10x	RGP10A, RGP10B, RGP10D, RGP10G, RGP10J ...	7
RGP15x	RGP15A, RGP15B, RGP15D, RGP15G, RGP15J ...	7
RGP30x	RGP30A, RGP30B, RGP30D, EGP30G, EGP30J ...	7
RHRG3040	RHRG3040	1
RHRG3060	RHRG3060	1
RHRG5060	RHRG5060	1
RHRG30120	RHRG30120	1
RHRG75120	RHRG75120	1
RHRP860	RHRP860	1
RHRP1540	RHRP1540	1
RHRP1560	RHRP1560	1
RHRP3060	RHRP3060	1
RHRP8120	RHRP8120	1
RHRP15120	RHRP15120	1
RHRP30120	RHRP30120	1
RL10x	RL101, RL102, RL103, RL104, RL105, RL106, RL107	7
RL20x	RL201, RL202, RL203, RL204, RL205, RL206, RL207	7
RS1x	RS1A, RS1B, RS1D, RS1G, RS1J, RS1K, RS1M	7
RS2x	RS2A, RS2B, RS2D, RS2G, RS2J, RS2K	6
RS3x	RS3A, RS3B, RS3D, RS3G, RS3J, RS3K	6
RS07x	RS07B, RS07D, RS07G, RS07J, RS07K	5
RURG1520CC	RURG1520CC	1
RURG3020CC	RURG3020CC	1
RURG3060	RURG3060	1
RURG3060CC	RURG3060CC	1
RURP3060	RURP3060	1
S1x	S1A, S1B, S1D, S1G, S1J, S1K, S1M, S1T, S1W, S1X ...	11
S1xB	S1AB, S1BB, S1DB, S1GB, S1JB, S1KB, S1MB	7
S1xF	S1AF, S1BF, S1DF, S1GF, S1JF, S1KF, S1MF	7
S2x	S2A, S2B, S2D, S2G, S2J, S2K, S2M, S2T, S2W, S2X ...	11
S2xF	S2AF, S2BF, S2DF, S2GF, S2JF, S2KF, S2MF	7
S3x	S3A, S3B, S3D, S3G, S3J, S3K, S3M, S3T, S3W, S3X ...	11
S3xBF	S3ABF, S3BBF, S3DBF, S3GBF, S3JBF, S3KBF, S3MBF	7
S3xF	S3AF, S3BF, S3DF, S3GF, S3JF, S3KF, S3MF	7
S3xFL	S3AFL, S3BFL, S3DFL, S3GFL, S3JFL, S3KFL, S3MFL	7
S4Px	S4PB, S4PD, S4PG, S4PJ, S4PK, S4PM	6
S5x	S5A, S5B, S5D, S5G, S5J, S5K, S5M, S5T, S5W, S5X ...	11
S05xFL	S05AFL, S05BFL, S05DFL, S05GFL, S05JFL, S05KFL ...	7
S07x	S07B, S07D, S07G, S07J, S07M	5
S07xFL	S07AFL, S07BFL, S07DFL, S07GFL, S07JFL, S07KFL ...	7
S10x	S10A, S10B, S10D, S10G, S10J, S10K, S10M	7
SA154-160	SA154, SA155, SA156, SA157, SA158, SA159, SA160	7

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
SA26x	SA261, SA262, SA263, SA264, SA265	5
SE15Px	SE15PB, SE15PD, SE15PG, SE15PJ	4
SF1x	SF12, SF13, SF15, SF16, SF18	5
SF2x	SF21, SF22, SF23, SF24	4
SF1200	SF1200	1
SF1600	SF1600	1
SF400x	SF4001, SF4002, SF4003, SF4004, SF4005, SF4006 ...	7
SF540x	SF5400, SF5401, SF5402, SF5403, SF5404, SF5405 ...	9
SK3	SK3-10, SK3-12, SK3-14, SK3-16	4
SL1x	SL1A, SL1B, SL1D, SL1G, SL1J, SL1K, SL1M	7
SM51x	SM513, SM516, SM518	3
SM2000	SM2000	1
SM3000	SM3000	1
SM400x	SM4001, SM4002, SM4003, SM4004, SM4005 ...	7
SM400xS	SM4001S, SM4002S, SM4003S, SM4004S, SM4005S ...	7
SM400xPL	SM4001PL, SM4002PL, SM4003PL, SM4004PL ...	7
SM5059-5063	SM5059, SM5060, SM5061, SM5062, SM5063	5
SM539x	SM5391, SM5392, SM5393, SM5395, SM5397 ...	7
SM540x	SM5400, SM5401, SM5402, SM5404, SM5406 ...	7
STTH1L06	STTH1L06	1
STTH1L06A	STTH1L06A	1
STTH1L06U	STTH1L06U	1
STTH1R02	STTH1R02	1
STTH1R02A	STTH1R02A	1
STTH1R02Q	STTH1R02Q	1
STTH1R02U	STTH1R02U	1
STTH1R04A	STTH1R04A	1
STTH1R04Q	STTH1R04Q	1
STTH1R04U	STTH1R04U	1
STTH1R06	STTH1R06	1
STTH1R06A	STTH1R06A	1
STTH1R06U	STTH1R06U	1
STTH2R02A	STTH2R02A	1
STTH2R02Q	STTH2R02Q	1
STTH2R02U	STTH2R02U	1
STTH3R02	STTH3R02	1
STTH3R02Q	STTH3R02Q	1
STTH3R02S	STTH3R02S	1
STTH4R02B	STTH4R02B	1
STTH4R02S	STTH4R02S	1
STTH4R02U	STTH4R02U	1
STTH5R06B	STTH5R06B	1
STTH5R06D	STTH5R06D	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
STTH5R06FP	STTH5R06PF	1
STTH5R06G	STTH5R06G	1
STTH8R04D	STTH8R04D	1
STTH8R04FP	STTH8R04FP	1
STTH8R04G	STTH8R04G	1
STTH8R06D	STTH8R06D	1
STTH8R06FP	STTH8R06FP	1
STTH8R06G	STTH8R06G	1
STTH8R06R	STTH8R06R	1
STTH12R06D	STTH12R06D	1
STTH12R06FP	STTH12R06FP	1
STTH12R06G	STTH12R06G	1
STTH12T06	STTH12T06	1
STTH30AC06FP	STTH30AC06FP	1
STTH30AC06FP	STTH30AC06FP	1
STTH30R06PI	STTH30R06PI	1
STTH30R06W	STTH30R06W	1
STTH60L06CW	STTH60L06CW	1
STTH60R04W	STTH60R04W	1
STTH1xx	STTH102, STTH106, STTH108, STTH110, STTH112	5
STTH1xxA	STTH102A, STTH108A, STTH110A, STTH112A	4
STTH112U	STTH112U	1
STTH802B	STTH802B	1
STTH802D	STTH802D	1
STTH802FP	STTH802FP	1
STTH802G	STTH802G	1
STTH806D	STTH806D	1
STTH810D	STTH810D	1
STTH810FP	STTH810FP	1
STTH810G	STTH810G	1
STTH1002CB	STTH1002CB	1
STTH1002CFP	STTH1002CFP	1
STTH1002CG	STTH1002CG	1
STTH1002CR	STTH1002CR	1
STTH1002CT	STTH1002CT	1
STTH1210D	STTH1210D	1
STTH1210FP	STTH1210FP	1
STTH1210G	STTH1210G	1
STTH1212D	STTH1212D	1
STTH1212G	STTH1212G	1
STTH1502D	STTH1502D	1
STTH1502FP	STTH1502FP	1
STTH1502G	STTH1502G	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
STTH1506DPI	STTH1506DPI	1
STTH1512D	STTH1512D	1
STTH1512G	STTH1512G	1
STTH1512PI	STTH1512PI	1
STTH1512W	STTH1512W	1
STTH2002D	STTH2002D	1
STTH2002G	STTH2002G	1
STTH2003CFP	STTH2003CFP	1
STTH2003CG	STTH2003CG	1
STTH2003CR	STTH2003CR	1
STTH2003CT	STTH2003CT	1
STTH3002CG	STTH3002CG	1
STTH3002CPI	STTH3002CPI	1
STTH3002CR	STTH3002CR	1
STTH3002CT	STTH3002CT	1
STTH3002CW	STTH3002CW	1
STTH3003CW	STTH3003CW	1
STTH3012D	STTH3012D	1
STTH3012W	STTH3012W	1
STTH6002CPI	STTH6002CPI	1
STTH6002CW	STTH6002CW	1
STTH6003CW	STTH6003CW	1
SUF400x	SUF4001, SUF4002, SUF4003, SUF4004, SUF4005 ...	7
TS4448	TS4448-RZ	1
TVR10x	TVR10D, TVR10G, TVR10J, TVR10K	4
UF1x	UF1A, UF1B, UF1D, UF1G, UF1J, UF1K, UF1M	7
UF1xFL	UF1AFL, UF1BFL, UF1DFL, UF1GFL, UF1JFL, UF1KFL ...	7
UF2x	UF2A, UF2B, UF2D, UF2G, UF2J, UF2K, UF2M	7
UF2xFP	UF2AFP, UF2BFL, UF2DFL, UF2GFL, UF2JFL, UF2KFL ...	7
UF3x	UF3A, UF3B, UF3D, UF3G, UF3J, UF3K, UF3M	7
UF03xFL	UF03AFL, UF03BFL, UF03DFL, UF03GFL, UF03JFL ...	7
UF05xFL	UF05AFL, UF05BFL, UF05DFL, UF05GFL, UF05JFL ...	7
UF600x	UF600A, UF600B, UF600D, UF600G, UF600J ...	7
UF400x	UF4001, UF4002, UF4003, UF4004, UF4005, UF4006 ...	7
UF540x	UF5400, UF5401, UF5402, UF5403, UF5404, UF5405 ...	9
UFT800x	UFT800A, UFT800B, UFT800C, UFT800D, UFT800G ...	6
UG30x	UG30A, UG30B, UG30C, UG30D	4
UGB8xT	UGB8AT, UGB8BT, UGB8DT, UGB8GT, UGB8JT	5
US1x	US1A, US1B, US1D, US1G, US1J, US1K, US1M	7
US1xF	US1AF, US1BF, US1DF, US1GF, US1JF, US1KF, US1MF	7
US1xBF	US1ABF, US1BBF, US1DBF, US1GBF, US1JBF ...	7
US2x	US2A, US2B, US2D, US2G, US2J, US2K, US2M	7
US2xF	US2AF, US2BF, US2DF, US2GF, US2JF, US2KF, US2MF	7

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
US2xBF	US2ABF, US2BBF, US2DBF, US2GBF, US2JBF ...	7
US3x	US3A, US3B, US3D, US3G, US3J, US3K, US3M	7
USL1x	USL1A, USL1B, USL1D, USL1G, USL1J, USL1K ...	7
VS-8ETH03-1-M3	VS-8ETH03-1-M3	1
VS-8ETH03-N3	VS-8ETH03-N3	1
VS-8ETH03S-M3	VS-8ETH03S-M3	1
VS-8EWF1xS-M3	VS-8EWF10S-M3, VS-8EWF12S-M3 ...	3
VS-12EWH06	VS-12EWH06	1
VS15ETL06	VS15ETL06	1
VS-20CTH03FP	VS-20CTH03FP	1
VS-20ETS08FP	VS-20ETS08FP	1
VS-20ETS08S	VS-20ETS08S	1
VS-20ETS12FP	VS-20ETS12FP	1
VS-20ETS12S	VS-20ETS12S	1
VS-30APF10	VS-30APF10	1
VS-30APF12	VS-30APF12	1
VS-30CPH03	VS-30CPH03	1
VS-30EPF10	VS-30EPF10	1
VS-30EPF12	VS-30EPF12	1
VS-60APH03	VS-60APH03	1
VS-60APU02	VS-60APU02	1
VS-60EPU02	VS-60EPU02	1
VS-ETH3006	VS-ETH3006	1
VS-ETH3006FP	VS-ETH3006FP	1
VS-ETU1506	VS-ETU1506	1
VS-ETU1506FP	VS-ETU1506FP	1
VS-HFA04SD60S-M3	VS-HFA04SD60S-M3	1
VS-HFA08PB120	VS-HFA08PB120	1
VS-HFA08TA60C	VS-HFA08TA60C	1
VS-HFA08TB60-M3	VS-HFA08TB60-M3	1
VS-HFA08TB60S	VS-HFA08TB60S	1
VS-HFA15TB60	VS-HFA15TB60	1
VS-HFA16PB120	VS-HFA16PB120	1
VS-HFA25TB60	VS-HFA25TB60	1
VS-HFA30PB120	VS-HFA30PB120	1

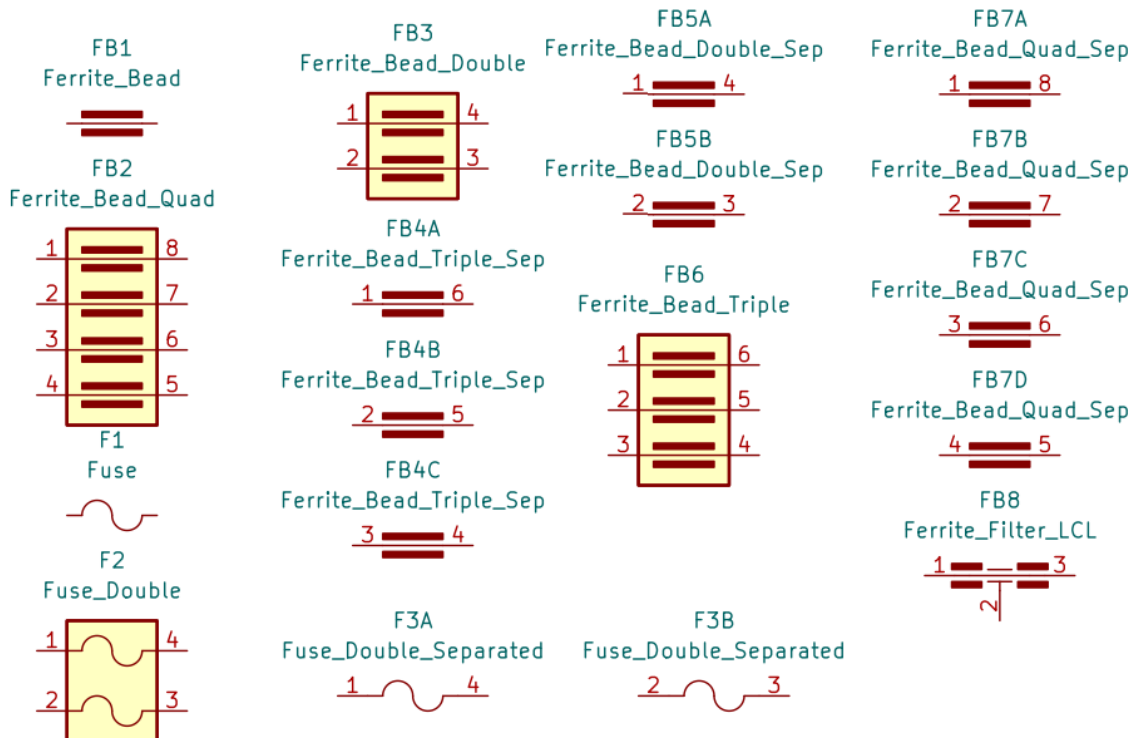
2.14. Generic Device Library

This library contains generic device symbols (without any footprint association) for fuses, ferrite beads and filters.

Double, triple or quad ferrites or fuses are provided as either aggregated (standard) or multi-unit symbols (_Sep suffix on the symbol name).

Symbols in this library are meant to complement the standard KiCad "Device" library with US-style fuse and AKL-style ferrite symbols.

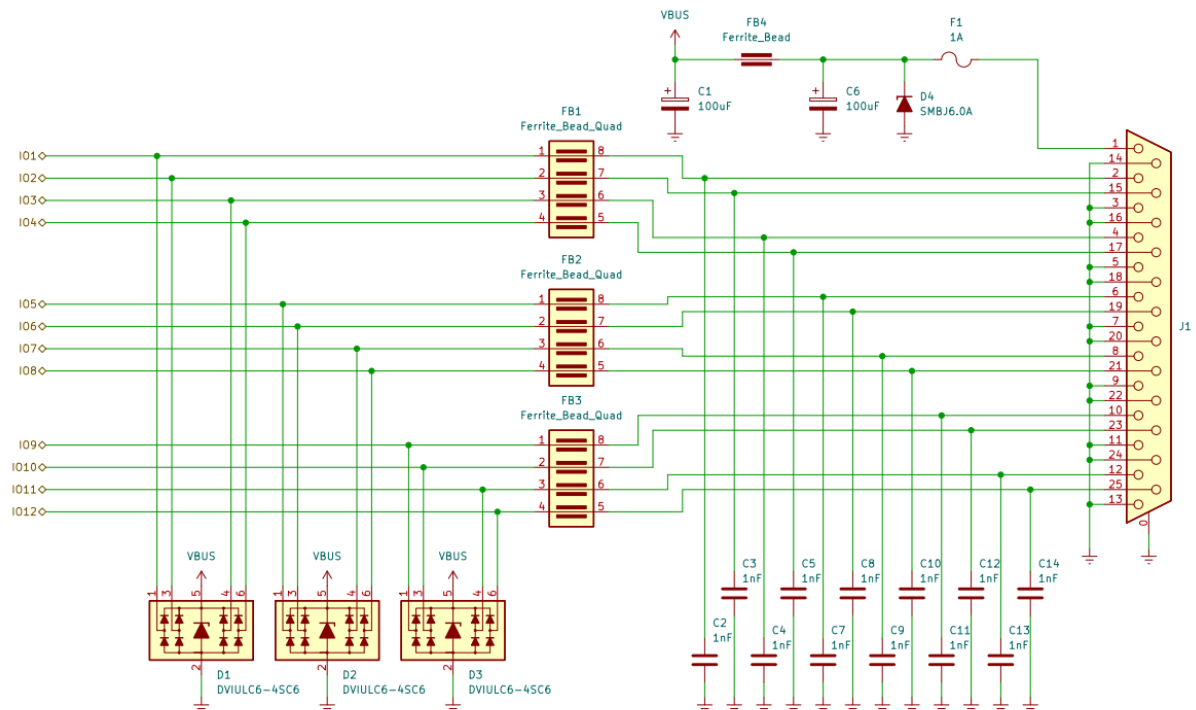
Filename: Diode_AKL	
Total symbols:	11
Generic symbols:	11
Specific symbols:	0



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Digital interface with EMI and ESD suppression on digital lines and protected power input showcasing ferrite and fuse generic symbols.

2.15. Bridge Rectifier Library

This library contains single and triple phase AC to DC bridge rectifiers.

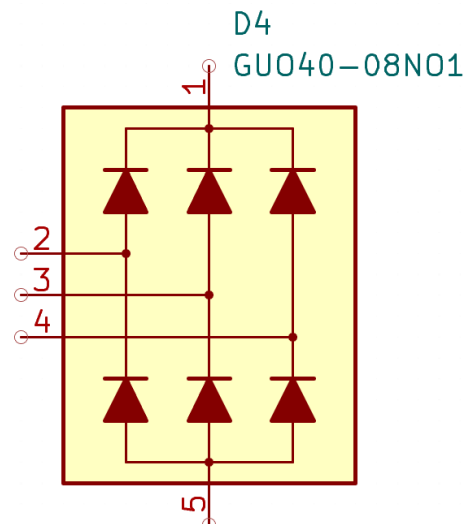
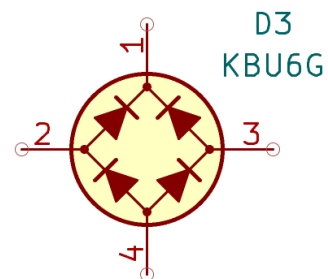
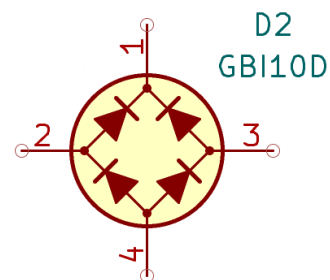
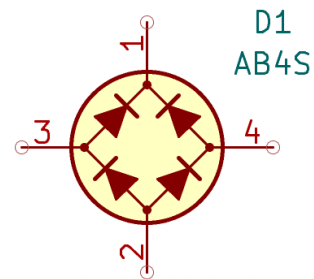
By default, all symbols are oriented so the positive DC output is on the top of the symbol and negative DC output is on the bottom.

All symbols have pin numbers clearly indicated.

Devices based on Schottky diodes have Schottky diodes instead of standard diodes on the symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode bridge family has a separate specific symbol.

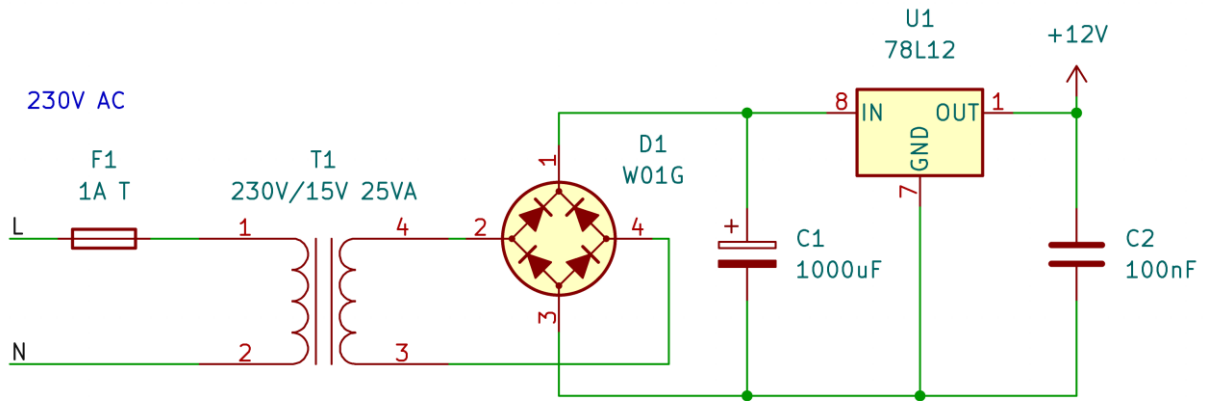
Filename: Diode_Bridge_AKL	
Total symbols:	842
Generic symbols:	6
Specific symbols:	836



Schematic examples

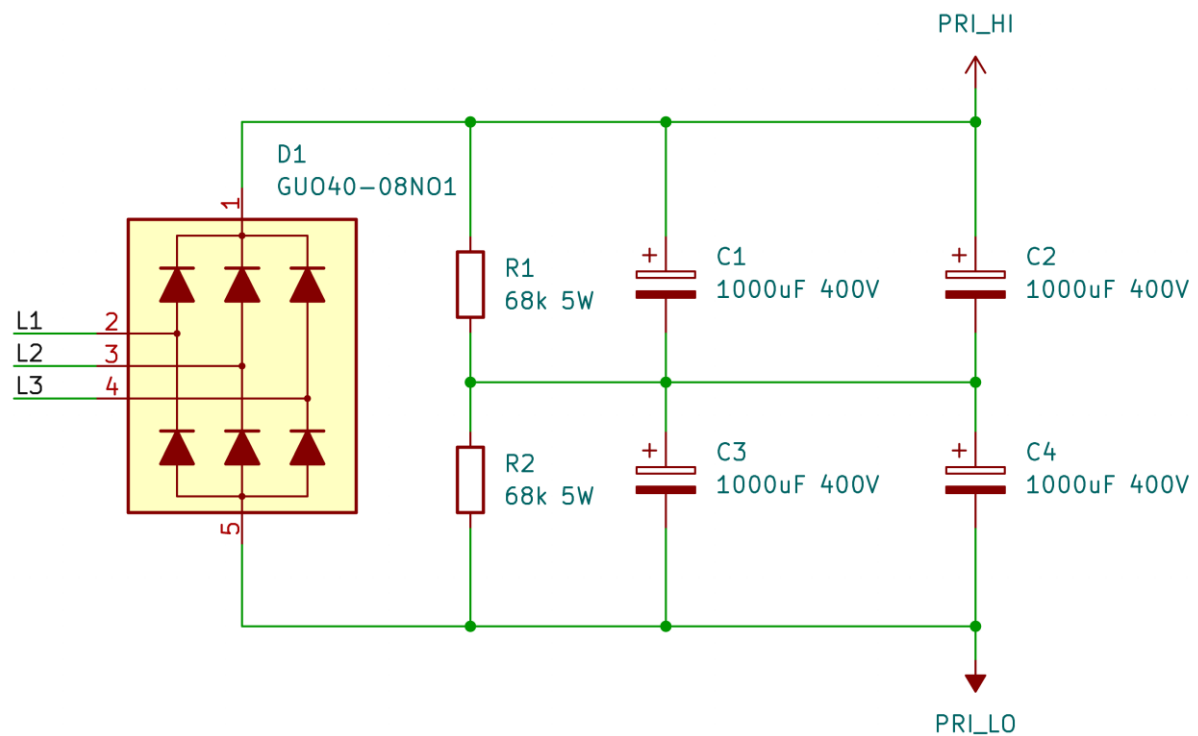
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

12VDC 100mA linear power supply using W01G bridge rectifier.



Example 2

3-Phase AC rectifier and filter based on GUO40-08NO1 bridge rectifier.

Table list of all devices included in this library

Bridge Family	Example symbol names	No. of symbols
2WxxG	2W005G, 2W01G, 2W02G, 2W04G, 2W06G, 2W08G ...	7
ABxS	AB05S, AB1S, AB2S, AB4S, AB6S, AB8S, AB10S	7
ABSx	ABS2, ABS4, ABS6, ABS8, ABS10	5
ABS15x	ABS15D, ABS15G, ABS15J, ABS15K ...	7
B1xF	B1AF, B1BF, B1DF, B1GF, B1JF, B1KF, B1MF	7
BxM	B2M, B4M, B6M	3
BxS	B2S, B4S, B6S	3
B04xF	B04AF, B04BF, B04DF, B04GF, B04JF, B04KF, B04MF	7
BxxC800DM	B40C800DM, B80C800DM, B125C800DM ...	5
BxxC800G	B40C800G, B80C800G, B125C800G, B250C800G ...	5
BxxC1000G	B40C1000G, B80C1000G, B125C1000G ...	5
BxxC1500G	B40C1500G, B80C1500G, B125C1500G ...	5
BxxC2300	B40C2300-1500A, B80C2300-1500B, B125C2300-15...	12
BxxC3200	B40C3200-2200A, B80C3200-2200A, B125C3200-22...	6
BxxC3700	B40C3700-2200A, B80C3700-2200A, B125C3700-22...	6
BxxC5000	B40C5000-3000A, B80C5000-3000A, B125C5000-30...	6
BxxC7000	B40C7000-4000A, B80C7000-4000A, B125C5000-40...	6
BxxD	B40D, B80D, B125D, B250D, B380D, B500D	6
BxxFD	B40FD, B80FD, B125FD, B250FD, B380FD	5
BxxFS	B40FS, B80FS, B125FS, B250FS, B380FS,	5
BxxR	B40R, B80R, B125R, B250R, B380R, B500R	6
BxxS	B40S, B80S, B125S, B250S, B380S, B500S	6
BxxS2A	B40S2A, B80S2A, B125S2A, B250S2A, B380S2A ...	6
BxxS15A	B40S15A, B80S15A, B125S15A, B250S15A ...	6
BR3x	BR305, BR31, BR32, BR34, BR36, BR38, BR310	7
BR15xL	BR1505L, BR151L, BR152L, BR154L, BR156L, BR158L ...	7
BR15xW	BR1505W, BR151W, BR152W, BR154W, BR156W ...	7
BR25xL	BR2505L, BR251L, BR252L, BR254L, BR256L, BR258L ...	7
BR25xW	BR2505W, BR251W, BR252W, BR254W, BR256W ...	7
BR35xL	BR3505L, BR351L, BR352L, BR354L, BR356L, BR358L ...	7
BR35xW	BR3505W, BR351W, BR352W, BR354W, BR356W ...	7
BR50xW	BR5005W, BR501W, BR502W, BR504W, BR506W ...	7
BU15xx	BU1506, BU1508, BU1510	3
CSxxD	CS10D, CS20D, CS30D, CS40D, CS50D	5
CSxxS	CS10S, CS20S, CS30S, CS40S, CS50S	5
DB10x	DB101, DB102, DB103, DB104, DB105, DB106, DB107	7
DB10xS	DB101S, DB102S, DB103S, DB104S, DB105S ...	7
DB15x	DB151, DB152, DB153, DB154, DB155, DB156, DB157	7
DB15xS	DB151S, DB152S, DB153S, DB154S, DB155S ...	7
DB20xS	DB201S, DB202S, DB203S, DB204S, DB205S ...	7
DBI6	DBI6-04P, DBI6-08P, DBI6-12P, DBI6-16P, DBI6-18P ...	7
DBI20	DBI20-08B, DBI20-12B, DBI20-16B	3
DBI25-xxP	DBI25-04P, DBI25-08P, DBI25-12P, DBI25-16P ...	6

Table list of all devices included in this library (cont.)

Bridge Family	Example symbol names	No. of symbols
DBI25-xxA	DBI25-08A, DBI25-12A, DBI25-16A, DBI25-18A	4
DBL10xG	DBL101G, DBL102G, DBL103G, DBL104G, DBL105G ...	7
DFxxM	DF005M, DF01M, DF02M, DF04M, DF06M, DF08M ...	7
DFxxS	DF005S, DF01S, DF02S, DF04S, DF06S, DF08S, DF10S	7
EDF1xM	EDF1AM, EDF1BM, EDF1CM, EDF1DM	4
EDF1xS	EDF1AS, EDF1BS, EDF1CS, EDF1DS	4
GBI10x	GBI10A, GBI10B, GBI10D, GBI10G, GBI10J, GBI10K ...	7
GBI15x	GBI15A, GBI15B, GBI15D, GBI15G, GBI15J, GBI15K ...	7
GBI20x	GBI20A, GBI20B, GBI20D, GBI20G, GBI20J, GBI20K ...	7
GBI25x	GBI25A, GBI25B, GBI25D, GBI25G, GBI25J, GBI25K ...	7
GBI35x	GBI35A, GBI35B, GBI35D, GBI35G, GBI35J, GBI35K ...	7
GBI40x	GBI40D, GBI40G, GBI40J, GBI40K, GBI40M, GBI40W	6
GBJ8x	GBJ8A, GBJ8B, GBJ8D, GBJ8G, GBJ8J, GBJ8K, GBJ8M	7
GBJ10x	GBJ10A, GBJ10B, GBJ10D, GBJ10G, GBJ10J, GBJ10K ...	7
GBJ15x	GBJ15A, GBJ15B, GBJ15D, GBJ15G, GBJ15J, GBJ15K ...	7
GBJ20x	GBJ20A, GBJ20B, GBJ20D, GBJ20G, GBJ20J, GBJ20K ...	7
GBK6x	GBK6A, GBK6B, GBK6D, GBK6G, GBK6J, GBK6K ...	7
GBK8x	GBK8A, GBK8B, GBK8D, GBK8G, GBK8J, GBK8K ...	7
GBK10x	GBK10A, GBK10B, GBK10D, GBK10G, GBK10J ...	7
GBK15x	GBK15A, GBK15B, GBK15D, GBK15G, GBK15J ...	7
GBK20x	GBK20A, GBK20B, GBK20D, GBK20G, GBK20J ...	7
GBK25x	GBK25A, GBK25B, GBK25D, GBK25G, GBK25J ...	7
GBK35x	GBK35A, GBK35B, GBK35D, GBK35G, GBK35J ...	7
GBK50x	GBK50A, GBK50B, GBK50D, GBK50G, GBK50J ...	7
GBLxx	GBL005, GBL01, GBL02, GBL04, GBL06, GBL08, GBL10	7
GBL2x	GBL2A, GBL2B, GBL2D, GBL2G, GBL2J, GBL2K, GBL2M	7
GBL6x	GBL6A, GBL6B, GBL6D, GBL6G, GBL6J, GBL6K, GBL6M	7
GBO25	GBO25-12NO1, GBO25-16NO1	2
GBPC1xx	GBPC1005, GBPC101, GBPC102, GBPC104 ...	7
GBPC6xx	GBPC6005, GBPC601, GBPC602, GBPC604, ...	7
GBPC8xx	GBPC8005, GBPC801, GBPC802, GBPC804 ...	7
GBPC10xx	GBPC10005, GBPC1001, GBPC1002, GBPC1004 ...	7
GBPC15xxW	GBPC15005W, GBPC1501W, GBPC1502W ...	7
GBPC25xxW	GBPC25005W, GBPC2501W, GBPC2502W ...	7
GBPC35xxW	GBPC35005W, GBPC3501W, GBPC3502W ...	7
GBPC50xxW	GBPC50005W, GBPC5001W, GBPC5002W ...	7
GBS4x	GBS4A, GBS4B, GBS4D, GBS4G, GBS4J, GBS4K ...	7
GBU4x	GBU4A, GBU4B, GBU4D, GBU4G, GBU4J, GBU4K ...	7
GBU6x	GBU6A, GBU6B, GBU6D, GBU6G, GBU6J, GBU6K ...	7
GBU8x	GBU8A, GBU8B, GBU8D, GBU8G, GBU8J, GBU8K ...	7
GBU10x	GBU10A, GBU10B, GBU10D, GBU10G, GBU10J ...	7
GBU12x	GBU12A, GBU12B, GBU12D, GBU12G, GBU12J ...	7
GBU15x	GBU15A, GBU15B, GBU15D, GBU15G, GBU15J ...	7

Table list of all devices included in this library (cont.)

Bridge Family	Example symbol names	No. of symbols
GBU25x	GBU25A, GBU25B, GBU25D, GBU25G, GBU25J ...	7
GBV15x	GBV15B, GBV15D, GBV15G, GBV15J, GBV15K ...	7
GSIB6xx	GSIB620, GSIB640, GSIB660, GSIB680	4
GSIB25xx	GSIB2520, GSIB2540, GSIB2560, GSIB2580	4
GUO40	GUO40-08NO1, GUO40-12NO1, GUO40-16NO1	3
KBJ4xxG	KBJ4005, KBJ401G, KBJ402G, KBJ404G, KBJ406G ...	7
KBJ6xxG	KBJ6005, KBJ601G, KBJ602G, KBJ604G, KBJ606G ...	7
KBLxx	KBL005, KBL01, KBL02, KBL04, KBL06, KBL08, KBL10	7
KBPxxG	KBG005G, KBP01G, KBP02G, KBP04G, KBP06G ...	7
KBP2xxG	KBP2005G, KBP201G, KBP202G, KBP204G, KBP206G ...	7
KBP3xxG	KBP302G, KBP304G, KBP306G, KBP308G, KBP310G	5
KBPC1xx	KBPC1005, KBPC101, KBPC102, KBPS104, KBPC106 ...	7
KBPC6xx	KBPC600, KBPC601, KBPC602, KBPC604, KBPC606 ...	7
KBPC8xx	KBPC800, KBPC801, KBPC802, KBPC804, KBPC806 ...	7
KBPC15xxW	KBPC15005W, KBPC1501W, KBPC1502W ...	7
KBU6x	KBU6A, KBU6B, KBU6D, KBU6G, KBU6J, KBU6K ...	7
KBU8x	KBU8A, KBU8B, KBU8D, KBU8G, KBU8J, KBU8K ...	7
KBU10x	KBU10A, KBU10B, KBU10D, KBU10G, KBU10J ...	7
KBU12x	KBU12A, KBU12B, KBU12D, KBU12G, KBU12J ...	7
MBxF	MB05F, MB1F, MB2F, MB4F, MB6F, MB8F, MB10F	7
MBxS	MB05S, MB1S, MB2S, MB4S, MB6S, MB8S, MB10S	7
MB15xW	MB1505W, MB151W, MB152W, MB154W ...	7
MB25xW	MB2505W, MB251W, MB252W, MB254W ...	7
MB35xW	MB3505W, MB351W, MB352W, MB354W ...	7
MBR15xW	MBR1505W, MBR151W, MBR152W, MBR154W ...	7
MBR25xW	MBR2505W, MBR251W, MBR252W, MBR254W ...	7
MBR35xW	MBR3505W, MBR351W, MBR352W, MBR354W ...	7
MBSx	MBS2, MBS4, MBS6, MBS8, MBS10	5
MMB15xW	MMB1505W, MMB151W, MMB152W, MMB154W ...	7
MMB25xW	MMB2505W, MMB251W, MMB252W, MMB254W ...	7
MMB35xW	MMB3505W, MMB351W, MMB352W, MMB354W ...	7
MP6xx	MP6005, MP601, MP602, MP604, MP606, MP608 ...	7
MP8xx	MP8005, MP801, MP802, MP804, MP806, MP808 ...	7
MP10xx	MP10005, MP1001, MP1002, MP1004, MP1006 ...	7
MYSxx	MYS40, MYS80, MYS125, MYS250, MSY380	5
PB10xx	PB1000, PB1001, PB1002, PB1004, PB1006, PB1008 ...	7
RS40x	RS401, RS402, RS403, RS404, RS405, RS406, RS407	7
RS60x	RS601, RS602, RS603, RS604, RS605, RS606, RS407	7
RS80x	RS801, RS802, RS803, RS804, RS805, RS806, RS807	7
Sxx	S40, S80, S125, S250, S380, S500	5
TBxS	TB05S, TB1S, TB2S, TB4S, TB6S, TB8S, TB10S	7
VS-GBPC25xxW	VS-GBPC2502W, VS-GBPC2504W, VS-GBPC2506W ...	6
VS-GBPC35xxW	VS-GBPC3502W, VS-GBPC3504W, VS-GBPC3506W ...	6

Table list of all devices included in this library (cont.)

Bridge Family	Example symbol names	No. of symbols
WxxG	W005G, W01G, W02G, W04G, W06G, W08G, W10G	7

2.16. Capacitance Diode Library

This library contains variable capacitance diodes (varicaps/varactors) and diode arrays.

Diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT capacitance diode symbols use standard variants of THT diode footprints by default.

SMD capacitance diode symbols use standard variants of SMD diode footprints by default.

Filename: Diode_Capacitance_AKL	
Total symbols:	34
Generic symbols:	4
Specific symbols:	30

D1

15V280



D2

BB329



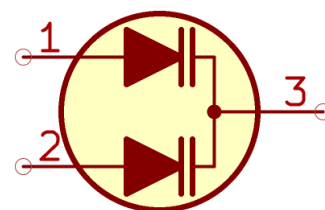
D3

BB439



D4

BBY53



D5

BBY40



D6

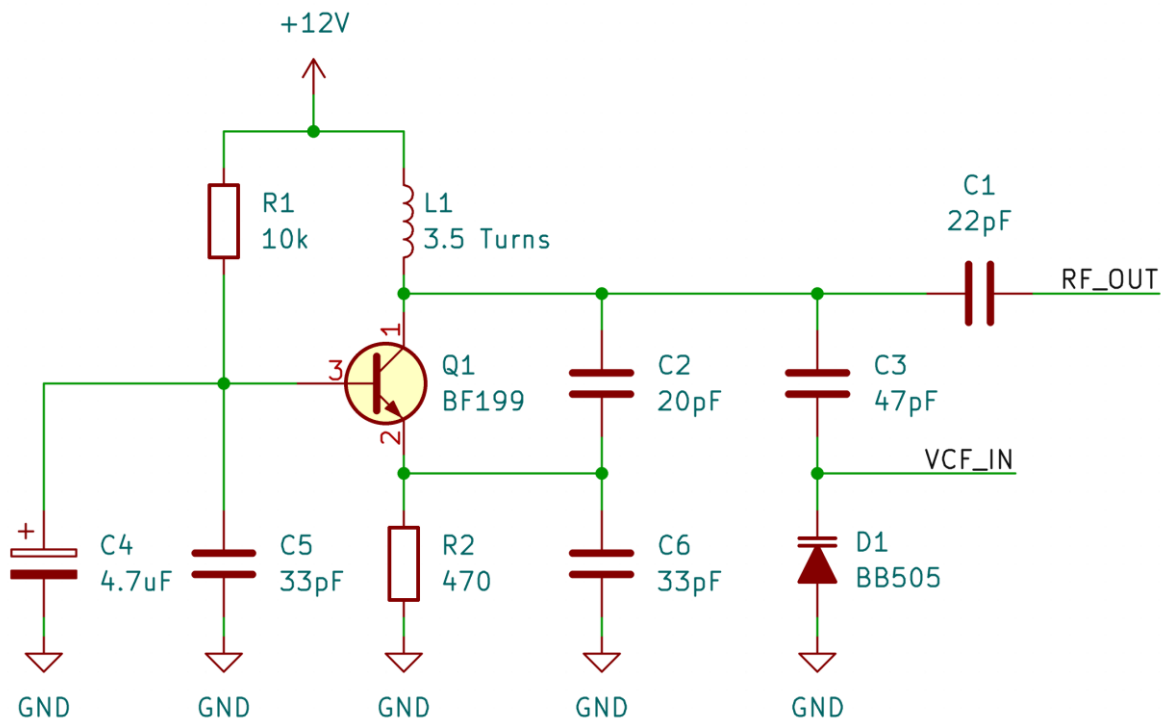
HVC300A



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Voltage Controlled Oscillator (VCO) using BB505 varicap diode.

Table list of all devices included in this library

Bridge Family	Example symbol names	No. of symbols
1SV277	1SV277	1
1SV280	1SV280	1
1SV282	1SV282	1
1SV285	1SV285	1
1SV311	1SV311	1
1SV323	1SV323	1
BA124	BA124	1
BB329	BB329	1
BB439	BB439	1
BB505	BB505	1
BB535	BB535	1
BB555	BB555	1
BB639	BB639	1
BB640	BB640	1
BB659	BB659	1
BB833	BB833	1
BB837	BB837	1
BB844	BB844	1
BB857	BB857, BB857-02V	2
BBY40	BBY40	1
BBY53	BBY53, BBY53-02V, BBY53-02W, BBY53-03W ...	5
BBY55	BBY55-02V, BBY55-02W, BBY55-03W	3
HVC300A	HVC300A	1

2.17. Current Limiting Diode Library

This library contains current limiting diodes, also known as current regulating diodes.

Current limiting diodes act as 2-terminal unidirectional current sources/sinks

Current limiting diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode (terminal that normally has lower voltage) is pin 1, anode (terminal that normally has higher voltage) is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT current-limiting diode symbols use standard variants of THT diode footprints by default.

SMD current-limiting diode symbols use standard variants of SMD diode footprints by default.

Filename: Diode_Current_Limiting_AKL	
Total symbols:	15
Generic symbols:	3
Specific symbols:	12

D1

CL15M45



D2

CL30MD



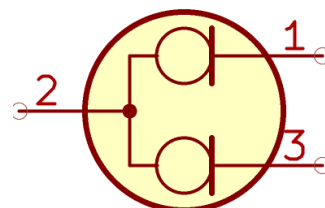
D3

OSCRDT118



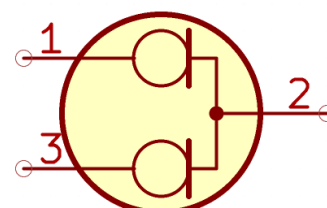
D4

OSCRDT216-A



D5

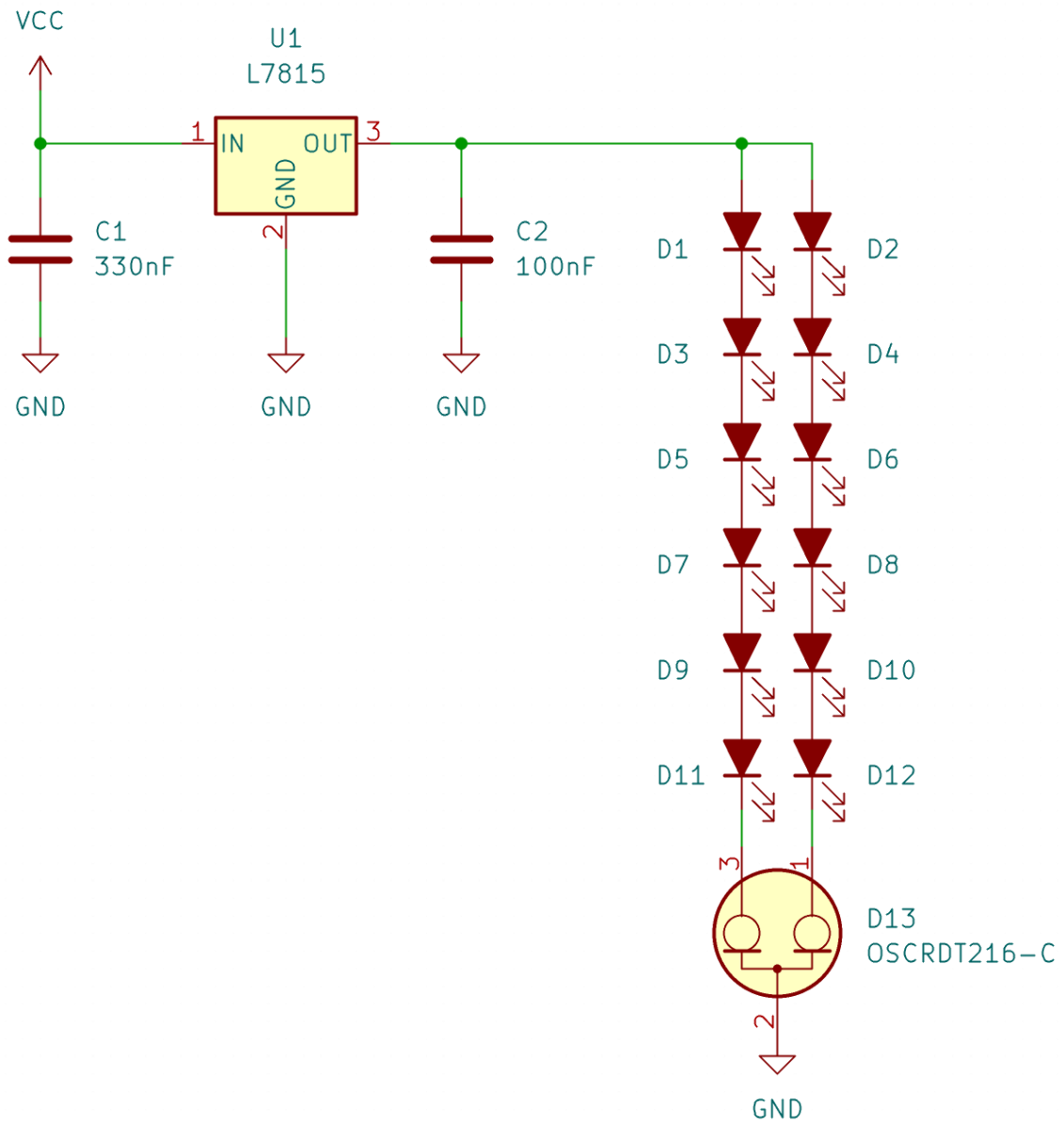
OSCRDT235-C



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

LED driver using OSCRD216-C Dual Common-Cathode current limiting diode.

Table list of all devices included in this library

Diode Family	Example symbol names	No. of symbols
CLxxMD	CL10MD, CL15MD, CL20MD, CL30MD	4
CLxxM45	CL15M45, CL20M45, CL40M45	3
OSCRDT118	OSCRDT118	1
OSCRDT216	OSCRDT216-A, OSCRTD216-C	2
OSCRDT235	OSCRDT235-A, OSCRTD235-C	2

2.18. Schottky Diode Library

This library contains Schottky diodes and Schottky diode arrays.

Dual and triple isolated Schottky diodes have two variants of their symbol. Standard symbol is a single-unit symbol with all diodes in one place. Disaggregated symbol ends in a lowercase 's' and is a multi-unit symbol.

Parts with two dual diode common cathode/anode/series arrays always have multi-unit symbols.

Schottky diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol. Parts with multiple pads connected to cathode or anode have multiple pins on the symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT Schottky diode symbols use standard variants of THT diode footprints by default.

SMD Schottky diode symbols use standard variants of SMD diode footprints by default.

Filename: Diode_Schottky_AKL	
Total symbols:	1763
Generic symbols:	50
Specific symbols:	1713

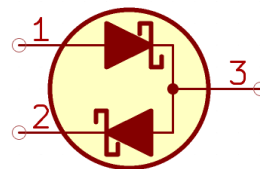
D1
1N5819



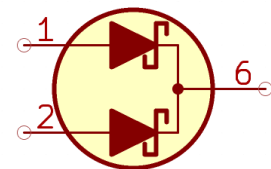
D2
BAT754



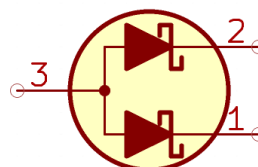
D3
BAT54S



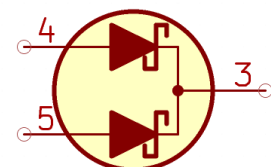
D4A
1PS88SB48



D5
BAT64-06



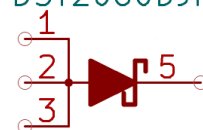
D4B
1PS88SB48



D6
DSA15IM200UC



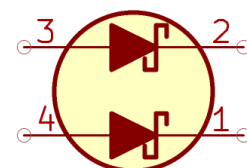
D7
DST2060DJF



D8A
BAS70-07s



D9
BAS70-07



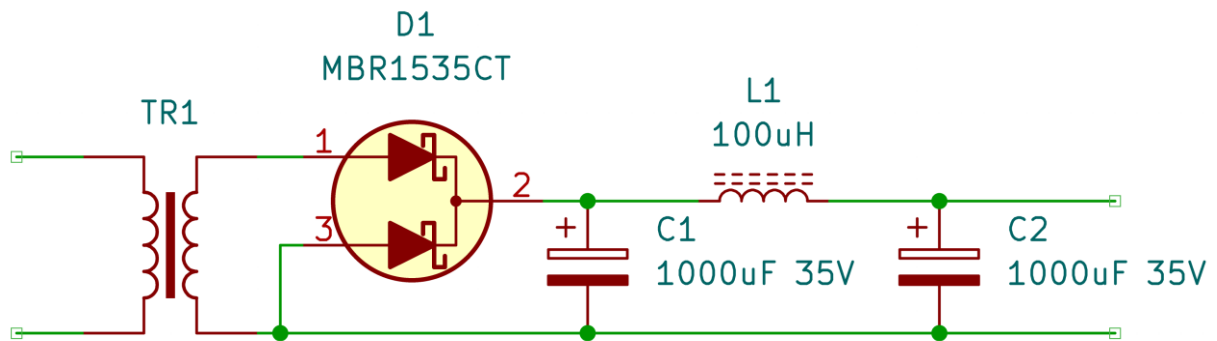
D8B
BAS70-07s



Schematic examples

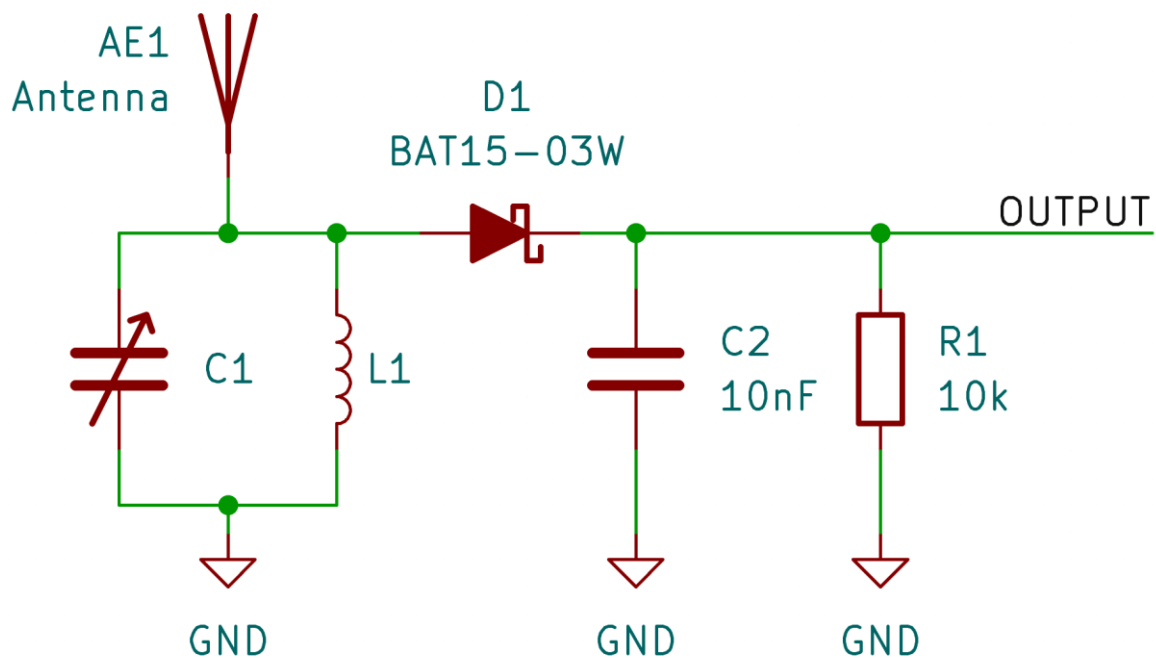
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Switching power supply secondary-side rectifier using MBR1535CT dual common-cathode Schottky diode.



Example 2

RF Detector (AM demodulator) circuit using BAT15-03W Schottky diode.

Table list of all devices included in this library

Diode Family	Example symbol names	No. of symbols
1N5711	1N5711	1
1N5711W	1N5711W	1
1N581x	1N5817, 1N5818, 1N5819	3
1N582x	1N5820, 1N5821, 1N5822	3
1N6263	1N6263	1
1PS66SB17	1PS66SB17, 1PS66SB17s	2
1PS70SB10	1PS70SB10	1
1PS70SB14	1PS70SB14	1
1PS70SB15	1PS70SB15	1
1PS70SB16	1PS70SB16	1
1PS70SB20	1PS70SB20	1
1PS70SB40	1PS70SB40	1
1PS70SB44	1PS70SB44	1
1PS70SB45	1PS70SB45	1
1PS70SB46	1PS70SB46	1
1PS70SB82	1PS70SB82	1
1PS70SB84	1PS70SB84	1
1PS70SB85	1PS70SB85	1
1PS70SB86	1PS70SB86	1
1PS74SB23	1PS74SB23	1
1PS75SB45	1PS75SB54	1
1PS76SB10	1PS76SB10	1
1PS76SB17	1PS76SB17	1
1PS76SB21	1PS76SB21	1
1PS76SB40	1PS76SB40	1
1PS76SB70	1PS76SB70	1
1PS79SB10	1PS79SB10	1
1PS79SB17	1PS79SB17	1
1PS79SB31	1PS79SB31	1
1PS79SB40	1PS79SB40	1
1PS79SB70	1PS79SB70	1
1PS88SB48	1PS88SB48	1
1SS367	1SS367	1
1SS389	1SS389	1
1SS405	1SS405	1
10SQxxx	10SQ030, 10SQ040, 10SQ050, 10SQ060, 10SQ080 ...	6
12SQxxx	12SQ030, 12SQ040, 12SQ050, 12SQ060, 12SQ080 ...	6
15SQxxx	15SQ030, 15SQ035, 15SQ040, 15SQ045, 15SQ050 ...	8
30CTQ0xx	30CTQ035, 30CTQ040, 30CTQ045	3
80SQ0xx	80SQ045, 80SQ05	2
APT30S20BCTG	APT30S20BCTG	1
APT30S20BG	APT30S20BG	1
APT30S20SG	APT30S20SG	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
APT60S20BG	APT60S20BG	1
APT60S20SG	APT60S20SG	1
APT100S20BG	APT100S20BG	1
APT100S20LCT	APT100S20LCT	1
B1x0	B120, B130, B140, B150, B160, B170, B180, B190 ...	9
B1x0B	B120B, B130B, B140B, B150B, B160B, B170B, B180B ...	9
B2x0	B220, B230, B240, B250, B260, B270, B280, B290 ...	9
B2x0A	B220A, B230A, B240A, B250A, B260A	5
B3x0	B320, B330, B340, B350, B360, B370, B380, B390 ...	9
B3x0A	B320A, B330A, B340A, B350A, B360A	5
B3x0B	B320B, B330B, B340B, B350B, B360B	5
B5x0C	B520C, B530C, B540C, B550C, B560C	5
B0520LW	B0520LW	1
B05xxW	B0520W, B0540W	2
B05xxWS	B0520WS. B0530WS. B0540WS	3
BAR18	BAR18	1
BAR42	BAR42	1
BAR43	BAR43, BAR43A, BAR43C, BAR43S	4
BAR46	BAR46, BAR46A	2
BAS40	BAS40, BAS40-04, BAS40-05, BAS40-06, BAS40-07 ...	6
BAS40W	BAS40W, BAS40-04W, BAS40-05W, BAS40-06W ...	6
BAS40V	BAS40-05V, BAS40-07V, BAS40-07Vs	3
BAS40H	BAS40H	1
BAS40L	BAS40L	1
BAS40XY	BAS40XY	1
BAS52	BAS52-02V	1
BAS70	BAS70, BAS70-04, BAS70-05, BAS70-06, BAS70-07 ...	8
BAS70W	BAS70W, BAS70-04W, BAS70-05W, BAS70-06W ...	6
BAS70-07V	BAS70-07V, BAS70-07Vs	2
BAS70H	BAS70H	1
BAS70J	BAS70J	1
BAS70K	BAS70K	1
BAS70L	BAS70L	1
BAS70V	BAS70V	1
BAS70VV	BAS70VV	1
BAS70XY	BAS70XY	1
BAS81-83	BAS81, BAS82, BAS83	3
BAS85-86	BAS85, BAS86	2
BAS125W	BAS125-04W, BAS125-05W, BAS125-06W ...	5
BAS140W	BAS140W	1
BAS170W	BAS170W	1
BAS281-283	BAS281, BAS282, BAS283	3
BAS285	BAS285	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
BAS286	BAS286	1
BAS381-383	BAS381, BAS382, BAS383	3
BAS385	BAS385	1
BAS386	BAS386	1
BAS3005A	BAS3005A-02V	1
BAS3007A	BAS3007A	1
BAS3010A	BAS3010A-03W	1
BAS4002A	BAS4002A	1
BAT15W	BAT15-03W, BAT15-04W, BAT15-05W	3
BAT15-099	BAT15-099, BAT15-099s	2
BAT15-099R	BAT15-99R	1
BAT17	BAT17, BAT17-04, BAT17-05, BAT17-07	4
BAT17W	BAT17-04W, BAT17-05W, BAT17-06W	3
BAT20J	BAT20J	1
BAT30xW	BAT30CW, BAT30SW	2
BAT30F4	BAT30F4	1
BAT30K	BAT30K	1
BAT40V	BAT40V	1
BAT41	BAT41	1
BAT42	BAT42	1
BAT42W	BAT42W	1
BAT42WS	BAT42WS	1
BAT43	BAT43	1
BAT43W	BAT43W	1
BAT43WS	BAT43WS	1
BAT46	BAT46	1
BAT46W	BAT46W	1
BAT46WH	BAT46WH	1
BAT46WJ	BAT46WJ	1
BAT48	BAT48	1
BAT48J	BAT48J	1
BAT48Z	BAT48Z	1
BAT54	BAT54, BAT54-04, BAT54-05, BAT54-06, BAT54A ...	7
BAT54W	BAT54W, BAT54-04W, BAT54-05W, BAT54-06W ...	7
BAT54-02V	BAT54-02V	1
BAT54-03W	BAT54-03W	1
BAT54xDW	BAT54ADW, BAT54CDW, BAT54SDW	3
BAT54BRW	BAT54BRW	1
BAT54J	BAT54J	1
BAT54K	BAT54K	1
BAT54TW	BAT54TW, BAT54TWs	2
BAT54V	BAT54V, BAT54Vs	2
BAT54Z	BAT54Z	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
BAT60A	BAT60A	1
BAT60B	BAT60B	1
BAT62	BAT62, BAT62s.	2
BAT62-02V	BAT62-02V	1
BAT62-02W	BAT62-02W	1
BAT62-03W	BAT62-03W	1
BAT62-07W	BAT62-07W, BAT62-07Ws	1
BAT63-02V	BAT63-02V	1
BAT63-07W	BAT63-07W, BAT63-07Ws	2
BAT64	BAT64, BAT640-04, BAT64-05, BAT64-06, BAT64-07	5
BAT64W	BAT64-04W, BAT64-05W, BAT64-06W	3
BAT64-02W	BAT64-02W	1
BAT68	BAT68, BAT68-04, BAT68-06	3
BAT68W	BAT68-04W, BAT68-06W	2
BAT68-07W	BAT68-07W, BAT68-07Ws	2
BAT68-08S	BAT68-08S, BAT68-08Ss	2
BAT74	BAT74, BAT74s	2
BAT81-83	BAT81, BAT82, BAT83	3
BAT85	BAT85	1
BAT86	BAT86	1
BAT165A	BAT165A	1
BAT240	BAT240	1
BAT720	BAT720	1
BAT721	BAT721, BAT721A, BAT721C, BAT721S	4
BAT754	BAT754, BAT754A, BAT754C, BAT754S	4
BAT1000	BAT1000	1
BYM13	BYM13-20, BYM13-30, BYM13-40, BYM13-50 ...	5
BYS11-90	BYS11-90	1
BYS12-90	BYS12-90	1
BYV10-40	BYV10-40	1
C3D02060A	C3D02060A	1
C3D02060F	C3D02060F	1
C3D2060E	C3D2060E	1
C3D2065E	C3D2065E	1
C3D03060A	C3D03060A	1
C3D03060F	C3D03060F	1
C3D3065E	C3D3065E	1
C3D04060A	C3D04060A	1
C3D04060F	C3D04060F	1
C3D4060E	C3D4060E	1
C3D4065E	C3D4065E	1
C3D06060A	C3D06060A	1
C3D06060F	C3D06060F	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
C3D6060G	C3D6060G	1
C3D6065E	C3D6065E	1
C3D06065A	C3D06065A	1
C3D08060A	C3D08060A	1
C3D8060G	C3D8060G	1
C3D08065A	C3D08065A	1
C3D8065E	C3D8065E	1
C3D10060A	C3D10060A	1
C3D10060G	C3D10060G	1
C3D10065A	C3D10065A	1
C3D10065E	C3D10065E	1
C3D10170H	C3D10170H	1
C3D12065A	C3D12065A	1
C3D16060D	C3D16060D	1
C3D16065A	C3D16065A	1
C3D16065D	C3D16065D	1
C3D20060D	C3D20060D	1
C3D20065D	C3D20065D	1
C3D25170H	C3D25170H	1
C3D30065D	C3D30065D	1
C4D02120A	C4D02120A	1
C4D02120E	C4D02120E	1
C4D05120A	C4D05120A	1
C4D05120E	C4D05120E	1
C4D08120A	C4D08120A	1
C4D08120E	C4D08120E	1
C4D10120A	C4D10120A	1
C4D10120D	C4D10120D	1
C4D10120E	C4D10120E	1
C4D10120H	C4D10120H	1
C4D15120A	C4D15120A	1
C4D15120D	C4D15120D	1
C4D15120H	C4D15120H	1
C4D20120A	C4D20120A	1
C4D20120D	C4D20120D	1
C4D20120H	C4D20120H	1
C4D30120D	C4D30120D	1
C4D40120D	C4D40120D	1
C5D05170H	C5D05170H	1
C5D10170H	C5D10170H	1
C5D25170H	C5D25170H	1
C5D50065D	C5D50065D	1
C6D04065A	C6D04065A	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
C6D06065A	C6D06065A	1
C6D06065E	C6D06065E	1
C6D08065A	C6D08065A	1
C6D08065E	C6D08065E	1
C6D10065A	C6D10065A	1
C6D10065E	C6D10065E	1
C6D16065D	C6D16065D	1
C10PxxQ	C10P09Q, C10P10Q	2
CES388	CES388	1
CMDSH-3	CMDSH-3	1
CRS01	CRS01	1
CRS03	CRS03	1
CRS04	CRS04	1
CRS05	CRS05	1
CRS06	CRS06	1
CRS08	CRS08	1
CRS09	CRS09	1
CRS13	CRS13	1
CRS14	CRS14	1
CRS15I30B	CRS15I30B	1
CRS20I40B	CRS20I40B	1
CSD01060A	CSD01060A	1
CSD01060E	CSD01060E	1
CUS10F30	CUS10F30	1
CUS10S30	CUS10S30	1
CUS520	CUS520	1
CVFD20065A	CVFD20065A	1
DCG10P1200HR	DCG10P1200HR	1
DCG17P1200HR	DCG17P1200HR	1
DCG20C1200HR	DCG20C1200HR	1
DCG35C1200HR	DCG35C1200HR	1
DFLS1xx	DFLS130, DFLS160, DFLS1100	3
DFLS240L	DFLS240L	1
DSA10C150PB	DSA10C150PB	1
DSA10I100PM	DSA10I100PM	1
DSA15I45PA	DSA15I45PA	1
DSA15IM45IB	DSA15IM45IB	1
DSA15IM200UC	DSA15IM200UC	1
DSA20CxxPB	DSA20C45PB, DSA20C100PB, DSA20C150PB	3
DSA20CxxPN	DSA20C60PN, DSA20C100PN, DSA20C150PN	3
DSA30CxxHB	DSA30C45HB, DSA30C100HB, DSA30C150HB	3
DSA30CxxPB	DSA30C45PB, DSA30C60PB, DSA30C100PB ...	5
DSA30C45PC	DSA30C45PC	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
DSA30C100PN	DSA30C100PN	1
DSA30C100QB	DSA30C100QB	1
DSA30C200IB	DSA30C200IB	1
DSA30I100PA	DSA30I100PA	1
DSA30I150PA	DSA30I150PA	1
DSA50C100HB	DSA50C100HB	1
DSA50C100QB	DSA50C100QB	1
DSA50C150HB	DSA50C150HB	1
DSA60CxxHB	DSA60C45HB, DSA60C60HB	2
DSA60CxxPB	DSA60C45PB, DSA60C60PB, DSA60C100PB ...	4
DSA70Cxx0HB	DSA70C100HB, DSA70C150HB, DSA70C200HB	3
DSA80C45HB	DSA80C45HB	1
DSA80C100PB	DSA80C100PB	1
DSA90C200HB	DSA90C200HB	1
DSA120C150QB	DSA120C150QB	1
DSB10I45PM	DSB10I45PM	1
DSB15IM45IB	DSB15IM45IB	1
DSB20C60PN	DSB20C60PN	1
DSB20I15PA	DSB20I15PA	1
DSB30CxxPB	DSB30C30PB, DSB30C45PB, DSB30C60PB	3
DSB30C45HB	DSB30C45HB	1
DSB40C15PB	DSB40C15PB	1
DSB60CxxHB	DSB60C30HB, DSB60C45HB, DSB60C60HB	3
DSB60CxxPB	DSB60C30PB, DSB60C45PB, DSB60C60PB	3
DSB80C45HB	DSB80C45HB	1
DSS6-015AS	DSS6-015AS	1
DSS6-0025BS	DSS6-0025BS	1
DSS6-0045AS	DSS6-0045AS	1
DSS10-01A	DSS10-01A	1
DSS10-01AS	DSS10-01AS	1
DSS10-006A	DSS10-006A	1
DSS10-0045B	DSS10-0045B	1
DSS16-01A	DSS16-01A	1
DSS16-01AS	DSS16-01AS	1
DSS16-0045A	DSS16-0045A	1
DSS16-0045AS	DSS16-0045AS	1
DSS17-06CR	DSS17-06CR	1
DSS20-0015B	DSS20-0015B	1
DSS25-0025B	DSS25-0025B	1
DSS25-0045A	DSS25-0045A	1
DSS40-0008D	DSS40-0008D	1
DSS60-0045B	DSS60-0045B	1
DSSK10-018A	DSSK10-018A	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
DSSK16-01A	DSSK16-01A	1
DSSK16-01AS	DSSK16-01AS	1
DSSK18-0025BS	DSSK18-0025BS	1
DSSK20-015A	DSSK20-015A	1
DSSK20-0045B	DSSK20-0045B	1
DSSK28-01AS	DSSK28-01AS	1
DSSK28-006BS	DSSK28-006BS	1
DSSK28-0045BS	DSSK28-0045BS	1
DSSK30-01A	DSSK30-01A	1
DSSK30-018A	DSSK30-018A	1
DSSK38-0025B	DSSK38-0025B	1
DSSK38-0025BS	DSSK38-0025BS	1
DSSK40-006B	DSSK40-006B	1
DSSK40-008B	DSSK40-008B	1
DSSK40-0015B	DSSK40-0015B	1
DSSK48-003B	DSSK48-003B	1
DSSK48-006B	DSSK48-006B	1
DSSK48-0025B	DSSK48-0025B	1
DSSK50-01A	DSSK50-01A	1
DSSK50-0025B	DSSK50-0025B	1
DSSK60-02A	DSSK60-02A	1
DSSK60-015A	DSSK60-015A	1
DSSK60-0045A	DSSK60-0045A	1
DSSK70-008B	DSSK70-008B	1
DSSK70-0015B	DSSK70-0015B	1
DSSK80-003B	DSSK80-003B	1
DSSK80-006B	DSSK80-006B	1
DSSK80-0008D	DSSK80-0008	1
DSSK80-0025B	DSSK80-0025B	1
DSSK80-0045B	DSSK80-0045B	1
DSSS30-01A	DSSS30-01A	1
DSSS35-008A	DSSS35-008A	1
DST10xxS	DST1040S, DST1045S	2
DST2045AX	DST2045AX	1
DST2060DJF	DST2060DJF	1
DST2080S	DST2080S	1
DST3060DJF	DST3060DJF	1
DST5200	DST5200	1
DST10100S	DST10100S	1
DST40100C	DST40100C	1
DSTB60100C	DSTB60100C	1
DSTD5200	DST5200	1
DSTF2050C	DSTF2050C	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
DSTF3060CR	DSTF3060CR	1
DSTF10200C	DSTF10200C	1
DSTF20120C	DSTF20120C	1
DSTF20120CR	DSTF20120CR	1
DSTF30100C	DSTF30100C	1
DSTF40100C	DSTF40100C	1
DSTF60100C	DSTF60100C	1
E4D20120A	E4D20120A	1
F10PxxQ	F10P09Q, F10P10Q	1
FCH10A04	FCH10A04	1
FYP2010DN	FYP2010DN	1
GAP3SLT33-214	GAP3SLT33-214	1
GB01SLTxx-214	GB01SLT06-214, GB01SLT12-214	2
GB01SLT12-252	GB01SLT12-252	1
GB02SLT12-214	GB02SLT12-214	1
GB02SLT12-252	GB02SLT12-252	1
GB05MPS17-263	GB05MPS17-263	1
GB05MPS33-263	GB05MPS33-263	1
GB10MPS17-247	GB10MPS17-247	1
GB20SLT12-247	GB20SLT12-247	1
GB25MPS17-247	GB25MPS17-247	1
GB50SLT12-247	GB50SLT12-247	1
GC02MPS12-220	GC02MPS12-220	1
GC2X5MPS12-247	GC2X5MPS12-247	1
GC2X8MPS12-247	GC2X8MPS12-247	1
GC2X10MPS12-247	GC2X10MPS12-247	1
GC2X15MPS12-247	GC2X15MPS12-247	1
GC2X20MPS12-247	GC2X20MPS12-247	1
GC05MPS12-252	GC05MPS12-252	1
GC08MPS12-220	GC08MPS12-220	1
GC08MPS12-252	GC08MPS12-252	1
GC10MPS12-220	GC10MPS12-220	1
GC10MPS12-252	GC10MPS12-252	1
GC15MPS12-220	GC15MPS12-220	1
GC15MPS12-247	GC15MPS12-247	1
GC20MPS12-220	GC20MPS12-220	1
GC20MPS12-247	GC20MPS12-247	1
GD02MPS12E	GD02MPS12E	1
GD10MPS17H	GD10MPS17H	1
GD30MPS06H	GD30MPS06H	1
GD30MPS06J	GD30MPS06J	1
GE2X8MPS06D	GE2X8MPS06D	1
GE2X10MPS06D	GE2X10MPS06D	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
GE06MPS06A	GE06MPS06A	1
GE06MPS06E	GE06MPS06E	1
GE08MPS06A	GE08MPS06A	1
GE08MPS06E	GE08MPS06E	1
GE10MPS06A	GE10MPS06A	1
GE10MPS06E	GE10MPS06E	1
HSMS-280x	HSMS-2800, HSMS-2802, HSMS-2803, HSMS-2804 ...	11
HSMS-281x	HSMS-2810, HSMS-2812, HSMS-2813, HSMS-2814 ...	12
HSMS-8101	HSMS-8101	1
HSMS-820x	HSMS-8202, HSMS-8207, HSMS-8209	3
IDD03SG60C	IDD03SG60C	1
IDD04SG60C	IDD04SG60C	1
IDD05SG60C	IDD05SG60C	1
IDD06SG60C	IDD06SG60C	1
IDD08SG60C	IDD08SG60C	1
IDD09SG60C	IDD09SG60C	1
IDD10SG60C	IDD10SG60C	1
IDD12SG60C	IDD12SG60C	1
IDH02G120C5	IDH02G120C5	1
IDH03SG60C	IDH03SG60C	1
IDH04SG60C	IDH04SG60C	1
IDH05G120C5	IDH05G120C5	1
IDH05SG60C	IDH05SG60C	1
IDH06G65C6	IDH06G65C6	1
IDH08G65C6	IDH08G65C6	1
IDH08G120C5	IDH08G120C5	1
IDH08S60C	IDH08S60C	1
IDH08SG60C	IDH08SG60C	1
IDH09G65C5	IDH09G65C5	1
IDH09SG60C	IDH09G60C	1
IDH10G65C5	IDH10G65C5	1
IDH10G65C6	IDG10G65C6	1
IDH10G120C5	IDH10G120C5	1
IDH10SG60C	IDH10SG60C	1
IDH12G65C5	IDH12G65C5	1
IDG12G65C6	IDH12G65C6	1
IDH12SG60C	IDH12SG60C	1
IDH16G65C6	IDH16G65C6	1
IDH16G120C5	IDH16G120C5	1
IDH20G65C6	IDG20G65C6	1
IDH20G120C5	IDH20G120C5	1
IDK02G65C5	IDK02G65C5	1
IDM02G120C5	IDM02G120C5	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
IDM08G120C5	IDM08G120C5	1
IDM10G120C5	IDM10G120C5	1
IDW10G120C5B	IDW10G120C5B	1
IDW12G65C5	IDW12G65C5	1
IDW15G120C5B	IDW15G120C5B	1
IDW20G65C5	IDW20G65C5	1
IDW20G120C5B	IDW20C120C5B	1
IDW24G65C5B	IDW24G65C5B	1
IDW30G120C5B	IDW30G120C5B	1
IDW32G65C5B	IDW32G65C5B	1
IDW40G65C5B	IDW40C65C5B	1
IDW40G120C5B	IDW40G120C5B	1
JDH3D01FV	JDH3D01FV	1
LFUSC10065A	LFUSC10065A	1
LFUSCD04065A	LFUSCD04065A	1
LFUSCD05120A	LFUSCD05120A	1
LFUSCD06065A	LFUSCD06065A	1
LFUSCD10120A	LFUSCD10120A	1
LFUSCD15120A	LFUSCD15120A	1
LFUSCD16065B	LFUSCD16065B	1
LFUSCD20065B	LFUSCD20065B	1
LFUSCD20120B	LFUSCD20120B	1
LFUSCD30120B	LFUSCD30120B	1
LL41-43	LL41, LL42, LL43	3
LL46	LL46	1
LL101	LL101A, LL101B, LL101C	3
LL103	LL103A, LL103B, LL103C	3
LL581x	LL5817, LL5818, LL5819	3
LS103	LS103A, LS103B, LS103C	3
LSIC2SD065AxxA	LSIC2SD065A06A, LSIC2SD065A08A, LSIC2SD...	5
LSIC2SD065CxxA	LSIC2SD065C06A, LSIC2SD065C08A, LSIC2SD...	5
LSIC2SD065DxxA	LSIC2SD065D06A, LSIC2SD065D08A, LSIC2SD...	3
LSIC2SD065ExxCCA	LSIC2SD065E12CCA, LSIC2SD065E16CCA ...	4
LSIC2SD120Axx	LSIC2SD120A05, LSIC2SD120A08, LSIC2SD120A...	5
LSIC2SD120Cxx	LSIC2SD120C05, LSIC2SD120C08, LSIC2SD120C...	3
LSIC2SD120Dxx	LSIC2SD120D10, LSIC2SD120D15, LSIC2SD120D...	3
LSIC2SD120ExxCC	LSIC2SD120E10CC, LSIC2SD120E15CC, LSIC2SD...	5
MBD701	MBD701	1
MBR30H60CT	MBR30H60CT	1
MBR41H100CT	MBR41H100CT	1
MBR60H100CT	MBR60H100CT	1
MBR60L45CT	MBR60L45CT	1
MBR60L45WT	MBR60L45WT	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
MBR1x0SFT	MBR130SFT, MBR140SFT	2
MBR1x0	MBR150, MBR160, MBR1100	3
MBR230SFT	MBR230SFT	1
MBR3x0	MBR350, MBR360	2
MBR05x0	MBR0520, MBR0530, MBR0540	3
MBR7xx	MBR735, MBR745, MBR750, MBR760	4
MBR1020VL	MBR1020VL	1
MBR10xx	MBR1035, MBR1045, MBR1050, MBR1060 ...	8
MBR15xxCT	MBR1535CT, MBR1545CT, MBR1550CT, MBR156...	4
MBR16xx	MBR1635, MBR1645, MBR1650, MBR1660	4
MBR2060	MBR2060	1
MBR20xxCT	MBR2090CT, MBR20100CT, MBR20150CT, MBR2...	4
MBR25xxCT	MBR2535CT, MBR2545CT, MBR2550CT, MBR256...	4
MBR30xxPT	MBR3035PT, MBR3045PT, MBR3050PT, MBR306...	4
MBR4015CT	MBR4015CT	1
MBR40xxPT	MBR4035PT, MBR4045PT, MBR4050PT, MBR406...	4
MBR6045WT	MBR6045WT	1
MBR30xxxCT	MBR30100CT, MBR30150CT, MBR30200CT	3
MBR40250	MBR40250	1
MBR40250T	MBR40250T	1
MBRA2H100	MBRA2H100	1
MBRA1x0T	MBRA130T, MBRA140T, MBRA160T	3
MBRA340T	MBRA340T	1
MBRB30H60CT	MBRB30H60CT	1
MBRB30H60CT-1G	MBRB30H60CT-1G	1
MBRB41H100CT-1	MBRB41H100CT-1	1
MBRB41H100CTT4	MBRB41H100CTT4	1
MBRB60H100CT	MBRB60H100CT	1
MBRB7xx	MBRB735, MBRB745, MBRB750, MBRB760	4
MBRB10xx	MBRB1035, MBRB1045, MBRB1045G, MBRB1050...	7
MBRB15xxCT	MBRB1535CT, MBRB1545CT, MBRB1550CT ...	4
MBRB16xx	MBRB1635, MBRB1645, MBRB1650, MBRB1660	4
MBRB2060	MBRB2060	1
MBRB20xxCT	MBRB2090CT, MBRB20100CT, MBRB20200CT	3
MBRB25xxCT	MBRB2035CT, MBRB2045CT	2
MBRB4030G	MBRB4030G	1
MBRB40250T	MBRB40250T	1
MBRD5H100	MBRD5H100	1
MBRD3x0G	MBRD320G, MBRD330G, MBRD340G, MBRD350...	5
MBRD6xxCT	MBRD620CT, MBRD630CT, MBRD640CT, MBRD...	5
MBRD835LG	MBRD835LG	1
MBRD1035CT	MBRD1035CT	1
MBRD1045G	MBRD1045G	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
MBRF30H60CT	MBRF30H60CT	1
MBRF7xx	MBRF735, MBRF745, MBRF750, MBRF760	4
MBRF10xx	MBRF1035, MBRF1045, MBRF1050, MBRF1060 ...	6
MBRF15xxCT	MBRF1535CT, MBRF1545CT, MBRF1550CT ...	4
MBRF16xx	MBRF1635, MBRF1645, MBRF1650, MBRF1660	4
MBRF20xxCT	MBRF2090CT, MBRF20100CT	2
MBRF20xxCT	MBRF2035CT, MBRF2045CT	2
MBRF10200CT	MBRF10200CT	1
MBRF40250T	MBRF40250T	1
MBRM140	MBRM140	1
MBRS2H100	MBRS2H100	1
MBRS1x0	MBRS120, MBRS130, MBRS140, MBRS190 ...	5
MBRS2x0	MBRS230, MBRS240, MBRS260	3
MBRS3x0	MBRS320, MBRS330, MBRS340, MBRS360 ...	4
MBRS360B	MBRS360B	1
MBRS410	MBRS410	1
MBRS540	MBRS540	1
MBRS1540	MBRS1540	1
MBRS2040	MBRS2040	1
MBRS3201	MBRS3201	1
MCL101	MCL101A, MCL101B, MCL101C	3
MCL103	MCL103A, MCL103B, MCL103C	3
MMBD701	MMBD701	1
MMBD150x	MMBD1501, MMBD1503, MMBD1504, MMBD15...	4
MSC010SDAxxxB	MSC010SDA070B, MSC010SDA120B ...	3
MSC010SDAxxxK	MSC010SDA070K, MSC010SDA120K	2
MSC015SDA120B	MSC015SDA120B	1
MSC030SDAxxxB	MSC030SDA070B, MSC030SDA120B ...	3
MSC030SDAxxxBCT	MSC030SDA070BCT, MSC030SDA120BCT	2
MSC030SDAxxxK	MSC030SDA070K, MSC030SDA120K	2
MSC030SDAxxxS	MSC030SDA070S, MSC030SDA120S	2
MSC050SDAxxxB	MSC050SDA070B, MSC050SDA120B ...	3
MSC050SDAxxxBCT	MSC050SDA070BCT, MSC050SDA120BCT	2
MSC050SDAxxxS	MSC050SDA070S, MSC050SDA120S	2
MSS1Px	MSS1P3, MSS1P4, MSS1P5, MSS1P6	4
NSR0240V2	NSR0240V2	1
NSR0320MW	NSR0320MW	1
NSR0340V2	NSR0340V2	1
NTS260SF	NTS260SF	1
NTSB20100CT	NTSB20100CT	1
NTSB20100CT-1	NTSB20100CT-1	1
NTSJ20100CT	NTSJ20100CT	1
NTST20100CT	NTST20100CT	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
NXPSCxx650	NXPSC04650, NXPSC08650, NXPSC10650	3
PDS3100	PDS3100	1
PMBD35x	PMBD353, PMBD354	2
PMEG1030EH	PMEG1030EH	1
PMEG1030EJ	PMEG1030EJ	1
PMEGxx02EJ	PMEG4002EJ, PMEG6002EJ	2
PMEGxx02EB	PMEG4002EB, PMEG6002EB	2
PMEG6002TV	PMEG6002TV, PMEG6002TVs	2
PMEGxx05AEA	PMEG2005AEA, PMEG3005AEA, PMEG4005AEA	3
PMEGxx05AEV	PMEG2005AEV, PMEG3005AEV, PMEG4005AEV	3
PMEGxx05EH	PMEG2005EH, PMEG3005EH, PMEG4005EH	3
PMEGxx05EJ	PMEG2005EJ, PMEG3005EJ, PMEG4005EJ	3
PMEGxx05ET	PMEG2005ET, PMEG3005ET, PMEG4005ET	3
PMEG3005EB	PMEG3005EB	1
PMEG3005EL	PMEG3005EL	1
PMEG4005CT	PMEG4005CT	1
PMEG2010AEB	PMEG2010AEB	1
PMEG2010AEH	PMEG2010AEH	1
PMEG2010AET	PMEG2010AET	1
PMEGxx10BEA	PMEG2010BEA, PMEG3010BEA, PMEG4010BEA	3
PMEGxx10BEV	PMEG2010BEV, PMEG3010BEV, PMEG4010BEV	3
PMEGxx10CEH	PMEG3010CEH, PMEG4010CEG, PMEG6010CEH	3
PMEGxx10CEJ	PMEG3010CEJ, PMEG4010CEJ, PMEG6010CEJ	3
PMEGxx10ER	PMEG3010ER, PMEG6010ER	2
PMEG4010EH	PMEG4010EH	1
PMEG4010EJ	PMEG4010EJ	1
PMEGxx10EP	PMEG4010EP, PMEG6010EP	2
PMEG4010ET	PMEG4010ET	1
PMEG4010ETP	PMEG4010ETP	1
PMEG6010ETR	PMEG6010ETR	1
PMEGxx20EP	PMEG4020EP, PMEG6020EP	2
PMEGxx20ER	PMEG4020ER, PMEG6020ER	2
PMEGxx30EP	PMEG3030EP, PMEG4030EP, PMEG6030EP	3
PMEG4030ER	PMEG4030ER	1
PMEGxx50EP	PMEG3050EP, PMEG4050EP	2
PMEG3050BEP	PMEG3050BEP	1
PMEG10020ELR	PMEG10020ELRX	1
PPL1550	PPL1550	1
PPS5xx	PPS560, PPS5100, PPS5150	3
PPS10xx	PPS1030, PPS1040, PPS1045, PPS1050, PPS1060	5
PPS15xx	PPS1530, PPS15040, PPS1545, PPS1550, PPS1560	5
RB520S30	RB520S30	1
RB521S30	RB521S30	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
RB751CS40	RB751CS40	1
RB751S40	RB751S40	1
RB751V40	RB751V40	1
S30DxxC	S30D30C, S30D35C, S30D40C, S30D45C, S30D50C ...	8
SB1x0	SB120, SB130, SB140, SB150, SB160, SB190, SB1100	7
SB2x0	SB220, SB230, SB240, SB250, SB260, SB290, SB2100	7
SB3x0	SB320, SB330, SB340, SB350, SB360, SB370, SB380 ...	9
SB5x0	SB520, SB530, SB540, SB550, SB560, SB570, SB580 ...	9
SB10100L-TA3	SB10100L-TA3	1
SB10100L-TF1	SB10100L-TF1	1
SBCT10xx	SBCT1020, SBCT1030, SBCT1040, SBCT1045 ...	8
SBCT20xx	SBCT2020, SBCT2030, SBCT2040, SBCT2045 ...	8
SBCT30xx	SBCT3045, SBCT3060, SBCT30100, SBCT30150 ...	5
SBJ18xx	SBJ1820, SBJ1830, SBJ1840, SBJ1845	4
SBL20xxPT	SBL2030PT, SBP2040PT	2
SBR0560S1Q	SBR0560S1Q	1
SBRT15U100SP5	SBRT15U100SP5	1
SBT10xx	SBT1020, SBT1030, SBT1040, SBT1045, SBT1050 ...	8
SBT18xx	SBT1820, SBT1830, SBT1840, SBT1845, SBT1850 ...	6
SBX20xx	SBX2030, SBX2040, SBX2045, SBX2050	4
SBX3040	SBX3040	1
SCS1xxAG	SCS106AG, SCS108AG, SCS110AG, SCS112AG	4
SCS205KG	SCS205KG	1
SCS2xxAJ	SCS206AJ, SCS208AJ, SCS210AJ, SCS215AJ	4
SCS2xxAM	SCS206AM, SCS208AM, SCS210AM, SCS212AM ...	6
SCS2xxAG	SCS208AG, SCS210AG, SCS212AG, SCS215AG ...	5
SCS2xxKE2	SCS210KE2, SC220KE2, SC230KE2, SC240KE2	4
SCS2xxKG	SCS210KG, SCS215KG, SCS220KG	3
SCS2xxAE	SCS212AE, SCS220AE	2
SCS2xxAE2	SCS220AE2, SCS230AE2, SCS240AE2	3
SD101xW	SD101AW, SD101BW, SD101CW	3
SD101xWS	SD101AWS, SD101BWS, SD101CWS	3
SD103	SD103A, SD103B, SD103C	3
SD103xW	SD103AW, SD103BW, SD103CW	3
SD103xWS	SD103AWS, SD103BWS, SD103CWS	3
SDM20U40	SDM20U40	1
SDM40E20L	SDM40E20LA, SDM40E20LC, SDM40E20LS	3
SDT20100CT	SDT20100CT	1
SDT20100CTFP	SDT20100CTFP	1
SGL1	SGL1-20, SGL1-30, SGL1-40, SGL1-50, SGL1-60 ...	7
SGL2	SGL2-40, SGL2-60	2
SGL34	SGL34-20, SGL34-30, SGL34-40, SGL34-50 ...	7
SGL41	SGL41-20, SGL41-30, SGL41-40, SGL41-50 ...	5

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
SK3HxxSMB	SK3H10SMB, SK3H15SMB	2
SK1x	SK12, SK13, SK14, SK15, SK16, SK18, SK110, SK115	8
SK2x	SK22, SK23, SK24, SK25, SK26, SK28, SK210	7
SK2xA	SK22A, SK23A, SK24A, SK25A, SK26A, SK29A ...	8
SK3x	SK32, SK33, SK34, SK35, SK36, SK38, SK310, SK315	8
SK3xSMA	SK32SMA, SK33SMA, SK34SMA, SK35SMA ...	8
SK3xSMB	SK32SMB, SK33SMB, SK34SMB, SK35SMB ...	8
SK5x	SK52, SK53, SK54, SK55, SK56, SK58, SK510, SK515	8
SK5xSMC	SK54SMC, SK55SMC, SK56SMC	3
SK8x	SK82, SK83, SK84, SK85, SK86, SK88, SK810, SK815	8
SK420	SK420	1
SK10xxD1	SK1020D1, SK1030D1, SK1040D1, SK1045D1 ...	8
SK10xxD2	SK1020D2, SK1030D2, SK1040D2, SK1045D2 ...	8
SK1545D2	SK1545D2	1
SK18xxD2	SK1820D2, SK1830D2, SK1840D2, SK1845D2	4
SK20xxCD2	SK2030CD2, SK2040CD2, SK2045CD2, SK2050CD2 ...	7
SK2545YD2	SK2545YD2	1
SK30xxCD2	SK3020CD2, SK3030CD2, SK3040CD2, SK3045CD2 ...	8
SK4045CD2	SK4045CD2	1
SKL1x	SKL12, SKL13, SKL14, SKL15, SKL16, SKL18, SKL110	7
SKL3x	SKL32, SKL33, SKL34, SKL35, SKL36, SKL38, SKL310	7
SL0x	SL02, SL03, SL04	3
SL2x	SL22, SL23	2
SL3xSMA	SL32SMA, SL34SMA	2
SL4x	SL42, SL43, SL44	3
SL5x	SL52, SL54	2
SL8x	SL82, SL84	2
SM581x	SM5817, SM5818, SM5819	3
SMD1xxPL	SMD110PL, SMD1150PL, SMD1200PL	3
SMS1x0	SMS120, SMS130, SMS140, SMS150, SMS160 ...	7
SMS2x0	SMS220, SMS230, SMS240, SMS250, SMS260 ...	7
SMS3x0	SMS320, SMS330, SMS340, SMS350, SMS360 ...	7
SMS5x0	SMS540, SMS560	2
SR10x	SR103, SR104, SR106	3
SR1x0	SR150, SR160, SR180, SR1100	4
SR2x0	SR220, SR230, SR240, SR250, SR260, SR280, SR2100	7
SR30x	SR302, SR303, SR304, SR305, SR306	5
SR5x0	SR520, SR530, SR540, SR550, SR560, SR580, SR5100	7
SS2FH6	SS2FH6	1
SS2Px	SS2P2, SS2P3, SS2P4	3
SS2PHx	SS2PH9, SS2PH10	2
SS3Px	SS3P5, SS3P6	2
SS5Px	SS5P5, SS5P6	2

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
SS10Px	SS10P5, SS10P6	2
SS1x	SS12, SS13, SS14, SS15, SS16, SS18, SS110	7
SS1xF	SS12F, SS14F, SS16F, SS18F, SS110F, SS112F ...	8
SS2x	SS22, SS23, SS24, SS25, SS26, SS28, SS29, SS210	8
SS2xF	SS22F, SS24F, SS26F, SS28F, SS210F, SS212F ...	8
SS2xBF	SS22BF, SS24BF, SS26BF, SS28BF, SS210BF ...	8
SS2xFL	SS24FL, SS26FL	2
SS3x	SS32, SS33, SS34, SS35, SS36, SS38, SS39, SS310	8
SS3xF	SS32F, SS34F, SS36F, SS38F, SS310F, SS312F ...	8
SS3xBF	SS32BF, SS34BF, SS36BF, SS38BF, SS310BF ...	8
SS5x	SS52, SS53, SS54, SS55, SS56, SS58, SS59, SS510	8
SS5xF	SS52F, SS54F, SS56F, SS58F, SS50F, SS512F ...	8
SS5xBF	SS52BF, SS54BF, SS56BF, SS58BF, SS510BF ...	8
SSA2x	SSA23, SSA24	2
SSA3x	SSA33, SSA34	2
SSB4x	SSB43, SSB44	2
SSC5x	SSC53, SSC54	2
STPR1620CTW	STPR1620CTW	1
STPS1H100A	STPS1H100A	1
STPS1H100AF	STPS1H100AF	1
STPS1H100U	STPS1H100U	1
STPS1LxxA	STPS1L30A, STPS1L40A, STPS1L60A	2
STPS1LxxU	STPS1L30U, STPS1L40U	2
STPS1L60	STPS1L60	1
STPS2H100	STPS2H100	1
STPS2H100A	STPS2H100A	1
STPS2H100AF	STPS2H100AF	1
STPS2H100U	STPS2H100U	1
STPS2H100UF	STPS2H100UF	1
STPS2L30A	STPS2L30A	1
STPS2L30AF	STPS2L30AF	1
STPS2L30UF	STPS2L30UF	1
STPS2L40AF	STPS2L40AF	1
STPS2L40U	STPS2L40U	1
STPS2L40UF	STPS2L40UF	1
STPS2L60	STPS2L60	1
STPS2L60A	STPS2L60A	1
STPS2L60UF	STPS2L60UF	1
STPS3L40S	STPS3L40S	1
STPS3L40UF	STPS3L40UF	1
STPS3L60	STPS3L60	1
STPS3L60Q	STPS3L60Q	1
STPS3L60U	STPS3L60U	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
STPS3L60UF	STPS3L60UF	1
STPS5H100B	STPS5H100B	1
STPS5H100H	STPS5H100H	1
STPS8H100CFP	STPS8H100CFP	1
STPS8H100CG	STPS8H100CG	1
STPS8H100CT	STPS8H100CT	1
STPS10L40CG	STPS10L40CG	1
STPS10L40CT	STPS10L40CT	1
STPS20H100CFP	STPS20H100CFP	1
STPS20H100CG	STPS20H100CG	1
STPS20H100CR	STPS20H100CR	1
STPS20H100CT	STPS20H100CT	1
STPS20L25CG	STPS20L25CG	1
STPS30M80CFP	STPS30M80CFP	1
STPS30M80CG	STPS30M80CG	1
STPS30M80CR	STPS30M80CR	1
STPS30M80CT	STPS30M80CT	1
STPS40L15CT	STPS40L15CT	1
STPS40L15CW	STPS40L15CW	1
STPS40L45CG	STPS40L45CG	1
STPS40L45CT	STPS40L45CT	1
STPS40L45CW	STPS40L45CW	1
STPS41L30CG	STPS41L30CG	1
STPS41L30CR	STPS41L30CR	1
STPS41L30CT	STPS41L30CT	1
STPS1x0A	STPS140A, STPS160A	2
STPS1x0U	STPS140U, STPS160U	2
STPS340B	STPS340B	1
STPS340S	STPS340S	1
STPS340U	STPS340U	1
STPS340UF	STPS340UF	1
STPS05x0Z	STPS0540Z, STPS0560Z	2
STPS745D	STPS745D	1
STPS745FP	STPS745FP	1
STPS745G	STPS745G	1
STPS1045B	STPS1045B	1
STPS1045D	STPS1045D	1
STPS1045FP	STPS1045FP	1
STPS1150	STPS1150	1
STPS1150A	STPS1150A	1
STPS1150AFN	STPS1150AFN	1
STPS1545D	STPS1545D	1
STPS1545FP	STPS1545FP	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
STPS1545G	STPS1545G	1
STPS1545R	STPS1545R	1
STPS2045CFP	STPS2045CFP	1
STPS2045CG	STPS2045CG	1
STPS2045CT	STPS2045CT	1
STPS2150	STPS2150	1
STPS2150A	STPS2150A	1
STPS2150AF	STPS2150AF	1
STPS3045CG	STPS3045CG	1
STPS3045CT	STPS3045CT	1
STPS3045CW	STPS3045CW	1
STPS3150	STPS3150	1
STPS3150U	STPS3150U	1
STPS3150UF	STPS3150UF	1
STPS4045CP	STPS4045CP	1
STPS4045CW	STPS4045CW	1
STPS10150CFP	STPS10150CFP	1
STPS10150CG	STPS10150CG	1
STPS10150CT	STPS10150CT	1
STPS20xxxCFP	STPS20150CFP, STPS20200CFP	2
STPS20xxxCG	STPS20150CG, STPS20200CG	2
STPS20xxxCR	STPS20150CR, STPS20200CR	2
STPS20xxxCT	STPS20150CT, STPS20200CT	2
STPS30100CT	STPS30100CT	1
STPS30100CW	STPS30100CW	1
STPS80170CW	STPS80170CW	1
STPSCxH065B	STPSC4H065B, STPSC6H065B, STPSC8H065B ...	4
STPSCxH065D	STPSC4H065D, STPSC6H065D, STPSC8H065D ...	4
STPSCxH065G	STPSC6H065G, STPSC8H065G, STPSC10H065G	3
STPSCxH065CT	STPSC8H065CT, STPSC20H065CT	2
STPSCxxH12B	STPSC10H12B, STPSC20H12B	2
STPSCxxH12D	STPSC10H12D, STPSC20H12D	2
STPSCxxH12G	STPSC10H12G, STPSC20H12G	2
STPSC10H12WL	STPSC10H12WL	1
STPSCxxH065C	STPSC12H065C, STPSC16H065C	2
STPSC20H065CW	STPSC20H065CW	1
STPSC406B	STPSC406B	1
STPSCx06D	STPSC406D, STPSC606D, STPSC806D, STPSC1006...	5
STPSCx06G	STPSC606G, STPSC806G, STPSC1006G	3
STPSC2006CW	STPSC2006CW	1
TMMBAT42	TMMBAT42	1
TMMBAT43	TMMBAT43	1
TMMBAT46	TMMBAT46	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
TMMBAT47	TMMBAT47	1
TMMBAT48	TMMBAT48	1
UPS120Ee3	UPS120Ee3	1
V10Pxx	V10P10, V10P12	2
V15P45S	V15P45S	1
V30200C	V30200C	1
VB30200C	VB30200C	1
VBT1045BP	VBT1045BP	1
VBT2045BP	VBT2045BP	1
VBT6045BP	VBT6045BP	1
VF30200C	VF30200C	1
VI30200C	VI30200C	1
VS-8TQxxx	VS-8TQ060, VS-8TQ080, VS-8TQ100	3
VS-8TQxxxS	VS-8TQ080S, VS-8TQ100S	2
VS-10BQxxx	VS-10BQ015, VS-10BQ040, VS-10BQ060 ...	4
VS-10CTQ150	VS-10CTQ150	1
VS-10ETSxx	VS-10ETS08, VS-10ETS12	2
VS-10MQ060	VS-10MQ060	1
VS-12CWQxxFN	VS-12CWQ03FN, VS-12CWQ06FN, VS-12CWQ10FN	3
VS-16CTQxxx-1	VS-16CTQ060-1, VS-16CTQ080-1, VS-16CTQ100-1	3
VS-16CTQxxxS	VS-16CTQ060S, VS-16CTQ080S, VS-16CTQ100S	3
VS-20CTQ150-1	VS-20CTQ150-1	1
VS-20CTQ150S	VS-20CTQ150S	1
VS-20TQxxx	VS-20TQ035, VS-20TQ040, VS-20TQ045	1
VS-30BQxxx	VS-30BQ060, VS-30BG100	2
VS-30CPQxxx	VS-30CPQ050, VS-30CPQ060, VS-30CPQ-080 ...	7
VS-30CQxxx-1	VS-30CQ035-1, VS-30CQ040-1, VS-30CQ045-1	3
VS-30CQxxxS	VS-30CQ035S, VS-30CQ040S, VS-30CQ045S	3
VS-30CTQxxx	VS-30CTQ050, VS-30CTQ060	2
VS-30WQ06FN	VS-30WQ06FN	1
VS-40CPQxxx	VS-40CPQ080, VS-40CPQ100	2
VS-42CQ030-1	VS-42CQ030-1	1
VS-42CQ030S	VS-42CQ030S	1
VS-50WQxxFN	VS-50WQ03FN, VS-50WQ04FN, VS-50WQ06FN	3
VS-CxxET07T	VS-C04ET07T, VS-C06ET07T, VS-C08ET-7T ...	7
VS-CxxCP07L	VS-C16CP07L, VS-C20CP07L, VS-C40CP07L	3
VS-MBRB10xx	VS-MBRB1035, VS-MBRB1045	2
VSSC520S	VSSC520S	1
ZHCS350	ZHCS350	1
ZHCS400	ZHCS400	1
ZHCS506	ZHCS506	1
ZHCS1000	ZHCS1000	1
ZHCS2000	ZHCS2000	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
ZLLS350	ZLLS350	1
ZLLS500	ZLLS500	1
ZLLS1000	ZLLS1000	1
ZLLS2000	ZLLS2000	1

2.19. Protection Diode Library

This library contains Transient Voltage Suppressor (TVS) diodes and ESD/Overvoltage protection diode arrays.

TVS diodes are Zener diodes with very high peak power dissipation, intended for overvoltage protection. Bidirectional TVS diodes clamp both negative and positive voltage (Like 2 Zener diodes connected back-to-back).

TVS diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol. Parts with multiple pads connected to cathode or anode have multiple pins on the symbol.

Isolated TVS diode arrays have 2 variants of their symbol. Standard symbol is a single-unit symbol with all diodes in one place. Disaggregated symbol ends in a lowercase 's' and is a multi-unit symbol.

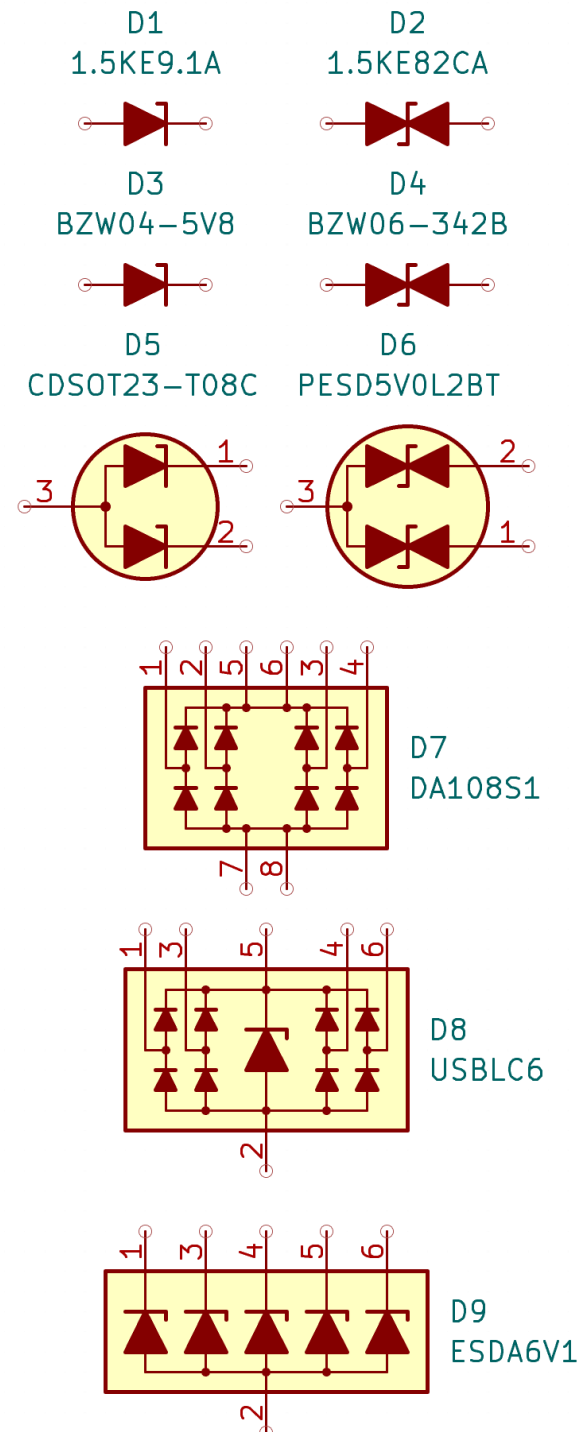
TVS diode arrays always have the internal diagram incorporated into the symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT Schottky diode symbols use 'Zener' variants of THT diode footprints for unidirectional devices and 'TVS' variants for bidirectional devices by default.

SMD Schottky diode symbols use standard variants of SMD diode footprints for unidirectional devices and 'TVS' variants for bidirectional devices by default.

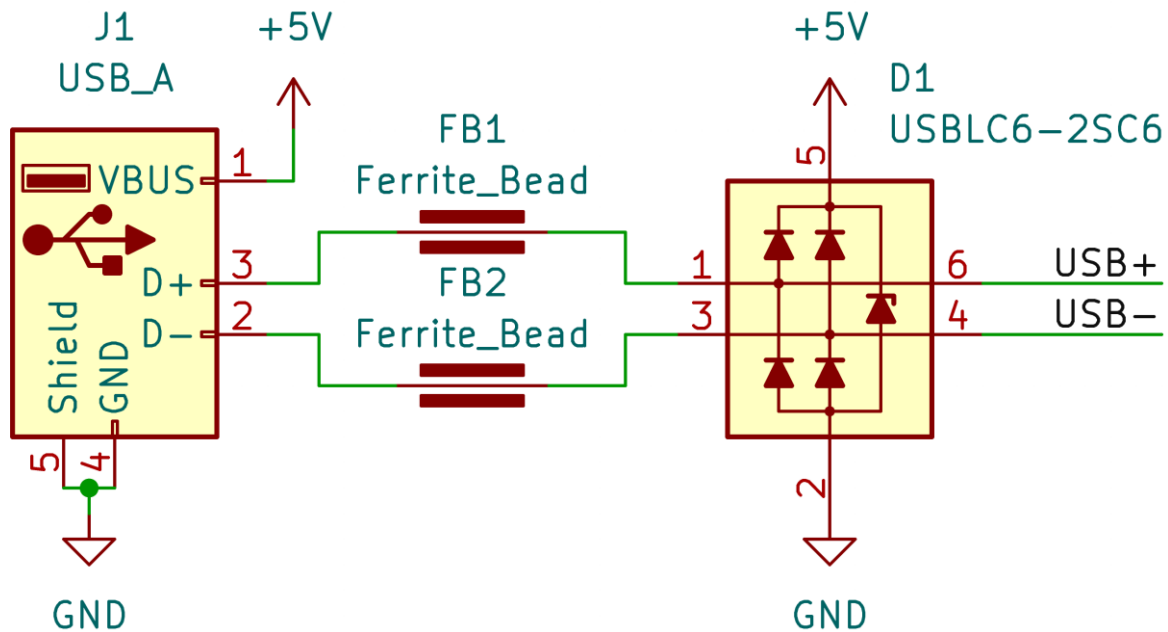
Filename: Diode_TV_S_AKL	
Total symbols:	3055
Generic symbols:	58
Specific symbols:	2997



Schematic examples

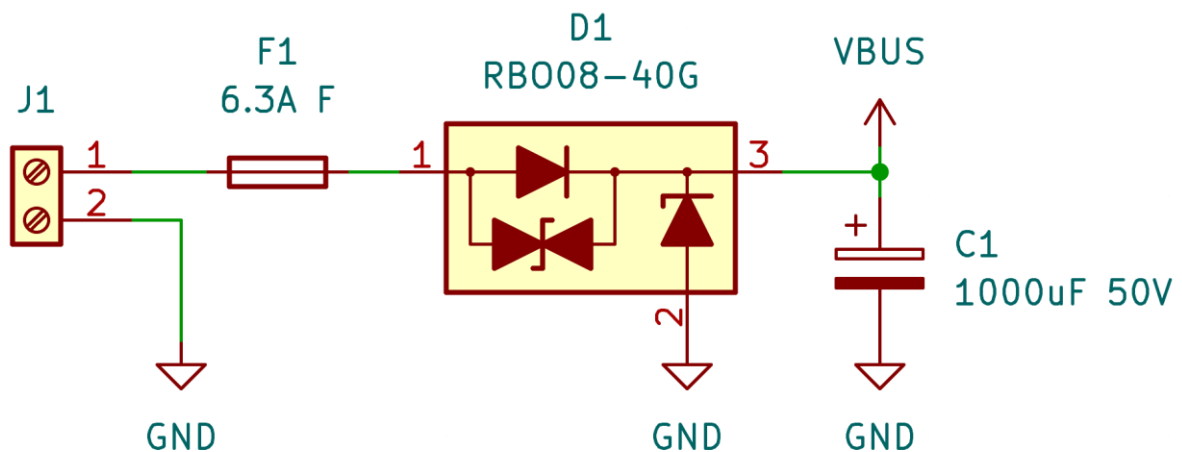
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

USB Type A port ESD protection using USBLC6-2SC6 dedicated ESD protection array.



Example 2

Reverse power polarity and overvoltage protection using RBO08-40G protection array.

Table list of all devices included in this library

Diode Family	Example symbol names	No. of symbols
1.5KExxxA	1.5KE6.8A, 1.5KE6V8A, 1.5KE11A, 1.5KE200A ...	52
1.5KExxxCA	1.5KE9.1CA, 1.5KE6V8CA, 1.5KE24CA, 1.5KE600CA ...	52
1.5SMCxxxA	1.5SMC220A, 1.5SMC400A, 1.5SMC480A ...	9
1.5SMCxxxCA	1.5SMC220CA, 1.5SMC300CA, 1.5SMC440CA ...	9
1.5SMCJxxxA	1.5SMCJ5.0A, 1.5SMCJ13A, 1.5SMCJ160A ...	45
1.5SMCJxxxCA	1.5SMCJ7.5CA, 1.5SMCJ33CA, 1.5SMCJ110CA ...	45
1KSMBxxxA	1KSMB6.8A, 1KSMB16A, 1KSMB62A, 1KSMB180A ...	36
1KSMBxxxCA	1KSMB7.5CA, 1KSMB12CA, 1KSMB110CA ...	36
1N5908	1N5908	1
1N6267-6303A	1N6267A, 1N6268A, 1N6269A, 1N6284A, 1N6303A ...	37
3.0SMCJxxxA	3.0SMCJ5.0A, 3.0SMCJ12A, 3.0SMCJ130A ...	46
3.0SMCJxxxCA	3.0SMCJ6.5CA, 3.0SMCJ20CA, 3.0SMCJ170CA ...	46
5KPxxxA	5KP5.0A, 5KP10A, 5KP28A, 5KP170A, 5KP250A ...	51
5KPxxxCA	5KP6.5CA, 5KP15CA, 5KP58CA, 5KP200CA ...	51
5KSMCxxA	5KSMC10A, 5KSMC18A, 5KSMC33A, 5KSMC43A ...	16
15KPxxxA	15KP12A, 15KP20A, 15KP200A, 15KP400A ...	47
15KPxxxCA	15KP18CA, 15KP40CA, 15KP100CA, 15KP360CA ...	47
15KPAxxxA	15KPA17A, 15KPA28A, 15KPA58A, 15KPA260A ...	37
15KPAxxxCA	15KPA22CA, 15KPA60CA, 15KPA100CA ...	37
20KPAxxxA	20KPA20A, 20KPA68A, 20KPA132A, 20KPA300A ...	36
20KPAxxxCA	20KPA34CA, 20KPA80CA, 20KPA192CA ...	36
30KPAxxxA	30KPA28A, 30KPA47A, 30KPA288A, 30KPA300A ...	41
30KPAxxxCA	30KPA70CA, 30KPA108CA, 30KPA280CA ...	41
AOZ8001DI	AOZ8001DI	1
AOZ8002DIL	AOZ8002DIL	1
AOZ8102DI	AOZ8102DI	1
AOZ8105CI	AOZ8105CI	1
AOZ8205DI	AOZ8205DI	1
AOZ8211DI	AOZ8211DI-02, AOZ8211DI-03, AOZ8211DI-05 ...	5
AOZ8222DI-05	AOZ8222DI-05	1
AOZ8224CI-05	AOZ8224CI-05	1
AOZ8231ADI	AOZ8231ADI-02, AOZ8231ADI-03, AOZ8231ADI-05...	6
AOZ8234DI-05	AOZ8234DI-05	1
AOZ8235DI-05	AOZ8235DI-05	1
AOZ8300CI-05	AOZ8300CI-05	1
AOZ8318DI	AOZ8318DI	1
AOZ8811DT-03	AOZ8811DT-03	1
AOZ8831ADI-05	AOZ8831ADI-05	1
AOZ8831DI-05	AOZ8831DI-05	1
AOZ8831DT	AOZ8831DT-03, AOZ8831DT-05, AOZ8831DT-24	3
AOZ8841DI-05	AOZ8841DI-05	1
BZW04-xxx	BZW04-5V8, BZW04-11, BZW04-145, BZW04-256 ...	45
BZW04-xxxB	BZW04-7V8B, BZW04-17B, BZW04-376B ...	45

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
BZW06-xxx	BZW06-5V8, BZW06-9V4, BZW06-19, BZW06-273 ...	45
BZW06-xxxB	BZW06-6V4B, BZW06-15B, BZW06-94B ...	45
BZW50-xxx	BZW50-10, BZW50-33, BZW50-82, BZW50-180	16
BZW50-xxxB	BZW50-18B, BZW50-39B, BZW50-150B ...	16
CDSOD323-Txx	CDSOD323-T03, CDSOD323-T05, CDSOD323-T12 ...	7
CDSOD323-TxxC	CDSOD323-T03C, CDSOD323-T08C ...	7
CDSOT23-Txx	CDSOT23-T03, CDSOT23-T12, CDSOT23-T36 ...	7
CDSOT23-TxxC	CDSOT23-T05C, CDSOT23-T15C, CDSOT23-T24C ...	7
D3V3F4U6S	D3V3F4U6S	1
D5V0L1B2T-7	D5V0L1B2T-7	1
D5V0L2B3T	D5V0L2B3T	1
D1213-02SR	D1213-02SR	1
DA108S1	DA108S1	1
DA112S1	DA112S1	1
DALC208	DALC208	1
DF2B36FU	DF2B36FU	1
DF2S16FS	DF2S16FS	1
DF5A3.6JE	DF5A3.6JE	1
DF5A5.6F	DF5A5.6F	1
DF5A6.2CJE	DF5A6.2CJE	1
DF5A6.8FU	DF5A6.8FU	1
DFLTxxxA	DFLT5V0A, DFLT11A, DFLT33A, DFLT220A ...	33
DI5315-02F	DI5315-02F	1
DLPT05	DLPT05	1
DSILC6-4P6	DSILC6-4P6	1
DSL70	DSL70	1
DT1140-04LP	DT1140-04LP	1
DVIULC6-4SC6	DVIULC6-4SC6	1
ESD3BxxxWS	ESD3B5V0WS, ESD3B12WS, ESD3B15WS ...	4
ESDxxxCA	ESD3V3CA, ESD5V0CA, ESD24CA, ESD36CA	4
ESD3Zxxx	ESD3Z5V0, ESD3Z12	2
ESD5B5.0S	ESD5B5.0S	1
ESD5ZxxxT	ESD5Z2.5T, ESD5Z3.3T, ESD5Z5.0T, ESD5Z6.0T ...	6
ESD5Zxxx	ESD5Z3V3, ESD5Z5V0, ESD5Z6V0, ESD5Z12 ...	5
ESD9Bxxx	ESD9B3.3, ESD9B5.0	2
ESD9BL24P	ESD9BL24P	1
ESD9BL0521P	ESD9BL0521P	1
ESD9BL0522P	ESD9BL0522P	1
ESD9Lxxx	ESD9L3.3, ESD9L5.0	2
ESD9R3.3	ESD9R3.3	1
ESD12VD9	ESD12VD9	1
ESD24VS2U	ESD24VS2U	1
ESD0521Z	ESD0521Z	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
ESD0541Z	ESD0541Z	1
ESDAxxxL	ESDA5V3L, ESDA6V1L, ESDA14V2L, ESDA25L	4
ESDAxxxSC5	ESDA5V3SC5, ESDA6V1SC5, ESDA14V2SC5	3
ESDAxxxSC6	ESDA5V3SC6, ESDA6V1SC6, ESDA14V2SC6 ...	5
ESDA6V1-5P6	ESDA6V1-5P6	1
ESDA6V1-5SC6	ESDA6V1-5SC6	1
ESDA6V1-5W6	ESDA6V1-5W6	1
ESDA6V1P6	ESDA6V1P6	1
ESDA6V1U1	ESDA6V1U1	1
ESDAxxxW5	ESDA6V1W5, ESDA25W5	2
ESDxxx-1L	ESDA12-1K, ESDA18-1K	2
ESDA14V2BP6	ESDA14V2BP6	1
ESDA25-4PB6	ESDA25-4PB6	1
ESDA25W	ESDA25W	1
ESDALC6-2SC6	ESDALC-2SC6	1
ESDALC6V1-5P6	ESDALC6V1-5P6	1
ESDCANxx-2BWY	ESDCAN02-2BWY, ESDCAN03-2BWY ...	4
ESDLIN1524BJ	ESDLIN1524BJ	1
GSOTxxC	GSOT03C, GSOT04C, GSOT05C, GSOT08C ...	8
IP4220CZ6	IP4220CZ6	1
LC03	LC03-3.3, LC03-6	2
LDP24A	LDP24A	1
MMBZxxxALT1G	MMBZ5V6ALT1G, MMBZ16VALT1G, MMBZ47VAL...	12
NUP2105L	NUP2105L	1
NUP2201MR6	NUP2201MR6	1
NUP4114HMR	NUP4114HMR	1
NUP4114UC	NUP4114UC	1
NUC4114UP	NUP4114UP	1
P4KExxxA	P4KE6.8A, P4KE22A, P4KE30A, P4KE550A ...	48
P4KExxxCA	P4KE9.1CA, P4KE27CA, P4KE350CA, P4KE540CA ...	48
P4SMAxxxA	P4SMA8.2A, P4SMA22A, P4SMA75A, P4SMA540A ...	46
P4SMAxxxCA	P4SMA7.5CA, P4SMA43CA, P4SMA220CA ...	38
P4SMAJxxxA	P4SMAJ6.5A, P4SMAJ11A, P4SMAJ54A ...	45
P4SMAJxxxCA	P4SMAJ7.5CA, P4SMAJ22CA, P4SMAJ170CA ...	45
P6KExxxA	P6KE8.2A, P6KE10A, P6KE56A, P6KE600A ...	49
P6KExxxCA	P6KE9.1CA, P6KE82CA, P6KE250CA, P6KA400CA ...	49
P6SMBxxxA	P6SMB6.8A, P6SMB15A, P6SMB91A, P6SMB530A ...	50
P6SMBxxxCA	P6SMB8.2CA, P6SMB13CA, P6SMB600CA ...	50
P6SMBJxxxA	P6SMBJ6.0A, P6SMBJ17A, P6SMBJ170A ...	46
P6SMBJxxxCA	P6SMBJ8.0CA, P6SMBJ51CA, P6SMBJ150CA ...	46
PESD1CAN	PESD1CAN	1
PESD1FLEX	PESD1FLEX	1
PESD1LIN	PESD1LIN	1

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
PESD2CAN	PESD2CAN	1
PESDxxxL1BA	PESD3V3L1BA, PESD5V0L1BA, PESD12VL1BA ...	5
PESDxxxL2BT	PESD3V3L2BT, PESD5V0L2BT, PESD12VL2BT ...	5
PESDxxxL4UF	PESD3V3L4UF, PESD5V0L4UF	2
PESDxxxL4UG	PESD3V3L4UG, PESD5V0L4UG	2
PESDxxxL4UW	PESD3V3L4UW, PESD5V0L4UW	2
PESDxxxL5UF	PESD3V3L5UF, PESD5V0L5UF	2
PESDxxxL5UV	PESD3V3L5UV, PESD5V0L5UV	2
PESDxxxL5UY	PESD3V3L5UY, PESD5V0L5UY	2
PESDxxxS1UB	PESD3V3S1UB, PESD5V0S1UB, PESD12VS1UB ...	5
PESDxxxS2UT	PESD3V3S2UT, PESD5V2S2UT, PESD12VS2UT ...	6
PESDxxxS4UD	PESD3V3S4UD, PESD5V0S4UD, PESD12VS4UD ...	5
PESD5V0S1BA	PESD5V0S1BA	1
PESD5V0S1BB	PESD5V0S1BB	1
PESD5V0S1LB	PESD5V0S1LB	1
PESD5V0U1UA	PESD5V0U1UA	1
PESD5V0U1UB	PESD5V0U1UB	1
PESD5V0U1UL	PESD5V0U1UL	1
PESDZxxx	PESDZ2.5, PESDZ3.3, PESDZ5.0, PESDZ6.0 ...	6
PKC-136	PKC-136	1
PRTR5V0U2X	PRTR5V0U2X	1
PRTR5V0U4D	PRTR5V0U4D	1
PTVSxxxP1UP	PTVS3V3P1UP, PTVS5V0P1UP, PTVS13P1UP ...	35
PTVSxxxP1UTR	PTVS9V0P1UTR, PTVS14VS1UTR, PTVS43VS1UTR ...	35
RBO08-40G	RBO08-40G	1
RBO08-40T	RBO08-40T	1
RBO40-40G	RBO40-40G	1
RBO40-40T	RBO40-40T	1
RClamp0502A	RClamp0502A	1
RClamp0502B	RClamp0502B	1
RClamp0503F	RClamp0503F	1
RClamp0504F	RClamp0504F	1
RClamp0504S	RClamp0504S	1
RClamp1502B	RClamp1502B	1
SDxx	SD05, SD12	2
SCxxC	SD05C, SD12C, SD15C, SD24C	4
SDA2AK	SDA2AK	1
SDA4AK	SDA4AK	1
SDC36	SDC36	1
SDMAxx	SDMA05, SDMA05s, SDMA12, SDMA12, SDMA15 ...	8
SDMAxxC	SDMA05C, SDMA05Cs, SDMA12C, SDMA12Cs ...	8
SLVU2.8-4A1	SLVU2.8-4A1, SLVU2.8-4A1s	2
SLVU2.8-8A1	SLVU2.8-8A1, SLVU2.8-8A1s	2

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
SM2TxxA	SM2T3V3A, SM2T6V8A, SM2T14A, SM2T18A ...	5
SMxx	SM05, SM12, SM15, SM24, SM36, SM712	5
SM6TxxxA	SM6T7V5A, SM6T56A, SM6T150A, SM6T220A ...	20
SM6TxxxCA	SM6T6V8CA, SM6T22CA, SM6T200CA ...	20
SM15TxxxA	SM15T10A, SM15T27A, SM15T60A, SM15T220A ...	19
SM15TxxxCA	SM15T7V5CA, SM15T33CA, SM15T150CA ...	19
SM5908	SM5908	1
SMAJxxxA	SMAJ5.0A, SMAJ13A, SMAJ64A, SMAJ170A ...	54
SMAJxxxCA	SMAJ6.5CA, SMAJ24CA, SMAJ90CA, SMAJ300CA ...	54
SMBJxxxA	SMBJ7.5A, SMBJ26A, SMBJ78A, SMBJ350A ...	55
SMBJxxxCA	SMBJ9.0CA, SMBJ45CA, SMBJ188CA, SMBJ400CA ...	55
SMCJxxxA	SMCJ5.0A, SMCJ11A, SMCJ33A, SMCJ440A ...	54
SMCJxxxCA	SMCJ8.5CA, SMCJ43CA, SMCJ90CA, SMCJ200CA ...	54
SMDJxxxA	SMDJ6.5A, SMDJ12A, SMDJ43A, SMDJ440A ...	55
SMDJxxxCA	SMDJ9.0CA, SMDJ33CA, SMDJ160CA ...	55
SMFxxxA	SMF8.0A, SMF11A, SMF19A, SMF90A, SMF220A ...	53
SMFxxxCA	SMF5.0CA, SMF17CA, SMF54CA, SMF190CA ...	53
SMFxxCT	SMF05CT, SMF12CT, SMF15CT, SMF24CT	4
SP03-6	SP03-6	1
SP0502BAHT	SP0502BAHT	1
SP0502BAJT	SP0502BAJT	1
SP0503BAHT	SP0503BAHT	1
SP0504BAHT	SP0504BAHT	1
SP0504BAJT	SP0504BAJT	1
SP0505BAHT	SP0505BAHT	1
SP0505BAJT	SP0505BAJT	1
SP0506BAAT	SP0506BAAT	1
SP1001-02JTG	SP1001-02JTG	1
SP1001-04JTG	SP1001-04JTG	1
SP1001-04XTG	SP1001-04XTG	1
SP1001-05JTG	SP1001-05JTG	1
SP1001-05VTG	SP1001-05VTG	1
SP1001-05XTG	SP1001-05XTG	1
SP1003-01ETG	SP1003-01ETG	1
SP1005-01WTG	SP1005-01WTG	1
SP3002-04HTG	SP3002-04HTG	1
SP3002-04JTG	SP3002-04JTG	1
SP3002-04UTG	SP3002-04UTG	1
SP4020-01FTG	SP4020-01FTG	1
SP4020-01FTG-C	SP4020-01FTG-C	1
SRxx	SR3.3, SR05	2
SRV05-4	SRV05-4	1
TGL34-xxxA	TGL34-6.8A, TGL34-27A, TGL34-110A ...	37

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
TGL34-xxxCA	TGL34-7.5CA, TGL34-27CA, TGL34-200CA ...	37
TGL41-xxxA	TGL41-8.2A, TGL41-82A, TGL41-120A, TGL41-440A ...	43
TGL41-xxxCA	TGL41-6.8CA, TGL41-36CA, TGL41-350CA ...	43
TPSMA6LxxxA	TPSMA6L6.0A, TPSMA6L30A, TPSMA6L85A ...	38
TPSMBxxxA	TPSMB7.5A, TPSMB39A, TPSMB58A, TPSMB510A ...	49
TPSMBxxxCA	TPSMB10CA, TPSMB120CA, TPSMB550CA ...	46
TPSMCxxxA	TPSMC12A, TPSMC39A, TPSMC47A, TPSMC91A ...	22
TPSMCxxxCA	TPSMC16CA, TPSMC30CA, TPSMC47CA ...	22
TPSMF4LxxxA	TPSMF4L5.0A, TPSMF4L13A, TPSMF4L85A ...	38
TPSMPxxxA	TPSMP10A, TPSMP20A, TPSMP33A, TPSMP43A ...	20
TVS3V3L4U	TVS3V3L4U	1
uClamp0501H	uClamp0501H	1
uClamp0501P	uClamp0501P	1
uClamp3301D	uClamp3301	1
USB6B1	USB6B1	1
USBLC6-2P6	USBLC6-2P6	1
USBLC6-2SC6	USBLC6-2SC6	1
USBLC6-4SC6	USBLC6-4SC6	1

2.20. Zener Diode Library

This library contains Zener/Avalanche diodes and diode arrays.

Zener diodes maintain a relatively constant Cathode to Anode voltage for a wide range of reverse currents. They are often used as voltage references, voltage limiters and DC-level shifters.

All Zener diodes have DZ reference designator (as opposed to D for all other diodes).

Zener diodes with standard 2-pad packages don't have pin numbers written on the symbol. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol. Parts with multiple pads connected to cathode or anode have multiple pins on the symbol.

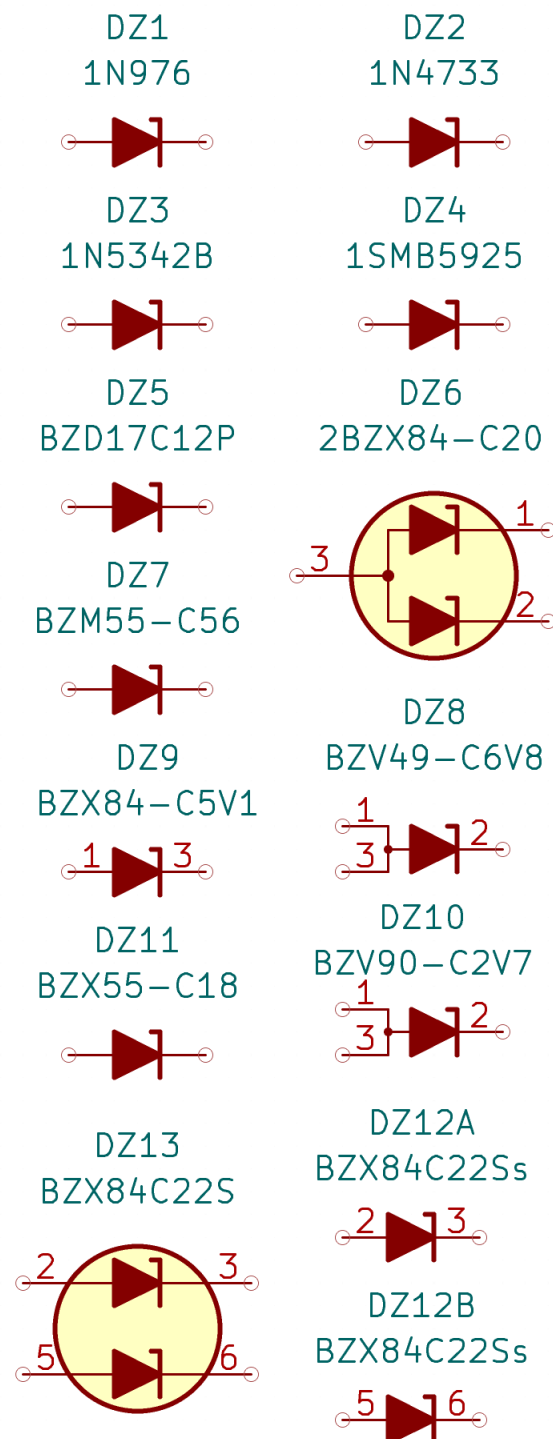
Dual isolated Zener diodes have 2 variants of their symbol. Standard symbol is a single-unit symbol with all diodes in one place. Disaggregated symbol ends in a lowercase 's' and is a multi-unit symbol

Each available orderable part number with different electrical characteristics, tolerance, pinout and package for each diode family has a separate specific symbol.

THT Zener diode symbols use 'Zener' variants of THT diode footprints by default.

SMD Zener diode symbols use standard variants of SMD diode footprints by default.

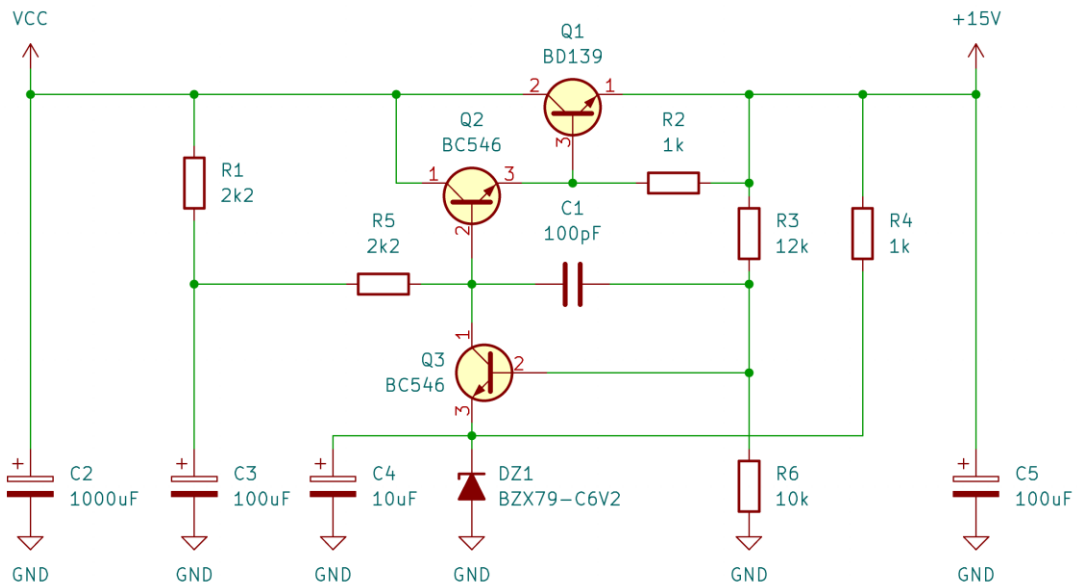
Filename: Diode_Zener_AKL	
Total symbols:	3259
Generic symbols:	11
Specific symbols:	3248



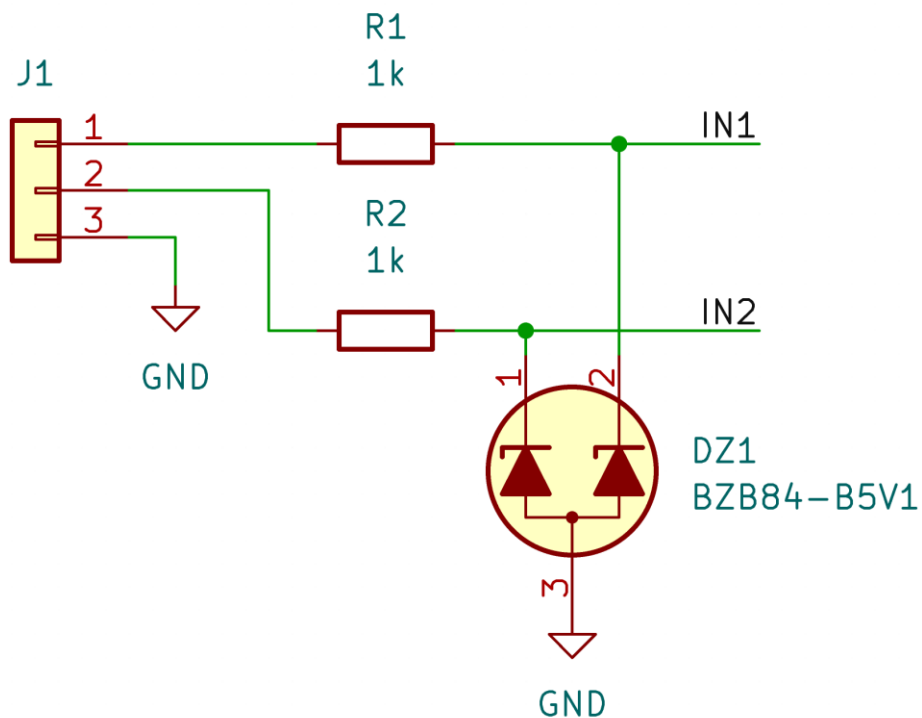
Schematic examples

Disclaimer

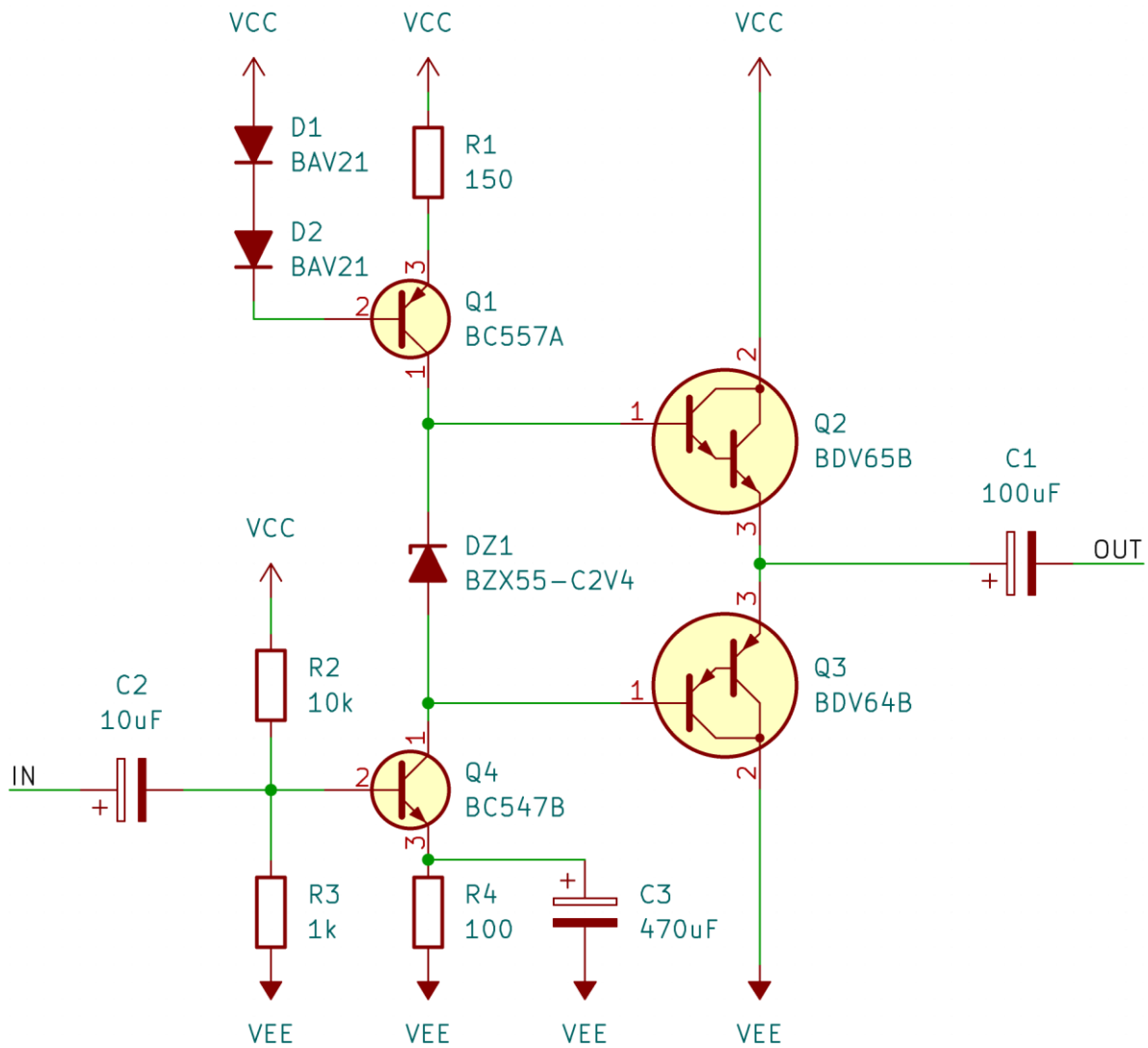
Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.

**Example 1**

Discrete 15V voltage regulator using BZX79-C6V2 Zener diode as a voltage reference.

**Example 2**

Voltage limiter circuit using BZB84-B5V1 dual Zener diode.

**Example 3**

Class AB power stage with BZX55-C2V4 used in the biasing circuit as a DC-level shifter.

Table list of all devices included in this library

Diode Family	Example symbol names	No. of symbols
1N957-978	1N957, 1N958, 1N959, 1N962, 1N971, 1N948 ...	22
1N4728-4764	1N4728, 1N4729, 1N4743, 1N4752, 1N4764 ...	37
1N5223B-5273B	1N5223B, 1N5224B, 1N5245B, 1N5260B, 1N5273B ...	51
1N5333B-5388B	1N5333B, 1N5334B, 1N5356B, 1N5370B, 1N5388B ...	54
1N5913B-5956B	1N5913B, 1N5917B, 1N5919B, 1N5942B, 1N5956B ...	40
1SMA59xx	1SMA5913, 1SMA5914, 1SMA5937, 1SMA5945 ...	32
1SMB59xx	1SMB5913, 1SMB5914, 1SMB5926, 1SMB5956 ...	44
2BZX84-Cxxx	2BZX84-C3V0, 2BZX84-C4V3, 2BZX84-C47 ...	30
1EZxxx	1EZ6.2, 1EZ6.8, 1EZ12, 1EZ33, 1EZ100, 1EZ300 ...	42
2EZxxx	2EZ6.2, 2EZ7.5, 2EZ15, 2EZ47, 2EZ150, 2EZ330 ...	44
3EZxxx	3EZ6.2, 3EZ9.1, 3EZ20, 3EZ82, 3EZ120, 3EZ200 ...	43
AZ23Cxxx	AZ23C2V7, AZ23C4V7, AZ23C12, AZ23C51 ...	32
BZB84-Bxxx	BZB84-B2V4, BZB84-B3V3, BZB84-B11, BZB84-B75 ...	37
BZB784-Cxxx	BZB784-C2V4, BZB784-C7V5, BZB784-C15 ...	20
BZD17CxxxP	BZD17C3V6P, BZD17C13P, BZD17C200P ...	43
BZG03-Cxxx	BZG03-C10, BZG-C36, BZG03-C56, BZG03-C270 ...	35
BZG04-xxx-M	BZG04-8V2-M, BZG04-12-M, BZG04-220-M ...	35
BZG05Cxxx	BZG05C3V3, BZG05C7V5, BZG05C22, BZG05C100 ...	37
BZM55-Cxxx	BZM55-C2V4, BZM55-C11, BZM55-C75	37
BZT03Cxxx	BZT03C6V2, BZT03C10, BZT03C62, BZT03C300 ...	41
BZT52-Cxxx	BZT52-C2V0, BZT52-C9V1, BZT52-C13, BZT52-C51 ...	34
BZT52CxxxS	BZT52C2V0S, BZT52C11S, BZT52C27S, BZT52C39S ...	31
BZT52CxxxT	BZT52C2V0T, BZT52C10T, BZT52C18T, BZT52C24T ...	26
BZT52H-Cxxx	BZT52H-C2V4, BZT52H-C39, BZT52H-C75 ...	37
BZT55-Cxxx	BZT55-C2V4, BZT55-C9V1, BZT55-C27, BZT55-C75 ...	37
BZT585-BxxxT	BZT585-B2V4T, BZT585-B10T, BZT585-B43T ...	30
BZV49-Cxxx	BZV49-C2V4, BZV49-C9V1, BZV49-C20, BZV49-C75 ...	37
BZV55-Cxxx	BZV55-C2V4, BZV55-C8V2, BZV55-C43, BZV55-C75 ...	37
BZV85-Cxxx	BZV85-C3V6, BZV85-C7V5, BZV85-C36, BZV85-C75 ...	33
BZV90-Cxxx	BZV90-C2V4, BZV90-C11, BZV90-C47, BZV90-C75 ...	37
BZX55-Cxxx	BZX55-C2V4, BZX55-C6V8, BZX55-C22, BZX55-C75 ...	37
BZX79-Cxxx	BZX79-C2V4, BZX79-C9V1, BZX79-C27, BZX79-C75 ...	37
BZX84-Cxxx	BZX84-C2V4, BZX84-C8V2, BZX84-C12, BZX84-C47 ...	32
BZX84CxxxS	BZX84C2V4S, BZX84C9V1Ss, BZX84C39Ss ...	60
BZX84CxxxW	BZX84C39W, BZX84C13W, BZX84C39W ...	30
BZX84J-Cxxx	BZX84J-C2V4, BZX84J-C16, BZX84J-C75 ...	37
BZX85-Cxxx	BZX85-C2V7, BZX85-C11, BZX85-C27, BZX85-C100 ...	39
BZX384-Cxxx	BZX384-C2V4, BZX384-C24, BZX384-C75 ...	37
BZX584-Cxxx	BZX584-C2V4, BZX585-C16, BZX584-C51 ...	33
BZX585-Cxxx	BZX585-C2V4, BZX585-C27, BZX585-C75 ...	37
BZX884-Cxxx	BZX884-C2V4, BZX884-C20, BZX884-C75 ...	37
CDZ55Cxxx	CDZ55C2V0, CDZ55C11, CDZ55C33, CDZ55C75 ...	39
CDZ55CxxxS	CDZ55C4V3S, CDZ55C18S, CDZ55C62S ...	39

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
CDZ55CxxxT	CDZ553V0T, CDZ55C18T, CDZ55C51T ...	39
D3ZxxxBF	D3Z2V4BF, D3Z8V2BF, D3Z15BF, D3Z36BF ...	29
DDZxxx	DDZ5V1, DDZ9V1, DDZ13, DDZ22, DDZ39, DDZ43 ...	23
DDZxxxCSF	DDZ2V4CSF, DDZ6V2CSF, DDZ18CSF, DDZ39CSF ...	30
DDZ9678-9717	DDZ9678, DDZ9681, DDZ9701, DDZ9717 ...	35
DFLZxxx	DFLZ5V1, DFLZ8V2, DFLZ13, DFLZ27, DFLZ39 ...	22
DL4728-4764	DL4728, DL4729, DL4741, DL4756, DL4764 ...	37
DZ23-Cxxx	DZ23-C2V7, DZ23-C11, DZ23-C33, DZ23-C51 ...	32
DZL1xx0	DZL110, DZL1120, DZL1150, DZL1220, DZL1330 ...	13
DZL4728-4764	DZL4728, DZL4729, DZL4748, DZL4757, DZL4764 ...	37
MM3Zxxx	MM3Z2V4, MM3Z7V5, MM3Z16, MM3Z47 ...	32
MM3ZxxxST	MM3Z2V4ST, MM3Z10ST, MM3Z27ST, MM3Z39ST ...	30
MM5Zxxx	MM5Z2V4, MM5Z9V1, MM5Z24, MM5Z47 ...	32
MMBZ52xx	MMBZ5221, MMBZ5222, MMBZ5238, MMBZ5259 ...	34
MMBZ52xxBS	MMBZ5221BS, MMBZ5245BS, MMBZ5259BS ...	33
MMSZxxx	MMSZ2V4, MMSZ11, MMSZ30, MMSZ56 ...	34
MMSZ4678-717	MMSZ4678, MMSZ4679, MMSZ4701, MMSZ4717 ...	40
MMSZ52xx	MMSZ5221, MMSZ5222, MMSZ5244, MMSZ5272 ...	51
MMSZ52xxBS	MMSZ5221BS, MMSZ5239BS, MMSZ5259BS ...	33
NZHxxx	NZH3V0, NZH4V7, NZH10, NZH15, NZH22, NZH30 ...	25
PDZxxxB	PDZ2.4B, DPZ4.7B, PDZ11B, PDZ27B, PDZ39B ...	30
PDZxxxBGW	PDZ2.4BGW, PDZ8.2BGW, PDZ11BGW, PDZ36BGW ...	29
PLVA6xx	PLVA50, PLVA653, PLVA656, PLVA665, PLVA668 ...	7
SMA2EZxxx	SMA2EZ6.2, SMA2EZ18, SMA2EZ82, SMA2EZ330 ...	44
SMA3EZxxx	SMA3EZ6.2, SMA3EZ33, SMA3EZ75, SMA3EZ200 ...	37
SMA4728-4764	SMA4728, SMA4729, SMA4751, SMA4764 ...	37
SMA5920-5956	SMA5920, SMA5921, SMA5935, SMA5956 ...	37
SMAZxxx	SMAZ5V1, SMAZ7V5, SMAZ16, SMAZ24, SMAZ39 ...	21
SMB2EZxxx	SMB2EZ6.2, SMB2EZ18, SMB2EZ75, SMB2EZ330 ...	44
SMB3EZxxx	SMB3EZ6.2, SMB3EZ9.1, SMB3EZ51, SMB3EZ200 ...	37
SMB5341-5388	SMB5341, SMB5342, SMB5369, SMB5388 ...	38
SMB5920-5956	SMB5920, SMB5921, SMB5943, SMB5956 ...	37
SMC5341-5388	SMC5341, SMC5342, SMC5355, SMC5388 ...	38
SMZxxx	SMZ1, SMZ5.6, SMZ9.1, SMZ16, SMZ36, SMZ200 ...	39
SZ3Cxxx	SZ3C1, SZ3C6.2, SZ3C13, SZ3C56, SZ3C200 ...	38
SZ1xx0	SZ1110, SZ1120, SZ1180, SZ1270, SZ1330 ...	13
TDZxxxJ	TDZ2V4J, TDZ7V5J, TDZ16J, TDZ22J, TDZ30J ...	27
TLZxxx	TLZ2V4, TLZ3V9, TLZ8V2, TLZ12, TLZ30, TLZ56 ...	34
TZM-Cxxx	TZM-C2V4, TZM-C6V8, TZM-C22, TZM-C75 ...	37
TZM5221-5267	TZM5221, TZM5222, TZM5235, TZM5267 ...	47
UDZxxx	UDZ3V6, UDZ5V1, UDZ8V2, UDZ11, UDZ13, UDZ15 ...	16
Z1SMAxxx	Z1SMA1, Z1SMA5.6, Z1SMA15, Z1SMA100 ...	31
Z2SMBxxx	Z2SMB6.8, Z2SMB12, Z2SMB39, Z2SMB200 ...	36

Table list of all devices included in this library (cont.)

Diode Family	Example symbol names	No. of symbols
Z3SMCxxx	Z3SMC6.8, Z3SMC18, Z3SMC47, Z3SMC200 ...	36
ZMDxxx	ZMD1, ZMD5.1, ZMD10, ZMD22, ZMD51, ZMD100 ...	36
ZMMxxxB	ZMM3B9, ZMM7B5, ZMM15B, ZMM39B, ZMM75B ...	32
ZMYxxx	ZMY1, ZMY3.0, ZMY9.1, ZMY27, ZMY200 ...	46
ZPDxxx	ZPD2.7, ZPD8.2, ZPD18, ZPD36, , ZPD47, ZPD75 ...	36
ZPYxxx	ZPY3V9, ZPY7V5, ZPY13, ZPY27, ZPY62, ZPY200 ...	40
ZYxxx	ZY1, ZY5.6, ZY11, ZY22, ZY36, ZY62, ZY120, ZY200 ...	39

2.21. Optocoupler Library

This library contains transistor-output optocouplers.

Optocouplers consist of an emitter and a detector. Emitter is typically an infrared LED, while the detector can be a phototransistor, photodarlington or a photodiode coupled to a transistor.

Dual and quad optocoupler symbols have 2 variants. Standard symbol contains all optocoupler channels. Disaggregated symbol is a multi-unit symbol with one channel per unit.

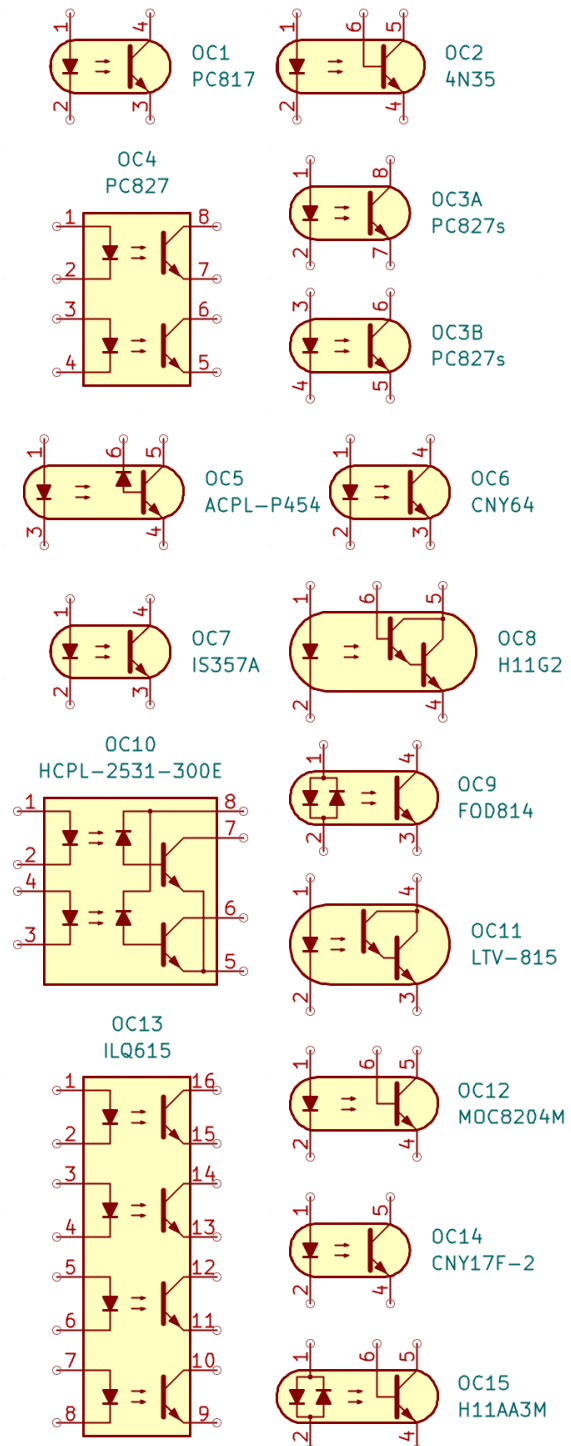
All optocouplers have their internal diagram incorporated into the schematic.

All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and current transfer ratio (CTR) have separate specific symbols.

THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

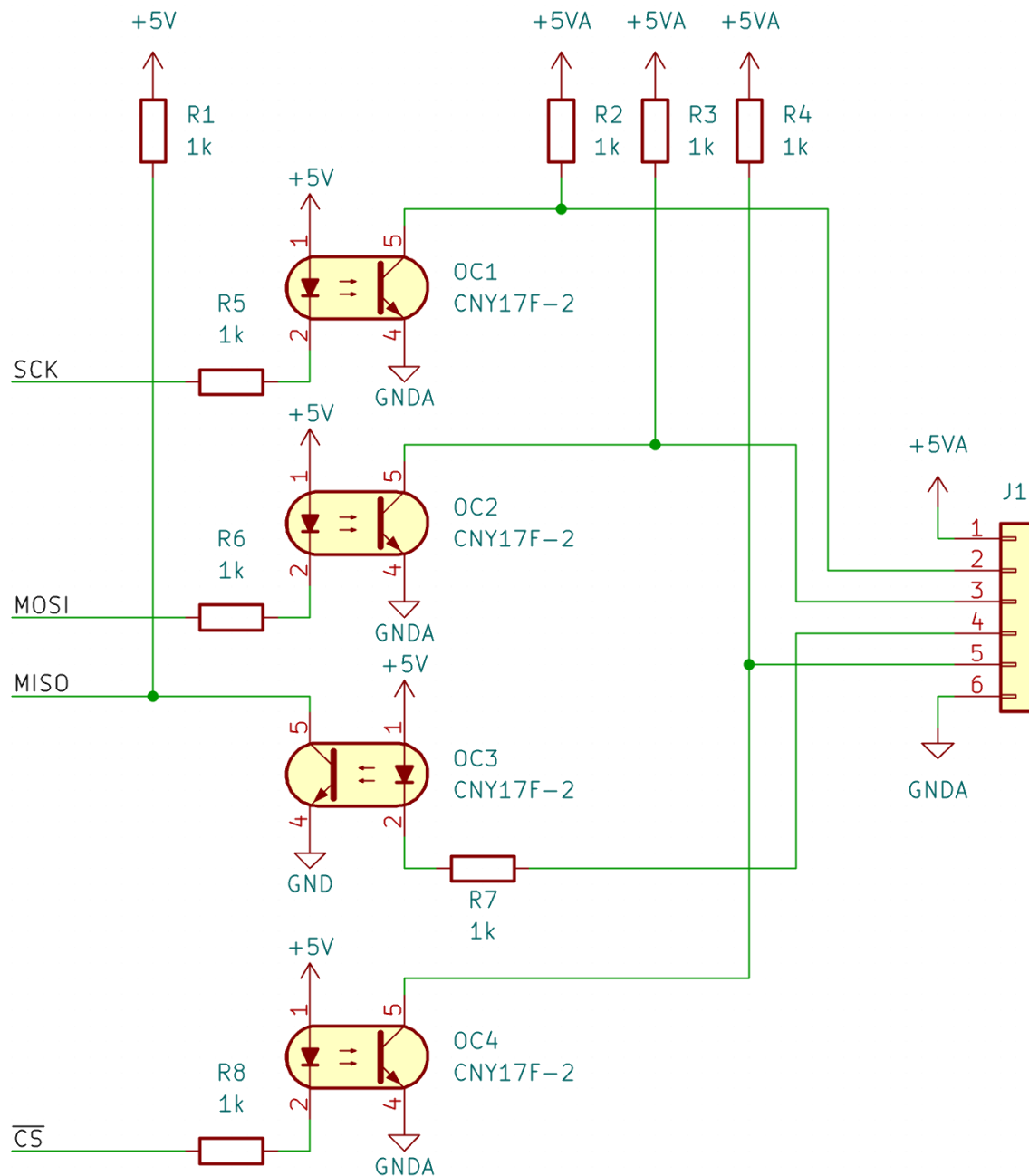
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Total symbols:	1428
Generic symbols:	54
Specific symbols:	1374



Schematic examples

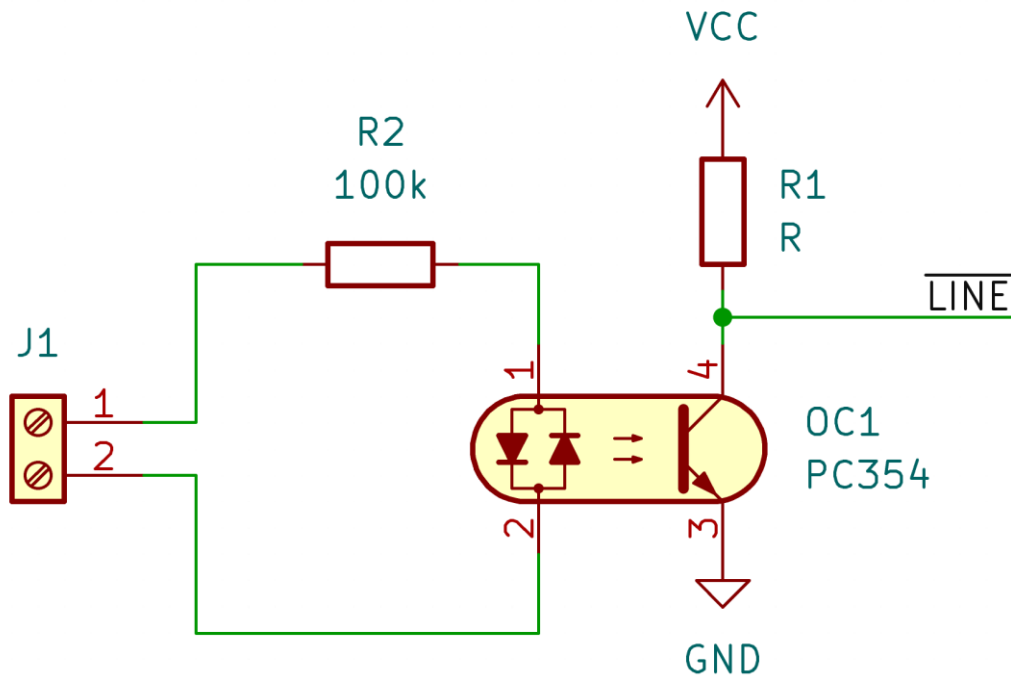
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



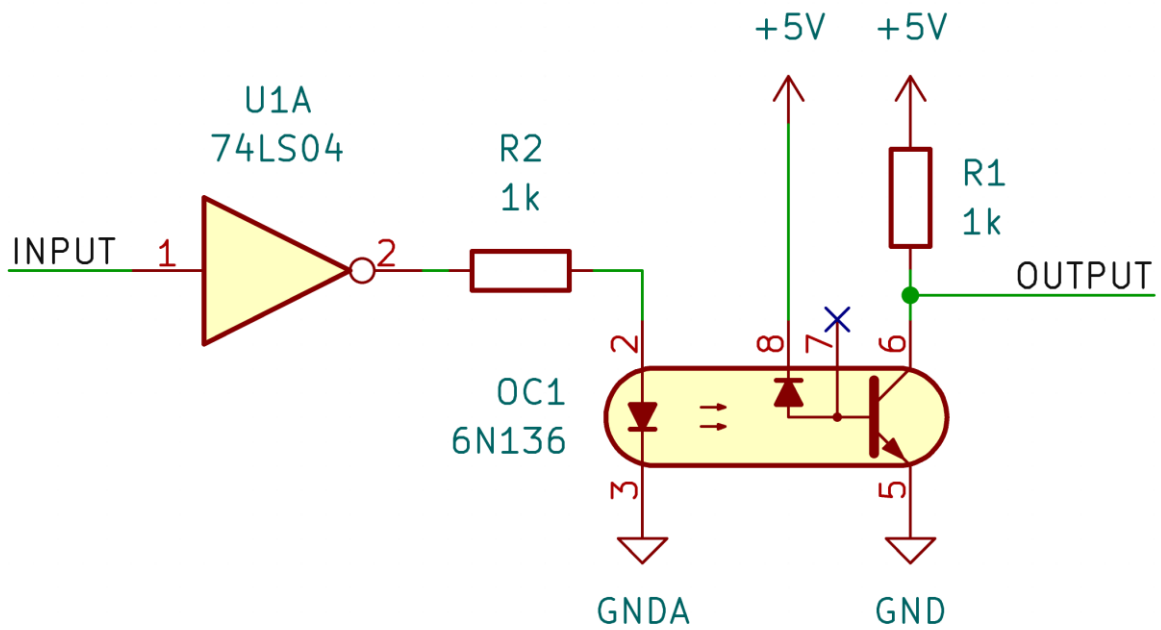
Example 1

Optically isolated SPI digital interface using four CNY17F optocouplers.



Example 2

Isolated AC line voltage detection based on PC354 bidirectional-input optocoupler.



Example 3

Digital line isolator based on 6N136 fast optocoupler.

Table list of all devices included in this library

Device	No. of symbols
4N25	4
4N26	4
4N27	4
4N28	4
4N29	3
4N30	3
4N32	4
4N33	4
4N35	12
4N36	7
4N37	9
4N38	5
6N135	7
6N136	11
6N138	4
6N139	10
ACPL-054L	1
ACPL-214	1
ACPL-217	1
ACPL-224	2
ACPL-227	2
ACPL-244	2
ACPL-247	2
ACPL-827	6
ACPL-847	6
ACPL-K54L	1
ACPL-M49T	1
ACPL-M50L	1
ACPL-P454	1
ACPL-W50L	1
ACPL-W454	1
CNY17	29
CNY17F	43
CNY64	7
CNY65	7
CNY66	2
CNY74	4
CNY75	8
CNY171	3
CNY172	3
CNY173	3
CNY174	3
CPC1001	1

Device	No. of symbols
CPC1301	2
CPC1303	2
CQY80	2
FOD814	5
FOD817	14
FOD852	2
FOD714300W	1
FOD817300W	1
FOD852300W	1
FODM121	4
FODM124	1
FODM452	1
FODM453	1
FODM2701	1
FODM2705	1
FODM8801	4
H11A1	4
H11A2	1
H11A3	1
H11A4	1
H11A5	1
H11AA1	8
H11AA2	3
H11AA3	3
H11AA4	3
H11B1	3
H11D1	6
H11D2	2
H11D3	5
H11D4	1
H11F1	3
H11F2	3
H11F3	3
H11G1	3
H11G2	3
H11G3	3
HCPL-050L	1
HCPL-053L	1
HCPL-070	2
HCPL-073	2
HCPL-250	2
HCPL-253	2
HCPL-270	2

Table list of all devices included in this library (cont.)

Device	No. of symbols
HCPL-273	2
HCPL-0452	1
HCPL-0453	1
HCPL-0454	1
HCPL-0500	1
HCPL-0501	1
HCPL-0530	1
HCPL-0531	1
HCPL-0700	1
HCPL-0701	1
HCPL-0730	1
HCPL-0731	1
HCPL-814	2
HCPL-817	2
HCPL-2502	2
HCPL-2530	2
HCPL-2531	2
HCPL-2730	2
HCPL-2731	2
HCPL-4502	2
HCPL-4503	2
HCPL-4504	2
HCPL-4701	2
HCPL-4731	2
HCPL-J454	2
HCPL-M452	1
HCPL-M453	1
HCPL0452	1
HCPL0453	1
HCPL0500	1
HCPL0501	1
HCPL0530	1
HCPL0534	1
HCPL0700	1
HCPL0701	1
HCPL0730	1
HCPL0731	1
HCPL2530	4
HCPL2531	4
HCPL4503	4
HMHA281	1
HMHA2801	4
HNCW135	2

Device	No. of symbols
HNCW136	2
HNCW138	2
HNCW139	2
HNCW4502	2
HNCW4503	2
HNCW4504	2
IL30	1
IL74	2
IL205AT	1
IL206AT	1
IL207AT	1
IL208AT	1
IL215AT	1
IL216AT	1
IL217AT	1
IL250	3
IL251	2
IL252	3
ILD1	6
ILD2	8
ILD5	10
ILD74	8
ILD205T	2
ILD206T	2
ILD207T	2
ILD211T	2
ILD213T	2
ILD217T	2
ILD223T	2
ILD250	4
ILD251	8
ILD252	4
ILD615	22
ILD620	10
ILD621	12
ILQ1	8
ILQ2	8
ILQ5	4
ILQ30	4
ILQ55	6
ILQ74	4
ILQ615	22
ILQ620	10

Table list of all devices included in this library (cont.)

Device	No. of symbols
ILQ621	16
IS126	1
IS127	1
IS181	7
IS355	1
IS357	5
IS660	3
IS661	3
IS662	3
K814P	1
K815P	1
K824P	2
K825P	2
K827PH	2
K844P	2
K845P	2
K847PH	2
LDA100	2
LDA101	2
LDA102	2
LDA110	2
LDA111	2
LDA200	4
LDA201	4
LDA202	4
LDA203	4
LDA210	4
LDA211	4
LDA212	4
LDA213	4
LTV-217	1
LTV-227	2
LTV-247	2
LTV-352T	1
LTV-354T	1
LTV-355T	1
LTV-356T	5
LTV-357T	5
LTV-358T	4
LTV-814	3
LTV-815	3
LTV-816	3
LTV-817	3

Device	No. of symbols
LTV-824	6
LTV-825	6
LTV-827	6
LTV-844	6
LTV-845	6
LTV-847	6
MCT2	6
MCT6	8
MCT61	4
MCT62	4
MCT210	3
MCT271	3
MCT5211	3
MCT9001	4
MOC205M	1
MOC206M	1
MOC207M	1
MOC208M	1
MOC211M	1
MOC212M	1
MOC213M	1
MOC216M	1
MOC217M	1
MOC223M	1
MOC8021	3
MOC8050	3
MOC8100	3
MOC8106	3
MOC8204	3
MOCD207M	2
MOCD208M	2
MOCD211M	2
MOCD213M	2
MOCD217M	2
MOCD223M	2
PC3H4	1
PC3H7	1
PC3H71	1
PC123	4
PC354	1
PC355	1
PC357	1
PC367	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
PC51	1
PC457	1
PC817	5
PC827	2
PC847	2
PS817	2
PS2501	6
PS2502	6
PS2503	2
PS2505	6
PS2506	2
PS2533	2
PS2561	12
PS2565	4
PS2701	1
PS2702	1
PS2703	1
PS2705A	1
PS2706	1
PS2801	3
PS2805	3
PS2806	1
PS2811	3
PS2832	1
PS2833	1
PS2911	1
PS8101	1
PS8501	4
SFH600	12
SFH601	17
SFH608	13
SFH610A	10
SFH615A	16
SFH617A	12
SFH618A	6
SFH619A	3
SFH620A	8
SFH628A	4
SFH636	4
SFH640	5
SFH690	5
SFH691AT	1
SFH1690	4

Device	No. of symbols
SFH6106	7
SFH6135	3
SFH6136	4
SFH6186	5
SFH6206	4
SFH6286	4
SFH6315	1
SFH6316	1
SFH6318	1
SFH6319	1
SFH6343	1
SFH6345	4
SFH6916	2
TCDT1100	2
TCDT1101	2
TCDT1102	2
TCDT1103	2
TCED1100	2
TCET1100	2
TCET1101	2
TCET1102	2
TCET1103	2
TCET1104	2
TCET1105	2
TCET1106	2
TCET1107	2
TCET1108	2
TCET1109	2
TCET1200	2
TCET1201	2
TCET1202	2
TCET1203	2
TCET1204	2
TCET1600	2
TCLD1000	1
TCLT1000	1
TCLT1002	1
TCLT1003	1
TCLT1004	1
TCLT1005	1
TCLT1006	1
TCLT1007	1
TCLT1008	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
TCLT1009	1
TCLT1100	1
TCLT1102	1
TCLT1103	1
TCLT1104	1
TCLT1105	1
TCLT1106	1
TCLT1107	1
TCLT1108	1
TCLT1109	1
TCLT1600	1
TCMT1100	1
TCMT1101	1
TCMT1102	1
TCMT1103	1
TCMT1104	1
TCMT1105	1
TCMT1106	1
TCMT1107	1
TCMT1108	1
TCMT1109	1
TCMT1600	1
TCMT4100	2
TCMT4106	2
TCMT4600	2
TCMT4606	2
TIL111	3
TIL113	3
TIL117	3
TLP109	1
TLP112	1
TLP124	1
TLP181	1
TLP182	1
TLP183	1
TLP184	1
TLP185	1
TLP187	1
TLP188	1
TLP290	1
TLP291	1
TLP291-4	2
TLP292	1

Device	No. of symbols
TLP293	1
TLP293-4	2
TLP383	1
TLP385	1
TLP620	1
TLP620-2	2
TLP620-4	2
TLP624	1
TLP624-2	2
TLP624-4	2
TLP626	1
TLP626-2	2
TLP626-4	2
TLP719F	1
TLP759	2
TLP785	4
TLP2303	1
TLP2309	1
TLP2530	1
TLP2531	1
TLP2703	1
VO205AT	1
VO206AT	1
VO207AT	1
VO208AT	1
VO610A	8
VO615A	40
VO617A	13
VO618A	5
VOD205T	2
VOD206T	2
VOD207T	2
VOD211T	2
VOD213T	2
VOD217T	2
VOL617A	5
VOL628A	4
VOM452	1
VOM453	1
VOM617A	8
VOM618A	8
VOS615A	5
VOS617A	7

2.22. Isolated FET gate driver library

This library contains optically isolated MOSFET and IGBT gate drivers.

Gate drivers are used to ensure fast switching of a MOSFET or an IGBT by providing high peak output current to charge the gate capacitance. Isolated gate drivers can drive MOSFETs while isolating the control circuits from the power circuits.

Dual isolated gate driver symbols have 2 variants. Standard symbol contains all driver channels. Disaggregated symbol is a multi-unit symbol with one channel per unit.

Gate driver is indicated by a triangle (to help distinguish it from logic-output optocouplers that have an AND-gate shape).

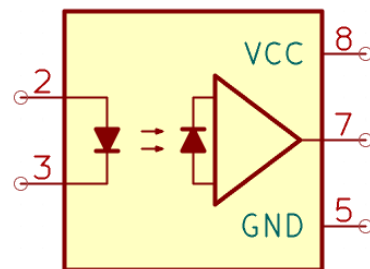
All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and electrical characteristics have separate specific symbols.

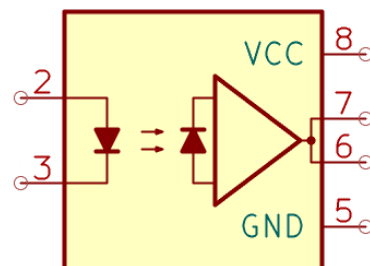
THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

Filename: Optocoupler_Gate_Driver_AKL	
Total symbols:	93
Generic symbols:	7
Specific symbols:	86

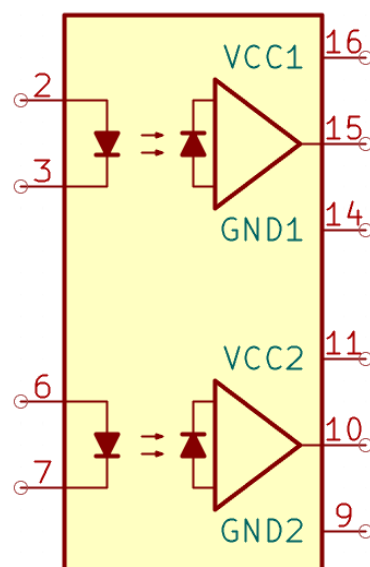
OC1
ACNW3130



OC2
FOD3150S



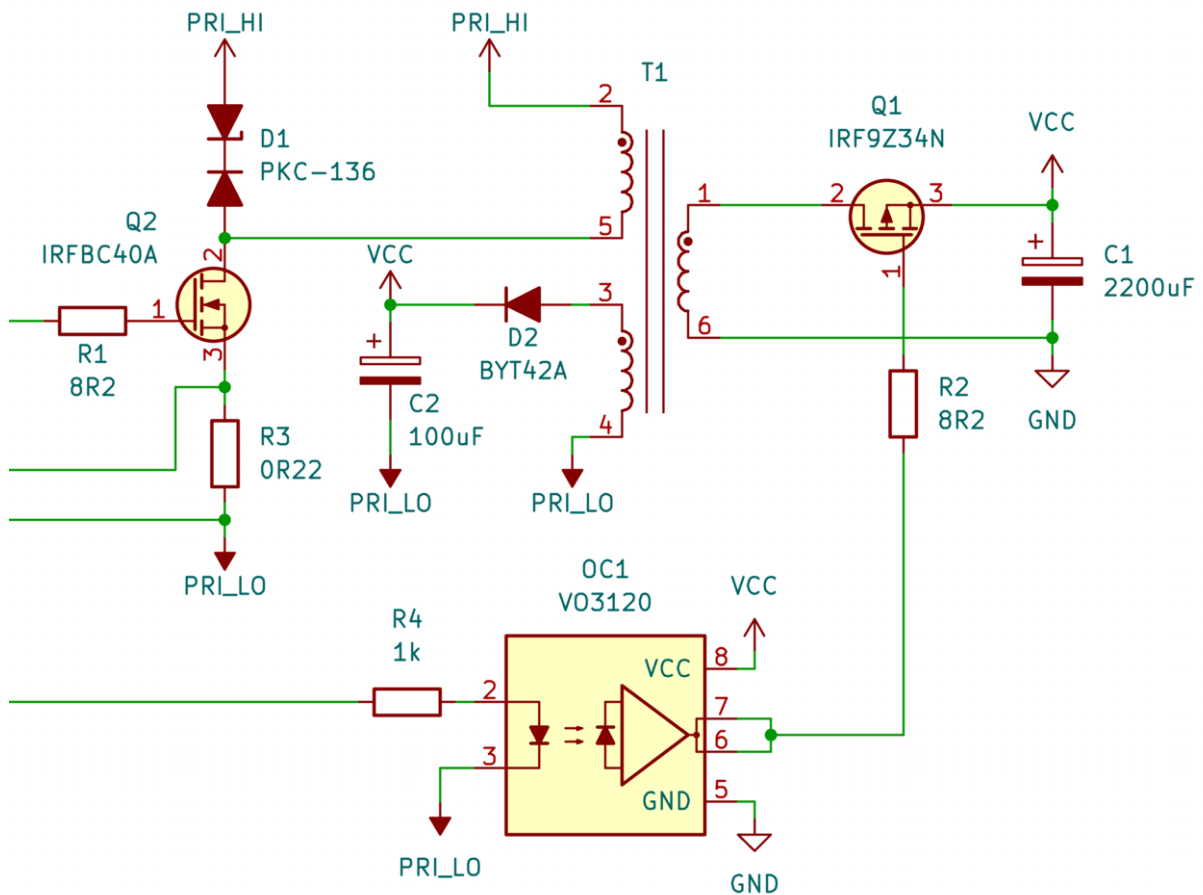
OC3
HCPL-314J



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Switching power supply with synchronous rectifier driven from the primary side via VO3120 isolated MOSFET gate driver.

Table list of all devices included in this library

Device	No. of symbols
ACNW3130	2
ACNW3190	2
ACPL-312T	2
ACPL-3130	2
ACPL-H312	1
ACPL-J313	2
ACPL-K312	1
ACPL-P302	1
ACPL-P314	1
ACPL-P340	1
ACPL-P343	1
ACPL-T350	2
ACPL-W302	1
ACPL-W340	1
ACPL-W343	1
FOD3120	4
FOD3150	4
FOD3180	3
FOD3182	4
HCPL-0302	1
HCPL-0314	1
HCPL-314J	2
HCPL-315J	2
HCPL-3020	2
HCPL-3120	2
HCPL-3140	2
HCPL-3150	2
HCPL-3180	2
HCPL-J312	2
HCPL-J314	2
HCNW3120	2
IX3120G	2
TLP152	1
TLP250H	2
TLP251	1
TLP350	2
TLP351	3
TLP352	2
TLP358	2
TLP700AF	1
TLP7001	2
TLP2451A	1
TLP5701	2


Device	No. of symbols
TLP5722	1
VO3120	2
VO3150A	2
VOL3120	1

2.23. Logic-Output Optocoupler Library

This library contains logic-output optocouplers.

Detectors of logic-output optocouplers contain a standard photosensitive device (photodiode, phototransistor) that drives either an open-collector or push-pull output logic gate. Logic optocouplers are typically faster than standard optocouplers for transmitting digital signals, but are slower than dedicated digital isolators.

Dual logic optocoupler symbols have 2 variants. Standard symbol contains all optocoupler channels. Disaggregated symbol is a multi-unit symbol with one channel per unit.

Inverting optocouplers have a circle at the output, open-collector optocouplers have a  symbol near the output.

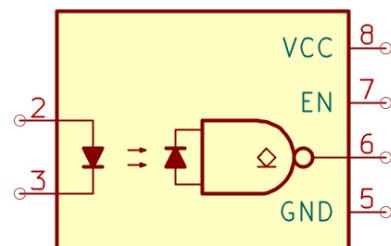
All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and electrical characteristics have separate specific symbols.

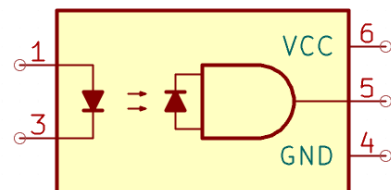
THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

Filename: Optocoupler_Logic_AKL	
Total symbols:	296
Generic symbols:	22
Specific symbols:	274

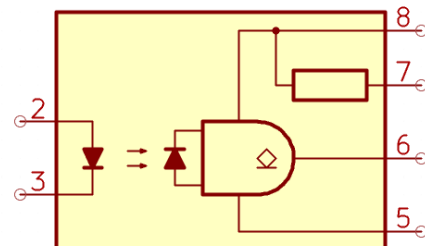
OC1
6N137



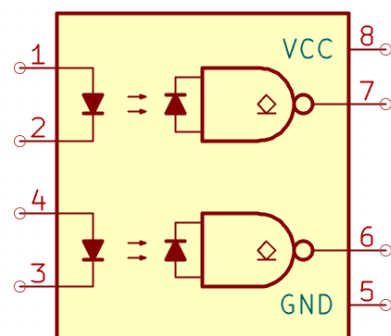
OC2
TLP2310



OC3
HNCW4506-300



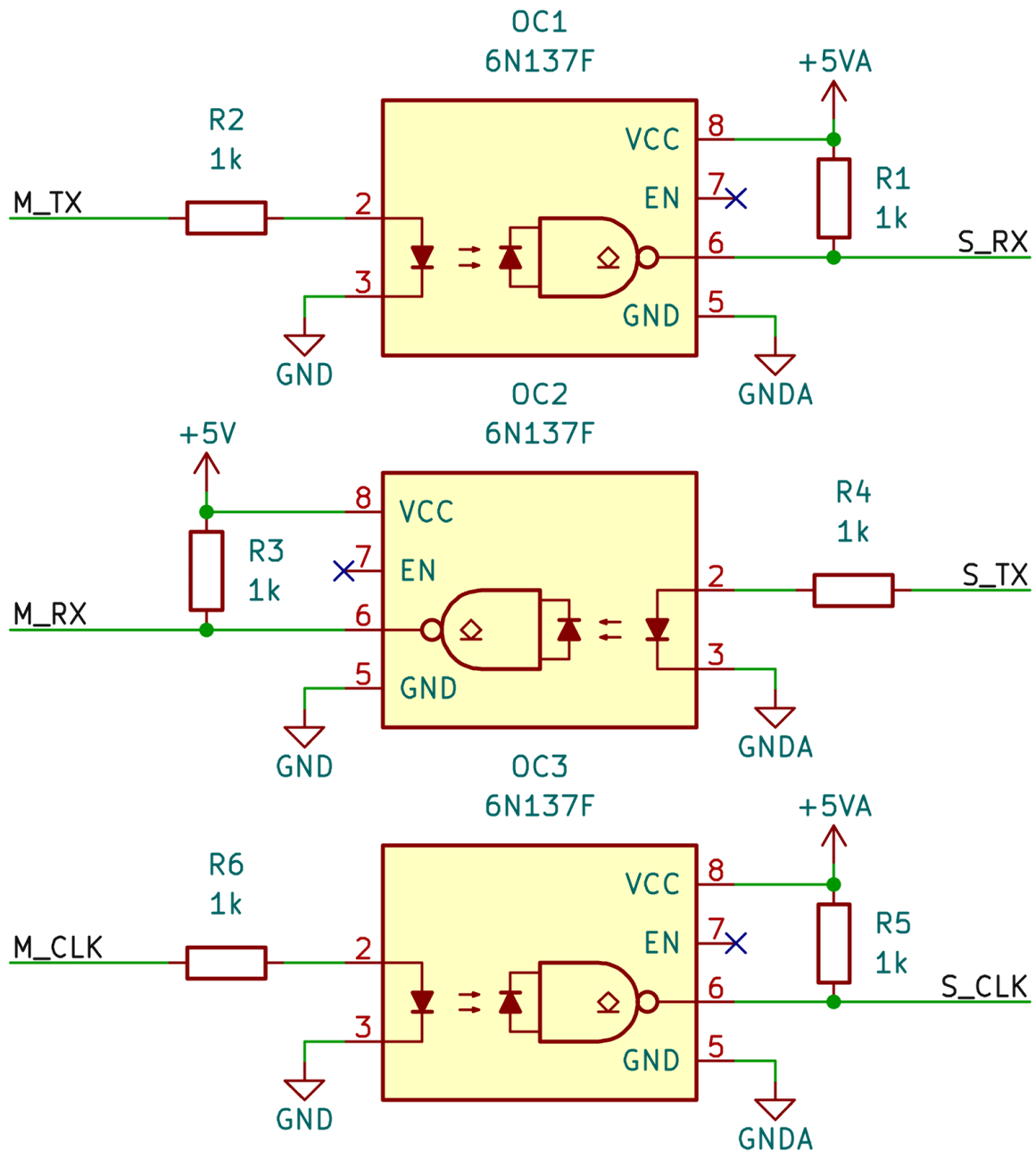
OC4
VO2630-X007T



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.

**Example 1**

High-speed USART optically isolated interface using three 6N137F logic-output optocouplers.

Table list of all devices included in this library

Device	No. of symbols
6N137	10
ACPL-021L	1
ACPL-024L	2
ACPL-064L	2
ACPL-071L	1
ACPL-074L	2
ACPL-K24L	2
ACPL-K63L	2
ACPL-K64L	2
ACPL-M21L	1
ACPL-M60L	1
ACPL-M61	2
ACPL-P611	1
ACPL-W21L	1
ACPL-W60L	1
ACPL-W61	2
APS1241S	1
APS1551S	1
APS2241S	1
FOD060L	1
FOD260	4
FOD8163	2
FOD8173	2
FOD8480	2
FOD8482	2
FODM611	1
FODM8061	1
FODM8071	1
H11L1	5
H11L2	5
H11L3	5
H11L4	2
H11L5	2
H11N1	3
H11N2	3
HCPL-060L	1
HCPL-061	2
HCPL-063	6
HCPL-0201	1
HCPL-0211	1
HCPL-260L	2
HCPL-261	4
HCPL-263	12

Device	No. of symbols
HCPL-0300	1
HCPL-0466	1
HCPL-0466	1
HCPL-0600	1
HCPL-0601	1
HCPL-0611	1
HCPL-0630	2
HCPL-0631	2
HCPL-0661	2
HCPL-2201	2
HCPL-2202	2
HCPL-2211	2
HCPL-2212	2
HCPL-2231	4
HCPL-2232	4
HCPL-2300	2
HCPL-2601	2
HCPL-2611	2
HCPL-2630	4
HCPL-2631	4
HCPL-4506	2
HCPL-4661	4
HCPL-J456	2
HCPL-M600	1
HCPL-M601	1
HCPL-M611	1
HCPL062N	2
HCPL0600	1
HCPL0601	1
HCPL0611	1
HCPL0637	2
HCPL0638	2
HCPL0639	2
HCPL2601	3
HCPL2611	3
HCPL2630	6
HCPL2631	6
HCNW137	2
HCNW2201	2
HCNW2211	2
HCNW2601	2
HCNW2611	2
HCNW4506	2

Table list of all devices included in this library (cont.)

Device	No. of symbols
PC400	1
TLP104	1
TLP108	1
TLP116	2
TLP118	1
TLP754F	1
TLP2168	2
TLP2310	1
TLP2345	1
TLP2348	1
TLP2355	1
TLP2361	1
TLP2362	1
TLP2366	1
TLP2367	1
TLP2368	1
TLP2466	1
TLP2662	4
TLP2704	2
TLP2710	1
TLP2745	1
TLP2758	1
TLP2761	2
TLP2766F	1
TLP2767	1
TLP2768A	2
TLP2955F	1
TLP2958	1
TLP2962	1
VO0600T	1
VO0601T	1
VO0611T	1
VO0630T	1
VO0631T	1
VO0661T	1
VO2601	4
VO2611	5
VO2630	6
VO2631	8
VO2661	6
VOH1016A	3

2.24. Miscellaneous Optocoupler Library

This library contains opto-isolation devices that don't otherwise fit into other optocoupler libraries.

Photovoltaic optocouplers have a string of photodiodes working in photovoltaic mode that outputs a small (~5V) DC voltage when energized.

Linear optocouplers contain 2 matched photodiode detectors, one meant to provide feedback to the input circuit and the other as a standard output. Isolated amplifiers can be constructed using linear optocouplers.

Optocouplers with integrated error amplifiers contain a TL431-class adjustable error amplifier and can minimize component count for switching power supplies.

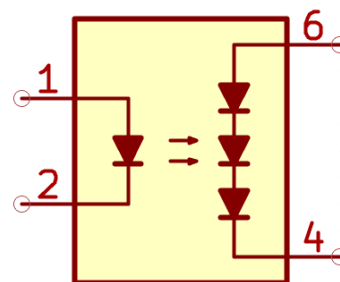
All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and electrical characteristics have separate specific symbols.

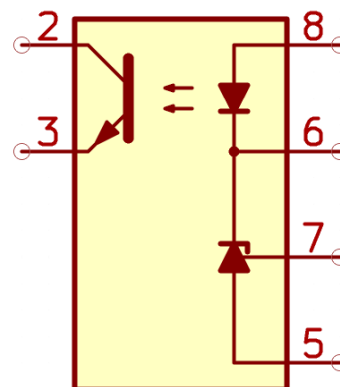
THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

Filename: Optocoupler_Misc_AKL	
Total symbols:	114
Generic symbols:	15
Specific symbols:	99

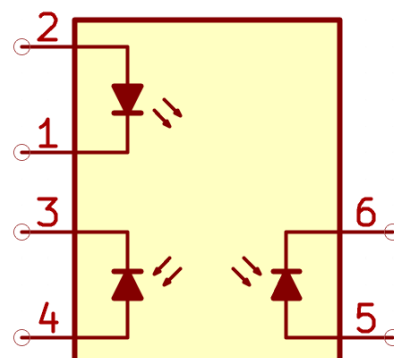
OC1
APV1122



OC2
FOD2741AT



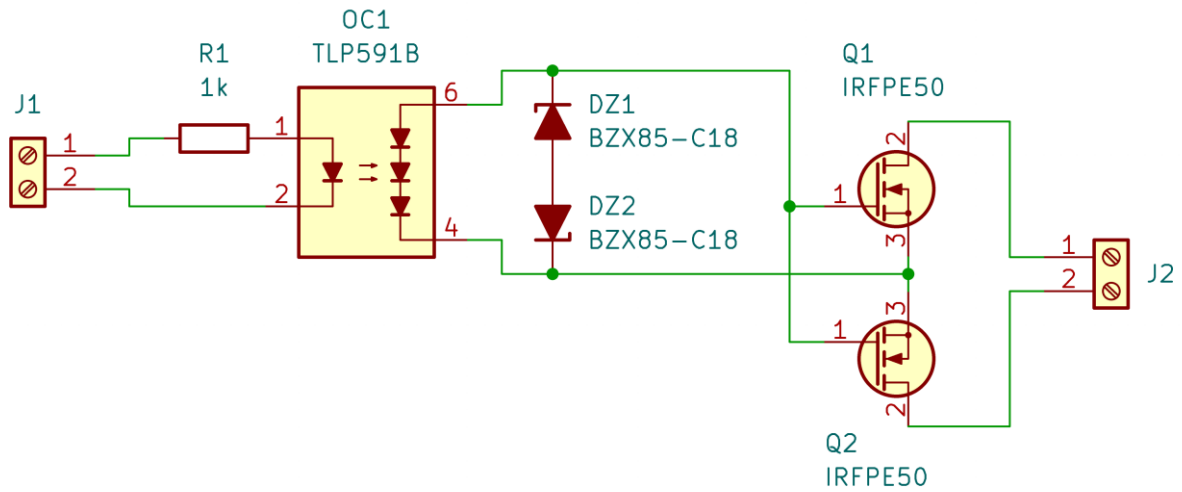
OC3
IL300



Schematic examples

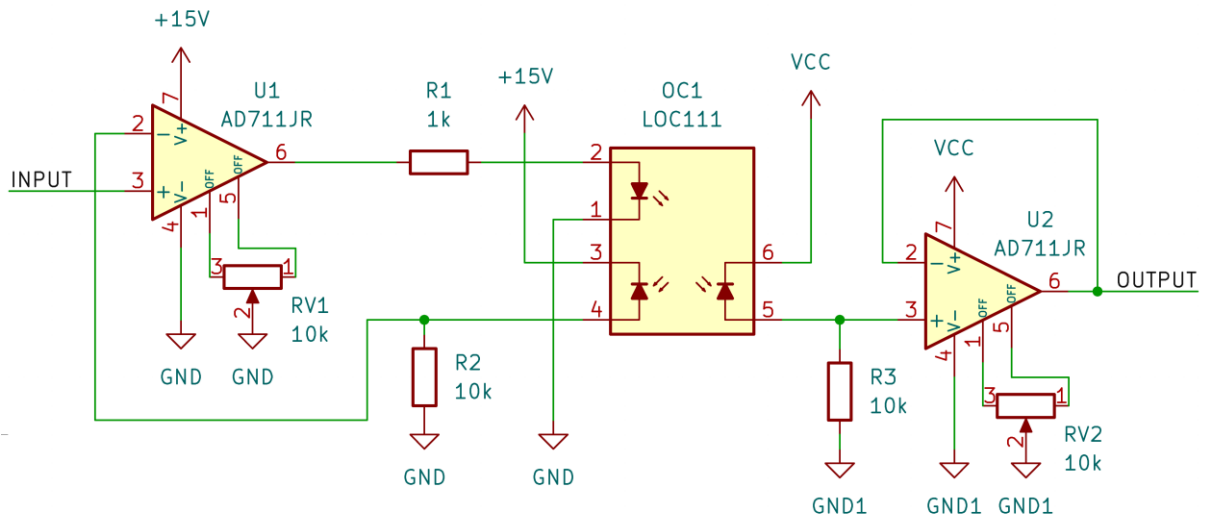
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



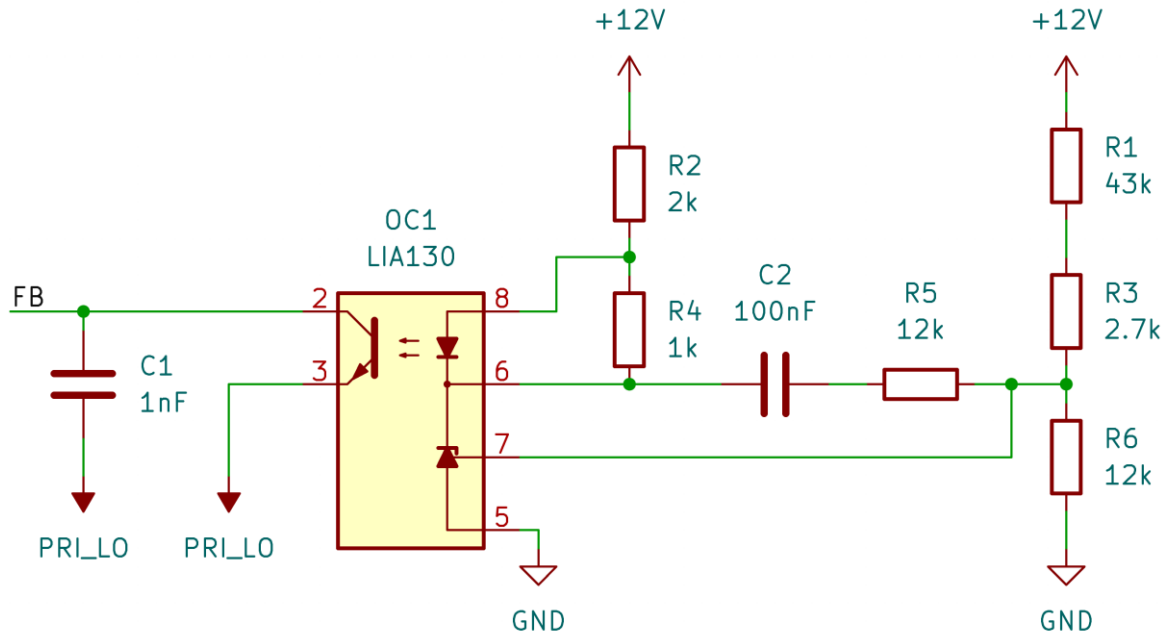
Example 1

Solid-State MOSFET Relay using TLP591B photovoltaic optocoupler.



Example 2

Isolation amplifier based on the LOC111 linear optocoupler.

**Example 3**

Switching power supply feedback loop using LIA isolated error amplifier to replace a standard optocoupler and a TL431 programmable reference.

Table list of all devices included in this library

Device	No. of symbols
APV1121S	1
APV1122	1
APV2121S	1
FOD2711A	3
FOD2712A	1
FOD2741	9
FOD2742	3
FOD2743	9
HCNR200	2
HCNR201	2
IL300	20
LIA120S	1
LIA130	2
LOC110	3
LOC112	3
LOC117	3
LOC210	2
LOC211	2
PVI1050N	4
PVI5013R	4
PVI5033R	4
PVI5050N	2
PVI5080N	2
TLP190B	1
TLP191B	1
TLP590B	1
TLP591B	1
TLP748JF	1
TLP3906	1
TLP3914	1
VO1263A	4
VOM1271	1

2.25. Phototriac-Output Optocoupler Library

This library contains phototriac-output optocouplers.

Phototriac-output optocouplers are used to trigger triacs in AC switching circuits.

Some phototriac-output optocouplers have an integrated zero crossing detection circuit (ZCD) that waits for the voltage across it to reach zero, before switching the output. This reduces losses during switching and limits abrupt voltage changes. All symbols with ZCD circuit built in have it clearly indicated.

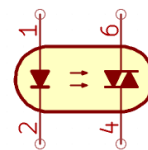
All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and electrical characteristics have separate specific symbols.

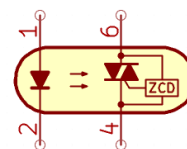
THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

Filename: Optocoupler_Triac_AKL	
Total symbols:	293
Generic symbols:	5
Specific symbols:	288

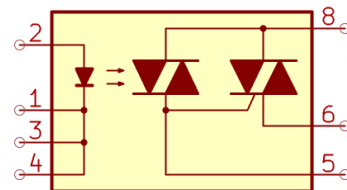
OC1
FOD420



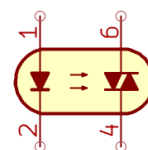
OC2
MOC3033TM



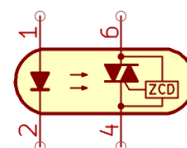
OC3
V02223



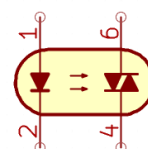
OC4
TLP3021



OC5
VOT8026AG



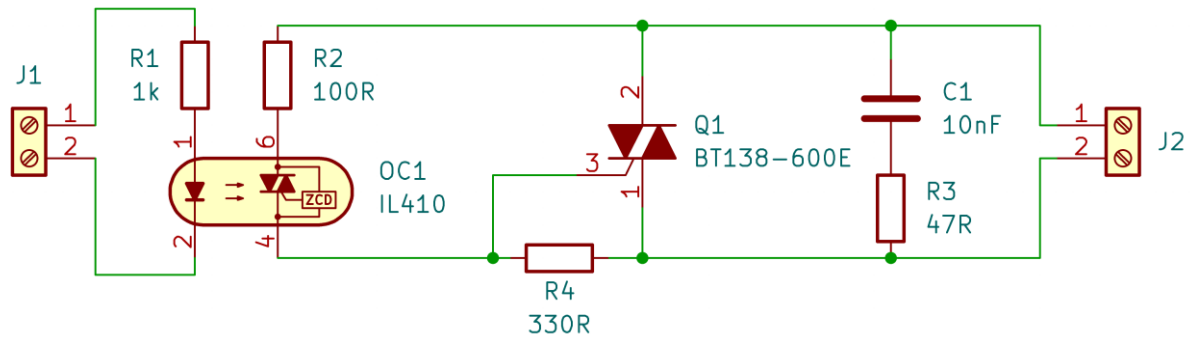
OC6
BRT11



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Triac AC switch using IL410 phototriac-output optocoupler with zero-crossing detection.

Table list of all devices included in this library

Device	No. of symbols
BRT11	3
BRT12	9
BRT13	6
BRT21	4
BRT22	8
BRT23	10
FOD410	2
FOD420	2
FOD4108	2
FOD4116	2
FOD4118	2
FOD4208	2
FOD4216	2
FOD4218	2
FODM3011	1
FODM3012	1
FODM3022	1
FODM3023	1
FODM3052	1
FODM3062	1
FODM3063	1
FODM3082	1
FODM3083	1
IL410	4
IL420	4
IL4108	4
IL4116	4
IL4117	2
IL4118	4
IL4208	3
IL4216	4
IL4217	3
IL4218	2
K3010P	3
K3011P	2
K3012P	3
K3020P	2
K3021P	2
K3022P	2
K3023P	2
K3036P	2
MOC3010	3
MOC3011	3

Device	No. of symbols
MOC3012	3
MOC3020	3
MOC3021	3
MOC3022	3
MOC3023	3
MOC3033	3
MOC3041	3
MOC3042	3
MOC3043	3
MOC3051	3
MOC3052	3
MOC3053	3
MOC3061	3
MOC3062	3
MOC3063	3
MOC3071	3
MOC3072	3
MOC3073	3
MOC3081	3
MOC3082	3
MOC3083	3
MOC3162	3
MOC3163	3
TLP265J	1
TLP266J	1
TLP267J	1
TJP268J	1
TLP3021	1
TLP3022	1
TLP3023	1
TLP3041	1
TLP3042	1
TLP3043	1
TLP3051F	1
TLP3052F	1
TLP3061	2
TLP3062	2
TLP3063	2
TLP3064	1
TLP3083	2
VO2223	1
VO3020	3
VO3021	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
VO3022	3
VO3023	3
VO3052	4
VO3053	4
VO3062	3
VO3063	4
VO4154	10
VO4156	10
VOT8024A	4
VOT8025A	3
VOT8026A	3
VOT8121A	4
VOT8123A	3
VOT8125A	3

2.26. Resistor Library (European Symbol)

This library contains resistor and shunt resistor symbols with pre-assigned footprints.

Specific resistor symbols have the footprint pre-assigned, but the user still needs to fill in the correct value. This helps reduce time spent assigning footprints before transferring to PCB layout.

Resistor symbol names mostly correspond to their respective resistor footprint names.

Independent resistor network symbols are available in two variants. Standard symbols have all resistors in a single place and are single-unit symbols. Disaggregated symbols are multi-unit symbols allowing the user to place different resistors from the same pack on different parts of the schematic.

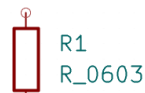
Capacitor symbol library grabs footprints from

- Resistor_SMD_AKL,
- Resistor_THT_AKL,
- Package_DIP_AKL
(for DIP resistor networks)

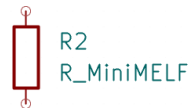
Single resistors have R as their reference designator, while resistor networks have RN as their reference designator.

Resistor_AKL symbol library is functionally equivalent to Resistor_US_AKL with the only difference being the graphical shape of the resistor symbol and linked footprint libraries. You can omit installation of this library if you want to use resistor library with US symbols instead. Linked footprint libraries are also inter-changeable, see [Section 3.1.7](#) for more details.

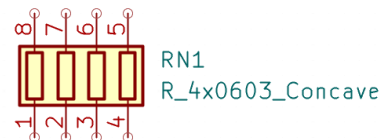
Filename: Resistor_AKL	
Total symbols:	191
Generic symbols:	27
Specific symbols:	164



Footprint:
Resistor_SMD_AKL:R_0603_1608Metric



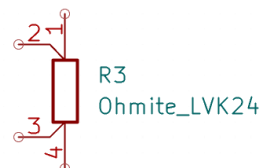
Footprint:
Resistor_SMD_AKL:R_MinimELF_MMA-0204



Footprint:
Resistor_SMD_AKL:R_Array_Concave_4x0603
R_4x0603_Sep_Concave



Footprint:
Resistor_SMD_AKL:R_Array_Concave_4x0603



Footprint:
Resistor_SMD_AKL:R_Shunt_Ohmite_LVK24



Footprint:
Resistor_THT_AKL:R_Array_SIP6_BigPads

SMD Chip Resistors

Symbol count: 17

Symbol naming convention:

R<size code>

Where size code is 4-digit imperial units.

Name examples:

R_0603

R_2512

Corresponding footprints:

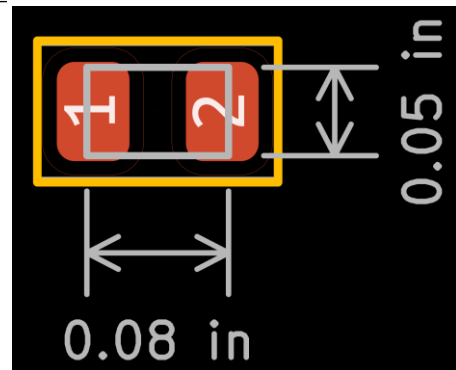
Resistor_SMD_AKL:R<imperial Size code>_<metric size code>**Metric**

Keywords:

R res resistor eu smd <size code>

Search examples:

Searching '**R 0603**' will yield 0603 chip resistor symbol as a result.



An 0805 SMD chip resistor footprint with the relevant dimensions indicated.

SMD Isolated Resistor Networks

Symbol count: 28

Symbol naming convention:

R<no. of resistors>**x**<size>_<pad shape>

For standard symbols,

R<no. of resistors>**x**<size>_**Sep**_<pad shape>

For multi-unit symbols.

Where pad shape is either convex or concave.

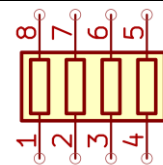
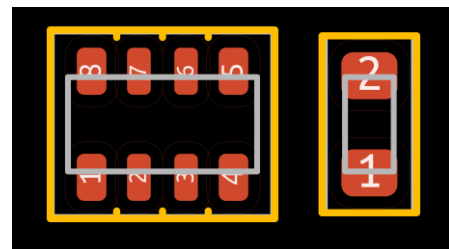
Name examples:

R_2x0606_Convex

R_4x0402_Sep_Concave

Corresponding footprints:

Resistor_SMD_AKL:R_**Array**_<pad shape>_<no. of resistors>**x**<size>



RN1
R_4x0603_Convex

4x0603 Resistor Network Footprint along a single 0603 resistor (TOP) and a corresponding Resistor network symbol.

Keywords:

R smd network parallel isolated eu x<no. of resistors> <size>

Search examples:

Searching '**resistor network 0603**' will yield all 0603 sized SMD resistor networks as results.

Searching '**res 4x1206**' will yield 1206 sized resistor networks with 4 resistors as results.

MELF Resistors

Symbol count: 3

Symbol naming convention:

R_<prefix>MELF

Name examples:

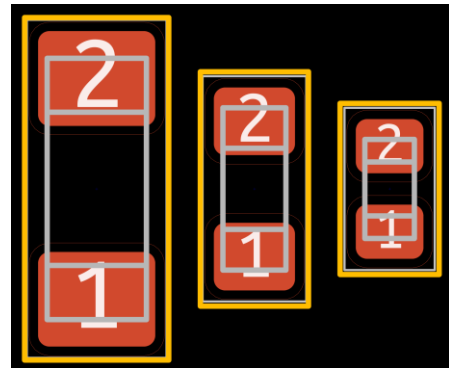
R_MELF

R_MiniMELF

R_MicroMELF

Corresponding footprints:

Resistor_SMD_AKL:R_<prefix>MELF_-<DIN size code>



Left to right: MELF, MiniMELF, MicroMELF resistor footprints.

Keywords:

R res resistor eu smd <prefix> melf

Search examples:

Searching '**R mini melf**' will yield MiniMELF resistor symbol as a result.

THT Axial DIN Resistors

Symbol count: 24

Symbol naming convention:

R_DIN<size code>_P<pin pitch>mm

Where size code is the DIN size (0207, 0309 etc.).

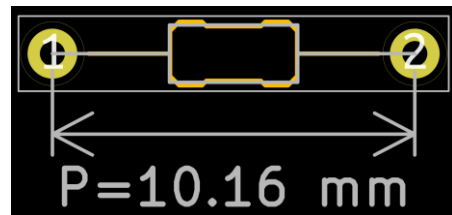
Name examples:

R_DIN0414_P5.08mm

R_DIN0207_P10.16mm

Corresponding footprints:

Resistor_THT_AKL:R_Axial_DIN<code>_L<len.>mm_D<dia.>mm_P<pitch>mm_<orient.>



DIN0204 THT resistor footprint with 10.16mm pin pitch as indicated.

Keywords:

R res resistor eu tht <pin pitch> <size code>

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**resistor 0207**' will yield all DIN0207 sized resistor symbols as results.

Searching '**res 12.70**' will yield all resistors with 12.70mm pin pitch as results.

THT Metal Element Resistors

Symbol count: 3

Symbol naming convention:

R_Metal_Element_L<length>_**W**<width>_**P**<pin pitch>

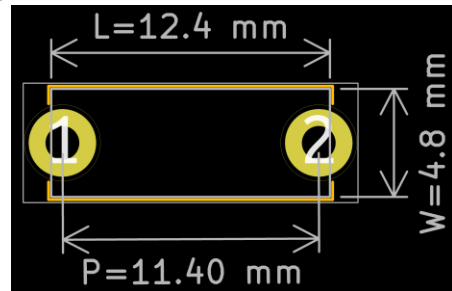
Name examples:

R_Metal_Element_L12.4mm_W4.8mm_P11.40mm

R_Metal_Element_L16.3mm_W4.8mm_P15.30mm

Corresponding footprints:

Resistor_THT_AKL:R_Bare_Metal_Element_L<length>_**W**<width>_**P**<pin pitch>



Bare metal element resistor footprint with relevant dimensions indicated.

Keywords:

R res resistor eu tht power metal element <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**resistor metal 15.30**' will yield all bare metal resistor symbols with pin pitch equal to 15.30mm as results.

Searching '**res metal 16.3x4.8**' will yield metal element resistors with 16.3mm length and 4.8mm width as results.

THT Box Resistors

Symbol count: 4

Symbol naming convention:

R_Box_L<length>_**W**<width>_**P**<pin pitch>

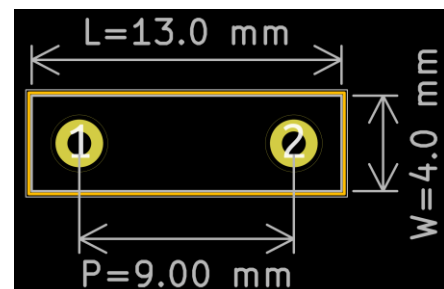
Name examples:

R_Box_L8.4mm_W2.5mm_P5.08mm

R_Box_L14.0mm_W5.0mm_P9.00mm

Corresponding footprints:

Resistor_THT_AKL:R_Box_L<length>_**W**<width>_**P**<pin pitch>



Box Resistor Footprint with all relevant dimensions indicated.

Keywords:

R res resistor eu tht box <pin pitch> <length>x<width>

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**R box 9.00**' will yield all box resistors with 9mm pin pitch as results.

Searching '**R box 14.0x5.0**' will yield box resistors with 14mm length and 5mm width.

DIP Bussed Resistor Networks

Symbol count: 5

Symbol naming convention:

R_Bussed_DIP-<pin count>

Name examples:

R_Bussed_DIP-8

R_Bussed_DIP-20

Corresponding footprints:

Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:

R network bussed star eu x<resistor count> DIP-<pin count>

Search examples:

Searching '**R bussed x15**' will yield all bussed resistor networks with 15 resistors as results.

Searching '**R bussed DIP-14**' will yield DIP-14 bussed resistor network symbol as a result..

SIP Bussed Resistor Networks

Symbol count: 11

Symbol naming convention:

R_Bussed_SIP-<pin count>

Name examples:

R_Bussed_SIP-4

R_Bussed_SIP-13

Corresponding footprints:

Resistor_THT_AKL:R_Array_SIP<pin count>**_BigPads**

Keywords:

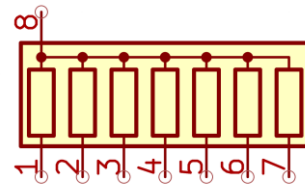
R network bussed star x<resistor count> eu sip <pin count>

Search examples:

Searching '**R bussed x5**' will yield all bussed resistor networks with 5 resistors as results.

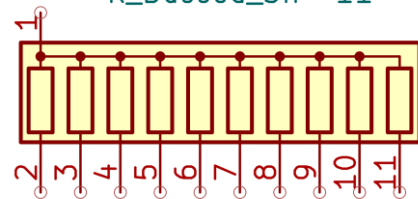
Searching '**R bussed sip**' will yield all SIP bussed resistor network symbols..

RN1
R_Bussed_DIP-8



DIP-8 bussed resistor network symbol.

RN1
R_Bussed_SIP-11



SIP-11 bussed resistor network symbol

DIP Isolated Resistor Networks

Symbol count: 10

Symbol naming convention:

R_Pack_DIP-<pin count>

For standard symbols,

R_Pack_DIP-<pin count>_Sep

For multi-unit symbols.

Name examples:

R_Pack_DIP-8

R_Pack_DIP-16_Sep

Corresponding footprints:

Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:

R network parallel isolated eu x<resistor count> dip <pin count>

Search examples:

Searching '**R isolated x4**' will yield all isolated resistor networks with 4 resistors as results.

Searching '**R isolated dip**' will yield all DIP isolated resistor network symbols..

SIP Isolated Resistor Networks

Symbol count: 12

Symbol naming convention:

R_Pack_SIP-<pin count>

For standard symbols,

R_Pack_SIP-<pin count>_Sep

For multi-unit symbols.

Name examples:

R_Pack_SIP-6

R_Pack_SIP-12_Sep

Corresponding footprints:

Resistor_THT_AKL:R_Array_SIP<pin count>_BigPads

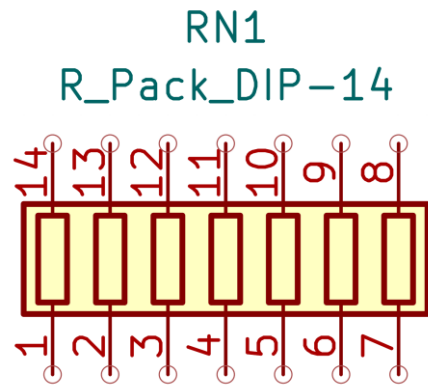
Keywords:

R network parallel isolated eu x<resistor count> sip <pin count>

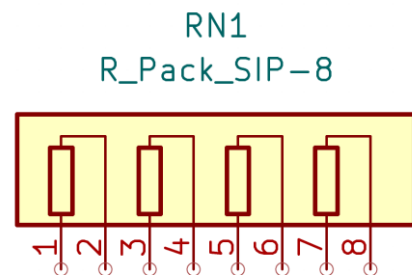
Search examples:

Searching '**R isolated x3**' will yield all isolated resistor networks with 3 resistors as results.

Searching '**R isolated sip**' will yield all SIP isolated resistor network symbols..



DIP-14 isolated resistor network symbol.



SIP-8 isolated resistor network symbol

DIP Termination Resistor Networks

Symbol count: 5

Symbol naming convention:

R_Termination_DIP-<pin count>

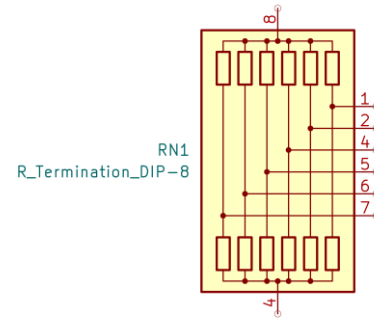
Name examples:

R_Termination_DIP-14

R_Termination_DIP-18

Corresponding footprints:

Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**



DIP-8 termination resistor network symbol.

Keywords:

R dividers terminator termination eu x<line count> dip <pin count>

Search examples:

Searching '**R termination x6**' will yield all termination resistor networks with 6 double-terminated lines.

Searching '**R termination dip**' will yield all DIP termination resistor network symbols..

SIP Termination Resistor Networks

Symbol count: 11

Symbol naming convention:

R_Termination_SIP-<pin count>

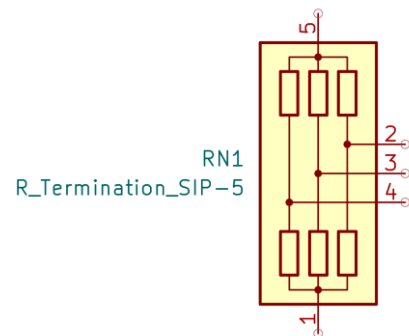
Name examples:

R_Termination_SIP-6

R_Termination_SIP-14

Corresponding footprints:

Resistor_THT_AKL:R_Array_SIP<pin count>**_BigPads**



SIP-5 termination resistor network symbol

Keywords:

R dividers terminator termination eu x<line count> sip <pin count>

Search examples:

Searching '**R termination x5**' will yield all termination resistor networks with 5 double-terminated lines as results.

Searching '**R termination sip**' will yield all SIP termination resistor network symbols..

THT Axial Power Resistors

Symbol count: 13

Symbol naming convention:

R_Power_L<length>_**W**<width>_**P**<pin pitch>

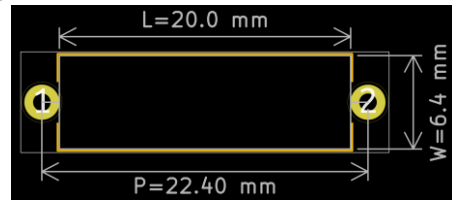
Name examples:

R_Power_L38.0mm_W6.4mm_P40.64mm

R_Power_L75.0mm_W9.0mm_P81.28mm

Corresponding footprints:

Resistor_THT_AKL:R_Axial_Power_L<length>_**W**<width>_**P**<pin pitch>_<orientation (optional)>



Power resistor footprint with relevant dimensions indicated.

Keywords:

R res resistor eu tht power <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**resistor power 25.40**' will yield all power resistor symbols with pin pitch equal to 25.40mm as results.

Searching '**res power 60.0x14.0**' will yield power resistors with 60mm length and 14mm width as results.

THT Radial Power Resistors

Symbol count: 6

Symbol naming convention:

R_Power_Radial_L<length>_**W**<width>_**P**<pin pitch>

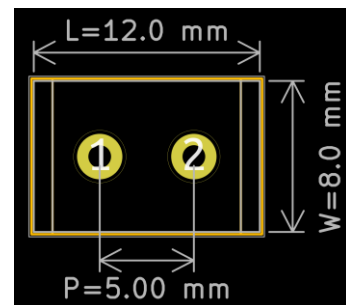
Name examples:

R_Power_Radial_L35.3mm_W9.5mm_P25.40mm

R_Power_Radial_L7.0mm_W8.0mm_Px2.40mm_Py2.30mm

Corresponding footprints:

Resistor_THT_AKL:R_Radial_Power_L<length>_**W**<width>_**P**<pin pitch>



Radial power resistor Footprint with all relevant dimensions indicated.

Keywords:

R res resistor eu tht power <pin pitch> <length>x<width>

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**R power 5.00**' will yield all power resistors with 5mm pin pitch as results.

Searching '**R power 13.0x9.0**' will yield power resistors with 13mm length and 9mm width.

Axial Power Shunt Resistors

Symbol count: 5

Symbol naming convention:

R_Power_Shunt_L<length>_**W**<width>_**P**<pin pitch>

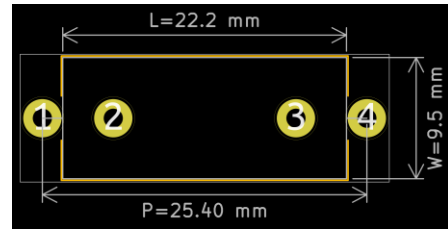
Name examples:

R_Power_Shunt_L22.2mm_W8.0mm_P25.40mm

R_Power_Shunt_L47.6mm_W9.5mm_P50.80mm

Corresponding footprints:

Resistor_THT_AKL:R_Axial_Shunt_L<length>_**W**<width>_**Ps**<sense pin pitch>_**P**<pin pitch>



Shunt power resistor footprint with relevant dimensions indicated.

Keywords:

R res shunt resistor eu tht power <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**resistor shunt 38.10**' will yield all shunt resistor symbols with pin pitch equal to 38.10mm as results.

Searching '**res shunt 35.3x9.5**' will yield shunt resistors with 35.3mm length and 9.5mm width as results.

Non-standard resistor symbols

Symbol count: 7

Some resistor, shunt resistor or resistor network families have a non-standard footprint. A separate specific symbol is provided for each device family.

Symbol naming convention:

<manufacturer>_<device family name>

Existing non-standard resistor symbol list:

Ohmite_LVK12

Ohmite_LVK20

Ohmite_LVK24

Ohmite_LVK25

Vishay_WSK2512

Vishay_WSKW0612

Vishay_WSR2_WSR3

2.27. Resistor Library (US Symbol)

This library contains resistor and shunt resistor symbols with pre-assigned footprints.

Specific resistor symbols have the footprint pre-assigned, but the user still needs to fill in the correct value. This helps reduce time spent assigning footprints before transferring to PCB layout.

Resistor symbol names mostly correspond to their respective resistor footprint names.

Independent resistor network symbols are available in two variants. Standard symbols have all resistors in a single place and are single-unit symbols. Disaggregated symbols are multi-unit symbols allowing the user to place different resistors from the same pack on different parts of the schematic.

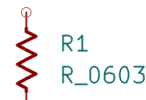
Capacitor symbol library grabs footprints from

- Resistor_SMD_AKL,
- Resistor_THT_US_AKL,
- Package_DIP_AKL
(for DIP resistor networks)

Single resistors have R as their reference designator, while resistor networks have RN as their reference designator.

Resistor_US_AKL symbol library is functionally equivalent to Resistor_AKL with the only difference being the graphical shape of the resistor symbol and linked footprint libraries. You can omit installation of this library if you want to use resistor library with european symbols instead. Linked footprint libraries are also inter-changeable, see [Section 3.1.7](#) for more details.

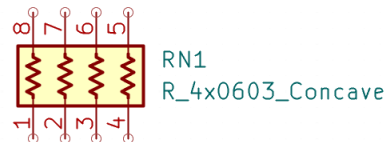
Filename: Resistor_US_AKL	
Total symbols:	191
Generic symbols:	27
Specific symbols:	164



Footprint:
Resistor_SMD_AKL:R_0603_1608Metric



Footprint:
Resistor_SMD_AKL:R_MiniMELF_MMA-0204



Footprint:
Resistor_SMD_AKL:R_Array_Concave_4x0603
R_4x0603_Sep_Concave



Footprint:
Resistor_SMD_AKL:R_Array_Concave_4x0603



Footprint:
Resistor_SMD_AKL:R_Shunt_Ohmite_LVK24



Footprint:
Resistor_THT_US_AKL:R_Array_SIP6_BigPads

SMD Chip Resistors

Symbol count: 17

Symbol naming convention:

R<size code>

Where size code is 4-digit imperial units.

Name examples:

R_0603

R_2512

Corresponding footprints:

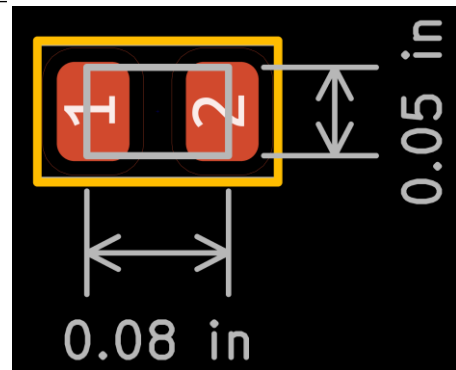
Resistor_SMD_AKL:R<imperial Size code>_<metric size code>**Metric**

Keywords:

R res resistor us smd <size code>

Search examples:

Searching '**R 0603**' will yield 0603 chip resistor symbol as a result.



An 0805 SMD chip resistor footprint with the relevant dimensions indicated.

SMD Isolated Resistor Networks

Symbol count: 28

Symbol naming convention:

R<no. of resistors>**x**<size>_<pad shape>

For standard symbols,

R<no. of resistors>**x**<size>_Sep_<pad shape>

For multi-unit symbols.

Where pad shape is either convex or concave.

Name examples:

R_2x0606_Convex

R_4x0402_Sep_Concave

Corresponding footprints:

Resistor_SMD_AKL:R_Array_<pad shape>_<no. of resistors>**x**<size>

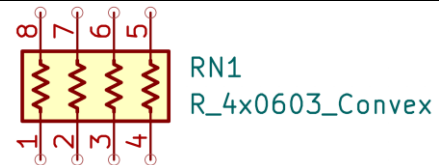
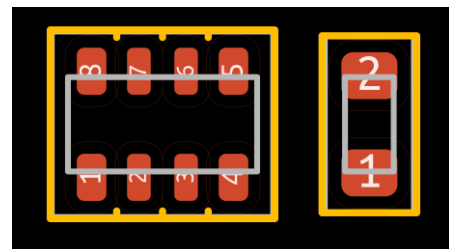
Keywords:

R smd network parallel isolated us x<no. of resistors> <size>

Search examples:

Searching '**resistor network 0603**' will yield all 0603 sized SMD resistor networks as results.

Searching '**res 4x1206**' will yield 1206 sized resistor networks with 4 resistors as results.



4x0603 Resistor Network Footprint along a single 0603 resistor (TOP) and a corresponding Resistor network symbol.

MELF Resistors

Symbol count: 3

Symbol naming convention:

R_<prefix>MELF

Name examples:

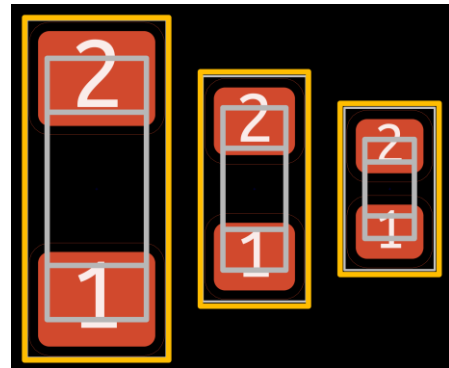
R_MELF

R_MiniMELF

R_MicroMELF

Corresponding footprints:

Resistor_SMD_AKL:R_<prefix>MELF_-<DIN size code>



Left to right: MELF, MiniMELF, MicroMELF resistor footprints.

Keywords:

R res resistor us smd <prefix> melf

Search examples:

Searching '**R mini melf**' will yield MiniMELF resistor symbol as a result.

THT Axial DIN Resistors

Symbol count: 24

Symbol naming convention:

R_DIN<size code>_P<pin pitch>mm

Where size code is the DIN size (0207, 0309 etc.).

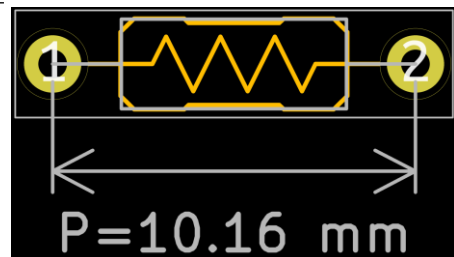
Name examples:

R_DIN0414_P5.08mm

R_DIN0207_P10.16mm

Corresponding footprints:

Resistor_THT_US_AKL:R_Axial_DIN<code>_L<len.>mm_D<dia.>mm_P<pitch>mm_<orient.>



DIN0204 THT resistor footprint with 10.16mm pin pitch as indicated.

Keywords:

R res resistor us tht <pin pitch> <size code>

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**resistor 0207**' will yield all DIN0207 sized resistor symbols as results.

Searching '**res 12.70**' will yield all resistors with 12.70mm pin pitch as results.

THT Metal Element Resistors

Symbol count: 3

Symbol naming convention:

R_Metal_Element_L<length>_W<width>_P<pin pitch>

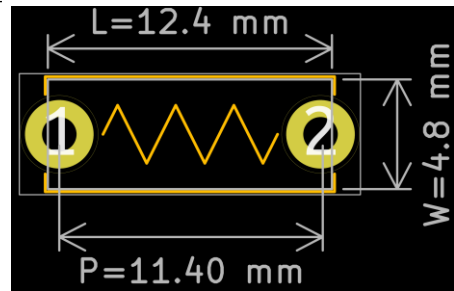
Name examples:

R_Metal_Element_L12.4mm_W4.8mm_P11.40mm

R_Metal_Element_L16.3mm_W4.8mm_P15.30mm

Corresponding footprints:

Resistor_THT_US_AKL:R_Bare_Metal_Element_L<length>_W<width>_P<pin pitch>



Bare metal element resistor footprint with relevant dimensions indicated.

Keywords:

R res resistor us tht power metal element <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**resistor metal 15.30**' will yield all bare metal resistor symbols with pin pitch equal to 15.30mm as results.

Searching '**res metal 16.3x4.8**' will yield metal element resistors with 16.3mm length and 4.8mm width as results.

THT Box Resistors

Symbol count: 4

Symbol naming convention:

R_Box_L<length>_W<width>_P<pin pitch>

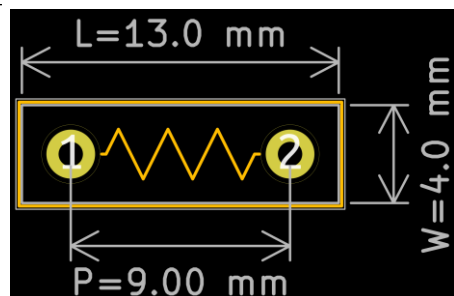
Name examples:

R_Box_L8.4mm_W2.5mm_P5.08mm

R_Box_L14.0mm_W5.0mm_P9.00mm

Corresponding footprints:

Resistor_THT_US_AKL:R_Box_L<length>_W<width>_P<pin pitch>



Box Resistor Footprint with all relevant dimensions indicated.

Keywords:

R res resistor us tht box <pin pitch> <length>x<width>

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**R box 9.00**' will yield all box resistors with 9mm pin pitch as results.

Searching '**R box 14.0x5.0**' will yield box resistors with 14mm length and 5mm width.

DIP Bussed Resistor Networks

Symbol count: 5

Symbol naming convention:

R_Bussed_DIP-<pin count>

Name examples:

R_Bussed_DIP-8

R_Bussed_DIP-20

Corresponding footprints:

Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:

R network bussed star us x<resistor count> DIP-<pin count>

Search examples:

Searching '**R bussed x15**' will yield all bussed resistor networks with 15 resistors as results.

Searching '**R bussed DIP-14**' will yield DIP-14 bussed resistor network symbol as a result..

SIP Bussed Resistor Networks

Symbol count: 11

Symbol naming convention:

R_Bussed_SIP-<pin count>

Name examples:

R_Bussed_SIP-4

R_Bussed_SIP-13

Corresponding footprints:

Resistor_THT_US_AKL:R_Array_SIP<pin count>**_BigPads**

Keywords:

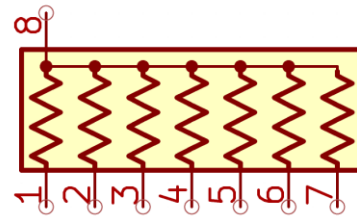
R network bussed star x<resistor count> us sip <pin count>

Search examples:

Searching '**R bussed x5**' will yield all bussed resistor networks with 5 resistors as results.

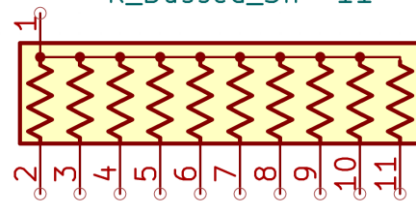
Searching '**R bussed sip**' will yield all SIP bussed resistor network symbols..

RN1
R_Bussed_DIP-8



DIP-8 bussed resistor network symbol.

RN1
R_Bussed_SIP-11



SIP-11 bussed resistor network symbol

DIP Isolated Resistor Networks

Symbol count: 10

Symbol naming convention:

R_Pack_DIP-<pin count>

For standard symbols,

R_Pack_DIP-<pin count>_Sep

For multi-unit symbols.

Name examples:

R_Pack_DIP-8

R_Pack_DIP-16_Sep

Corresponding footprints:

Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:

R network parallel isolated us x<resistor count> dip <pin count>

Search examples:

Searching '**R isolated x4**' will yield all isolated resistor networks with 4 resistors as results.

Searching '**R isolated dip**' will yield all DIP isolated resistor network symbols..

SIP Isolated Resistor Networks

Symbol count: 12

Symbol naming convention:

R_Pack_SIP-<pin count>

For standard symbols,

R_Pack_SIP-<pin count>_Sep

For multi-unit symbols.

Name examples:

R_Pack_SIP-6

R_Pack_SIP-12_Sep

Corresponding footprints:

Resistor_THT_US_AKL:R_Array_SIP<pin count>_BigPads

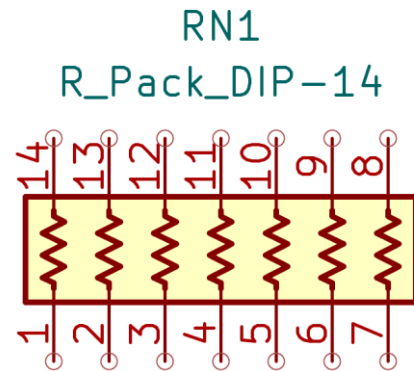
Keywords:

R network parallel isolated us x<resistor count> sip <pin count>

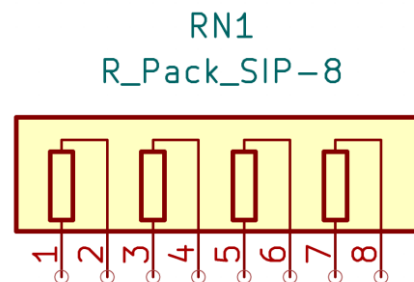
Search examples:

Searching '**R isolated x3**' will yield all isolated resistor networks with 3 resistors as results.

Searching '**R isolated sip**' will yield all SIP isolated resistor network symbols..



DIP-14 isolated resistor network symbol.



SIP-8 isolated resistor network symbol

DIP Termination Resistor Networks

Symbol count: 5

Symbol naming convention:

R_Termination_DIP-<pin count>

Name examples:

R_Termination_DIP-14

R_Termination_DIP-18

Corresponding footprints:

Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:

R dividers terminator termination us x<line count> dip <pin count>

Search examples:

Searching '**R termination x6**' will yield all termination resistor networks with 6 double-terminated lines.

Searching '**R termination dip**' will yield all DIP termination resistor network symbols..

SIP Termination Resistor Networks

Symbol count: 11

Symbol naming convention:

R_Termination_SIP-<pin count>

Name examples:

R_Termination_SIP-6

R_Termination_SIP-14

Corresponding footprints:

Resistor_THT_US_AKL:R_Array_SIP<pin count>**_BigPads**

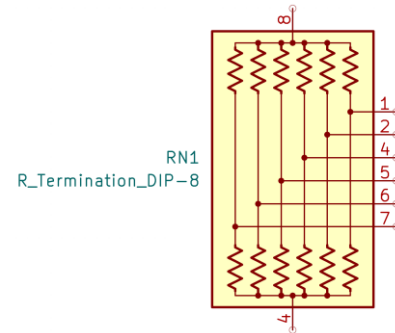
Keywords:

R dividers terminator termination us x<line count> sip <pin count>

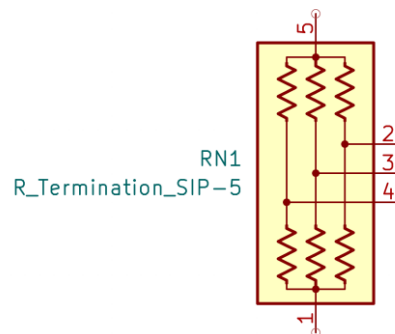
Search examples:

Searching '**R termination x5**' will yield all termination resistor networks with 5 double-terminated lines as results.

Searching '**R termination sip**' will yield all SIP termination resistor network symbols..



DIP-8 termination resistor network symbol.



SIP-5 termination resistor network symbol

THT Axial Power Resistors

Symbol count: 13

Symbol naming convention:

R_Power_L<length>_**W**<width>_**P**<pin pitch>

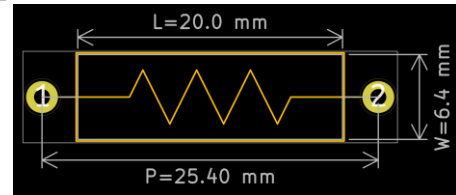
Name examples:

R_Power_L38.0mm_W6.4mm_P40.64mm

R_Power_L75.0mm_W9.0mm_P81.28mm

Corresponding footprints:

Resistor_THT_US_AKL:R_Axial_Power_L<length>_**W**<width>_**P**<pin pitch>_<orientation (opt.)>



Power resistor footprint with relevant dimensions indicated.

Keywords:

R res resistor us tht power <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**resistor power 25.40**' will yield all power resistor symbols with pin pitch equal to 25.40mm as results.

Searching '**res power 60.0x14.0**' will yield power resistors with 60mm length and 14mm width as results.

THT Radial Power Resistors

Symbol count: 6

Symbol naming convention:

R_Power_Radial_L<length>_**W**<width>_**P**<pin pitch>

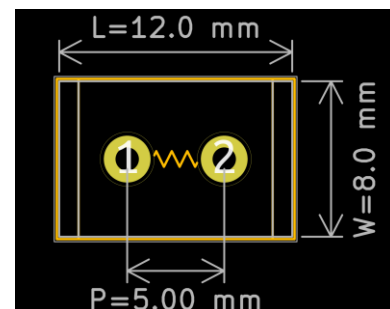
Name examples:

R_Power_Radial_L35.3mm_W9.5mm_P25.40mm

R_Power_Radial_L7.0mm_W8.0mm_Px2.40mm_Py2.30mm

Corresponding footprints:

Resistor_THT_US_AKL:R_Radial_Power_L<length>_**W**<width>_**P**<pin pitch>



Radial power resistor Footprint with all relevant dimensions indicated.

Keywords:

R res resistor us tht power <pin pitch> <length>x<width>

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**R power 5.00**' will yield all power resistors with 5mm pin pitch as results.

Searching '**R power 13.0x9.0**' will yield power resistors with 13mm length and 9mm width.

Axial Power Shunt Resistors

Symbol count: 5

Symbol naming convention:

R_Power_Shunt_L<length>_**W**<width>_**P**<pin pitch>

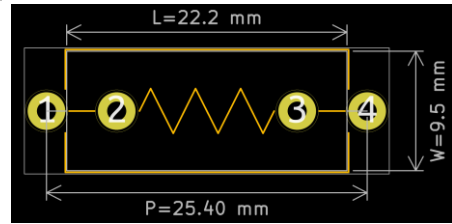
Name examples:

R_Power_Shunt_L22.2mm_W8.0mm_P25.40mm

R_Power_Shunt_L47.6mm_W9.5mm_P50.80mm

Corresponding footprints:

Resistor_THT_US_AKL:R_Axial_Shunt_L<length>_**W**<width>_**Ps**<sense pin pitch>_**P**<pin pitch>



Shunt power resistor footprint with relevant dimensions indicated.

Keywords:

R res shunt resistor us tht power <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:

Searching '**resistor shunt 38.10**' will yield all shunt resistor symbols with pin pitch equal to 38.10mm as results.

Searching '**res shunt 35.3x9.5**' will yield shunt resistors with 35.3mm length and 9.5mm width as results.

Non-standard resistor symbols

Symbol count: 7

Some resistor, shunt resistor or resistor network families have a non-standard footprint. A separate specific symbol is provided for each device family.

Symbol naming convention:

<manufacturer>_<device family name>

Existing non-standard resistor symbol list:

Ohmite_LVK12

Ohmite_LVK20

Ohmite_LVK24

Ohmite_LVK25

Vishay_WSK2512

Vishay_WSKW0612

Vishay_WSR2_WSR3

2.28. Thyristor Library

This library contains Silicon Controlled Rectifiers (SCRs) also known as thyristors.

Anode-gated thyristors have the gate terminal visibly connected to the anode instead of cathode.

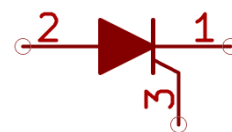
All thyristors have Q as their reference designator.

All available orderable part numbers for each device with different package and electrical characteristics have separate specific symbols.

Filename: Thyristor_AKL	
Total symbols:	251
Generic symbols:	4
Specific symbols:	247

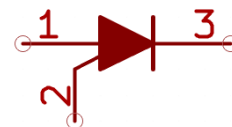
Q1

2N6404



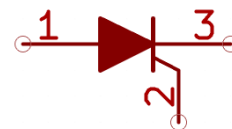
Q2

CLB30I1200HB



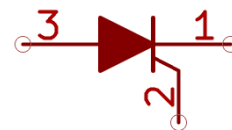
Q3

BT169G



Q4

MCR100-5



Q5

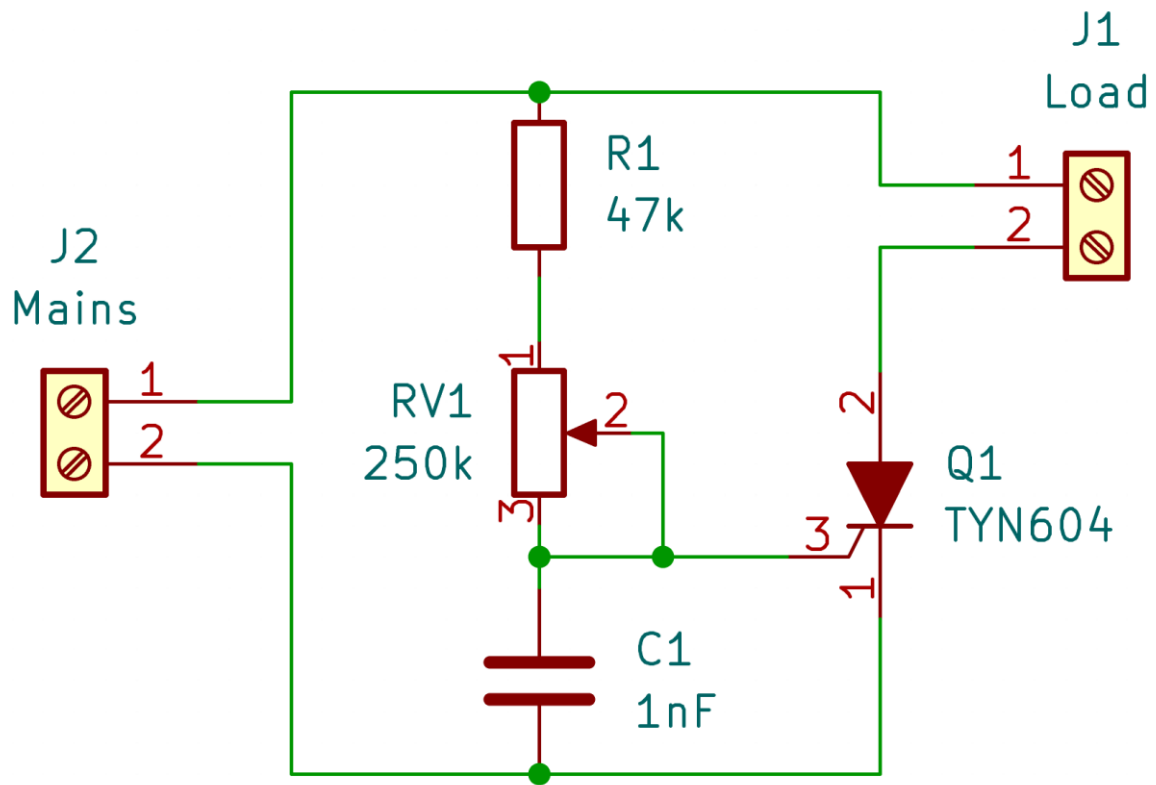
X0405M



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

AC power control circuit based on TYN604 thyristor.

Table list of all devices included in this library

Device Family	Example symbol names	No. of symbols
2N640x	2N6400, 2N6401, 2N6402, 2N6403, 2N6404, 2N6405	6
2N650x	2N6504, 2N6505, 2N6507, 2N6508, 2N6509	5
2N6565	2N6565	1
BT145-xxxR	BT145-500R, BT145-600R, BT145-800R	3
BT148W-600R	BT148W-600R	1
BT149x	BT149D, BT149G	2
BT150-500R	BT150-500R	1
BT151-xxxC	BT151-500C, BT151-650C, BT151-800C	3
BT151-500L	BT151-500L	1
BT151-xxxR	BT151-500R, BT151-650R, BT151-800R	3
BT151-xxxRT	BT151-500RT, BT151-1000RT	2
BT151S-xxxL	BT151S-500L, BT151S-650L	2
BT151S-xxxR	BT151S-500R, BT151S-650R, BT151S-800R	3
BT152-xxxR	BT152-400R, BT152-600R, BT152-800R	3
BT152-1200T	BT152-1200T	1
BT152B-xxxR	BT152B-400R, BT152B-600R, BT152B-800R	3
BT152X-xxxR	BT152X-600R, BT152X-800R	2
BT155K-1200T	BT155K-1200T	1
BT155W-1200T	BT155W-1200T	1
BT158W-1200T	BT158W-1200T	1
BT168GW	BT168GW	1
BT169x	BT169B, BT169D, BT169G	3
BT258-xxxR	BT258-500R, BT258-600R, BT258-800R	3
BT258S-800LT	BT258S-800LT	1
BT258S-800R	BT258S-800R	1
BTW68-xxxRG	BTW68-600RG, BTW68-800RG, BTW68-1000RG ...	4
BTW69-xxxRG	BTW69-600RG, BTW69-800RG, BTW69-1200RG	3
C106x	C106B, C106D, C106D1, C106M	4
CLA5E1200PZ	CLA5E1200PZ	1
CLA15E1200NPZ	CLA15E1200NPZ	1
CLA30E1200HB	CLA30E1200HB	1
CLA30E1200NPZ	CLA30E1200NPZ	1
CLA30E1200PB	CLA30E1200PB	1
CLA40E1200HR	CLA40E1200HR	1
CLA40E1200NPZ	CLA40E1200NPZ	1
CLA50E1200HB	CLA50E1200HB	1
CLA50E1200TC	CLA50E1200TC	1
CLB30I1200HB	CLB30I1200HB	1
CLB30I1200PZ	CLB30I1200PZ	1
CLE30E1200PB	CLE30E1200PB	1
CLE40E1200HB	CLE40E1200HB	1
CLF20E1200PB	CLF20E1200PB	1
CMA20E1600PB	CMA20E1600PB	1

Table list of all devices included in this library (cont.)

Device Family	Example symbol names	No. of symbols
CMA20E1600PZ	CMA20E1600PZ	1
CMA30E1600PB	CMA30E1600PB	1
CMA30E1600PN	CMA30E1600PN	1
CMA30E1600PZ	CMA30E1600PZ	1
CMA50E1600HB	CMA50E1600HB	1
CMA50E1600QB	CMA50E1600QB	1
CMA50E1600TZ	CMA50E1600TZ	1
CMA80E1600HB	CMA80E1600HB	1
CME30E1600PZ	CME30E1600PZ	1
CS19-xxho1	CS19-08ho1, CS19-12ho1	2
CS19-xxho1S	CS19-08ho1S, CS19-12ho1S	2
CS20-xxio1	CS20-12io1, CS20-16io1	2
CS20-25moT1	CS20-25moT1	1
CS22-xxio1M	CS22-08io1M, CS22-12io1M	2
CS30-12io1	CS30-12io1	1
CS45-xxio1	CS45-08io1, CS45-12io1, CS45-16io1	3
CS60-16io1	CS60-16io1	1
EC103D1W	EC103D1W	1
MCR08	MCR08B, MCR08BT1, MCR08M	3
MCR12xG	MCR12DG, MCR12MG, MCR12NG	3
MCR16NG	MCR16NG	1
MCR25xG	MCR25DG, MCR25MG, MCR25NG	3
MCR69	MCR69-2, MCR69-3	2
MCR100	MCR100-3, MCR100-4, MCR100-5, MCR100-6 ...	6
MCR106	MCR106-6, MCR106-8	2
MCR310	MCR310-6, MCR310-8, MCR310-10	3
MCR703A	MCR703A	1
MCR706A	MCR706A	1
MCR708A	MCR708A	1
MCR708A1	MCR708A1	1
NYC0102BLT1G	NYC0102BLT1G	1
P0102xA	P0102AA, P0102BA, P0102DA, P0102MA	4
P0102xL	P0102AL, P0102BL	2
P0102xN	P0102DN, P0102MN	2
P0109AL	P0109AL	1
P0109DA	P0109DA	1
P0130AA	P0130AA	1
Sxx20L	S4020L, S6020L, S8020L, SKD20L	4
Sxx25L	S4025L, S6025L, S8025L, SKD25L	4
Sxx25N	S4025N, S6025N, S8025N, SKD25N	4
Sxx25R	S4025R, S6025R, S8025R, SKD25R	4
Sxx55M	S4055M, S6055M, S8055M, SKD55M	4
Sxx55N	S4055N, S6055N, S8055N, SKD55N	4

Table list of all devices included in this library (cont.)

Device Family	Example symbol names	No. of symbols
Sxx55R	S4055R, S6055R, S8055R, SKD55R	4
Sxx65K	S4065K, S6065K, S8065K, SKD65K	4
TN22-1500H	TN22-1500H	1
TN22-1500T	TN22-1500T	1
TN1205T-600B	TN1205T-600B	1
TN1215-xxxB	TN1215-600B, TN1215-800B	2
TN1215-xxxG	TN1215-600G, TN1215-800G	2
TN1215-xxxH	TN1215-600H, TH1215-800H	2
TN1625-xxxG	TN1625-600G, TN1625-1000G	2
TN2540-xxxG	TN2540-600G, TN2540-800G	2
TS805-600B	TS805-600B	1
TS815-xxxB	TS815-600B, TS815-800B	2
TS820-600B	TS820-600B	1
TS820-600FP	TS820-600FP	1
TS820-600H	TS820-600H	1
TS820-600T	TS820-600T	1
TS1220-600B	TS1220-600B	1
TS1220-600H	TS1220-600H	1
TS1220-600T	TS1220-600T	1
TXN625	TXN625	1
TYNx04	TYN204, TYN404, TYN604, TYN804, TYN1004	5
TYNx10	TYN410, TYN610, TYN810	3
TYNx12	TYN412, TYN612, TYN812, TYN1012	4
TYNx12T	TYN612T, TYN812T, TYN1012T	3
TYNx16	TYN616, TYN816	2
TYNx25	TYN625, TYN825, TYN1225	3
TYNx40	TYN640, TYN840	2
TYN608	TYN608	1
TYN612M	TYN612M	1
TYN612MFP	TYN612MFP	1
VS-12TTS08	VS-12TTS08	1
VS-16TTSxx	VS-16TTS08, VS-16TTS12	2
VS-16TTS16S	VS-16TT16S	1
VS-25TTSxx	VS-25TTS08, VS-25TTS12	2
VS-25TTSxxFP	VS-25TTS08FP, VS-25TTS12FP	2
VS-25TTS12S	VS-25TTS08S, VS-25TTS12S	2
VS-30TPSxx	VS-30TPS08, VS-30TPS12, VS-30TPS16	3
VS-40TPSxx	VS-40TPS08, VS-40TPS12, VS-40TPS16	3
VS-40TPSxxA	VS-40TPS08A, VS-40TPS12A	2
X0402x	X0402M, X0402N	2
X0405x	X0405M, X0405N	2

2.29. Bipolar Transistor Library

This library contains Bipolar Junction Transistors (BJTs) and transistor arrays.

PNP transistors by default have emitter on the top of the symbol and collector at the bottom (as opposed to NPN transistors).

Dual NPN or PNP matched transistors have total of 4 symbol variants: 3 standard variants with different spacing between transistors (no suffix, -1 and -2 suffixes) and a disaggregated multi-unit variant (lowercase s) to ensure maximum schematic flexibility when designing differential amplifiers and other analog circuits from discrete transistors.

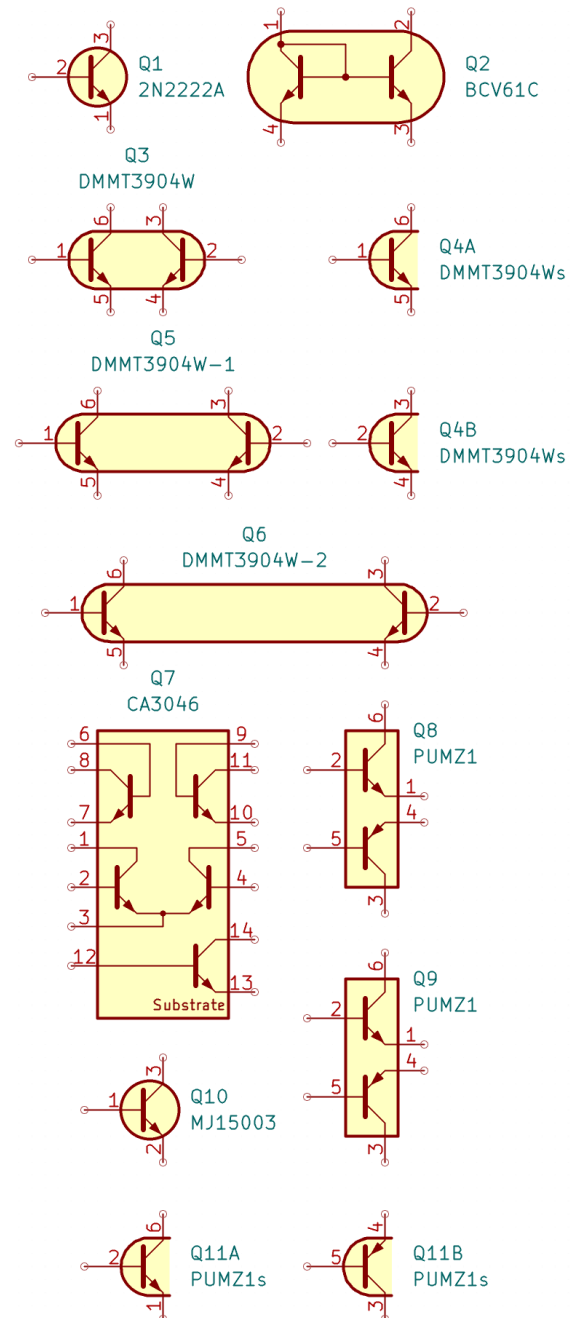
Dual NPN or PNP standard transistors have only 2 symbol variants: standard and disaggregated multi-unit symbol with 's' suffix.

Complementary transistor arrays (NPN + PNP) have 3 symbol variants: One with emitters of both transistors close together (no suffix), one with collectors of both transistors close together (-H suffix) and a multi-unit disaggregated symbol (lowercase s suffix).

Transistor arrays containing more than two transistors might have one or two symbol variants depending on the internal configuration.

Each available orderable part number with different electrical characteristics, current gain grade (not all devices), configuration, pinout and package for each transistor type has a separate specific symbol.

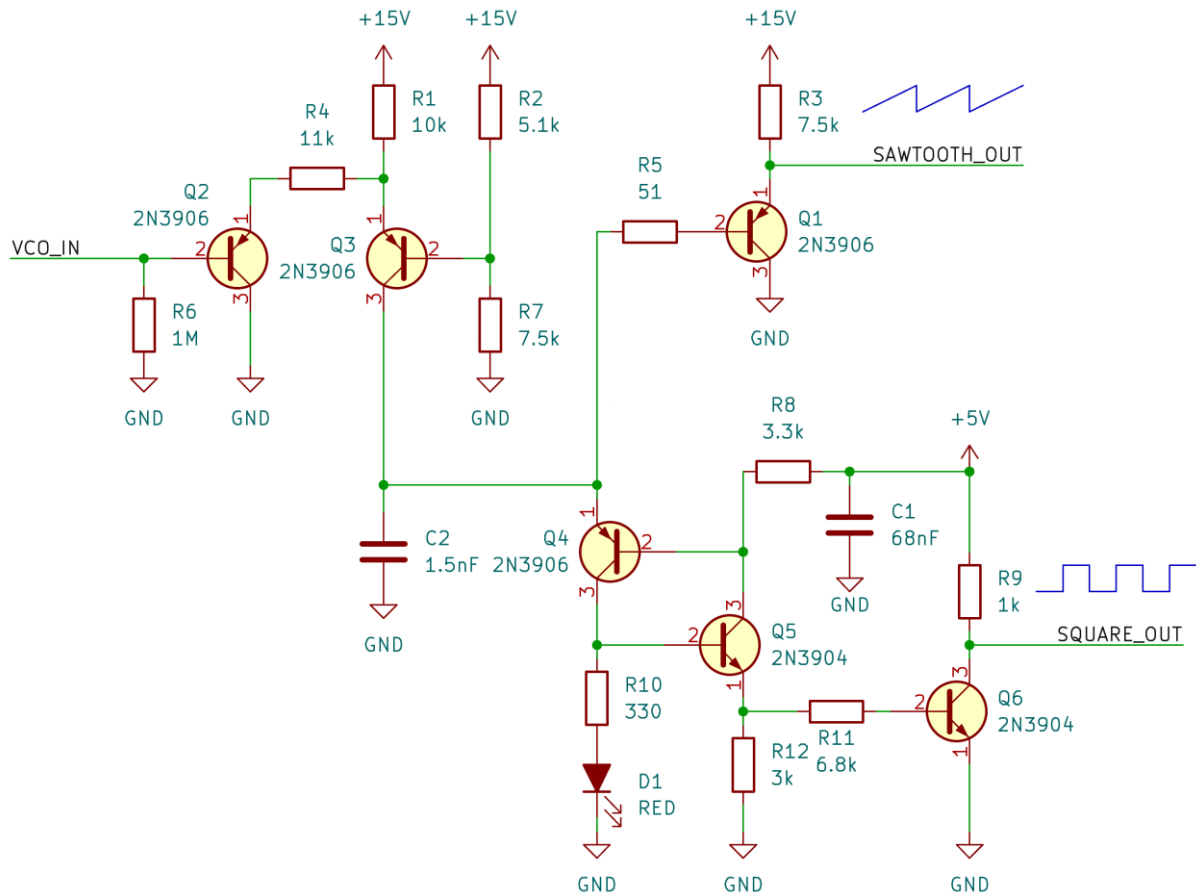
Filename: Transistor_BJT_AKL	
Total symbols:	1364
Generic symbols:	85
Specific symbols:	1279



Schematic examples

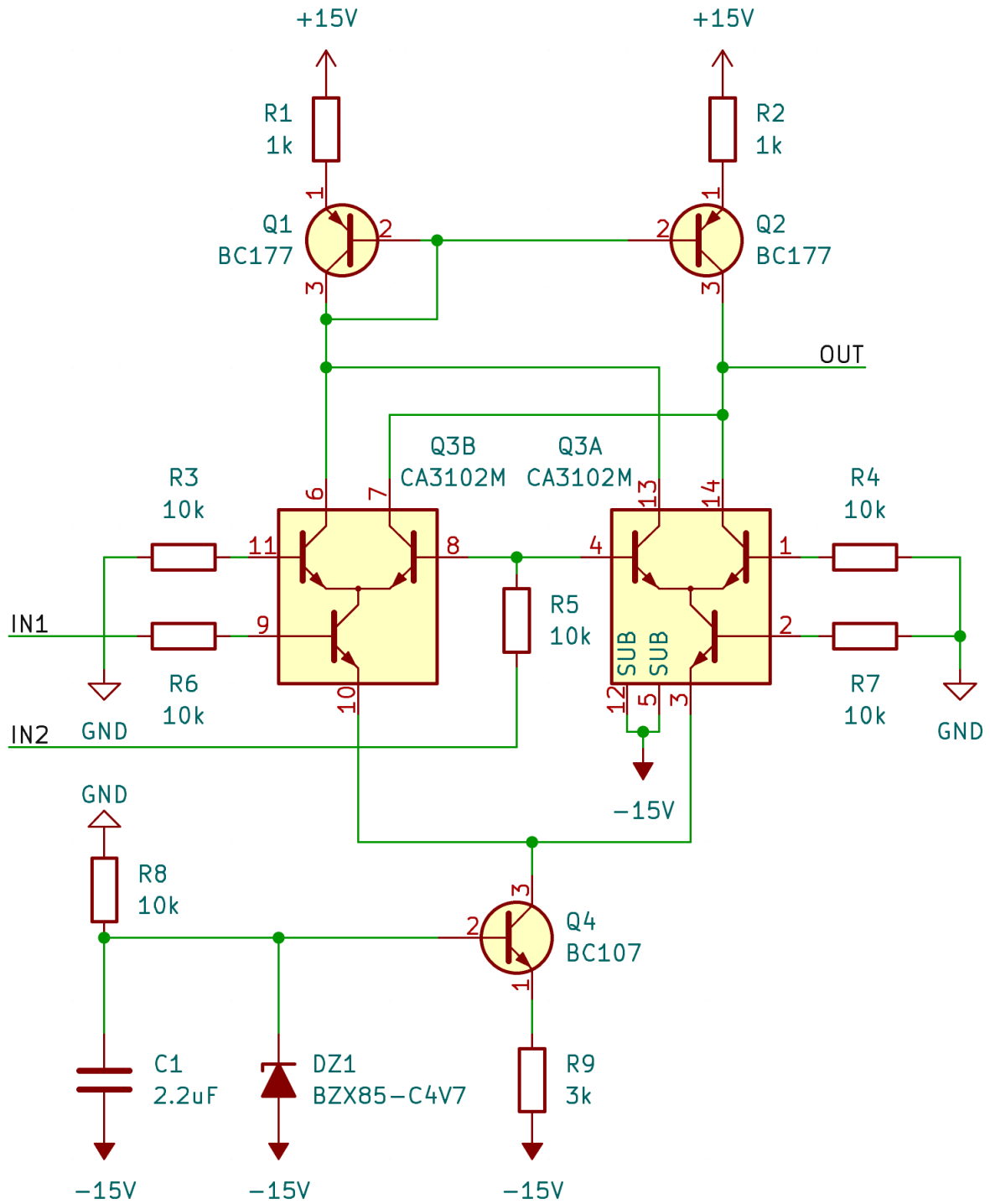
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



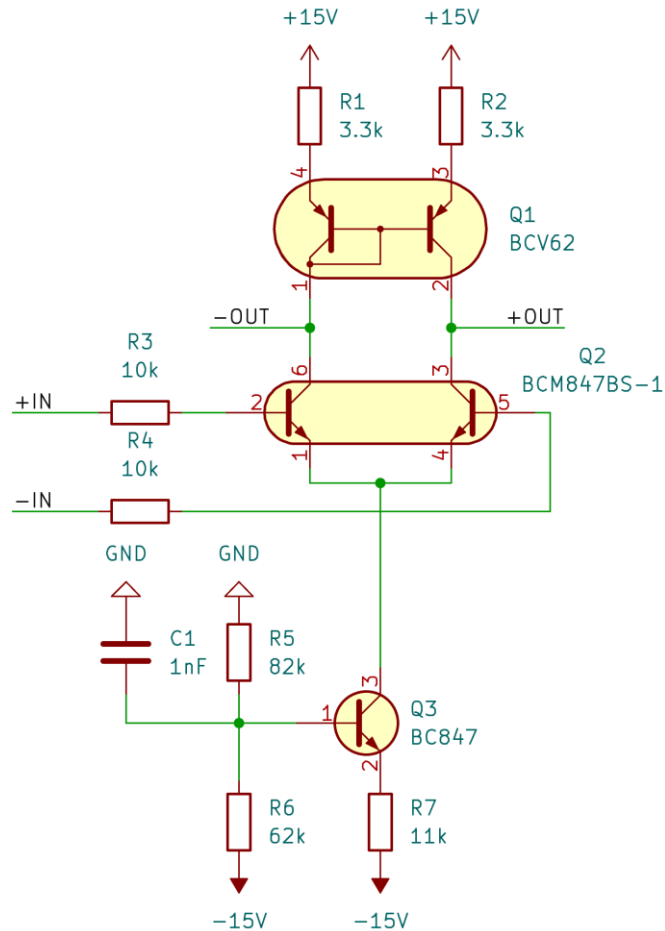
Example 1

Voltage controlled relaxation oscillator built using 2N3904 and 2N3906 transistors with square and sawtooth wave outputs.



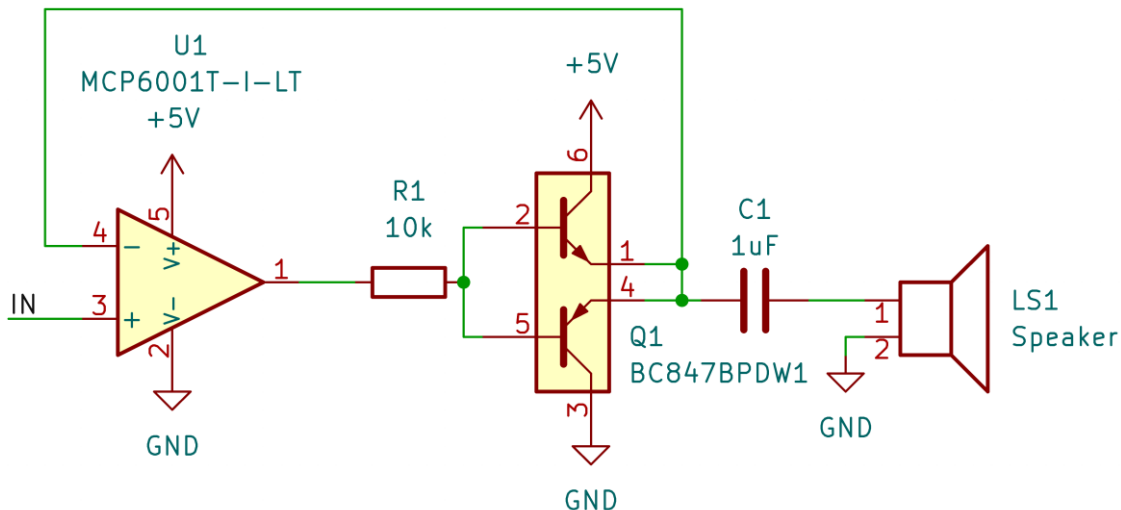
Example 2

Gilbert cell 4-quadrant analog multiplier using CA3102M transistor array, BC177 PNP transistors and a BC107 transistor.



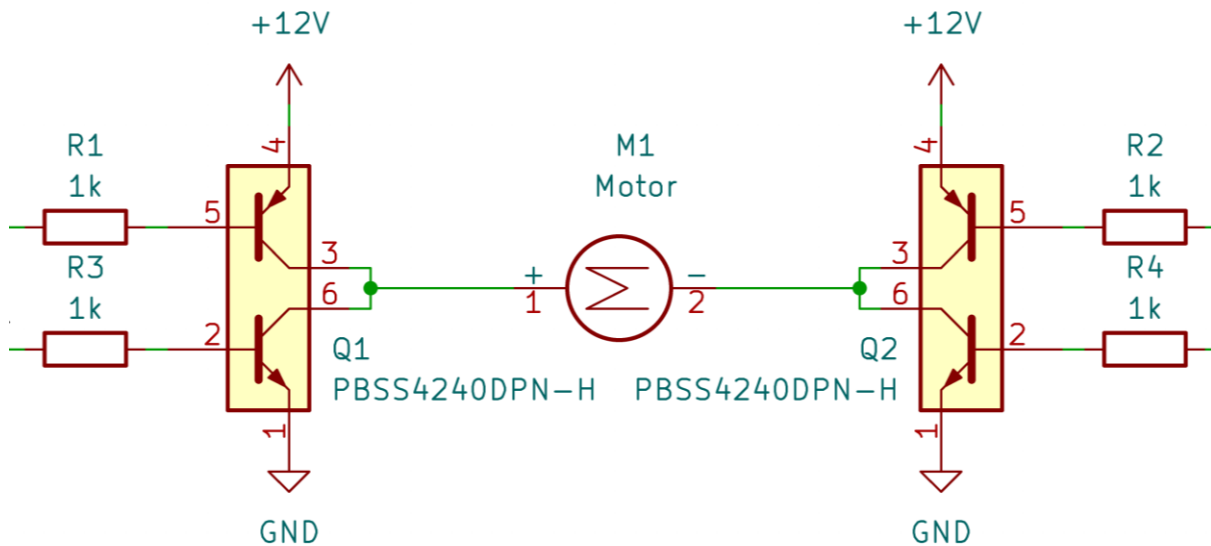
Example 3

Differential amplifier using BCM847BS dual matched NPN transistor ('-1' symbol variant), BCV62 PNP current mirror and a BC847 single NPN transistor



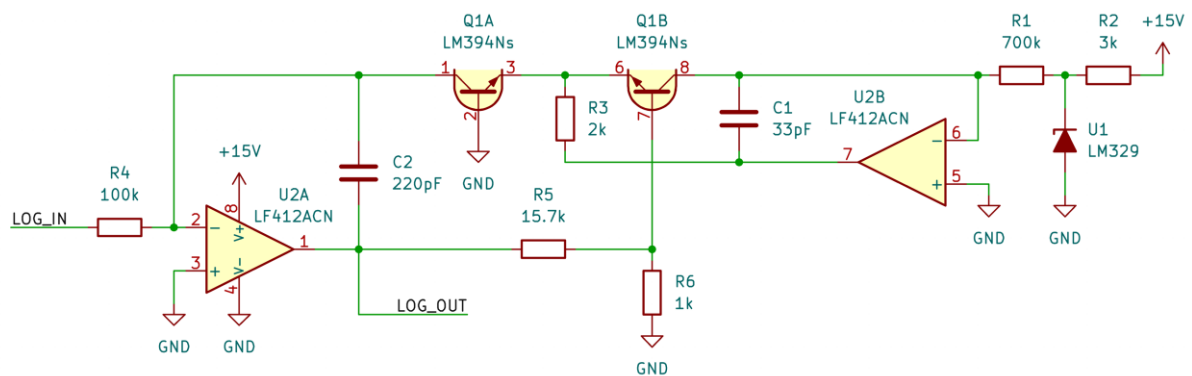
Example 4

Class-AB power amplifier driving a small buzzed/speaker using BC847BPDW1 complementary dual transistor with a standard symbol variant.



Example 5

Miniature DC motor H-Bridge driver using two PBSS4240DPN dual complementary transistors with '-H' symbol variant.



Example 6

Logarithmic amplifier based on LM394 matched transistor pair ('s' symbol variant).

Table list of all devices included in this library

Device	No. of symbols
2DA1971	1
2DD1664	4
2DD1766	4
2DD2098	1
2DD2652	1
2DD2679	1
2N696	1
2N697	1
2N1613	1
2N1711	1
2N1893	1
2N2102	1
2N2219	2
2N2222	3
2N2369	1
2N2484	1
2N2904	2
2N2905	2
2N2906	2
2N2907	3
2N3019	2
2N3053	2
2N3054	2
2N3055	2
2N3439	1
2N3440	1
2N3441	1
2N3442	1
2N3502	1
2N3503	1
2N3504	1
2N3505	1
2N3546	1
2N3570	1
2N3700	1
2N3702	1
2N3771	1
2N3772	1
2N3773	1
2N3866	2
2N3904	1
2N3906	1
2N4030	1

Device	No. of symbols
2N4031	1
2N4032	1
2N4033	1
2N4036	1
2N4037	1
2N4234	1
2N4235	1
2N4236	1
2N4237	1
2N4238	1
2N4239	1
2N4401	1
2N4403	1
2N4904	1
2N4905	1
2N4906	1
2N4913	1
2N4914	1
2N4915	1
2N4918	1
2N4919	1
2N4920	1
2N4921	1
2N4922	1
2N4923	1
2N5038	1
2N5087	1
2N5172	1
2N5190	1
2N5191	1
2N5192	1
2N5194	1
2N5195	1
2N5320	1
2N5321	1
2N5322	1
2N5323	1
2N5336	1
2N5337	1
2N5338	1
2N5339	1
2N5400	1
2N5401	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
2N5415	1
2N5416	1
2N5550	1
2N5551	1
2N5679	1
2N5680	1
2N5681	1
2N5682	1
2N5685	1
2N5686	1
2N5883	1
2N5884	1
2N5885	1
2N5886	1
2N6076	1
2N6107	1
2N6109	1
2N6111	1
2N6263	1
2N6264	1
2N6288	1
2N6292	1
2N6430	1
2N6431	1
2N6432	1
2N6433	1
2N6487	1
2N6488	1
2N6490	1
2N6491	1
2N6515	1
2N6517	1
2N6520	1
2N6547	1
2N6609	1
2SA683	1
2SA684	1
2SA719	1
2SA720	1
2SA733	1
2SA928	1
2SA950	1
2SA952	1

Device	No. of symbols
2SA966	1
2SA1012	1
2SA1015	1
2SA1018	1
2SA1020	1
2SA1145	1
2SA1162	1
2SA1268	1
2SA1270	1
2SA1273	1
2SA1275	1
2SA1312	1
2SA1313	1
2SA1362	1
2SA1491	1
2SA1535	2
2SA1586	1
2SA1587	1
2SA1657	1
2SA1667	1
2SA1668	1
2SA1694	1
2SA1774	1
2SA1943	1
2SA2018	1
2SA2030	1
2SA2119	1
2SAR523	3
2SAR544	1
2SB536	1
2SB544	1
2SB562	1
2SB647	2
2SB738	1
2SB739	1
2SB857	1
2SB858	1
2SB861	1
2SB1015	1
2SB1184	1
2SB1299	1
2SC388	1
2SC945	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
2SC1317	1
2SC1318	1
2SC1383	1
2SC1384	1
2SC1473	2
2SC1573	3
2SC1815	1
2SC1959	1
2SC2001	1
2SC2068	1
2SC2073	1
2SC2120	1
2SC2236	1
2SC2310	1
2SC2562	1
2SC2570	1
2SC2655	1
2SC2705	1
2SC2713	1
2SC2714	1
2SC2898	1
2SC2925	1
2SC3198	1
2SC3199	1
2SC3202	1
2SC3203	1
2SC3205	1
2SC3206	1
2SC3228	1
2SC3320	1
2SC3325	1
2SC3326	1
2SC3503	1
2SC3675	1
2SC3851	2
2SC3855	1
2SC3944	2
2SC4116	1
2SC4117	1
2SC4131	1
2SC4213	1
2SC4368	1
2SC4381	1

Device	No. of symbols
2SC4382	1
2SC4467	1
2SC4495	1
2SC4572	1
2SC4726	1
2SC4769	1
2SC5024	1
2SC5144	1
2SC5200	1
2SCR544	1
2SD381	1
2SD400	1
2SD468	1
2SD471	1
2SD667	1
2SD787	1
2SD788	1
2SD882	1
2SD965	1
2SD1047	1
2SD1133	1
2SD1134	1
2SD1138	1
2SD1207	1
2SD1273	2
2SD1406	1
2SD2012	1
2SD5072	1
300P14	1
300S14	1
320P14	1
320S14	1
340P14	1
340S14	1
BC107	3
BC108	4
BC109	3
BC140	4
BC141	4
BC160	4
BC161	4
BC167	1
BC168	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
BC169	1
BC171	3
BC172	4
BC174	3
BC177	4
BC178	4
BC179	4
BC182	2
BC183	1
BC184	1
BC211	1
BC212	1
BC213	1
BC214	1
BC237	1
BC238	1
BC239	1
BC257	1
BC258	1
BC259	1
BC300	1
BC301	1
BC302	1
BC303	1
BC304	1
BC307	1
BC308	1
BC309	1
BC313	1
BC317	1
BC318	1
BC319	1
BC320	1
BC321	1
BC322	1
BC327	1
BC328	1
BC337	1
BC338	1
BC393	1
BC394	1
BC440	1
BC441	1

Device	No. of symbols
BC460	1
BC461	1
BC546	4
BC547	4
BC548	4
BC549	4
BC550	4
BC556	4
BC557	4
BC558	4
BC559	4
BC560	4
BC635	1
BC636	1
BC637	1
BC638	1
BC639	1
BC640	1
BC807	4
BC807W	4
BC807U	1
BC817	4
BC817W	4
BC817DFN	3
BC817DS	2
BC817K	1
BC817U	2
BC817UPN	3
BC818	1
BC818K	1
BC846	3
BC846T	3
BC846W	3
BC846BPDW1	3
BC846BS	2
BC846PN	3
BC846S	2
BC846UPN	3
BC847	4
BC847M	4
BC847T	4
BC847W	4
BC847BPDW1	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
BC847BPN	3
BC847BS	2
BC847BV	2
BC847BVN	3
BC847PN	3
BC847S	2
BC848	4
BC848W	4
BC848CPDW1	3
BC849	3
BC849W	3
BC850	3
BC850W	3
BC856	4
BC856W	4
BC856BDW1T	2
BC856BS	2
BC856S	2
BC856U	2
BC857	4
BC857T	4
BC857W	4
BC857BDW1T	2
BC857BS	2
BC857S	2
BC858	4
BC858W	4
BC858CDW1T	2
BC859	4
BC859W	4
BC860	4
BC860W	4
BC868	1
BC869	1
BC33716	1
BC33725	1
BC33740	1
BC33825	1
BC63916	1
BCM846S	4
BCM847BS	4
BCM847BV	4
BCM847DS	4

Device	No. of symbols
BCM856S	4
BCM857BS	4
BCM857BV	4
BCM857DS	4
BCP51	3
BCP52	3
BCP53	3
BCP54	3
BCP55	3
BCP56	3
BCP68	1
BCP69	1
BCV61	4
BCV62	4
BCV65	1
BCV71	1
BCV72	1
BCW29	1
BCW30	1
BCW31	1
BCW32	1
BCW33	1
BCW60	4
BCW61	1
BCW66	1
BCW67	1
BCW68	1
BCW71	1
BCW72	1
BCW89	1
BCX17	1
BCX18	1
BCX19	1
BCX41	1
BCX42	1
BCX51	3
BCX52	3
BCX53	3
BCX54	3
BCX55	3
BCX56	3
BCX70	1
BCX71	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
BD135	4
BD136	3
BD137	3
BD138	3
BD139	4
BD140	3
BD179	1
BD201	1
BD202	1
BD203	1
BD204	1
BD235	1
BD236	1
BD237	1
BD238	1
BD239C	1
BD241A	1
BD241C	1
BD242	4
BD243	2
BD244	2
BD255	1
BD354	1
BD355	1
BD433	1
BD434	1
BD435	1
BD436	1
BD437	1
BD438	1
BD439	1
BD440	1
BD441	1
BD442	1
BD787	1
BD788	1
BD909	1
BD910	1
BD911	1
BD912	1
BDP948	1
BDP950	1
BDP954	1

Device	No. of symbols
BDW42	1
BDW46	1
BDW47	1
BDY55	1
BDY73	1
BF182	1
BF183	1
BF199	1
BF214	1
BF215	1
BF240	1
BF241	1
BF257	1
BF258	1
BF259	1
BF370	1
BF420	1
BF421	1
BF422	1
BF423	1
BF469	1
BF470	1
BF471	1
BF472	1
BF479	1
BF494	1
BF495	1
BF506	1
BF820	1
BF821	1
BF822	1
BF823	1
BF840	1
BF888	1
BF959	1
BF979	1
BFN24	1
BFN26	1
BFN27	1
BFP193	1
BFP193W	1
BFP196W	1
BFP405	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
BFP420	1
BFP450	1
BFP520	1
BFP540	1
BFP640	1
BFP650	1
BFP760	1
BFQ19S	1
BFQ51	1
BFQ131	1
BFQ162	1
BFQ262	1
BFQ262A	1
BFR90A	1
BFR91A	1
BFR92P	1
BFR93AW	1
BFR93P	1
BFR106	1
BFR181	1
BFR181W	1
BFR193	1
BFR193W	1
BFS17P	1
BFS17W	1
BFS20	1
BFT25	1
BFU520A	1
BFU520X	1
BFU590G	1
BFW92A	1
BFX85	1
BFY50	1
BFY51	1
BSP31	1
BSP32	1
BSP33	1
BSP41	1
BSP43	1
BSR13	1
BSR14	1
BSR15	1
BSR16	1

Device	No. of symbols
BSR17A	1
BSR19	1
BSR19A	1
BSR33	1
BSR43	1
BSS63	1
BSS64	1
BST39	1
BSV52	1
BSX59	1
BSX61	1
BU126	1
BU204	1
BU205	1
BU207	1
BU208	2
BU326	2
BU406	1
BU407	1
BU408	1
BU508A	1
BU508AW	1
BU1508AX	1
BUL38D	1
BUL39D	1
BUL45D2G	1
BUL49D	1
BUL49DFP	1
BUL216	1
BUL381D	1
BUL742C	1
BUL742CFP	1
BULB49D-1	1
BULB49DT4	1
BULB742C-1	1
BULB742CT4	1
BULD118D-1	1
BUTW92	1
BUV21	1
BUV48A	1
BUW52	1
BUX48	2
BUX80	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
BUX85G	1
CA3046	2
CA3046M	2
CA3102M	1
D44H8	1
D44H11	1
D44VH10	1
D45H8	1
D45H11	1
D45VH10	1
D4203D	1
DMC50201	1
DMMT3904W	4
DMMT5401	2
DMMT5551	4
DMMT5551S	4
DSS5540X	1
DXTA92	1
DZT2907A	1
DZTA42	1
FCX458	1
FCX491	1
FCX690B	1
FCX790A	1
FJL6920	1
FJP13007	1
FJP13009	1
FMMT458	1
FMMT491A	1
FMMT493A	1
FMMT551	1
FMMT558	1
FMMT560	1
FMMT591A	1
FMMT539	1
FMMT617	1
FMMT619	1
FMMT620	1
FMMT625	1
FMMT717	1
FMMT718	1
FMMT720	1
FMMTA42	1

Device	No. of symbols
FMMTA92	1
FZT489	1
FZT651	1
FZT653	1
FZT657	1
FZT717	1
FZT751	1
FZT790	1
FZT851	1
FZT855	1
FZT955	1
FZT956	1
HD1750FX	1
HFA3046	2
HFA3096	1
HFA3127BZ	1
HFA3127RZ	1
HFA3128BZ	1
HFA3128RZ	1
HN1A01FU	2
HN1B04FE	3
HN1B04FU	3
KN2907	2
KSA539	1
KSA931	1
KSA1013	1
KSB772	1
KSB1151	1
KSC815	1
KSC2073	1
KSC2331	1
KSC2383	1
KSC3503	1
KSC5030F	1
KSC5042F	1
KSD882	1
KSD1691	1
KSP92	1
KSP93	1
KSP94	1
KSP2222A	1
KTC9013	1
LM194H	4

Table list of all devices included in this library (cont.)

Device	No. of symbols
LM394H	4
LM394N	4
LM3046M	2
LM3046N	2
LM3086N	2
MAT01	4
MAT12	4
MAT14	1
MBT3904DW1	4
MBT3904DW2	4
MBT3906DW1	2
MBT3946DW1	3
MCH3105	1
MCH3205	1
MJ2955	1
MJ4502	1
MJ15003	1
MJ15004	1
MJ15015	1
MJ15016	1
MJ15022	1
MJ15023	1
MJ15024	1
MJ15025	1
MJ21193	1
MJ21194	1
MJD31	1
MJD31C	1
MJD32	1
MJD32C	1
MJD41C	1
MJD42C	1
MJD44H11	1
MJD45H11	1
MJD47	1
MJD50	1
MJD340	1
MJD350	1
MJE170	1
MJE171	1
MJE172	1
MJE180	1
MJE181	1

Device	No. of symbols
MJE182	1
MJE243	1
MJE253	1
MJE340	1
MJE350	1
MJE2955T	1
MJE3055T	1
MJE5850	1
MJE5851	1
MJE5852	1
MJE13001	1
MJE13002	1
MJE13007	1
MJE15028	1
MJE15029	1
MJE15030	1
MJE15031	1
MJE15032	1
MJE15033	1
MJE15034	1
MJE15035	1
MJE18004	1
MJE18008	1
MJF44H11	1
MJF45H11	1
MJF15030	1
MJF15031	1
MJF18004	1
MJF18008	1
MJL1302A	1
MJL3281A	1
MJL4281A	1
MJL4302A	1
MJL21193	1
MJL21194	1
MJW18020	1
MJW21193	1
MJW21194	1
MJW21195	1
MJW21196	1
MMBT2222	1
MMBT2222A	1
MMBT2222AW	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
MMBT2369	1
MMBT2369A	1
MMBT2484	1
MMBT2907	1
MMBT2907A	1
MMBT3904	1
MMBT3906	1
MMBT4124	1
MMBT4401	1
MMBT4403	1
MMBT5401	1
MMBT5551	1
MMBTA05	1
MMBTA06	1
MMBTA42	1
MMBTA44	1
MMBTA56	1
MMBTA92	1
MMBTA94	1
MMDT2227	3
MMJT9435	1
MMSS8050	1
MMSS8550	1
MMST3904	1
MMST5401	1
MMST5551	1
MPS2222	1
MPS2222A	1
MPSA06	1
MPSA18	1
MPSA42	1
MPSA44	1
MPSA56	1
MPSA92	1
NJW0281	1
NJW0302	1
NJW21193	1
NJW21194	1
NSS30101	1
NZT560	1
NZT560A	1
PBHV8215Z	1
PBHV9050T	1

Device	No. of symbols
PBHV9050Z	1
PBHV9115T	1
PBSS304NX	1
PBSS304PX	1
PBSS4120T	1
PBSS4160DPN	3
PBSS4240DPN	3
PBSS4350Z	1
PBSS5240T	1
PBSS8110T	1
PH2369	1
PMBT2222	1
PMBT2222A	1
PMBT2369	1
PMBT2907	1
PMBT2907A	1
PMBT3904	1
PMBT3906	1
PMBTA42	1
PMBTA44	1
PMBTA56	1
PN2222A	1
PN2484	1
PN2907	1
PN2907A	1
PUMZ1	3
PIMZ2	3
PXT2222A	1
PZT2222A	1
PZT2907A	1
PZT3904	1
PZT3906	1
PZTA42	1
PZTA92	1
SBMTA06UPN	3
SS8050	1
SS8550	1
SS9012	1
SS9013	1
SS9014	1
SS9015	1
SS9018	1
ST2310FX	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
ST13007	1
ST13009	1
STD830CP40	2
STN83003	1
STN93003	1
TBC847	1
TIP29	1
TIP29A	1
TIP29B	1
TIP29C	1
TIP30	1
TIP30A	1
TIP30B	1
TIP30C	1
TIP31	1
TIP31A	1
TIP31B	1
TIP31C	1
TIP32	1
TIP32A	1
TIP32B	1
TIP32C	1
TIP33A	1
TIP33C	1
TIP35C	1
TIP36C	1
TIP41	1
TIP41A	1
TIP41B	1
TIP41C	1
TIP42	1
TIP42A	1
TIP42B	1
TIP42C	1
TIP47	1
TIP48	1
TIP49	1
TIP50	1
TIP2955	1
TIP3055	1
TMBT3904	1
TTA0002	1
TTA006B	1

Device	No. of symbols
TTC0002	1
TTC011B	1
ZTX450	1
ZTX451	1
ZTX453	1
ZTX510	1
ZTX550	1
ZTX551	1
ZTX651	1
ZTX652	1
ZTX653	1
ZTX749	1
ZTX752	1
ZTX753	1
ZTX851	1
ZTX853	1
ZXTN2010G	1
ZXTN2011G	1
ZXTN2011Z	1
ZXTN2031F	1
ZXTN4004K	1
ZXTN25020DFH	1
ZXTN25050DFH	1
ZXTN25100DFH	1
ZXTP2012G	1
ZXTP2012Z	1
ZXTP5401G	1
ZXTP25020CFH	1

2.30. Darlington Transistor Library

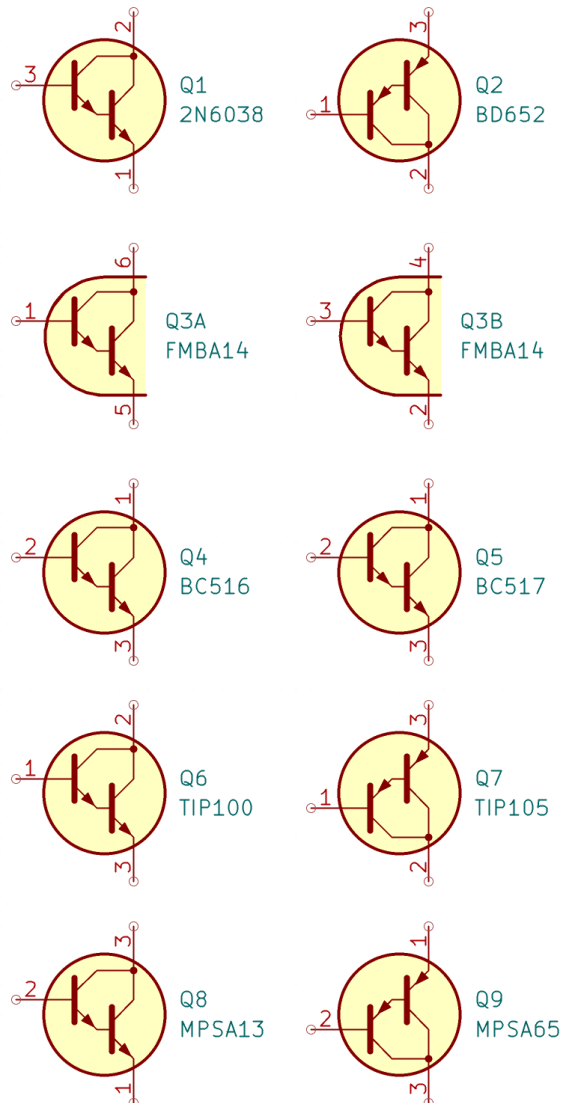
This library contains Bipolar transistors in Darlington configuration.

PNP Darlington transistors by default have emitter on the top of the symbol and collector at the bottom (as opposed to NPN transistors).

Dual Darlington transistors are available only as a disaggregated symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each transistor type has a separate specific symbol.

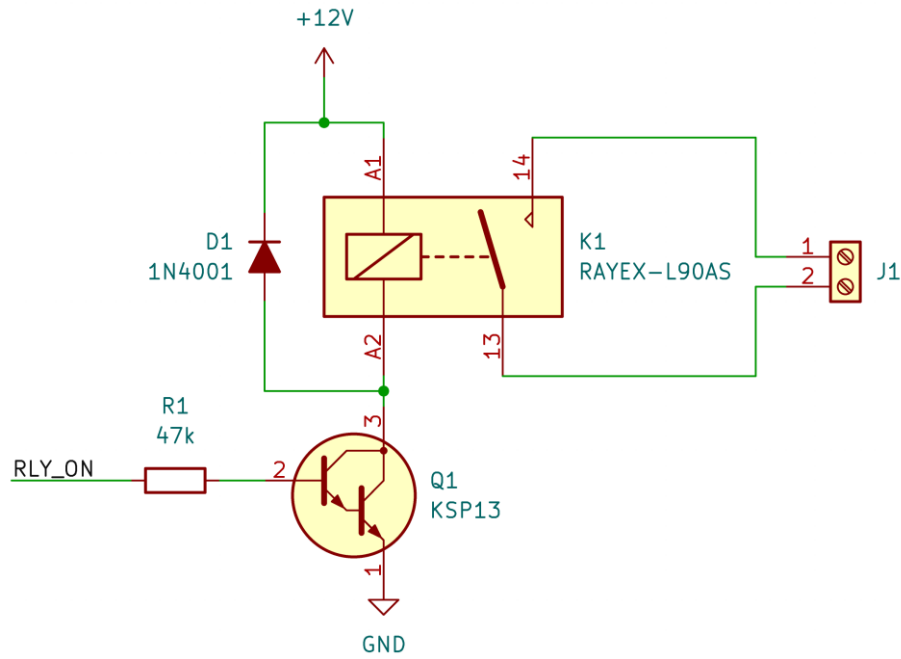
Filename: Transistor_BJT_Darlington_AKL	
Total symbols:	216
Generic symbols:	16
Specific symbols:	200



Schematic examples

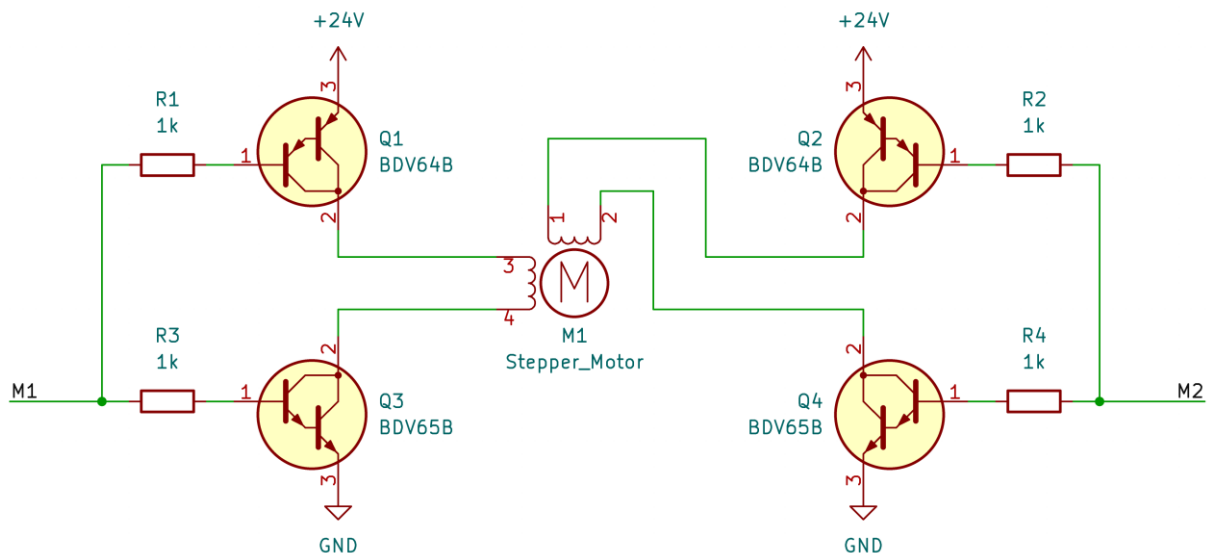
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Relay driver using KSP13 Darlington transistor.



Example 2

Stepper motor driver based on BDV64B and BDV65B bipolar Darlington transistors.

Table list of all devices included in this library

Device	No. of symbols
2N6034	1
2N6035	1
2N6036	1
2N6038	1
2N6039	1
2N6040	1
2N6042	1
2N6043	1
2N6045	1
2N6058	1
2N6059	1
2N6284	1
2N6286	1
2N6287	1
2N6387	1
2N6388	1
2N6667	1
2N6668	1
2SB1257	1
2SB1383	1
2SB1647	1
2SD1413	1
2SD2014	1
2SD2083	1
2SD2560	1
BC516	1
BC517	1
BCV26	1
BCV27	1
BCV28	1
BCV29	1
BCV46	1
BCV47	1
BCV48	1
BCV49	1
BD645	1
BD646	1
BD647	1
BD648	1
BD649	1
BD650	1
BD651	1
BD652	1

Device	No. of symbols
BD675	1
BD676	1
BD677	1
BD678	1
BD679	1
BD680	1
BD681	1
BD682	1
BDV64B	1
BDV65B	1
BDV66B	1
BDV67B	1
BDW42	1
BDW46	1
BDW47	1
BDW93C	1
BDW93CFP	1
BDW94B	1
BDW94C	1
BDW94CFP	1
BDX33B	1
BDX33C	1
BDX34B	1
BDX34C	1
BDX53B	1
BDX53C	1
BDX54B	1
BDX54C	1
BSP50	1
BSP51	1
BSP52	1
BSP60	1
BSP61	1
BSP62	1
BST50	1
BST51	1
BST52	1
BST60	1
BST61	1
BST62	1
BU806	1
BU807	1
BU931	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
BU931P	1
BU931T	1
BUB323Z	1
BUX87	1
FJB102	1
FMBA14	1
FMMT634	1
FZT705	1
KSD560	1
KSD800	1
KSD801	1
KSD802	1
KSD803	1
KSD1692	1
KSH122	1
KSH122I	1
KSP13	1
KSP14	1
MJ2500	1
MJ2501	1
MJ3000	1
MJ3001	1
MJ11012	1
MJ11015	1
MJ11016	1
MJ11021	1
MJ11022	1
MJ11028	1
MJ11029	1
MJ11030	1
MJ11032	1
MJ11033	1
MJD44E3	1
MJD112	1
MJD117	1
MJD200	1
MJD210	1
MJE270	1
MJE271	1
MJE700	1
MJE702	1
MJE703	1
MJE800	1

Device	No. of symbols
MJE802	1
MJE803	1
MJE5740	1
MJE5742	1
MJF122	1
MJF127	1
MJF6388	1
MJF6668	1
MJH6284	1
MJH6287	1
MJH11017	1
MJH11018	1
MJH11019	1
MJH11020	1
MJH11021	1
MJH11022	1
MMBT6427	1
MMBTA13	1
MMBTA14	1
MMBTA28	1
MMBTA64	1
MMBTA65	1
MPSA13	1
MPSA14	1
MPSA29	1
MPSA64	1
MPSA65	1
PMBTA13	1
PMBTA14	1
PMBTA64	1
PZTA14	1
PZTA28	1
PZTA29	1
PZTA64	1
PZTA65	1
SGSD100	1
SGSD200	1
TIP100	1
TIP101	1
TIP102	1
TIP105	1
TIP106	1
TIP107	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
TIP110	1
TIP111	1
TIP112	1
TIP115	1
TIP116	1
TIP117	1
TIP120	1
TIP121	1
TIP122	1
TIP125	1
TIP126	1
TIP127	1
TIP140	1
TIP140F	1
TIP141	1
TIP142	1
TIP142F	1
TIP142T	1
TIP145	1
TIP145F	1
TIP146	1
TIP146F	1
TIP147	1
TIP147F	1
TIP147T	1
ZTX604	1
ZTX605	1

2.31. Pre-Biased Transistor Library

This library contains bipolar transistors with integrated resistor bias networks (BRT – Bias Resistor Transistor), also known as Digital Transistors.

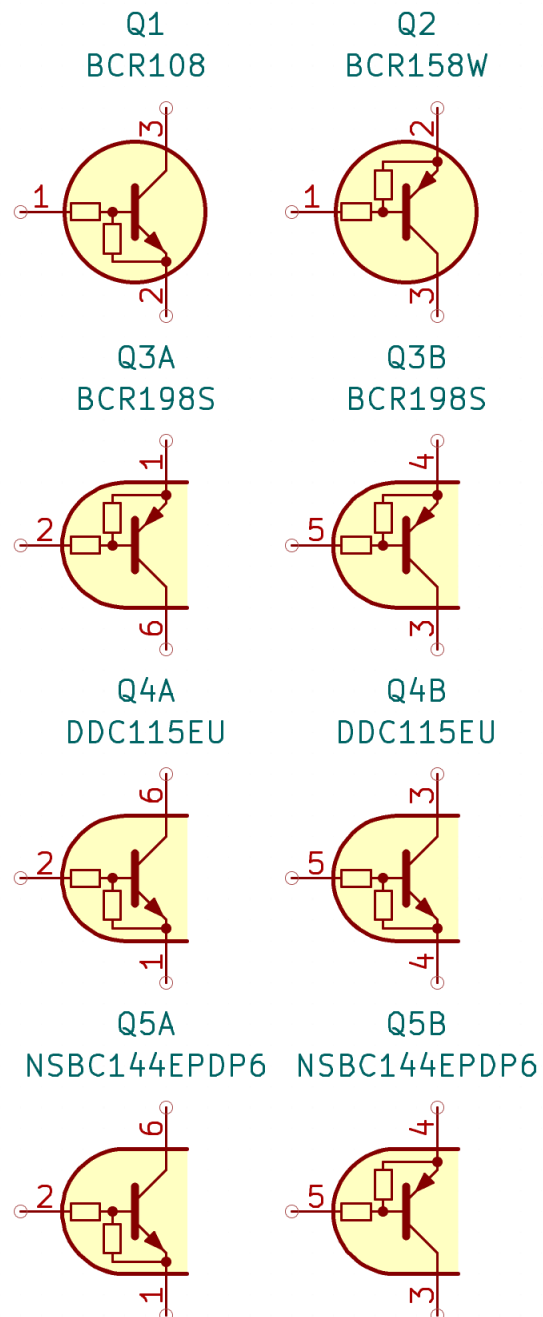
Pre-biased transistor symbols have the internal resistor bias network included in the symbol, but resistor values are not indicated in any way.

PNP digital transistors by default have emitter on the top of the symbol and collector at the bottom (as opposed to NPN transistors).

Dual digital transistors have only 1 symbol variant – disaggregated multi-unit symbol.

Each available orderable part number with different electrical characteristics, bias configuration, pinout and package for each transistor type has a separate specific symbol.

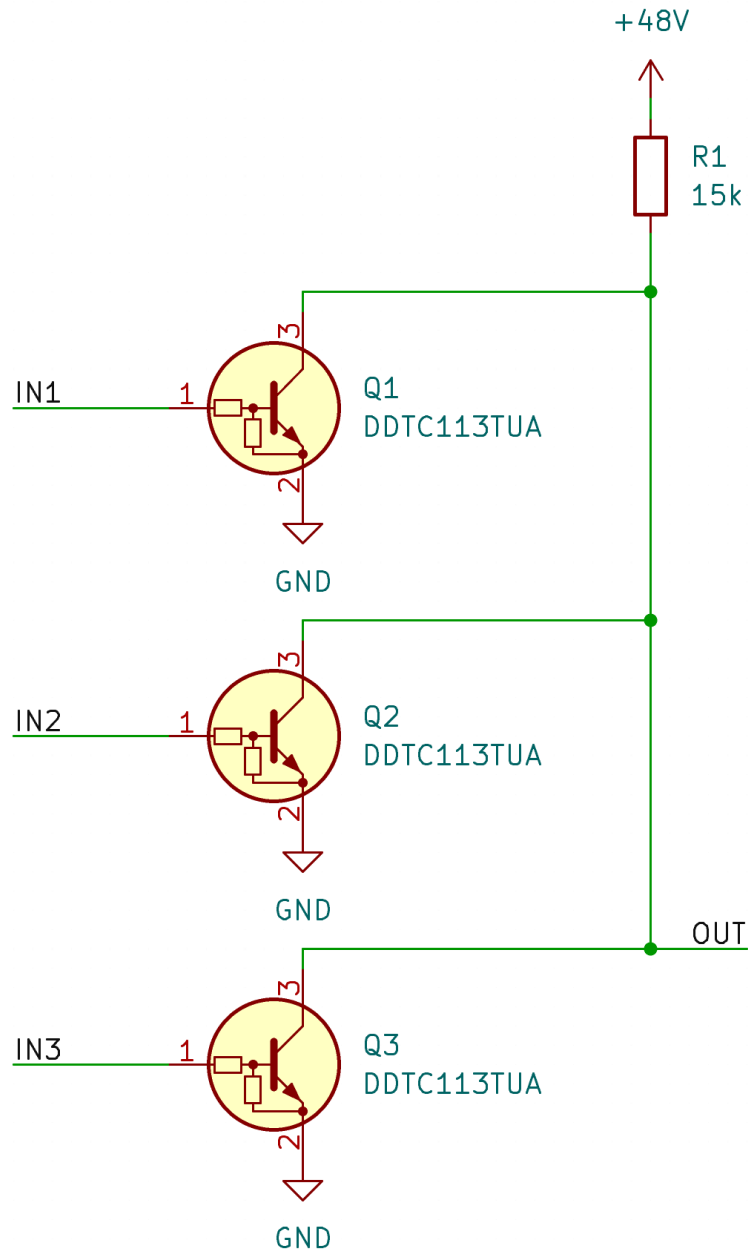
Filename: Transistor_BJT_Pre-Biased_AKL	
Total symbols:	539
Generic symbols:	7
Specific symbols:	532



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Triple-input NOR gate and voltage level translator based on three DDTC113TUA bias resistor transistors.

Table list of all devices included in this library

Device	No. of symbols
ADTC144EUAQ	1
BCR08PN	1
BCR10PN	1
BCR22PN	1
BCR35PN	1
BCR108	3
BCR116	3
BCR129	3
BCR133	3
BCR135	3
BCR141	3
BCR148	3
BCR158	2
BCR162	1
BCR166	2
BCR183	4
BCR185	3
BCR191	2
BCR192	2
BCR196	2
BCR198	3
BCR503	1
BCR505	1
BCR521	1
BCR523	2
BCR533	1
BCR553	1
BCR555	1
BCR562	1
BCR583	1
DCX114	3
DCX115	1
DCX123	1
DCX124	1
DCX143	3
DCX144	1
DDC113	1
DDC114	3
DDC115	1
DDC123	1
DDC124	1
DDC143	2
DDC144	1

Device	No. of symbols
DDTA114	1
DDTA115	1
DDTA123	1
DDTA124	1
DDTA143	1
DDTA144	1
DDTC113	1
DDTC114	2
DDTC115	2
DDTC123	2
DDTC124	2
DDTC125	1
DDTC143	2
DDTC144	2
DTA114	6
DTA115	2
DTA123	4
DTA124	4
DTA143	6
DTA144	2
DTC114	8
DTC123	4
DTC124	4
DTC143	6
DTC144	4
MBTRA101SS	1
MBTRA102SS	1
MBTRA103SS	1
MBTRA104SS	1
MBTRA105SS	1
MBTRA106SS	1
MBTRA221SS	1
MBTRA222SS	1
MBTRA223SS	1
MBTRA224SS	1
MBTRA225SS	1
MBTRA226SS	1
MBTRC101SS	1
MBTRC102SS	1
MBTRC103SS	1
MBTRC104SS	1
MBTRC105SS	1
MBTRC106SS	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
MBTRC110SS	1
MBTRC111SS	1
MBTRC112SS	1
MBTRC113SS	1
MBTRC114SS	1
MBTRC116SS	1
MBTRC117SS	1
MBTRC118SS	1
MBTRC119SS	1
MBTRC129SS	1
MBTRC121SS	1
MMDT5110W	1
MMDT5111W	1
MMDT5112W	1
MMDT5113W	1
MMDT5114W	1
MMDT5115W	1
MMUN2111	2
MMUN2112	2
MMUN2114	2
MMUN2115	2
MMUN2116	2
MMUN2131	2
MMUN2132	2
MMUN2133	2
MMUN2134	2
MMUN2136	2
MMUN2137	2
MMUN2138	2
MMUN2211	2
MMUN2212	2
MMUN2213	2
MMUN2214	2
MMUN2215	2
MMUN2216	2
MMUN2231	2
MMUN2232	2
MMUN2233	2
MMUN2234	2
MMUN2235	2
MMUN2237	2
MMUN5111	1
MMUN5112	1

Device	No. of symbols
MMUN5114	1
MMUN5115	1
MMUN5116	1
MMUN5131	1
MMUN5132	1
MMUN5133	1
MMUN5134	1
MMUN5136	1
MMUN5137	1
MMUN5138	1
MMUN5211	1
MMUN5212	1
MMUN5213	1
MMUN5214	1
MMUN5215	1
MMUN5216	1
MMUN5231	1
MMUN5232	1
MMUN5233	1
MMUN5234	1
MMUN5235	1
MMUN5237	1
MUN5111DW1	1
MUN5112DW1	1
MUN5113DW1	1
MUN5114DW1	1
MUN5115DW1	1
MUN5131DW1	1
MUN5133DW1	1
MUN5135DW1	1
MUN5232DW1	1
MUN5235DW1	1
MUN5311DW1	1
MUN5312DW1	1
MUN5313DW1	1
MUN5314DW1	1
MUN5335DW1	1
NSBA114	9
NSBA115	1
NSBA123	5
NSBA124	4
NSBA143	5
NSBA144	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
NSBC114	7
NSBC123	5
NSBC124	4
NSBC143	4
NSBC144	4
PDTA114	4
PDTA123	10
PDTA124	4
PDTA143	8
PDTC114	14
PDTC115	6
PDTC123	16
PDTC124	4
PDTC143	12
PDTC144	4
PDTD123	3
PEMB1	1
PEMB2	1
PEMB3	1
PEMB4	1
PEMB9	1
PEMB10	1
PEMB11	1
PEMB13	1
PEMB15	1
PEMB16	1
PEMB20	1
PEMB24	1
PEMB30	1
PEMD2	1
PEMD3	1
PEMD4	1
PEMD6	1
PEMD9	1
PEMD10	1
PEMD12	1
PEMD13	1
PEMD14	1
PEMD15	1
PEMD16	1
PEMD17	1
PEMD18	1
PEMD20	1

Device	No. of symbols
PEMD24	1
PEMD30	1
PEMD48	1
PEMH1	1
PEMH2	1
PEMH4	1
PEMH7	1
PEMH9	1
PEMH10	1
PEMH11	1
PEMH13	1
PEMH14	1
PEMH15	1
PEMH16	1
PEMH17	1
PEMH18	1
PEMH19	1
PEMH20	1
PEMH24	1
PIMD2	1
PIMD3	1
PUMB1	1
PUMB2	1
PUMB3	1
PUMB4	1
PUMB9	1
PUMB10	1
PUMB11	1
PUMB13	1
PUMB15	1
PUMB16	1
PUMB20	1
PUMB24	1
PUMB30	1
PUMD2	1
PUMD3	1
PUMD4	1
PUMD6	1
PUMD9	1
PUMD10	1
PUMD12	1
PUMD13	1
PUMD14	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
PUMD15	1
PUMD16	1
PUMD17	1
PUMD18	1
PUMD20	1
PUMD24	1
PUMD30	1
PUMD48	1
PUMH1	1
PUMH2	1
PUMH4	1
PUMH7	1
PUMH9	1
PUMH10	1
PUMH11	1
PUMH13	1
PUMH14	1
PUMH15	1
PUMH16	1
PUMH17	1
PUMH18	1
PUMH19	1
PUMH20	1
PUMH24	1
RN1401	1
RN1402	1
RN1403	1
RN1404	1
RN1405	1
RN1406	1
RN1410	1
RN1411	1
RN1421	1
RN1422	1
RN1423	1
RN1424	1
RN1425	1
RN1426	1
RN1427	1
RN1601	1
RN1602	1
RN1603	1
RN1604	1

Device	No. of symbols
RN1605	1
RN1606	1
RN2410	1
RN2411	1
TDTA114E	1
TDTA123J	1
TDTA143E	1
TDTA144E	1
TDTC114	2
TDTC123J	1
TDTC124E	1
TDTC143E	1
TDTC144E	1

2.32. IGBT Transistor Library

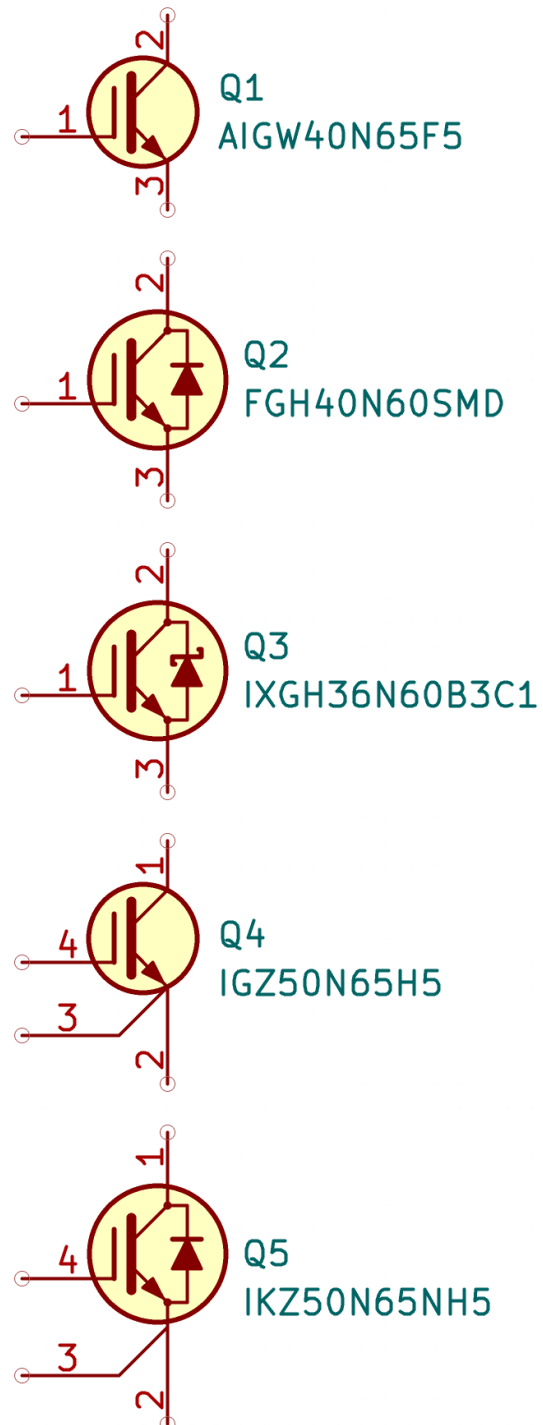
This library contains Insulated Gate Bipolar Transistors (IGBTs). These devices combine the robustness and low loss for high voltage switching of a BJT and ease of use of a MOSFET.

Transistors with internal Emitter to Collector diode or SiC Schottky diode have it clearly indicated on the symbol.

IGBTs with kelvin connection (with 2 emitter pins – one meant to be a reference for gate voltage) have the sense pin aligned with the gate pin.

Each available orderable part number with different electrical characteristics, pinout and package for each transistor type has a separate specific symbol.

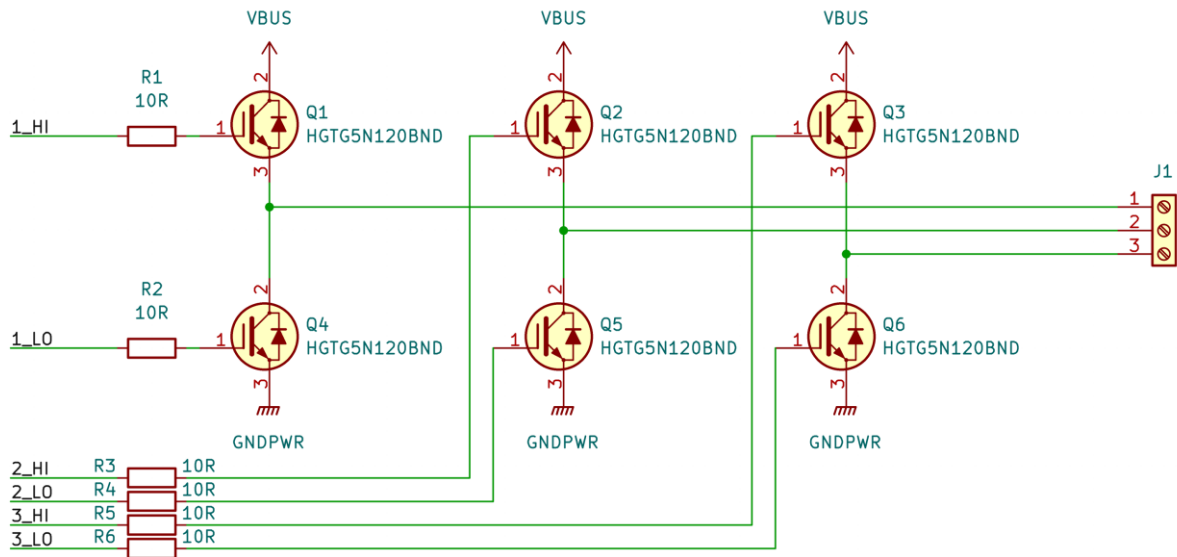
Filename: Transistor_IGBT_AKL	
Total symbols:	655
Generic symbols:	5
Specific symbols:	650



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Motor driver based on 6 HG TG5N120BND IGBT Transistors.

Table list of all devices included in this library

Device	No. of symbols
AFGB40T65SQDN	1
AIGW40N65F5	1
AIGW40N65H5	1
AIGW50N65F5	1
AIGW50N65H5	1
AIHD04N60R	1
AIHD04N60RF	1
AIHD06N60R	1
AIHG10N60R	1
AIHD10N60RF	1
AIHD15N60R	1
AIHD15N60RF	1
AIKB20N60CT	1
AIKP20N60CT	1
AIKQ100N60CT	1
AIKQ120N60CT	1
AIKW20N60CT	1
AIKW30N60CT	1
AIKW40N65DF5	1
AIKW40N65DH5	1
AIKW50N60CT	1
AIKW50N65DF5	1
AIKW50N65DH5	1
AIKW75N60CT	1
AOB5B65M1	1
AOB10B65M1	1
AOB15B65M1	1
AOB20B65M1	1
AOD5B60D	1
AOD5B65M1	1
AOD5B65N1	1
AOD6M60M1	1
AOD7B65M3	1
AOK20B60D1	1
AOK20B65M1	1
AOK20B65M2	1
AOK20B120D1	1
AOK20B120E1	1
AOK20B120E2	1
AOK20B135D1	1
AOK20B135E1	1
AOK30B60D1	1
AOK30B65M2	1

Device	No. of symbols
AOK30B120D2	1
AOK30B135W1	1
AOK40B60D1	1
AOK40B65H1	1
AOK40B65H2AL	1
AOK40B65M3	1
AOK40B120H1	1
AOK40B120H1	1
AOK50B60D1	1
AOK50B65H1	1
AOK50B65M2	1
AOK60B60D1	1
AOK60B65H1	1
AOK60B65H2AL	1
AOK60B65M3	1
AOK75B60D1	1
AOK75B65H1	1
AOKS40B65H2AL	1
AOT5B60D	1
AOT5B65M1	1
AOT10B60D	1
AOT10B65M1	1
AOT10B65M2	1
AOT15B60D	1
AOT15B65M1	1
AOT15B65M3	1
AOT20B65M1	1
AOTF5B60D	1
AOTF5B65M1	1
AOTF10B60D	1
AOTF10B60D2	1
AOTF10B65M1	1
AOTF10B65M2	1
AOTF15B60D	1
AOTF15B60D2	1
AOTF15B65M1	1
AOTF15B65M2	1
AOTF15B65M3	1
AOTF20B65M1	1
AOTF20B65M2	1
AUIRG4PH50S	1
AUIRGB4062D1	1
AUIRGF65G40D0	1

Table list of all devices included in this library (cont.)

Device	No. of symbols	Device	No. of symbols
AUIRGP35B60PD	1	HGTP5N120BND	1
AUIRGP65G40D0	1	HGTP10N120BN	1
AUIRGP4062D	2	HGTP12N60A4D	1
AUIRGP4063D	2	HGTP12N60C3D	1
AUIRGP4066D1	2	IGA03N120H2	1
AUIRGR4045D	1	IGB01N120H2	1
AUIRGS4062D1	1	IGB03N120H2	1
AUIRGS4062D1	1	IGB10N60T	1
AUIRGS4062D1	1	IGB15N60T	1
AUIRGR4045D	1	IGB15N65S5	1
DGTD65T15H2TF	1	IGB20N60H3	1
DGTD65T60S2PT	1	IGB20N65S5	1
DGTD120T25S1PT	1	IGB30N60H3	1
FGA25N120ANTD	1	IGB30N60T	1
FGA30S120P	1	IGB50N60T	1
FGA60N65SMD	1	IGB50N65H5	1
FGH20N60SFD	1	IGB50N65S5	1
FGH30S130P	1	IGP06N60T	1
FGH40N60SFD	1	IGP10N60T	1
FGH40N60SMD	1	IGP15N60T	1
FGH40N60UFD	1	IGP20N60H3	1
FGH40N65UFD	1	IGP20N65F5	1
FGH40T120SMD	1	IGP20N65H5	1
FGH50N65SQD	1	IGP30N60H3	1
FGH60N60SMD	1	IGP30N65F5	1
FGL40N120AND	1	IGP30N65H5	1
GT15J341	1	IGP40N65F5	1
GT20J341	1	IGU04N60T	1
GT30J121	1	IGW08T120	1
GT50JR21	1	IGW15N120H3	1
GT50JR22	1	IGW15T120	1
HGT1S10N120BN	1	IGW20N60H3	1
HGT1S12N60A4D	1	IGW25N120H3	1
HGT1S12N60C3D	1	IGW25T120	1
HGTG5N120BND	1	IGW30N60H3	1
HGTG10N120BN	2	IGW30N60T	1
HGTG11N120CN	1	IGW30N60TP	1
HGTG12N60A4D	1	IGW40N60H3	1
HGTG12N60C3D	1	IGW40N60TP	1
HGTG20N60A4	2	IGW40N65F5	1
HGTG20N60B3D	1	IGW40N65H5A	1
HGTG30N60A4D	1	IGW40N120H3	1
HGTG30N60B3D	1	IGW40T120	1
HGTG40N60A4	1		

Table list of all devices included in this library (cont.)

Device	No. of symbols
IGW50N60H3	1
IGW50N60T	1
IGW50N60TP	1
IGW50N65F5	1
IGW60N60H3	1
IGW60T120	1
IGW75N60H3	1
IGW75N60T	1
IGW75N65H5	1
IGW100N60H3	1
IGZ50N65H5	1
IGZ75N65H5	1
IGZ100N65H5	1
IHW15N120E1	1
IHW15N120R3	1
IHW20N65R5	1
IHW20N120R5	1
IHW20N135R5	1
IHW30N65R5	1
IHW30N110R3	1
IHW30N120R5	1
IHW30N135R5	1
IHW30N160R5	1
IHW40N60RF	1
IHW40N65R5	1
IHW40N120R5	1
IHW50N65R5	1
IKA08N65ET6	1
IKA08N65F5	1
IKA10N60T	1
IKA10N65ET6	1
IKA15N60T	1
IKA15N65ET6	1
IKA15N65F5	1
IKB06N60T	1
IKB10N60T	1
IKB15N60T	1
IKB15N65EH5	1
IKB20N60H3	1
IKB20N60T	1
IKB20N65EH5	1
IKB30N65EH5	1
IKB30N65ES5	1

Device	No. of symbols
IKB40N65EF5	1
IKB40N65EH5	1
IKB40N65ES5	1
IKD03N60RF	1
IKD04N60R	1
IKD04N60RF	1
IKD06N60R	1
IKD06N60RF	1
IKD10N60R	1
IKD10N60RF	1
IKD15N60R	1
IKD15N60RF	1
IKP04N60T	1
IKP06N60T	1
IKP08N65F5	1
IKP08N65H5	1
IKP10N60T	1
IKP15N60T	1
IKP15N65F5	1
IKP15N65H5	1
IKP20N60H3	1
IKP20N60T	1
IKP20N65F5	1
IKP20N65H5	1
IKP30N65F5	1
IKP30N65H5	1
IKP40N65F5	1
IKP40N65F5	1
IKP40N65H5	1
IKW15N120BH6	1
IKW15N120H3	1
IKW15T120	1
IKW20N60H3	1
IKW20N60T	1
IKW25N120H3	1
IKW25N120T2	1
IKW25T120	1
IKW30N60DTP	1
IKW30N60H3	1
IKW30N60T	1
IKW30N65EL5	1
IKW30N65ES5	1
IKW30N65H5	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IKW30N65WR5	1
IKW40N60DTP	1
IKW40N60H3	1
IKW40N65ES5	1
IKW40N65F5	1
IKW40N65H5	1
IKW40N65WR5	1
IKW40N120CS6	1
IKW40N120H3	1
IKW40N120T2	1
IKW40T120	1
IKW50N60DTP	1
IKW50N60H3	1
IKW50N60T	1
IKW50N65EH5	1
IKW50N65ES5	1
IKW50N65F5	1
IKW50N65H5	1
IKW50N65WR5	1
IKW60N60H3	1
IKW75N60H3	1
IKW75N60T	1
IKW75N65EH5	1
IKW75N65ES5	1
IKZ50N65EH5	1
IKZ50N65ES5	1
IKZ50N65NH5	1
IKZ75N65EH5	1
IKZ75N65EL5	1
IKZ75N65ES5	1
IKZ75N65NH5	1
IRG4BC15UD-L	1
IRG4BC15UD-S	1
IRG4BC40KP	1
IRG4BC40U	1
IRG4BC40WL	1
IRG4BC40WS	1
IRG4IBC10UD	1
IRG4IBC30W	1
IRG4PC30F	1
IRG4PC30U	1
IRG4PC30UD	1
IRG4PC60F	1

Device	No. of symbols
IRG4PH20K	1
IRG4PH20KD	1
IRG4PH30K	1
IRG4PH40K	1
IRG4PH40U	1
IRG4RC10KD	1
IRG4RC10UD	1
IRG7PH35UD	1
IRG7PH37K10D	1
IRG7PH42U	1
IRG7PH44K10D	1
IRG7PH46U	1
IRG8P15N120KD	1
IRG8P25N120KD	1
IRG8P60N120KD	1
IRGB6B60KD	1
IRGB10B60KD	1
IRGB30B60K	1
IRGB4056D	1
IRGB4062D	1
IRGB4607D	1
IRGB4620D	1
IRGIB7B60KD	1
IRGIB10B60KD1P	1
IRGIB15B60KD1P	1
IRGP30B60KD	1
IRGP35B60PD	1
IRGP4062D	1
IRGP4063	1
IRGP4066D	1
IRGP4068D	1
IRGP4069D	1
IRGP4263D	1
IRGP4620D	1
IRGP4640D	1
IRGP4650D	1
IRGP4660D	1
IRGP4670D	1
IRGS6B60KD	1
IRGS10B60KD	1
IRGS30B60K	1
IRGS4062D	1
IRGS4607D	1

Table list of all devices included in this library (cont.)

Device	No. of symbols	Device	No. of symbols
IRGS4620D	1	IXDP20N60BD1	1
IRGSL6B60KD	1	IXFA4IF1200TC	1
IRGSL10B60KD	1	IXFA12IF1200PB	1
IRGSL30B60K	1	IXFA12IF1200TC	1
IRGSL4062D	1	IXGA12N120A3	1
ITF48IF1200HR	1	IXGA20N120B3	1
IXA12IF1200HB	1	IXGA24N120C3	1
IXA20I1200PB	1	IXGA30N60C3C1	1
IXA33IF1200HB	1	IXGA30N120B3	1
IXA45IF1200HB	1	IXGA36N60A3	1
IXBA16N170AHV	1	IXGA48N60A3	1
IXBH2N250	1	IXGA48N60C3	1
IXBH5N160G	1	IXGH2N250	1
IXBH6N170	1	IXGH6N170	1
IXBH9N160G	1	IXGH6N170A	1
IXBH10N170	1	IXGH10N170	1
IXBH12N300	1	IXGH10N170A	1
IXBH16N170	1	IXGH12N120A3	1
IXBH16N170A	1	IXGH16N170	1
IXBH24N170	1	IXGH16N170A	1
IXBH40N160	1	IXGH16N170AH1	1
IXBH42N170	1	IXGH20N120A3	1
IXBH42N170A	1	IXGH24N120C3	1
IXBK55N300	1	IXGH24N120C3H	1
IXBK64N250	1	IXGH24N170	1
IXBK75N170	1	IXGH24N170A	1
IXBP5N160G	1	IXGH25N160	1
IXBT2N250	1	IXGH25N250	1
IXBT6N170	1	IXGH28N60B3D1	1
IXBT10N170	1	IXGH30N60C3C1	1
IXBT12N300	1	IXGH30N120B3	1
IXBT16N170	1	IXGH30N120B3D	1
IXBT16N170A	1	IXGH30N120C3H	1
IXBT16N170AHV	1	IXGH32N120A3	1
IXBT24N170	1	IXGH32N170	1
IXBT42N170	1	IXGH32N170A	1
IXBT42N170A	1	IXGH36N60A3	1
IXBT42N300HV	1	IXGH36N60B3	1
IXDA20N120AS	1	IXGH36N60B3C1	1
IXDH20N120	1	IXGH40N120A2	1
IXDH20N120D1	1	IXGH40N120B2D	1
IXDH30N120	1	IXGH40N120C3	1
IXDH30N120D1	1	IXGH40N120C3D	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXGH48N60A3	1
IXGH48N60A3D1	1
IXGH48N60B3C1	1
IXGH48N60C3	1
IXGH48N60C3D1	1
IXGH50N90B2	1
IXGH50N120C3	1
IXGH60N60C3D1	1
IXGH72N60A3	1
IXGH72N60B3	1
IXGH72N60C3	1
IXGH120N30B3	1
IXGI48N60C3	1
IXGK50N120C3H1	1
IXGK55N120A3H1	1
IXGK72N60B3H1	1
IXGK75N250	1
IXGK82N120A3	1
IXGK82N120B3	1
IXGK100N170	1
IXGK120N120A3	1
IXGK120N120B3	1
IXGK320N60B3	1
IXGK400N30A3	1
IXGP12N120A3	1
IXGP20N120A3	1
IXGP20N120B3	1
IXGP24N120C3	1
IXGP30N60C3C1	1
IXGP30N120B3	1
IXGP36N60A3	1
IXGP48N60A3	1
IXGP48N60C3	1
IXGT2N250	1
IXGT6N170	1
IXGT6N170A	1
IXGT6N170AHV	1
IXGT10N170	1
IXGT10N170A	1
IXGT16N170	1
IXGT16N170A	1
IXGT16N170AH1	1
IXGT24N170	1

Device	No. of symbols
IXGT24N170A	1
IXGT25N160	1
IXGT25N250	1
IXGT30N120B3D1	1
IXGT32N120A3	1
IXGT32N170	1
IXGT32N170A	1
IXGT40N120A2	1
IXGT40N120B2D1	1
IXGT60N60C3D1	1
IXGT72N60A3	1
IXGT72N60B3	1
IXXA50N60B3	1
IXXH30N60B3	1
IXXH30N60B3D1	1
IXXH30N60C3D1	1
IXXH30N65B4	1
IXXH30N65B4D1	1
IXXH30N65B4H1	1
IXXH40N65C4D1	1
IXXH50N60B3	1
IXXH50N60B3D1	1
IXXH50N60C3	1
IXXH50N60C3D1	1
IXXH60N65B4	1
IXXH60N65B4H1	1
IXXH60N65C4	1
IXXH75N60B3D1	1
IXXH75N60C3	1
IXXH75N60C3D1	1
IXXH80N65B4	1
IXXH80N65B4D1	1
IXXH80N65B4H1	1
IXXH100N60B3	1
IXXH100N60C3	1
IXXH110N65C4	1
IXXH140N65B4	1
IXXH140N65C4	1
IXXH150N60C3	1
IXXK100N60B3H1	1
IXXK110N65B4H1	1
IXXK160N65B4	1
IXXK200N60B3	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXXK200N60C3	1
IXXK200N65B4	1
IXXK300N60B3	1
IXXK300N60C3	1
IXXP12N65B4D1	1
IXXP50N60B3	1
IXXQ30N60B3M	1
IXYA8N90C3D1	1
IXYA8N250CHV	1
IXYA15N65C3D1	1
IXYA20N65B3	1
IXYA20N65C3	1
IXYA20N65C3D1	1
IXYA50N65C3	1
IXYH10N170C	1
IXYH10N170CV1	1
IXYH16N170C	1
IXYH16N170CV1	1
IXYH20N65B3	1
IXYH20N65C3	1
IXYH20N120C3	1
IXYH20N120C3D1	1
IXYH24N90C3	1
IXYH24N90C3D1	1
IXYH24N170C	1
IXYH24N170CV1	1
IXYH30N65C3	1
IXYH30N65C3H1	1
IXYH30N120C3	1
IXYH30N120C3D1	1
IXYH30N170C	1
IXYH40N65B3	1
IXYH40N65B3	1
IXYH40N65B3D1	1
IXYH40N65C3	1
IXYH40N65C3D1	1
IXYH40N65C3H1	1
IXYH40N90C3	1
IXYH40N90C3D1	1
IXYH40N120B3	1
IXYH40N120B3D1	1
IXYH40N120C3	1
IXYH40N120C3D1	1

Device	No. of symbols
IXYH50N65C3	1
IXYH50N65C3D1	1
IXYH50N65C3H1	1
IXYH50N120C3	1
IXYH50N120C3D	1
IXYH60N90C3	1
IXYH75N65C3	1
IXYH75N65C3H1	1
IXYH80N90C3	1
IXYH82N120C3	1
IXYH85N120A4	1
IXYH100N65A3	1
IXYH100N65C3	1
IXYK100N65B3D1	1
IXYK100N120C3	1
IXYK120N120C3	1
IXYK140N90C3	1
IXYK200N65B3	1
IXYP8N90C3	1
IXYP8N90C3D1	1
IXYP10N65C3	1
IXYP10N65C3D1	1
IXYP10N65C3DM	1
IXYP15N65C3	1
IXYP15N65C3D1	1
IXYP15N65C3DM	1
IXYP20N65B3	1
IXYP20N65B3D1	1
IXYP20N65C3D1	1
IXYP20N65C3DM	1
IXYP20N120C3	1
IXYP30N65C3	1
IXYP30N120C3	1
IXYP50N65C3	1
IXYQ40N65B3D1	1
IXYQ40N65C3D1	1
IXYT20N120C3D1	1
IXYT25N250CHV	1
IXYT30N65C3H1	1
IXYT30N450HV	1
IXYT80N90C3	1
IXYY8N90C3	1
NGTB25N120FL2	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
SGB02N120	1
SGL50N60RUF	1
SGL160N60UFD	1
SGP07N120	1
SGP23N60UF	1
SGP23N60UFD	1
SKW25N120	1
STGB7H60DF	1
STGB10NC60KD	1
STGB14NC60KD	1
STGB30V60DF	1
STGD10NC60KD	1
STGF7H60DF	1
STGF10NC60KD	1
STGF14NC60KD	1
STGP7H60DF	1
STGP10NC60KD	1
STGP14NC60KD	1
STGP30V60DF	1
STGW20IH125DF	1
STGW20NC60VD	1
STGW28IH125DF	1
STGW30NC60KD	1
STGW30NC60WD	1
STGW30NC120H	1
STGW30V60DF	1
STGW35NB60SD	1
STGW39NC60VD	1
STGW60H65DFB	1
STGW60V60DF	1
STGWA30H65DFB	1
STGWA60H65DFB	1
STGWA60V60DF	1
STGWT20IH125D	1
STGWT28IH125D	1
STGWT30V60DF	1
STGWT60H65DFB	1
STGWT60V60DF	1

2.33. JFET Transistor Library

This library contains Junction Field Effect Transistors (JFETs) and matched JFET pairs.

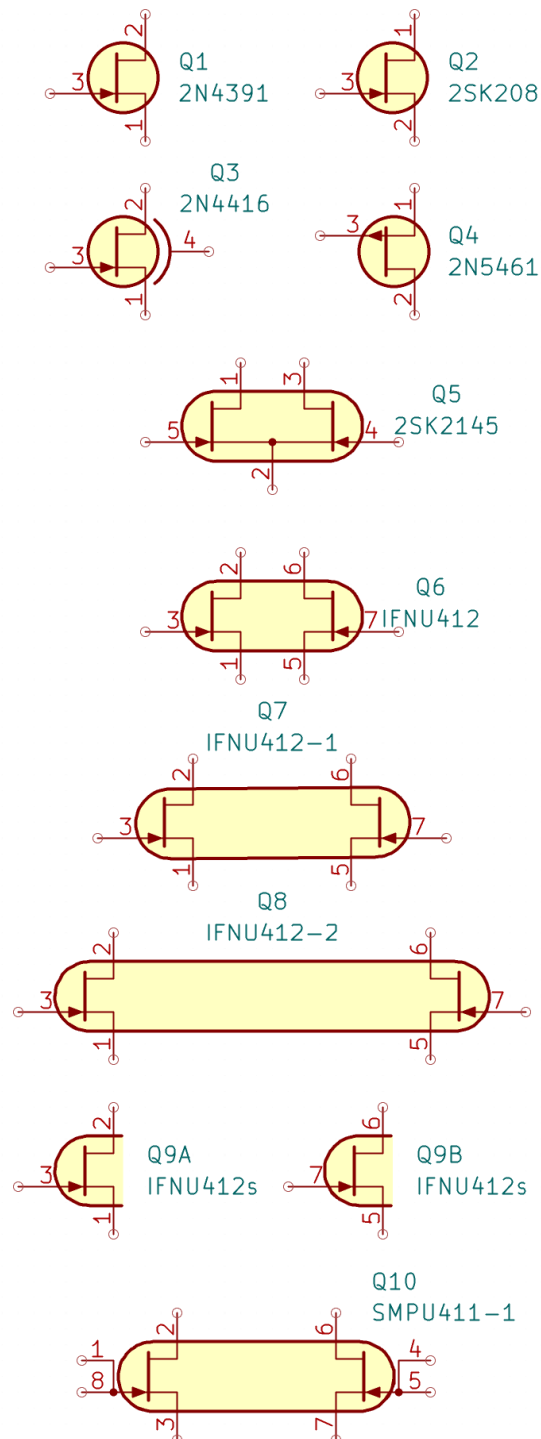
JFET symbols have the gate pin moved closer to the source terminal. Most JFETs are symmetrical and drain – source orientation is not critical, but indicating source terminal might be useful in some scenarios.

Dual matched JFETs (isolated) have four symbol variants: 3 standard variants with different spacing between transistors (no suffix, -1 and -2 suffixes) and a disaggregated multi-unit variant (lowercase s) to ensure maximum schematic flexibility when designing differential amplifiers and other analog circuits from discrete transistors.

P-Channel JFET transistors have source terminal on the top side by default.

Each available orderable part number with different electrical characteristics, pinout and package for each transistor type has a separate specific symbol.

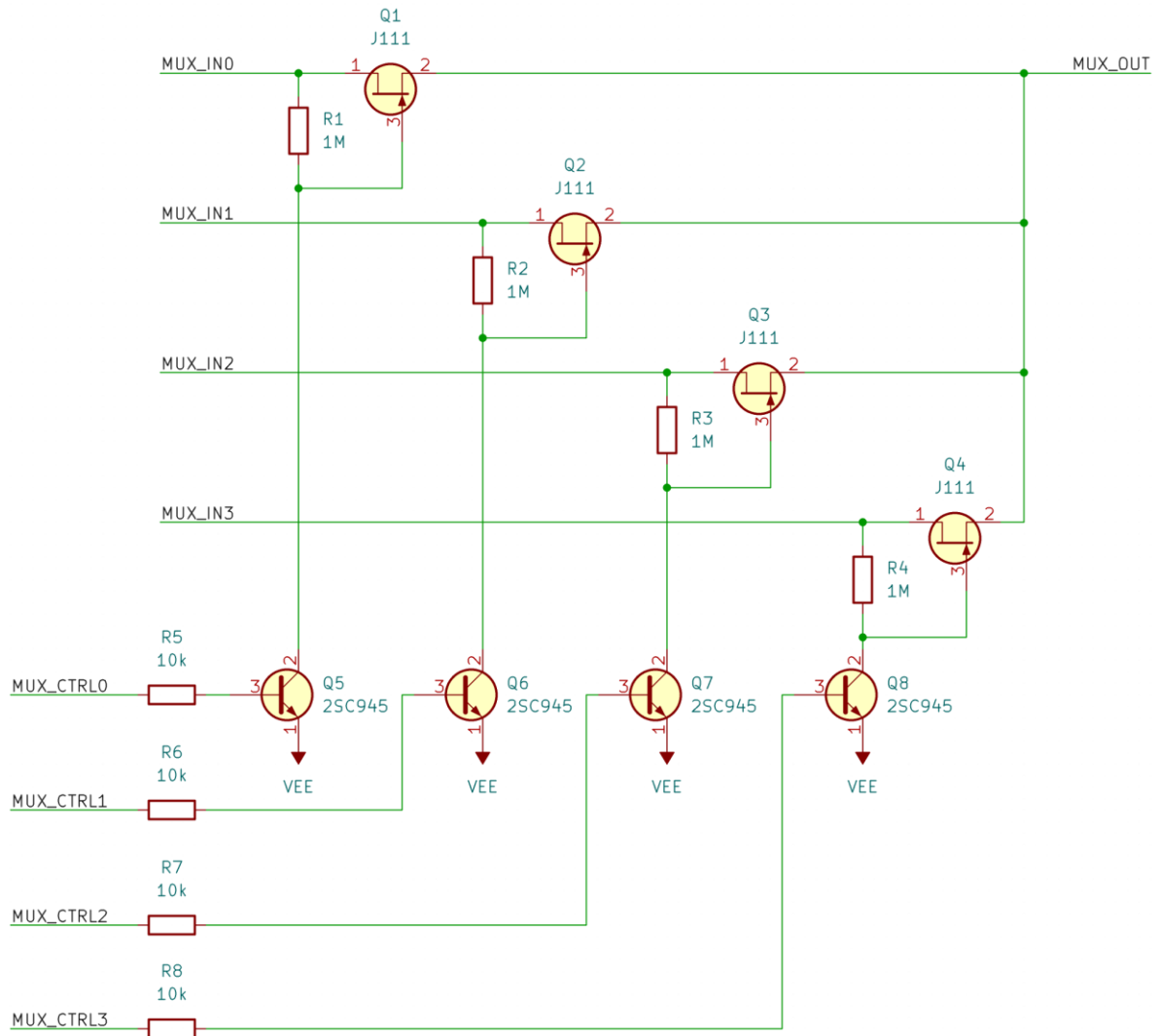
Filename: Transistor_JFET_AKL	
Total symbols:	136
Generic symbols:	23
Specific symbols:	113



Schematic examples

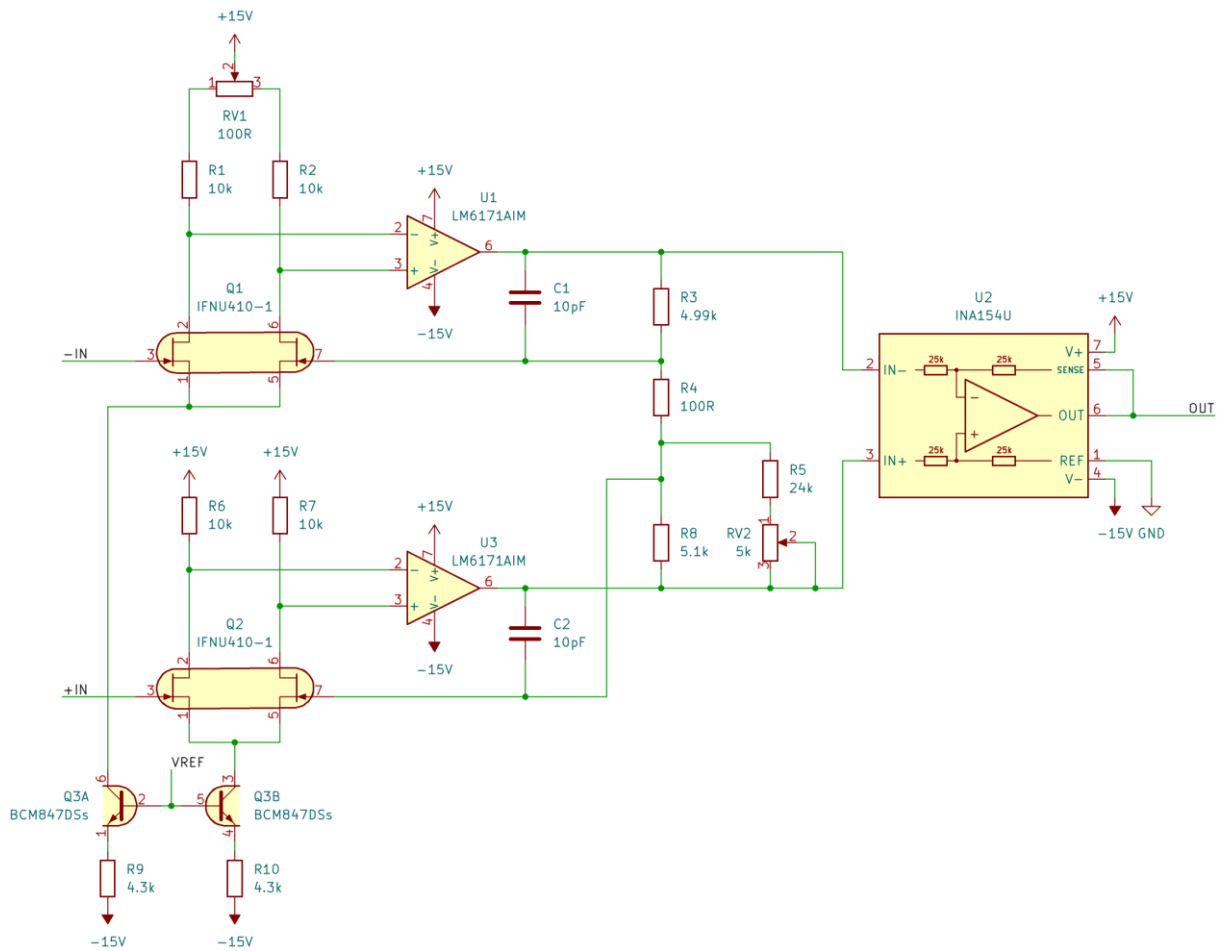
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



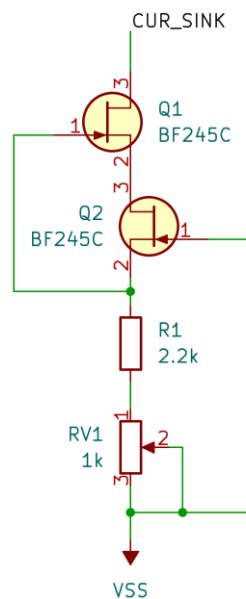
Example 1

4-Input analog multiplexer using four J111 N-Channel JFETs.



Example 2

Instrumentation amplifier with discrete JFET input stage based on two IFNU410 dual matched JFETs.



Example 3

Adjustable Cascode current sink using two BF245 JFETs.

Table list of all devices included in this library

Device	No. of symbols
2N2608	1
2N2609	1
2N4391	1
2N4392	1
2N4393	1
2N4416	2
2N4857	2
2N5452	4
2N5453	4
2N5454	4
2N5460	1
2N5461	1
2N5462	1
2N5484	1
2N5485	1
2N5486	1
2SK30	1
2SK208	1
2SK209	1
2SK879	1
2SK932	1
2SK2145	1
2SK2394	1
2SK3320	1
BF244	2
BF245	4
BSR58	1
BSV78	1
BSV79	1
BSV80	1
IFNU410	4
IFNU411	4
IFNU412	4
J109	1
J111	1
J112	1
J113	1
J175	1
J176	1
J201	1
J202	1
J204	1
MMBF4117	1

Device	No. of symbols
MMBF4118	1
MMBF4119	1
MMBF4391	1
MMBF4392	1
MMBF4393	1
MMBF4416A	1
MMBF5484	1
MMBF5485	1
MMBF5486	1
MMBFJ108	1
MMBFJ111	1
MMBFJ112	1
MMBFJ113	1
MMBFJ175	1
MMBFJ176	1
MMBFJ177	1
MMBFJ201	1
MMBFJ202	1
MMBFJ270	1
MMBFJ309	1
MMBFJ310	1
NSVJ5908DSG5	1
NSVJ6904DSB6	1
PN2608	1
PN2609	1
PN4391	1
PN4392	1
PN4393	1
SMP2608	1
SMP2609	1
SMPU410	4
SMPU411	4
SMPU412	4
SST201	1
SST202	1
SST204	1
SST4416	1

2.34. MOSFET Transistor Library

This library contains Metal Oxide Semiconductor Field Effect Transistors and MOSFET arrays.

MOSFET symbols do not have the internal body diode indicated. The source terminal is additionally indicated by closer positioning of the gate pin.

Depletion-mode MOSFET symbols have a continuous channel line.

P-Channel MOSFETs start with source on the top of the symbol (as opposed to N-Channel MOSFETs where the source is on the bottom).

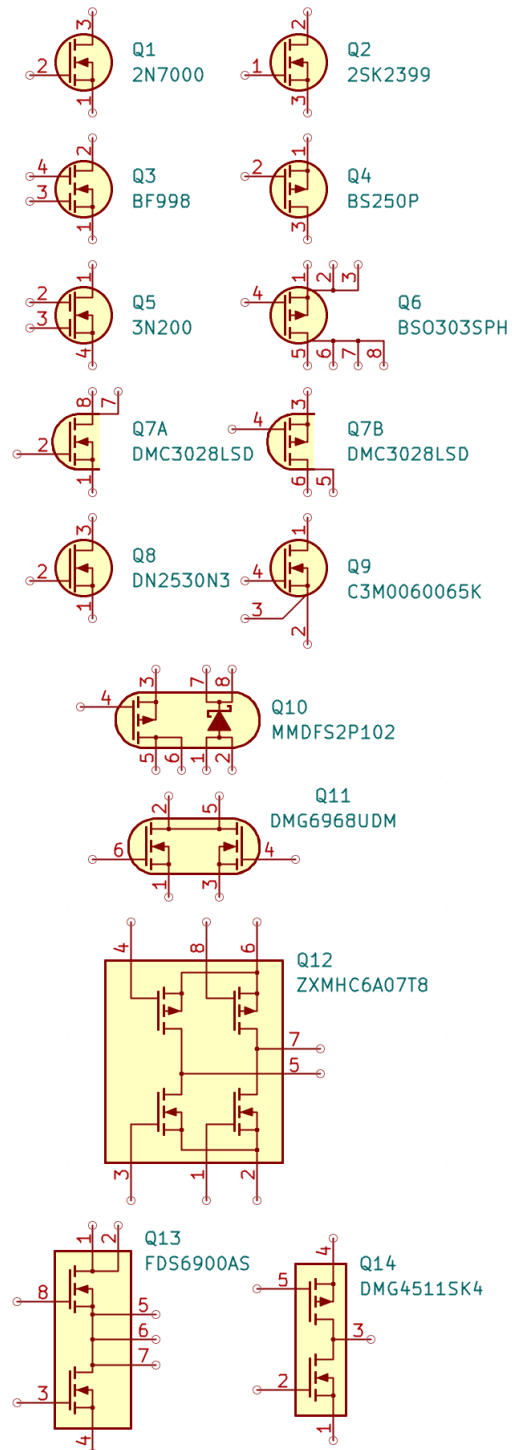
Devices with multiple connections for drain, source or gate have multiple pins corresponding to each respective footprint pad.

MOSFETs with kelvin connection (with 2 source pins, one meant to be a reference for gate voltage) have the sense pin aligned with the gate pin.

MOSFET arrays have either a multi-unit symbol (if transistors are isolated) or a single symbol with internal connections between transistors indicated.

Each available orderable part number with different electrical characteristics, pinout and package for each transistor type has a separate specific symbol.

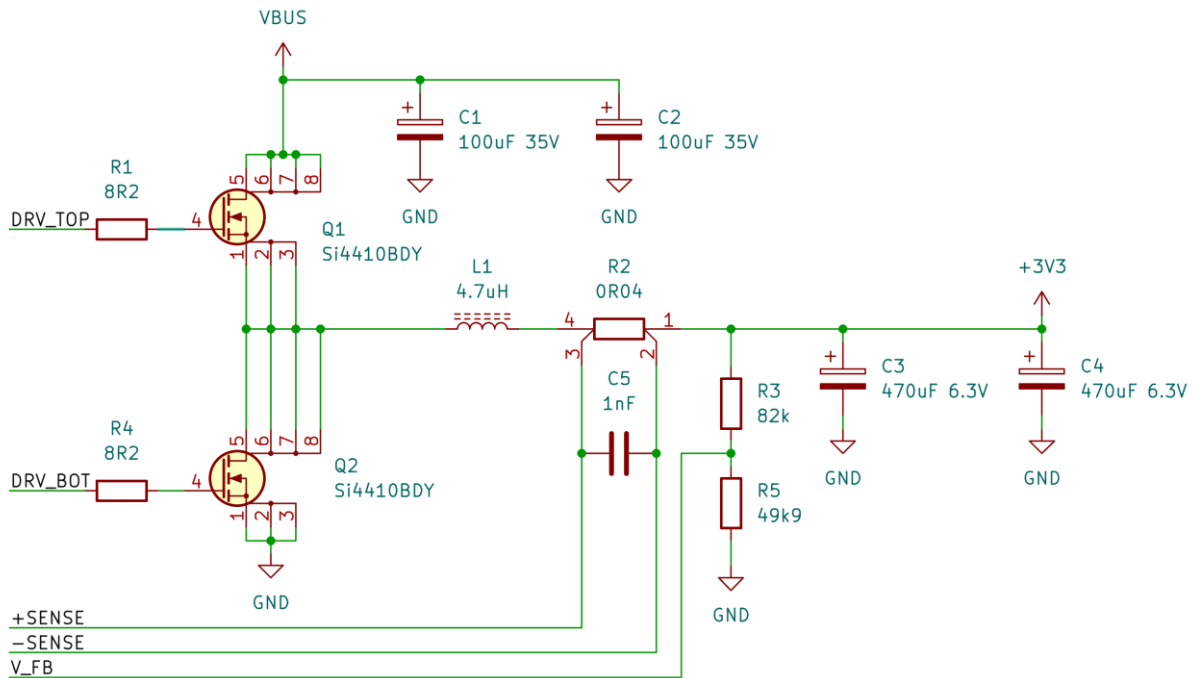
Filename: Transistor_MOSFET_AKL	
Total symbols:	6149
Generic symbols:	69
Specific symbols:	6080



Schematic examples

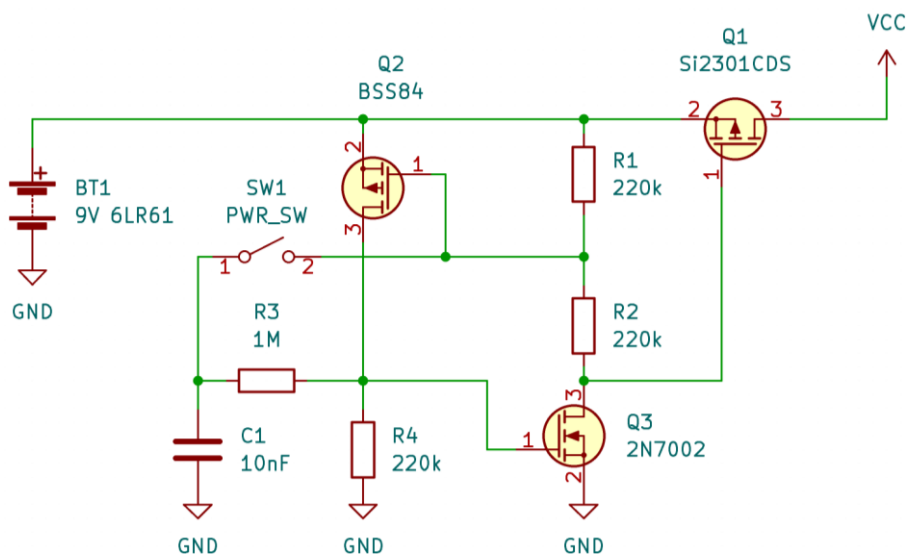
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



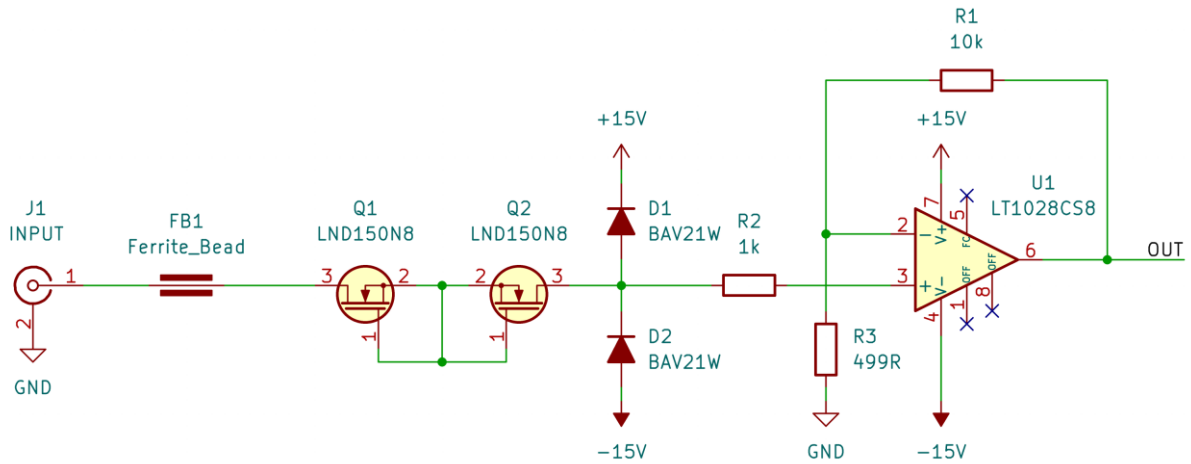
Example 1

Synchronous step-down DC/DC converter power stage using a Si4410BDY dual N-Channel power MOSFET.



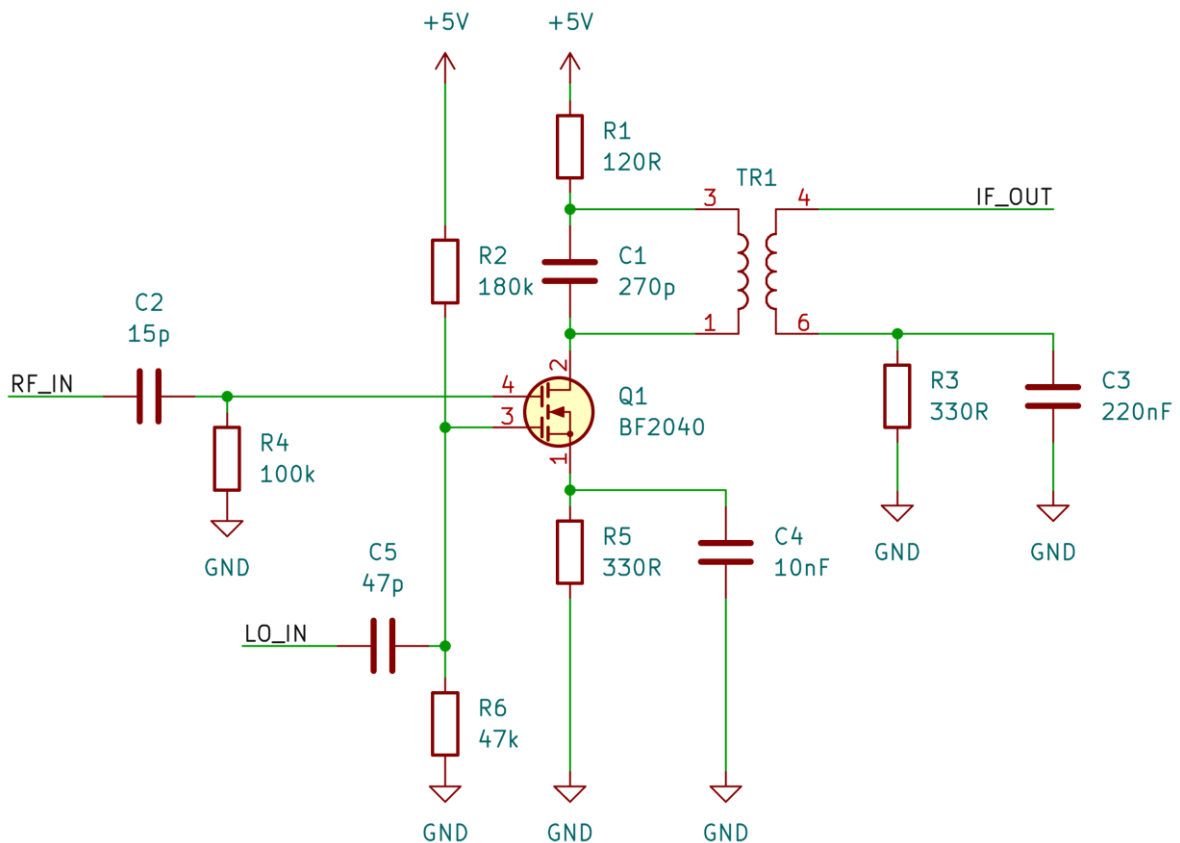
Example 2

Latching battery power switch using BSS84 P-Channel MOSFET, 2N7002 N-Channel MOSFET and Si2301CDS P-Channel power MOSFET.



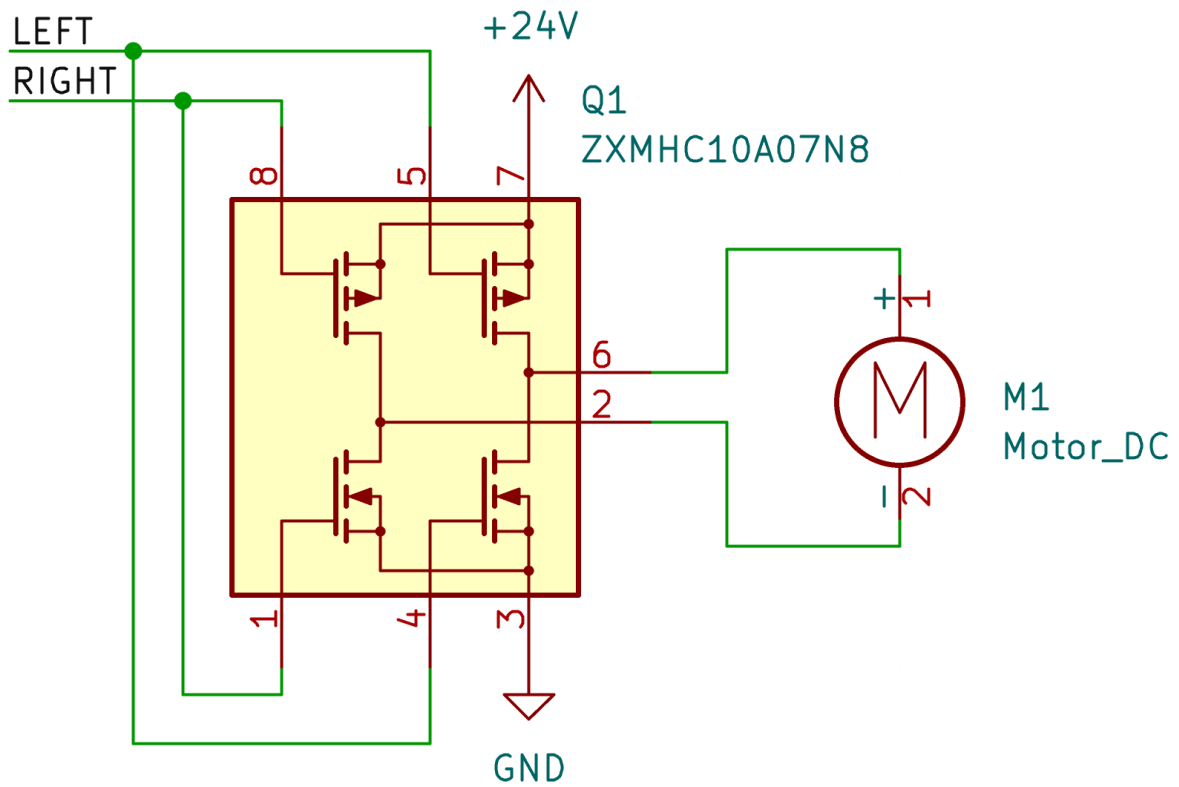
Example 3

Input overvoltage protection circuit using two LND150 depletion-mode MOSFETs to limit input current to roughly 2 milliamps.



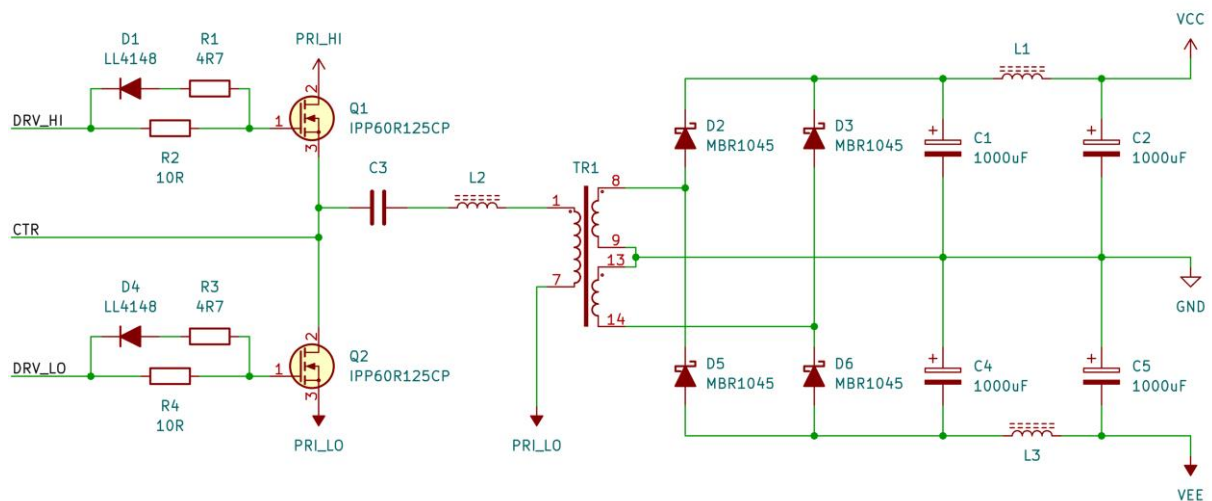
Example 4

RF mixer based on BF2040 dual-gate MOSFET (Tetrode).



Example 5

H-Bridge motor control circuit using dedicated ZXMHC10A07N8 MOSFET array.



Example 6

LLC switching power supply power stage using two IPP60R125CP high voltage power MOSFETs.

Table list of all devices included in this library

Device	No. of symbols
2N6660	1
2N6661	1
2N6790	1
2N7000	1
2N7002	1
2N7002AQ	1
2N7002BK	1
2N7002BKS	1
2N7002BKV	1
2N7002BKW	1
2N7002CK	1
2N7002DW	1
2N7002E	1
2N7002H	1
2N7002K	1
2N7002KW	1
2N7002L	1
2N7002P	1
2N7002PS	1
2N7002T	1
2N7002V	1
2N7002W	1
2N7008	1
2SJ168	1
2SJ494	1
2SJ668	1
2SK357	1
2SK552	1
2SK553	1
2SK1006	1
2SK1062	1
2SK1118	1
2SK1317	1
2SK1357	1
2SK1365	1
2SK2231	1
2SK2367	1
2SK2368	1
2SK2399	1
2SK2538	1
2SK2615	1
2SK2645	1
2SK2698	1

Device	No. of symbols
2SK2749	1
2SK2962	1
2SK3018	1
2SK3475	1
2SK3564	1
2SK3565	1
2SK3566	1
2SK3567	1
2SK3799	1
2SK3918	2
2SK3919	2
2SK4013	1
3N200	1
20N50L	2
AO3160	2
AO3400A	1
AO3401A	1
AO3042	1
AO3404A	1
AO3406	1
AO3407A	1
AO3414	1
AO3415A	1
AO3416	1
AO3418	1
AO3420	1
AO3422	1
AO3434A	1
AO4262E	1
AO4264E	1
AO4266E	1
AO4268	1
AO4286	1
AO4290A	1
AO4292E	1
AO4294A	1
AO4296	1
AO4306	1
AO4354	1
AO4402	2
AO4403	1
AO4404B	1
AO4405E	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
AO4406A	1
AO4407A	1
AO4411	1
AO4419	1
AO4421	1
AO4425	1
AO4430	1
AO4441	1
AO4443	1
AO4404B	1
AO4405E	1
AO4406A	1
AO4407A	1
AO4411	1
AO4419	1
AO4421	1
AO4425	1
AO4430	1
AO4441	1
AO4443	1
AO4447	1
AO4449	1
AO4453	1
AO4459	1
AO4466	1
AO4468	1
AO4476A	1
AO4480	1
AO4482	1
AO4484	1
AO4485	1
AO4486	1
AO4492	1
AO4496	1
AO4498	1
AO4566	1
AO4576	1
AO4611	1
AO4612	1
AO4614B	1
AO4616	1
AO4620	1
AO4627	1

Device	No. of symbols
AO4629	1
AO4752	1
AO4801A	1
AO4803A	1
AO4805	1
AO4806	1
AO4807	1
AO4813	1
AO4822A	1
AO4828	1
AO4832	1
AO4838	1
AO4840	1
AO4842	1
AO4854	1
AO4862	1
AO4862E	1
AO4882	1
AO4884	1
AO4892	1
AO6400	1
AO6401A	1
AO6402A	1
AO6404	1
AO6405	1
AO6409	2
AO6415	1
AO6420	1
AO6424	2
AO6601	1
AO6602	2
AO6604	1
AO6608	1
AO6800	1
AO6802	1
AO6804A	1
AO6808	1
AO7400	1
AO7401	1
AO7405	1
AO7407	1
AO7408	1
AO7411	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
AO7415	1
AO7417	1
AO7800	1
AO8801A	1
AO8804	1
AO8810	1
AO8814	1
AO8820	1
AO8822	1
AO9926C	1
AOB10N60	1
AOB10T60PL	1
AOB11S65	1
AOB12N50	1
AOB12N65L	1
AOB14N50	1
AOB20S60L	1
AOB25S65	1
AOB27S60L	1
AOB42S60L	1
AOB190A60CL	1
AOB190A60L	1
AOB240L	1
AOB254L	1
AOB256L	1
AOB260L	1
AOB262L	1
AOB264L	1
AOB270L	1
AOB270AL	1
AOB280L	1
AOB282L	1
AOB284L	1
AOB286L	1
AOB290L	1
AOB292L	1
AOB296L	1
AOB409L	1
AOB410L	1
AOB411L	1
AOB412L	1
AOB414	1
AOB418L	1

Device	No. of symbols
AOB470L	1
AOB480L	1
AOB482L	1
AOB1100L	1
AOB1404L	1
AOB1608L	1
AOB2140L	1
AOB2144L	1
AOB2146L	1
AOB2500L	1
AOB2502L	1
AOB2904	1
AOB2910L	1
AOB4184	1
AOB66616L	1
AOD1N60	1
AOD1R4A70	1
AOD2N60	2
AOD3N50	1
AOD3N60	1
AOD3N80	1
AOD4N60	1
AOD4S60	1
AOD5N40	1
AOD5N50	1
AOD7N60	1
AOD7N65	1
AOD7S65	1
AOD8N25	1
AOD9N40	1
AOD9N50	1
AOD11S60	1
AOD256	1
AOD294A	1
AOD296A	1
AOD380A60	1
AOD403	1
AOD407	1
AOD409	2
AOD413	1
AOD417	1
AOD418	1
AOD423	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
AOD424	2
AOD442	2
AOD444	1
AOD450	1
AOD454A	1
AOD458	1
AOD468	1
AOD478	1
AOD480	1
AOD482	1
AOD508	1
AOD514	1
AOD536	1
AOD538	1
AOD558	1
AOD603A	1
AOD607A	1
AOD609	1
AOD661	1
AOD950A70	1
AOD2144	1
AOD2146	1
AOD2210	1
AOD2544	1
AOD2606	1
AOD2610E	1
AOD2810	1
AOD2816	1
AOD2910	2
AOD2916	1
AOD2922	1
AOD4126	1
AOD4130	1
AOD4132	1
AOD4184	2
AOD4185	1
AOD4186	1
AOD4189	1
AOD4286	1
AOD4454	1
AOD4504	1
AOD21357	1
AOD66406	1

Device	No. of symbols
AOD66923	1
AOE6930	1
AOE6932	1
AOE6936	1
AOH3106	1
AOH3254	1
AOI1N60	1
AOI1R4A70	1
AOI2N60A	1
AOI4N60	1
AOI4S60	1
AOI5N40	1
AOI7N60	1
AOI7N65	1
AOI8N25	1
AOI9N50	1
AOI11S60	1
AOI294A	1
AOI296A	1
AOI403	1
AOI409	1
AOI418	1
AOI423	1
AOI442	1
AOI444	1
AOI468	1
AOI478	1
AOI482	1
AOI508	1
AOI514	1
AOI538	1
AOI950A70	1
AOI2210	1
AOI2606	1
AOI2610E	1
AOI4126	1
AOI4130	1
AOI4184	1
AOI4185	1
AOI4286	1
AOI21357	1
AOI66406	1
AOK5N100	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
AOK40N30	1
AOK60N30L	1
AON1606	1
AON2240	1
AON2260	1
AON2290	1
AON2406	1
AON2408	1
AON2410	1
AON2420	1
AON2801	1
AON2802	1
AON2803	1
AON2810	1
AON2812	1
AON6144	1
AON6152	1
AON6154	1
AON6156	1
AON6160	1
AON6162	1
AON6220	1
AON6224	2
AON6226	1
AON6234	1
AON6240	1
AON6242	1
AON6250	1
AON6260	1
AON6262E	1
AON6264E	1
AON6266E	1
AON6276	1
AON6278	1
AON6280	1
AON6282	1
AON6284	2
AON6290	1
AON6292	1
AON6294	1
AON6298	1
AON6312	1
AON6314	1

Device	No. of symbols
AON6354	1
AON6358	1
AON6360	1
AON6362	1
AON6366E	1
AON6368	1
AON6380	1
AON6384	1
AON6405	1
AON6407	1
AON6411	1
AON6414A	1
AON6435	1
AON6448	1
AON6452	1
AON6458	1
AON6482	1
AON6484	1
AON6500	1
AON6502	1
AON6510	1
AON6512	1
AON6516	1
AON6528	1
AON6548	1
AON6552	1
AON6558	1
AON6560	1
AON6566	1
AON6572	1
AON6576	1
AON6586	1
AON6588	1
AON6590	1
AON6594	1
AON6596	1
AON6661	1
AON6667	1
AON6792	1
AON6796	1
AON6816	1
AON6850	1
AON6884	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
AON6906A	1
AON6912A	1
AON6926	1
AON6932A	1
AON6934A	1
AON6946	1
AON6980	1
AON6992	1
AON6994	1
AON6996	1
AON6998	1
AON7407	1
AON7421	1
AON7611	1
AOND32324	1
AONR21307	1
AONR21321	1
AONR21357	1
AONS21307	1
AONS21321	1
AONS21357	1
AONS32306	1
AONS32314	1
AONS62602	1
AONS62614	1
AONS62618	1
AONS62920	1
AONS62922	1
AONS66402	1
AONS66406	1
AONS66612	1
AONS66916	1
AONS66923	1
AONY36352	1
AONY36354	1
AOSD26313C	1
AOSD62666E	1
AOSP21307	1
AOSP21321	1
AOSP21357	1
AOSP32314	1
AOSP32368	1
AOSP66406	1

Device	No. of symbols
AOSS21311C	1
AOSS32136C	1
AOT1N60	1
AOT5N100	1
AOT10N60	1
AOT10N65	1
AOT10T60PL	1
AOT11N60L	1
AOT11N70	1
AOT11S60L	1
AOT11S65	1
AOT12N30	1
AOT12N40	1
AOT12N50	1
AOT12N60	1
AOT12N65	1
AOT14N50	1
AOT20N25	1
AOT20N60	1
AOT20S60L	1
AOT22N50L	1
AOT25S65	1
AOT27S60L	1
AOT42S60L	1
AOT190A60CL	1
AOT190A60L	1
AOT240L	1
AOT254L	1
AOT260L	1
AOT262L	1
AOT264L	1
AOT270AL	1
AOT270L	1
AOT280L	1
AOT282L	1
AOT284L	1
AOT286L	1
AOT290L	1
AOT292L	1
AOT296L	1
AOT380A60L	1
AOT410L	1
AOT412	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
AOT414	1
AOT418L	1
AOT424	1
AOT430	1
AOT470	1
AOT480L	1
AOT482L	1
AOT1100L	1
AOT1404L	1
AOT1608L	1
AOT2140L	1
AOT2142L	1
AOT2144L	1
AOT2146L	1
AOT2500L	1
AOT2502L	1
AOT2904	1
AOT2910L	1
AOT66616L	1
AOTF4N90	1
AOTF5N100	1
AOTF6N90	1
AOTF7T60P	2
AOTF9N90	1
AOTF10N60	1
AOTF10N65	1
AOTF10T60P	2
AOTF11N60	2
AOTF11N70	1
AOTF11S60	2
AOTF11S65	2
AOTF12N30	1
AOTF12N50	1
AOTF12N60	1
AOTF12N65	2
AOTF14N50	1
AOTF20N60	1
AOTF20S60	2
AOTF22N50	2
AOTF25S65	2
AOTF42S60	2
AOTF190A60	2
AOTF240L	1

Device	No. of symbols
AOTF256L	1
AOTF286L	1
AOTF290L	1
AOTF292L	1
AOTF296L	1
AOTF380A60L	1
AOTF409	1
AOTF454L	1
AOTF2142L	1
AOTF2144L	1
AOTF2146L	1
AOTF2910L	1
AOTF4126	1
AOTF4185	1
AOU1N60	1
AOU2N60	2
AOU3N50	1
AOU3N60	1
AOU4N60	1
AOU4S60	1
AOU7S65	1
AOU9N50	1
AOW7S60	1
AOW11N60	1
AOW284	1
AOW292	1
AOW296	1
AOW482	1
AOW2500	1
AOW2502	1
AOW66412	1
AOW66616	1
AOY423	1
AOY2610E	1
AUIRF540Z	2
AUIRF1010Z	3
AUIRF1324	4
AUIRF1404	3
AUIRF1404Z	3
AUIRF1405Z	2
AUIRF2804	4
AUIRF2805	1
AUIRF2903Z	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
AUIRF3205Z	2
AUIRF3415	1
AUIRF3710Z	2
AUIRF3805	4
AUIRF3808	1
AUIRF4104	2
AUIRF4905	3
AUIRF6215	1
AUIRF7309Q	1
AUIRF7316Q	1
AUIRF7341Q	1
AUIRF7342Q	1
AUIRF7343Q	1
AUIRF7379Q	1
AUIRF9540N	1
AUIRFB4410	1
AUIRFB8405	1
AUIRFB8407	1
AUIRFB8409	1
AUIRFN7107	1
AUIRFP2907	1
AUIFR024N	1
AUIFR120Z	1
AUIFR3504	1
AUIFR3710Z	1
AUIFR4104	1
AUIFR4105	1
AUIFR4615	1
AUIFR5305	1
AUIFR6215	1
AUIFR8401	1
AUIFR8403	1
AUIFR8405	1
AUIRFS3107-7P	1
AUIRFS4115	1
AUIRFS4310	1
AUIRFS8403	1
AUIRFS8405	1
AUIRFS8407	2
AUIRFS8408-7P	1
AUIRFS8409	2
AUIRFSL4115	1
AUIRFSL4310	1

Device	No. of symbols
AUIRFSL8403	1
AUIRFSL8405	1
AUIRFSL8407	1
AUIRFSL8409	1
AUIRFU024N	1
AUIRFU120Z	1
AUIRFU4104	1
AUIRFU4615	1
AUIRFU5305	1
AUIRFU8401	1
AUIRFU8403	1
AUIRFU8405	1
AUIRFZ24N	2
AUIRFZ34N	1
AUIRFZ44VZS	1
AUIRL1404	2
AUIRL3705Z	3
AUIRLR014N	1
AUIRLR2703	1
AUIRLR3410	1
AUIRLS3034	1
AUIRLS3036-7P	1
AUIRLZ44Z	1
BF998	2
BF2040	2
BF2040W	1
BF5030	2
BF5030W	1
BS107A	1
BS107KL	1
BS170	1
BS170F	1
BS250P	1
BS270	1
BSC007N04LS6	1
BSC009NE2LS	3
BSC010N04LS	3
BSC010NE2LS	2
BSC011N03LS	2
BSC12DN20NS3G	1
BSC014N03LS	2
BSC014N04LS	2
BSC014N06NS	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
BSC014NE2LSI	1
BSC16DN25NS3G	1
BSC016N03	2
BSC016N06NS	1
BSC017N04NSG	1
BSC018N04LSG	1
BSG018NE2LS	2
BSC019N02KSG	1
BSC019N04	2
BSC020N03	2
BSC22DN20NS3G	1
BSC022N04LS	2
BSC024NE2LS	1
BSC025N02KSG	2
BSC026N04LS	1
BSC026N04LS	1
BSC026N08NS5	1
BSC026NE2LS5	1
BSC027N04LSG	1
BSC028N06	2
BSC939N03	2
BSC030N04NSG	1
BSC030N08NS5	1
BSC030P03NS3G	1
BSC031N06NS3G	1
BSC032N04LS	1
BSC032NE2LS	1
BSC034N03LSG	1
BSC034N06NS	1
BSC035N10NS5	1
BSC036NE7NS3G	1
BSC037N08NS5	1
BSC039N06NS	1
BSC040N08NS5	1
BSC042N03	3
BSC042NE7NS3G	1
BSC046N10NS3G	1
BSC047N08NS3G	1
BSC050N03	2
BSC050NE2LS	1
BSC052N03LS	1
BSC052N08NS5	1
BSC054N04NSG	1

Device	No. of symbols
BSC057N03	2
BSC057N08NS3G	1
BSC059N03S	1
BSC059N04LS	2
BSC060N10NS3G	1
BSC060P03NS3G	1
BSC061N08NS5	1
BSC066N06NS	1
BSC067N06LS3G	1
BSC070N10NS3	1
BSC072N08NS5	1
BSC077N12NS3G	1
BSC080N03MSG	1
BSC082N10LSG	1
BSC084P03NS3G	1
BSC090N03	2
BSC093N04LSG	1
BSC097N06NS	1
BSC098N10NS5	1
BSC100N03MSG	1
BSC100N06LS3G	1
BSC105N10LSFG	1
BSC109N10NS3G	1
BSC110N06NS3G	1
BSC117N08NS5	1
BSC118N10NSG	1
BSC119N03SG	1
BSC120N03	2
BSC123N08NS3G	1
BSC123N10LSG	1
BSC130P03LSG	1
BSC150N03LDG	1
BSC160N10NS3G	1
BSC190N12NS3G	1
BSC190N15NS3G	1
BSC196N10NSG	1
BSC252N10NSFG	1
BSC265N10LSFG	1
BSC320N20NS3G	1
BSC340N08NS3G	1
BSC360N15NS3G	1
BSC500N20NS3G	1
BSC0501NSI	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
BSC0504NSI	1
BSC520M15NS3G	1
BSC600N25NS3G	1
BSC900N20NS3G	1
BSC0901NS	2
BSC0902NS	2
BSC0904NSI	1
BSC0906NS	1
BSC0909NS	1
BSC0910NDI	1
BSC0911ND	1
BSC0923NDI	1
BSC0924NDI	1
BSC0925ND	1
BSD214SN	1
BSD223P	1
BSD235C	1
BSD235N	1
BSD314SPE	1
BSD316SN	1
BSD840N	1
BSG0811ND	1
BSH103	1
BSH105	1
BSH108	1
BSH111	1
BSH114	1
BSH201	1
BSH202	1
BSH203	1
BSH205	1
BSL207SP	1
BSL211SP	1
BSL214N	1
BSL215C	1
BSL296SN	1
BSL305PE	1
BSL307SP	1
BSL308C	1
BSL308PE	1
BSL316C	1
BSL372SN	1
BSL373SN	1

Device	No. of symbols
BSL606SN	1
BSL716SN	1
BSL802SN	1
BSN20	1
BSN20BK	1
BSO033N03MSG	1
BSO080P03NS3E	1
BSO080P03SH	1
BSO110N03MSG	1
BSO130P03SH	1
BSO150N03MDG	1
BSO200P03SH	1
BSO201SPH	1
BSO203PH	1
BSO203SPH	1
BSO207PH	1
BSO211PH	1
BSO0220N03MD	1
BSO301SPH	1
BSO303SPH	1
BSO615CG	1
BSP88	1
BSP89	1
BSP92P	1
BSP122	1
BSP125	1
BSP126	1
BSP129	1
BSP135	1
BSP149	1
BSP170P	1
BSP171P	1
BSP220	1
BSP225	1
BSP230	1
BSP250	1
BSP295	1
BSP297	1
BSP300	1
BSP315P	1
BSP316P	1
BSP317P	1
BSP318	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
BSP320	1
BSP321P	1
BSP322P	1
BSP324	1
BSP372	1
BSP373	1
BSP603S2L	1
BSP612P	1
BSP613P	1
BSP716N	1
BSR92P	1
BSR202N	1
BSR302N	1
BSR315P	1
BSR316P	1
BSR802N	1
BSS83P	1
BSS84	1
BSS84AK	1
BSS84AKS	1
BSS84DW	1
BSS84P	1
BSS84PW	1
BSS84W	1
BSS87	1
BSS119N	1
BSS123	1
BSS123L	1
BSS123N	1
BSS123W	1
BSS126	1
BSS127	1
BSS131	1
BSS138	1
BSS138BK	1
BSS138BKS	1
BSS138BKW	1
BSS138L	1
BSS138N	1
BSS138P	1
BSS138PW	1
BSS138W	1
BSS139	1

Device	No. of symbols
BSS159	1
BSS169	1
BSS192	1
BSS205N	1
BSS209PW	1
BSS214N	1
BSS215P	1
BSS223PW	1
BSS225	1
BSS306N	1
BSS308PE	1
BSS314PE	1
BSS315P	1
BSS316N	1
BSS606N	1
BSS670S2L	1
BSS806N	2
BSS806NW	1
BSS7728N	1
BSS8402DW	1
BST82	1
BSV236SP	1
BSZ12DN20NS3G	1
BSZ014NE2LS5IF	1
BSZ15DC02KDH	1
BSZ16DN25NS3G	1
BSZ018NE2LS	2
BSZ019N03LS	1
BSZ22DN20NS3G	1
BSZ025N04LS	1
BSZ028N04LS	1
BSZ034N04LS	1
BSZ035N03	2
BSZ036NE2LS	1
BSZ040N04LSG	1
BSZ42DN25NS3G	1
BSZ042N06NS	1
BSZ050N03	2
BSZ058N03	2
BSZ065N03LS	1
BSZ067N06LS3G	1
BSZ068N06NS	1
BSZ075N08NS5	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
BSZ084N08NS5	1
BSZ086P03NS3	2
BSZ088N03	2
BSZ097N04LSG	1
BSZ099N06LS5	1
BSZ100N03LSG	1
BSZ100N03	2
BSZ100N06LS3G	1
BSZ100N06NS	1
BSZ105N04NSG	1
BSZ110N08NS5	1
BSZ120P03NS3G	1
BSZ123N08NSZ3	1
BSZ130N03	2
BSZ150N10LS3G	1
BSZ160N10NS3G	1
BSZ180P03NS3	2
BSZ240N12NS3G	1
BSZ340N08NS3G	1
BSZ440N10NS3G	1
BSZ0506NS	1
BSZ520N15NS3G	1
BSZ900N15NS3G	1
BSZ900N20NS3G	1
BSZ0901NS	2
BSZ0902NS	2
BSZ0904NSI	1
BSZ0909NS	1
BSZ0994NS	1
BUK7Y7R6-40E	1
BUK555-60	2
BUK765R0-100E	1
BUK7628-100A	1
BUK7635-55A	1
BUK7635-100A	1
BUK96180-100A	1
BUZ10	1
BUZ11	1
C2M0025120D	1
C2M0040120D	1
C2M0045170D	1
C2M0080120D	1
C2M0160120D	1

Device	No. of symbols
C2M1000170D	1
C2M1000170J	1
C3M0015065K	1
C3M0016120K	1
C3M0030090K	1
C3M0060065D	1
C3M0060065J	1
C3M0060065K	1
C3M0065090D	1
C3M0065090J	1
C3M0065100J	1
C3M0065100K	1
C3M0075120D	1
C3M0075120J	1
C3M0075120K	1
C3M0120090D	1
C3M0120090J	1
C3M0120100J	1
C3M0120100K	1
C3M0160120D	1
C3M0160120J	1
C3M028009D	1
C3M0280090J	1
C3M0350120D	1
C3M0350120J	1
CPC3701CTR	1
CPC3703CTR	1
CPC3710CTR	1
CPC3714CTR	1
CPC3720CTR	1
CPC3730CTR	1
CPC3902CTR	1
CPC3902ZTR	1
CPC3909CTR	1
CPC3909ZTR	1
CPC3960ZTR	1
CPC3980ZTR	1
CPC3982TTR	1
CPC5602CTR	1
CPC5603CTR	1
DI010N03PW	1
DI012N60D1	1
DI015N25D1	1

Table list of all devices included in this library (cont.)

Device	No. of symbols	Device	No. of symbols
DI020N06D1	1	DMG301NU	1
DI028P03PT	1	DMG1012	2
DI030N03D1	1	DMG1013UW	1
DI035N10PT	1	DMG1016	2
DI036N20PQ	1	DMG1023UV	1
DI040N03PT	1	DMG1024UV	1
DI045N03PT	1	DMG1029SV	1
DI050N04PT	1	DMG1045U	1
DI080N03PQ	1	DMG2302U	1
DI080N06PQ	1	DMG2305UX	1
DI100N10PQ	1	DMG2307L	1
DI110N03PQ	1	DMG3402L	1
DI110N04PQ	1	DMG3404L	1
DI110N15PQ	1	DMG3406L	1
DI150N03PQ	1	DMG3414U	1
DIT050N06	1	DMG3415U	1
DIT090N06	1	DMG3418L	1
DIT095N08	1	DMG4511SK4	1
DIT100N10	1	DMG4800	2
DIT120N08	1	DMG6301UDW	1
DIT150N03	1	DMG6402LVT	1
DIT195N08	1	DMG6601LVT	1
DMC2004	2	DMG6602LVT	1
DMC2020USD	1	DMG6968UDM	1
DMC2038LVT	1	DMG7430LFG	1
DMC2400UV	1	DMN5L06	2
DMC2450UV	1	DMN10H120SE	1
DMC2700UDM	1	DMN10H170S	2
DMC2990UDJ	1	DMN10H220LQ	1
DMC3016LSD	1	DMN26D0UFB4	1
DMC3021LK4	1	DMN26D0UT	1
DMC3021LSD	1	DMN30H4D0LFD	1
DMC3025LSD	1	DMN53D0L	1
DMC3028LSD	1	DMN53D0LDW	1
DMC3032LSD	1	DMN55D0UT	1
DMC3400SDW	1	DMN61D9UDW	1
DMC4015SSD	1	DMN62D0U	2
DMC4028SSD	1	DMN63D8L	1
DMC4029SSD	1	DMN63D8LDW	1
DMC4040SSD	1	DMN63D8LV	1
DMC4047SSD	1	DMN63D8LW	1
DMC4050SSD	1	DMN65D8L	2
DMC6040SSD	1	DMN66D0LT	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
DMN90H8D5HCT	1
DMN601WK	1
DMN1004UFV	1
DMN1019UFDE	1
DMN1029UFDB	1
DMN2004K	1
DMN2004VK	1
DMN2005LPK	1
DMN2022UFDF	1
DMN2028USS	1
DMN2029USD	1
DMN2046U	1
DMN2050L	1
DMN2050LFD8	1
DMN2056U	1
DMN2058U	1
DMN2100UDM	1
DMN2215UDM	1
DMN2230U	1
DMN2300UFB4	1
DMN2400UFB4	1
DMN2400UV	1
DMN2990UDJ	1
DMN3018SSD	1
DMN3023L	1
DMN3024LSD	1
DMN3033L	2
DMN3042L	1
DMN3053L	1
DMN3065LW	1
DMN3070SSN	1
DMN3404L	1
DMN4020LFDE	1
DMN4036LK3	1
DMN4060SVT	1
DMN6040SSD	1
DMN6040SSS	1
DMN4068SE	1
DMN6070SSD	1
DMN6075S	1
DMNH6021SPD	1
DMNH6021SPSQ	1
DMP10H4D2S	1

Device	No. of symbols
DMP10H400SE	1
DMP10H400SK3	1
DMP32D4SFB	1
DMP56D0UFB	1
DMP58D0SV	1
DMP2004K	1
DMP2004VK	1
DMP2022LS5	1
DMP2035U	2
DMP2039UFDE	1
DMP2045U	1
DMP2065UFDB	1
DMP2066LDM	1
DMP2066LSD	1
DMP2066LSS	1
DMP2100U	1
DMP2130L	2
DMP2160U	1
DMP2215L	1
DMP2225L	1
DMP2305U	1
DMP3010LK3	1
DMP3036SFG	1
DMP3036SSS	1
DMP3056L	2
DMP3056LSD	1
DMP3068L	1
DMP3099L	1
DMP3125L	1
DMP3130LQ	1
DMP3160L	1
DMP4015SK3	1
DMP4015SSSQ	1
DMP4025SFGQ	1
DMP4047LFDE	1
DMP4047SK3	1
DMP4050SSD	1
DMP4050SSS	1
DMP4051KL3	1
DMP4065S	1
DMP6110SVT	1
DMPH3010LPS	1
DMPH6050SSD	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
DMT10H010LPS	1
DMT34M1LPS	1
DMT6007LFG	1
DMT8012LFG	1
DMTH6004SK3Q	1
DMTH6016LSD	1
DN1509N8	1
DN2450	2
DN2470K4	1
DN2530	2
DN2535	2
DN2540	3
DN2625K4	1
DN3135	2
DN3525N8	1
DN3535N8	1
DN3545	2
DPM2023UFD	1
FCA47N60	1
FCB20N60	1
FCD5N60	1
FCH47N60	1
FCP11N60	1
FCP20N60	1
FCP22N60	1
FCP36N60N	1
FCPF11N60	1
FCPF20N60	1
FCPF22N60	1
FCPF36N60NT	1
FCPF400N80Z	1
FCPF1300N80Z	1
FCU5N60	1
FDA16N50	1
FDA50N50	1
FDB13AN06A0	1
FDB14N30	1
FDB15N50	1
FDB28N30	1
FDB33N25	1
FDB035AN06A0	1
FDB44N25	1
FDB045AN08A0	1

Device	No. of symbols
FDB050AN060A0	1
FDB52N20	1
FDB070AN06A0	1
FDB075N15A	1
FDB2532	1
FDB2572	1
FDB2614	1
FDB2710	1
FDB2632	1
FDB3652	1
FDB5800	1
FDC604P	1
FDC606P	1
FDC608PZ	1
FDC610PZ	1
FDC634PZ	1
FDC637	1
FDC638	2
FDC640P	1
FDC653N	1
FDC655BN	1
FDC658AP	1
FDC2512	1
FDC2612	1
FDC5612	1
FDC5614P	1
FDC6301N	1
FDC6303N	1
FDC6305N	1
FDC6306P	1
FDC6318P	1
FDC6321C	1
FDC6333C	1
FDC6401N	1
FDC6420C	1
FDC6561AN	1
FDD3N50C	1
FDD6N25	1
FDD10AN06A0	1
FDD13AN06A0	1
FDD16AN08A0	1
FDD120AN15A0	1
FDD306P	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
FDD2572	1
FDD2582	1
FDD3672	1
FDD3682	1
FDD4141	1
FDD4243	1
FDD4685	1
FDD5353	1
FDD5612	1
FDD5670	1
FDD5690	1
FDD6637	1
FDD6690A	1
FDD8424H	1
FDD8445	1
FDD8447L	1
FDD8647L	1
FDD8896	1
FDD86102LZ	1
FDG315N	1
FDG1024NZ	1
FDG6301N	1
FDG6304P	1
FDG3606P	1
FDG3608P	1
FDG6321C	1
FDG6322C	1
FDG6332C	1
FDG6335N	1
FDG8850NZ	1
FDH44N50	1
FDH50N50	1
FDH3632	1
FDL100N50F	1
FDMA291P	1
FDMA507PZ	1
FDMA530PZ	1
FDMA1023PZ	1
FDMA6023PZT	1
FDMC510P	1
FDMC4435BZ	1
FDMC7660	1
FDMC8462	1

Device	No. of symbols
FDMC8651	1
FDMC86102L	1
FDMC86324	1
FDME1024NZT	1
FDMS5352	1
FDMS5672	1
FDMS8460	1
FDMS86101	1
FDMS86104	1
FDMS86163P	1
FDMS86200	1
FDMS86300	1
FDN302P	1
FDN304P	2
FDN306P	1
FDN308P	1
FDN327N	1
FDN335N	1
FDN336P	1
FDN337N	1
FDN338P	1
FDN339N	1
FDN340P	1
FDN342P	1
FDN352AP	1
FDN357N	1
FDN358P	1
FDN359AN	1
FDN360P	1
FDN361BN	1
FDN5618P	1
FDN5630	1
FDP12N50	1
FDP18N50	1
FDP20N50F	1
FDP22N50N	1
FDP39N20	1
FDP42AN15A0	1
FDP050AN060A0	1
FDP51N25	1
FDP52N20	1
FDP55N06	1
FDP075N15A	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
FDP2532	1
FDP3632	1
FDP3651U	1
FDP3652	1
FDPF12N50T	1
FDPF18N50	2
FDPF39N20	1
FDPF51N25	1
FDPF51N25	1
FDPF52N20T	1
FDPF55N06	1
FDS2572	1
FDS2582	1
FDS2672	1
FDS2734	1
FDS3692	1
FDS3992	1
FDS4435BZ	1
FDS4465	1
FDS4559	1
FDS4675	1
FDS4685	1
FDS4897	2
FDS4935	2
FDS5351	1
FDS5670	1
FDS5672	1
FDS5680	1
FDS6294	1
FDS6375	1
FDS6574A	1
FDS6673BZ	1
FDS6675BZ	1
FDS6679BZ	1
FDS6680A	2
FDS6681Z	1
FDS6690A	2
FDS6699S	1
FDS6875	1
FDS6890A	1
FDS6898A	1
FDS6900AS	1
FDS6912A	1

Device	No. of symbols
FDS6930B	1
FDS6961A	1
FDS6975	1
FDS6982AS	1
FDS8447	1
FDS8449	1
FDS8870	1
FDS8880	1
FDS8884	1
FDS8949	1
FDS8958A	1
FDS8984	1
FDS9431A	1
FDS9435A	1
FDS9926A	1
FDS9934C	1
FDS9945	1
FDS9958	1
FDS86141	1
FDS89141	1
FDS89161	1
FDT458P	1
FDU2572	1
FDU8896	1
FDV301N	1
FDV303N	1
FDV304P	1
FDV305N	1
FDY100PZ	1
FDY101PZ	1
FDY2000PZ	1
FDY3000NZ	1
FDY4000CZ	1
FQA11N90C	1
FQA24N60	1
FQA30N40	1
FQA32N20C	1
FQA36P15	1
FQA70N10	1
FQAF11N90C	1
FQAF16N50	1
FQB1P50	1
FQB5N50C	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
FQB5N90	1
FQB6N80	1
FQB12P20	1
FQB19N20L	1
FQB22P10	1
FQB27P06	1
FQB33N10	1
FQB34N20L	1
FQB34P10	1
FQB47P06	1
FQB55N10	1
FQD1N80	1
FQD2N60C	1
FQD2N100	1
FQD3P50	1
FQD5P20	1
FQD6N40C	1
FQD7N10L	1
FQD7P20	1
FQD8P10	1
FQD9N25	1
FQD10N20C	1
FQD11P06	1
FQD12N20L	1
FQD13N06L	1
FQD13N10L	1
FQD16N25C	1
FQD17P06	1
FQD18N20V2	1
FQD19N10L	1
FQD20N06	1
FQI12P20	1
FQP2N60C	1
FQP3N80C	1
FQP3P50	1
FQP4N90C	1
FQP4P40	1
FQP6N80C	1
FQP6N90C	1
FQP7P06	1
FQP8N80C	1
FQP9N50C	1
FQP9N90C	1

Device	No. of symbols
FQP11N40C	1
FQP13N06L	1
FQP13N10	1
FQP13N50	2
FQP17P06	1
FQP19N20C	1
FQP20N06L	1
FQP27P06	1
FQP32N20C	1
FQP33N10C	1
FQP45N15V2	1
FQP46N15	1
FQP47P06	1
FQP50N06L	1
FQP70N10	1
FQP85N06	1
FQPF2N60C	1
FQPF3N80C	1
FQPF4N90C	1
FQPF6N80C	1
FQPF6N90C	1
FQPF8N80C	1
FQPF9N50C	1
FQPF9N90C	1
FQPF11N40C	1
FQPF13N50C	1
FQPF19N20C	1
FQPF20N06	1
FQPF27P06	1
FQPF32N20C	1
FQPF45N15V2	1
FQPF47P06	1
FQPF65N06	1
FQS4901	1
FQS4903	1
FQT1N60C	1
FQT4N20L	1
FQT5P10	1
FQT7N10L	1
FQU1N80	1
FQU2N60C	1
FQU2N100	1
FQU5P20	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
FQU8P10	1
FQU9N25	1
FQU10N20C	1
FQU11P06	1
FQU12N20L	1
FQU13N06L	1
FQU13N10L	1
FQU17P06	1
FTD439N	1
FTD457N	1
FTD86102LZ	1
G2R1000MT17	2
G2R1000MT33J	1
G3R20MT12K	1
G3R20MT17K	1
G3R30MT12	2
G3R40MT12	3
G3R45MT12K	1
G3R45MT17	2
G3R75MT12	2
G3R160MT12	2
G3R160MT17	2
G3R350MT12	2
G3R450MT17	2
HUF75332P3	1
HUF75339P3	1
HUF75344	2
HUF75345	3
HUF75545	2
HUF75639	4
HUF75645	2
HUF75652G3	1
HUF76423P3	1
IAUC120N04S6L	2
IAUT150N10S5N	1
IAUT165N08S5N	1
IAUT200N08S5N	1
IAUT240N08S5N	1
IAUT260N10S5N	1
IAUT300N08S5N	2
IAUT300N10S5N	1
IPA028N08N3G	1
IPA029N06N	1

Device	No. of symbols
IPA030N10N3G	1
IPA032N06N3G	1
IPA037N08N3G	1
IPA040N06N	1
IPA041N04NG	1
IPA045N10N3G	1
IPA50R140CP	1
IPA50R190CE	1
IPA50R199CP	1
IPA50R250CP	1
IPA50R280CE	1
IPA50R299CP	1
IPA50R350CP	1
IPA50R399CP	1
IPA50R500CE	1
IPA50R520CP	1
IPA50R800CE	1
IPA50R905CE	1
IPA057N06N3G	1
IPA057N08N3G	1
IPA060N06N	1
IPA60R060P7	1
IPA60R080P7	1
IPA60R099	4
IPA60R120	2
IPA60R125	3
IPA60R160	2
IPA60R165CP	1
IPA60R170CFD7	1
IPA60R180P7S	1
IPA60R190	3
IPA60R199CP	1
IPA60R230P6	1
IPA60R250CP	1
IPA60R280	4
IPA60R330P6	1
IPA60R380	3
IPA60R385CP	1
IPA60R400CE	1
IPA60R450E6	1
IPA60R460CE	1
IPA60R520	2
IPA60R600	4

Table list of all devices included in this library (cont.)

Device	No. of symbols
IPA60R650CE	1
IPA60R750E6	1
IPA60R950C6	1
IPA65R045C7	1
IPA65R065C7	1
IPA65R095C7	1
IPA65R099C6	1
IPA65R110CFD	1
IPA65R125C7	1
IPA65R150CFD	1
IPA65R190	4
IPA65R225C7	1
IPA65R280	2
IPA65R310CFD	1
IPA65R380	2
IPA65R420CFD	1
IPA65R600	2
IPA65R650CE	1
IPA65R660CFD	1
IPA075N15N3G	1
IPA80R1K0CE	1
IPA80R750P7	1
IPA80R900P7	1
IPA083N10N5	1
IPA086N10N3G	1
IPA90R1K0C3	1
IPA90R1K2C3	1
IPA90R340C3	1
IPA90R500C3	1
IPA90R800C3	1
IPA093N06N3G	1
IPA95R1K2P7	1
IPA95R450P7	1
IPA95R750P7	1
IPA105N15N3G	1
IPA126N10N3G	1
IPAN70R360P7S	1
IPAN70R450P7S	1
IPAN70R600P7S	1
IPAN70R750P7S	1
IPAN70R900P7S	1
IPAN80R280P7	1
IPAN80R360P7	1

Device	No. of symbols
IPB04CN10NG	1
IPB06N03LA	1
IPB09N03LA	1
IPB009N03LG	1
IPB010N06N	1
IPB011N04	2
IPB12CN10NG	1
IPB014N06N	1
IPB015N04	2
IPB015N08N5	1
IPB016N06L3G	1
IPB017N08N5	1
IPB017N10N5	1
IPB019N06L3G	1
IPB019N08N3G	1
IPB020N04NG	1
IPB020N10N5	2
IPB021N06N3G	1
IPB023N04NG	1
IPB025N08N3G	1
IPB025N10N3G	1
IPB026N06N	1
IPB027N10N	2
IPB029N06N3G	1
IPB030N08N3G	1
IPB031N08N3G	1
IPB031NE7N3G	1
IPB033N10N5LF	1
IPB034N03LG	1
IPB034N06L3G	1
IPB035N08N3G	1
IPB036N12N3G	1
IPB037N06N3G	1
IPB038N12N3G	1
IPB039N04LG	1
IPB039N10N3G	1
IPB041N04NG	1
IPB042N03LG	1
IPB042N10N3G	1
IPB048N15N5LF	1
IPB049N06L3G	1
IPB049N08N5	1
IPB049NE7N3G	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IPB50R140CP	1
IPB50R199CP	1
IPB50R250CP	1
IPB50R299CP	1
IPB054N06N3G	1
IPB054N08N3G	1
IPB055N03LG	1
IPB057N06N	1
IPB60R060P7	1
IPB60R080P7	1
IPB60R099	4
IPB60R120P7	1
IPB60R125C6	1
IPB60R160	2
IPB60R165CP	1
IPB60R180	2
IPB60R190	2
IPB60R199CPA	1
IPB60R230P6	1
IPB60R250CP	1
IPB60R280	3
IPB60R299CPA	1
IPB60R330P6	1
IPB60R360P7	1
IPB60R380	2
IPB60R385CP	1
IPB60R600	2
IPB60R950	1
IPB065N15N3G	1
IPB65R045C7	1
IPB65R065C7	1
IPB65R095C7	1
IPB65R099C6	1
IPB65R110CFD	1
IPB65R125C7	1
IPB65R150CFD	1
IPB65R190	4
IPB65R225C7	1
IPB65R280	2
IPB65R310CFD	1
IPB65R380C6	1
IPB65R420CFD	1
IPB65R600C6	1

Device	No. of symbols
IPB65R660CFD	1
IPB067N08N3G	1
IPB070N10S3-12	1
IPB072N15N3G	1
IPB073N15N3G	1
IPB077N06S2-12	1
IPB079CN10NG	1
IPB80N04S2-H4	1
IPB80N04S4L-04	1
IPB80N06S2	2
IPB081N06L3G	1
IPB083N10N3G	1
IPB083N15N5LF	1
IPB090N06N3G	1
IPB90R340C3	1
IPB097N08N3G	1
IPB100N04S3-03	1
IPB100N06S2	2
IPB107N20N	2
IPB108N15N3G	1
IPB110N20N3LF	1
IPB117N20NFD	1
IPB120N04S4-02	1
IPB126N10N3G	1
IPB144N12N3G	1
IPB180N04S4-H0	1
IPB180P04P4	2
IPB200N15N3G	1
IPB200N25N3G	1
IPB320N20N3G	1
IPB407N30N	1
IPB530N15N3G	1
IPB600N25N3G	1
IPC50N04S5	2
IPC100N04S5	4
IPC100N04S5L	4
IPD12CN10NG	1
IPD025N06N	1
IPD26N06S2L-35	1
IPD30N03S4L-09	1
IPD30N08S2-22	1
IPD031N03LG	1
IPD031N06L3G	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IPD034N06L3G	1
IPD038N06N3G	1
IPD050N03LG	1
IPD50N06S4L	1
IPD50R1K4CE	1
IPD50R3K0CE	1
IPD50R280CE	1
IPD50R399CP	1
IPD50R500CE	1
IPD50R520CP	1
IPD50R950CE	1
IPD053N06N	1
IPD060N03LG	1
IPD60R1K0CE	1
IPD60R170CFD7	1
IPD60R280	3
IPD60R360P7	1
IPD60R380	3
IPD60R400CE	1
IPD60R450E6	1
IPD60R520C6	1
IPD60R600	4
IPD60R650CE	1
IPD60R750E6	1
IPD60R950C6	1
IPD65R1K4C	2
IPD65R190C7	1
IPD65R225C7	1
IPD65R250	2
IPD65R380	2
IPD65R400CE	1
IPD65R420CFD	1
IPD65R600	2
IPD65R650CE	1
IPD65R660CFD	1
IPD65R950C	2
IPD068P03L3G	1
IPD70R1K4	2
IPD70R2K0CE	1
IPD70R360P7S	1
IPD70R600P7S	1
IPD70R900P7S	1
IPD70R950CE	1

Device	No. of symbols
IPD075N03LG	1
IPD78CN10NG	1
IPD079N06L3G	1
IPD80R1K0CE	1
IPD80R1K2P7	1
IPD80R1K4	2
IPD80R2K0P7	1
IPD80R2K4P7	1
IPD80R3K3P7	1
IPD80R4K5P7	1
IPD80R280P7	1
IPD80R360P7	1
IPD80R450P7	1
IPD80R750P7	1
IPD80R900P7	1
IPD082N10N3G	1
IPD090N03LG	1
IPD90N03S4L-02	1
IPD90N04S3-04	1
IPD90N04S4-04	1
IPD90N04S4-05	1
IPD090R1K2C3	1
IPD095R2K0P7	1
IPD095R450P7	1
IPD095R750P7	1
IPD135N03LG	1
IPD200N15N3G	1
IPD350N06LG	1
IPD530N15N3G	1
IPDD60R050G7	1
IPDD60R080G7	1
IPDD60R102G7	1
IPDD60R125G7	1
IPDD60R150G7	1
IPDD60R190G7	1
IPG20N04S4	2
IPI04CN10NG	1
IPI06N03LA	1
IPI09N03LA	1
IPI12CN10NG	1
IPI020N06N	1
IPI023NE7N3G	1
IPI024N06N3G	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IPI029N06N	1
IPI030N10N3G	1
IPI032N06N3G	1
IPI034NE7N3G	1
IPI037N06L3G	1
IPI037N08N3G	1
IPI040N06N3G	1
IPI041N12N3G	1
IPI045N10N3G	1
IPI50R140CP	1
IPI50R199CP	1
IPI50R250CP	1
IPI50R350CP	1
IPI50R399CP	1
IPI052NE7N3G	1
IPI057N08N3G	1
IPI60R099CPA	1
IPI60R125CP	1
IPI60R165CP	1
IPI60R190C6	1
IPI60R199CP	1
IPI60R250CP	1
IPI60R280C6	1
IPI60R380C6	1
IPI60R385CP	1
IPI65R099C6	1
IPI65R110CFD	1
IPI65R150CFD	1
IPI65R190	3
IPI65R280	2
IPI65R310CFD	1
IPI65R380C6	1
IPI65R420CFD	1
IPI65R600C6	1
IPI65R660CFD	1
IPI070N08N3G	1
IPI70N10S3-12	1
IPI70R950CE	1
IPI072N10N3G	1
IPI075N15N3G	1
IPI076N12N3G	1
IPI80CN10NG	1
IPI80N04S2-H4	1

Device	No. of symbols
IPI80N04S4L-04	1
IPI80N08S2-07	1
IPI084N06L3G	1
IPI086N10N3G	1
IPI90R1K2C3	1
IPI90R340C3	1
IPI90R500C3	1
IPI90R800C3	1
IPI100N04S3-03	1
IPI100N08	2
IPI110N20N3G	1
IPI111N15N3G	1
IPI120N04S4-02	1
IPI126N10N3G	1
IPI147N12N3G	1
IPI180N10N3G	1
IPI200N15N3G	1
IPI200N25N3G	1
IPI320N20N3G	1
IPI530N15N3G	1
IPI600N25N3G	1
IPL60R1K5C6S	1
IPL60R2K1C6S	1
IPL60R065P7	1
IPL60R075CFD7	1
IPL60R085P7	1
IPL60R104C7	1
IPL60R105P7	1
IPL60R125P7	1
IPL60R180P6	1
IPL60R185CFD7	1
IPL60R199CP	1
IPL60R210P6	1
IPL60R285P7	1
IPL60R299CP	1
IPL60R365P7	1
IPL60R650P6S	1
IPL65R1K5C6S	1
IPL65R070C7	1
IPL65R099C7	1
IPL65R130C7	1
IPL65R165CFD	1
IPL65R190E6	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IPL65R195C7	1
IPL65R210CFD	1
IPL65R230C7	1
IPL65R310E6	1
IPL65R340CFD	1
IPL65R420E6	1
IPL65R460CFD	1
IPL65R650C6S	1
IPL65R660E6	1
IPN50R2K0CE	1
IPN50R3K0CE	1
IPN50R650CE	1
IPN50R800CE	1
IPN50R950CE	1
IPN60R2K1CE	1
IPN60R600P7S	1
IPN65R1K5CE	1
IPN70R1K0CE	1
IPN70R1K0CE	1
IPN70R1K5CE	1
IPN70R360P7S	1
IPN80R1K2P7	1
IPN80R1K4P7	1
IPN80R2K0P7	1
IPN80R2K4P7	1
IPN80R3K3P7	1
IPN80R4K5P7	1
IPN80R600P7	1
IPN80R750P7	1
IPN80R900P7	1
IPN95R1K2P7	1
IPN95R2K0P7	1
IPN95R3K7P7	1
IPP04CN10NG	1
IPP06N03LA	1
IPP09N03LA	1
IPP12CN10	2
IPP015N04NG	1
IPP020N08N5	1
IPP023N04NG	1
IPP023N10N5	1
IPP023NE7N3G	1
IPP024N06N3G	1

Device	No. of symbols
IPP027N08N5	1
IPP029N06N	1
IPP030N10N	2
IPP032N06N3G	1
IPP034N03LG	1
IPP034N08N5	1
IPP037N06L3G	1
IPP037N08N3G	1
IPP039N04LG	1
IPP040N06N	2
IPP041N04NG	1
IPP041N12N3G	1
IPP042N03LG	1
IPP045N10N3G	1
IPP048N04NG	1
IPP50R140CP	1
IPP50R190CE	1
IPP50R199CP	1
IPP50R250CP	1
IPP50R280CE	1
IPP50R299CP	1
IPP50R350CP	1
IPP50R380CE	1
IPP50R399CP	1
IPP50R500CE	1
IPP50R520CP	1
IPP052N06L3G	1
IPP052N08N5	1
IPP052NE7N3G	1
IPP055N03LG	1
IPP057N06N3G	1
IPP057N08N3G	1
IPP60R1K4C6	1
IPP60R040C7	1
IPP60R060C7	1
IPP60R074C6	1
IPP60R080P7	1
IPP60R099	5
IPP60R120P7	1
IPP60R125	3
IPP60R160	2
IPP60R165CP	1
IPP60R180P7	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IPP60R190	3
IPP60R199CP	1
IPP60R230P6	1
IPP60R250CP	1
IPP60R280	5
IPP60R299CP	1
IPP60R330P6	1
IPP60R360P7	1
IPP60R380	3
IPP60R385CP	1
IPP60R450E6	1
IPP60R520	2
IPP60R600	4
IPP60R750E6	1
IPP60R950C6	1
IPP062NE7N3G	1
IPP65R045C7	1
IPP65R065C7	1
IPP65R074C6	1
IPP65R095C7	1
IPP65R099C6	1
IPP65R110CFD	1
IPP65R125C7	1
IPP65R150CFD	1
IPP65R190	4
IPP65R225C7	1
IPP65R280	2
IPP65R310CFD	1
IPP65R380	2
IPP65R420CFD	1
IPP65R600	2
IPP65R660CFD	1
IPP070N08N3G	1
IPP70N10S3-12	1
IPP072N10N3G	1
IPP075N15N3G	1
IPP076N12N3G	1
IPP076N15N5	1
IPP77N06S2-12	1
IPP80CN10NG	1
IPP80N04S2-H4	1
IPP80N04S4L-04	1
IPP80N06S2L-07	1

Device	No. of symbols
IPP80N08S2	2
IPP080R1K2P7	1
IPP080R280P7	1
IPP080R360P7	1
IPP080R600P7	1
IPP080R750P7	1
IPP083N10N5	1
IPP084N06L3G	1
IPP086N10N3G	1
IPP090R1K0C3	1
IPP090R1K2C3	1
IPP090R340C3	1
IPP090R500C3	1
IPP090R800C3	1
IPP093N06N3G	1
IPP100N04S3-03	1
IPP100N06S2	2
IPP100N08	2
IPP107N20NA	1
IPP110N20N3G	1
IPP111N15N3G	1
IPP114N12N3G	1
IPP120N04S4-02	1
IPP120N20NFD	1
IPP126N10N3G	1
IPP147N12N3G	1
IPP180N10N3G	1
IPP200N15N3G	1
IPP200N25N3G	1
IPP220N25NFD	1
IPP320N20N3G	1
IPP410N30N	1
IPP530N15N3G	1
IPP600N25N3G	1
IPS12CN10LG	1
IPS031N03LG	1
IPS050N03LG	1
IPS060N03LG	1
IPS65R1K4C6	1
IPS65R1K5CE	1
IPS65R400CE	1
IPS65R905C6	1
IPS70R1K4	2

Table list of all devices included in this library (cont.)

Device	No. of symbols
IPS70R360P7S	1
IPS70R905CE	1
IPS075N03LG	1
IPS80R2K0P7	1
IPS80R2k4P7	1
IPS135N03LG	1
IPSA70R360P7S	1
IPT004N03L	1
IPT007N06L	1
IPT012N08N5	1
IPT015N10N5	1
IPT020N10N3	1
IPT029N08N5	1
IPT059N15N3	1
IPT60R022S7	1
IPU050N03LG	1
IPU50R1K4CE	1
IPU50R3K0CE	1
IPU50R950CE	1
IPU060N03LG	1
IPU075N03LG	1
IPU80R1K0CE	1
IPU80R1K2P7	1
IPU80R1K4	2
IPU80R2K0P7	1
IPU80R2K4P7	1
IPU80R3K3P7	1
IPU80R4K5P7	1
IPU80R600P7	1
IPU80R750P7	1
IPU80R900P7	1
IPU95R1K2P7	1
IPU95R3K7P7	1
IPU95R450P7	1
IPU95R750P7	1
IPU135N03LG	1
IPW50R140CFP	1
IPW50R190CE	1
IPW50R280CE	1
IPW60R031CFD7	1
IPW60R037	2
IPW60R040C7	1
IPW60R041	2

Device	No. of symbols
IPW60R045CPA	1
IPW60R070	3
IPW60R80P7	1
IPW60R099	5
IPW60R120P7	1
IPW60R125	3
IPW60R160	2
IPW60R165CP	1
IPW60R170CFD7	1
IPW60R180	2
IPW60R190	3
IPW60R199CP	1
IPW60R230P6	1
IPW60R280	3
IPW60R299CP	1
IPW60R330P6	1
IPW65R019C7	1
IPW65R037C6	1
IPW65R041CFD	1
IPW65R045C7	1
IPW65R065C7	1
IPW65R070C6	1
IPW65R080CFD	1
IPW65R095C7	1
IPW65R099C6	1
IPW65R110CFD	1
IPW65R125C7	1
IPW65R150CFD	1
IPW65R190	4
IPW65R280	2
IPW65R310CFD	1
IPW65R380E6	1
IPW65R420CFD	1
IPW65R600E6	1
IPW65R660CFD	1
IPW80R280P7	1
IPW80R360P7	1
IPW90R1K0C3	1
IPW90R340C3	1
IPW90R500C3	1
IPZ40N04S5	3
IPZ40N04S5L	3
IPZ60R017C7	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IPZ60R040C7	1
IPZ60R099C7	1
IPZ65R019C7	1
IPZ65R045C7	1
IPZ65R065C7	1
IPZ65R095C7	1
IPZA65R037P7	1
IPZA65R060P7	1
IPZA65R080P7	1
IPZA65R099P7	1
IPZA65R120P7	1
IPZA65R180P7	1
IRF9Z24	2
IRF9Z24N	1
IRF9Z34	1
IRF9Z34N	3
IRF40B207	1
IRF40R207	1
IRF100B202	1
IRF135B203	1
IRF135S203	1
IRF200P222	1
IRF200P223	1
IRF250P225	1
IRF300P226	1
IRF300P227	1
IRF510	2
IRF520	1
IRF520N	3
IRF530	2
IRF530A	1
IRF530M	3
IRF540	2
IRF540N	3
IRF540Z	3
IRF610	1
IRF620	1
IRF630	2
IRF630N	3
IRF634	1
IRF640	2
IRF640N	3
IRF644	2

Device	No. of symbols
IRF710	2
IRF720	1
IRF730	1
IRF740	2
IRF740A	3
IRF740LC	1
IRF820	1
IRF820A	1
IRF830	3
IRF840	2
IRF840A	3
IRF840LC	1
IRF1010E	1
IRF1010EZ	3
IRF1010N	3
IRF1010Z	3
IRF1018E	3
IRF1104	1
IRF1310N	1
IRF1324	1
IRF1404	3
IRF1404Z	3
IRF1405	3
IRF1405Z	3
IRF1407	1
IRF1503	1
IRF2204	3
IRF2804	4
IRF2805	3
IRF2807	3
IRF2807Z	3
IRF2903Z	3
IRF2907Z	3
IRF3007	1
IRF3205	3
IRF3205Z	3
IRF3315	3
IRF3415	3
IRF3610S	1
IRF3703	1
IRF3709	3
IRF3710	3
IRF3710Z	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRF3805	3
IRF3808	3
IRF4104	3
IRF4905	3
IRF5210	3
IRF5305	3
IRF5801	1
IRF5802	1
IRF5803	1
IRF6215	2
IRF6216	1
IRF6217	1
IRF6218	2
IRF7101	1
IRF7103	2
IRF7104	1
IRF7105	1
IRF7201	1
IRF7204	1
IRF7205	1
IRF7240	1
IRF7241	1
IRF7301	1
IRF7303	1
IRF7304	1
IRF7306	1
IRF7307	1
IRF7309	1
IRF7311	1
IRF7313	1
IRF7314	1
IRF7316	1
IRF7317	1
IRF7319	1
IRF7324	1
IRF7328	1
IRF7341	1
IRF7342	1
IRF7343	1
IRF7351	1
IRF7379	1
IRF7380	1
IRF7389	1

Device	No. of symbols
IRF7401	1
IRF7403	1
IRF7404	1
IRF7406	1
IRF7410	1
IRF7413	2
IRF7416	1
IRF7420	1
IRF7424	1
IRF7425	1
IRF7451	1
IRF7452	1
IRF7455	1
IRF7456	1
IRF7457	1
IRF7458	1
IRF7463	1
IRF7465	1
IRF7469	1
IRF7470	1
IRF7473	1
IRF7476	1
IRF7490	1
IRF7493	1
IRF7495	1
IRF7501	1
IRF7503	1
IRF7504	1
IRF7506	1
IRF0507	1
IRF7509	1
IRF7530	1
IRF7601	1
IRF7606	1
IRF7607	1
IRF7726	1
IRF7805	1
IRF7805Z	1
IRF7807V	1
IRF7807Z	1
IRF7809AV	1
IRF7811AV	1
IRF7815	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRF7821	1
IRF7831	1
IRF7832	1
IRF7834	1
IRF7842	1
IRF7853	1
IRF7854	1
IRF7855	1
IRF7862	1
IRF7904	1
IRF7907	1
IRF7910	1
IRF8010	3
IRF8313	1
IRF8714	1
IRF8721	1
IRF8734	1
IRF8736	1
IRF8788	1
IRF8910	1
IRF9310	1
IRF9317	1
IRF9321	1
IRF9328	1
IRF9332	1
IRF9333	1
IRF9335	1
IRF9358	1
IRF9362	1
IRF9389	1
IRF9410	1
IRF9510	2
IRF9520	2
IRF9520N	1
IRF9530	2
IRF9530N	3
IRF9540	2
IRF9540N	3
IRF9610	1
IRF9620	1
IRF9630	2
IRF9640	3
IRF9910	1

Device	No. of symbols
IRF9952	1
IRF9956	1
IRFB9N60A	1
IRFB9N65A	1
IRFB11N50A	1
IRFB17N50L	1
IRFB18N50K	1
IRFB20N50K	1
IRFB23N20D	1
IRFB31N20D	1
IRFB38N20D	1
IRFB52N15D	1
IRFB260N	1
IRFB3004	1
IRFB3006	2
IRFB3077	1
IRFB3206	1
IRFB3207	1
IRFB3207Z	2
IRFB3256	1
IRFB3306	1
IRFB3307	1
IRFB3307Z	1
IRFB3607	1
IRFB3806	1
IRFB4019	1
IRFB4020	1
IRFB4110	2
IRFB4115	1
IRFB4127	1
IRFB4137	1
IRFB4227	1
IRFB4228	1
IRFB4229	1
IRFB4310	1
IRFB4310Z	1
IRFB4321	1
IRFB4322	1
IRFB4410	1
IRFB4410Z	1
IRFB4510	1
IRFB4610	1
IRFB4615	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRFB4620	1
IRFB4710	1
IRFB5615	1
IRFB5620	1
IRFB7430	1
IRFB7434	1
IRFB7437	1
IRFB7440	1
IRFB7446	1
IRFB7530	1
IRFB7534	1
IRFB7537	1
IRFB7540	1
IRFB7545	1
IRFB7546	1
IRFB7730	1
IRFB7734	1
IRFBC20	3
IRFBC30	1
IRFBC40	3
IRFBC40A	1
IRFBC40LC	1
IRFBE20	1
IRFBE30	3
IRFBF20	3
IRFBF30	1
IRFBG20	1
IRFBG30	1
IRFD014	1
IRFD024	1
IRFD110	1
IRFD120	1
IRFD210	1
IRFD220	1
IRFD320	1
IRFD420	1
IRFD9014	1
IRFD9024	1
IRFD9110	1
IRFD9120	1
IRFD9210	1
IRFD9220	1
IRFH3702	1

Device	No. of symbols
IRFH4210D	1
IRFH4234	1
IRFH5004	1
IRFH5006	1
IRFH5007	1
IRFH5010	1
IRFH5015	1
IRFH5020	1
IRFH5025	1
IRFH5053	1
IRFH5110	1
IRFH5210	1
IRFH5215	1
IRFH5250	2
IRFH5300	1
IRFH5301	1
IRFH5302	2
IRFH5304	1
IRFH5406	1
IRFH6200	1
IRFH7084	1
IRFH7110	1
IRFH7440	1
IRFH7446	1
IRFH7914	1
IRFH7921	1
IRFH7932	1
IRFH7934	1
IRFH8201	1
IRFH8202	1
IRFH8303	1
IRFH8307	1
IRFH8311	1
IRFH8316	1
IRFH8321	1
IRFH8324	1
IRFH8325	1
IRFH8330	1
IRFH9310	1
IRFHM830	1
IRFHM8326	1
IRFHM8329	1
IRFHM9331	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRFHS8242	1
IRFHS8342	1
IRFHS9301	1
IRFHS9351	1
IRFI520G	1
IRFI530G	1
IRFI530N	1
IRFI540G	1
IRFI540N	1
IRFI630G	1
IRFI640G	1
IRFI644G	1
IRFI740G	1
IRFI820G	1
IRFI830G	1
IRFI840GLC	1
IRFI1310N	1
IRFI3205	1
IRFI4110G	1
IRFI4229	1
IRFI4321	1
IRFI4410Z	1
IRFI4510G	1
IRFI9520G	1
IRFI9530G	1
IRFI9540G	1
IRFI9630G	1
IRFI9634G	1
IRFI9640G	1
IRFIB6N60A	1
IRFIB7N50A	1
IRFIBC20G	1
IRFIBC30G	1
IRFIBC40G	1
IRFIBE30G	1
IRFIBF20G	1
IRFIBF30G	1
IRFIZ24N	1
IRFIZ34G	1
IRFIZ34N	1
IRFIZ44N	1
IRFIZ48G	1
IRFL014	1

Device	No. of symbols
IRFL014N	1
IRFL024N	1
IRFL024Z	1
IRFL110	1
IRFL210	1
IRFL214	1
IRFL4105	1
IRFL4310	1
IRFL4315	1
IRFL9014	1
IRFL9110	1
IRFML8244	1
IRFP22N50A	1
IRFP23N50L	1
IRFP27N60K	1
IRFP31N50L	1
IRFP32N50K	1
IRFP054	1
IRFP054N	1
IRFP064	1
IRFP064N	1
IRFP90N20D	1
IRFP140	1
IRFP140N	1
IRFP150	1
IRFP150M	1
IRFP150N	1
IRFP240	1
IRFP244	1
IRFP250	1
IRFP250M	1
IRFP250N	1
IRFP254	1
IRFP260	1
IRFP260M	1
IRFP260N	1
IRFP264	1
IRFP340	1
IRFP350	1
IRFP360	1
IRFP360LC	1
IRFP440	1
IRFP450	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRFP450A	1
IRFP450LC	1
IRFP460	3
IRFP460LC	1
IRFP1405	1
IRFP2907	1
IRFP2907Z	1
IRFP3006	1
IRFP3077	1
IRFP3206	1
IRFP3306	1
IRFP3415	1
IRFP3703	1
IRFP3710	1
IRFP4004	1
IRFP4110	1
IRFP4127	1
IRFP4137	1
IRFP4227	1
IRFP4229	1
IRFP4310Z	1
IRFP4321	1
IRFP4332	1
IRFP4368	1
IRFP4468	1
IRFP4568	1
IRFP4668	1
IRFP4710	1
IRFP4868	1
IRFP7430	1
IRFP7530	1
IRFP7537	1
IRFP7718	1
IRFP9140	1
IRFP9140N	1
IRFP9240	1
IRFPC40	1
IRFPC50	2
IRFPC60	1
IRFPC60LC	1
IRFPE30	1
IRFPE40	1
IRFPE50	1

Device	No. of symbols
IRFPF40	1
IRFPF50	1
IRFPG30	1
IRFPG40	1
IRFPG50	1
IRFR1N60A	1
IRFR9N20D	1
IRFR13N15D	1
IRFR13N20D	1
IRFR014	1
IRFR15N20D	1
IRFR18N15D	1
IRFR024	1
IRFR024N	1
IRFR24N15D	1
IRFR110	1
IRFR120	1
IRFR120N	1
IRFR120Z	1
IRFR210	1
IRFR220	1
IRFR220N	1
IRFR224	1
IRFR310	1
IRFR320	1
IRFR420	2
IRFR430A	1
IRFR825	1
IRFR1010Z	1
IRFR1018	1
IRFR1205	1
IRFR2307Z	1
IRFR2405	1
IRFR2407	1
IRFR2607	1
IRFR2905Z	1
IRFR3410	1
IRFR3411	1
IRFR3504Z	1
IRFR3518	1
IRFR3607	1
IRFR3707Z	1
IRFR3708	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRFR3709Z	1
IRFR3710Z	1
IRFR3711	1
IRFR3711Z	1
IRFR3806	1
IRFR3910	1
IRFR4104	1
IRFR4105	1
IRFR4105Z	1
IRFR4510	1
IRFR4615	1
IRFR4620	1
IRFR5305	1
IRFR5410	1
IRFR5505	1
IRFR6215	1
IRFR7440	1
IRFR7446	1
IRFR7540	1
IRFR7546	1
IRFR7740	1
IRFR8314	1
IRFR9014	1
IRFR9024	1
IRFR9024N	1
IRFR9110	1
IRFR9120	1
IRFR9120N	1
IRFR9210	1
IRFR9214	1
IRFRC20	1
IRFS9N60A	1
IRFS11N50A	1
IRFS23N20D	1
IRFS31N20D	1
IRFS38N20D	1
IRFS52N15D	1
IRFS450B	1
IRFS3004	1
IRFS3006	1
IRFS3107	2
IRFS3206	1
IRFS3207	1

Device	No. of symbols
IRFS3207Z	1
IRFS3306	1
IRFS3307	1
IRFS3307Z	1
IRFS3607	1
IRFS3806	1
IRFS4010	1
IRFS4020	1
IRFS4127	1
IRFS4227	1
IRFS4229	1
IRFS4310	1
IRFS4130Z	1
IRFS4321	1
IRFS4410	1
IRFS4410Z	1
IRFS4510	1
IRFS4610	1
IRFS4615	1
IRFS4710	1
IRFS7430	2
IRFS7434	1
IRFS7440	1
IRFS7530	2
IRFS7534	1
IRFS7537	1
IRFS7540	1
IRFS7730	1
IRFS7734	1
IRFSL11N50A	1
IRFSL23N20D	1
IRFSL31N20D	1
IRFSL38N20D	1
IRFSL52N15D	1
IRFSL3004	1
IRFSL3006	1
IRFSL3107	1
IRFSL3206	1
IRFSL3207	1
IRFSL3207Z	1
IRFSL3306	1
IRFSL3307	1
IRFSL3307Z	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRFSL3607	1
IRFSL3806	1
IRFSL4010	1
IRFSL4020	1
IRFSL4127	1
IRFSL4227	1
IRFSL4310	1
IRFSL4310Z	1
IRFSL4321	1
IRFSL4410	1
IRFSL4410Z	1
IRFSL4510	1
IRFSL4610	1
IRFSL4615	1
IRFSL4710	1
IRFSL7430	1
IRFSL7434	1
IRFSL7440	1
IRFSL7530	1
IRFSL7534	1
IRFSL7537	1
IRFSL7540	1
IRFSL7730	1
IRFSL7734	1
IRFT8342	1
IRFT9342	1
IRFU1N60A	1
IRFU9N20D	1
IRFU13N15D	1
IRFU13N20D	1
IRFU014	1
IRFU15N20D	1
IRFU18N15D	1
IRFU024	1
IRFU024N	1
IRFU24N15D	1
IRFU110	1
IRFU120	1
IRFU120N	1
IRFU120Z	1
IRFU210	1
IRFU220	1
IRFU220N	1

Device	No. of symbols
IRFU224	1
IRFU310	1
IRFU320	1
IRFU420	2
IRFU430A	1
IRFU1010Z	1
IRFU1018	1
IRFU1205	1
IRFU2307Z	1
IRFU2405	1
IRFU2407	1
IRFU2607	1
IRFU2905Z	1
IRFU3410	1
IRFU3411	1
IRFU3504Z	1
IRFU3518	1
IRFU3607	1
IRFU3707Z	1
IRFU3708	1
IRFU3709Z	1
IRFU3710Z	1
IRFU3711	1
IRFU3711Z	1
IRFU3806	1
IRFU3910	1
IRFU4104	1
IRFU4105	1
IRFU4105Z	1
IRFU4510	1
IRFU4615	1
IRFU4620	1
IRFU5305	1
IRFU5410	1
IRFU5505	1
IRFU6215	1
IRFU7440	1
IRFU7540	1
IRFU7546	1
IRFU7740	1
IRFU9014	1
IRFU9024	1
IRFU9024N	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRFU9110	1
IRFU9120	1
IRFU9120N	1
IRFU9210	1
IRFU9214	1
IRFU9220	1
IRFU9310	1
IRFUC20	1
IRFZ14	1
IRFZ24N	1
IRFZ34	1
IRFZ34N	3
IRFZ44	1
IRFZ44E	3
IRFZ44N	3
IRFZ44V	1
IRFZ44VZ	3
IRFZ44Z	3
IRFZ46N	3
IRFZ48N	3
IRFZ48R	1
IRL40B212	1
IRL40B215	1
IRL40S212	1
IRL60B216	1
IRL60HS118	1
IRL80HS120	1
IRL100HS121	1
IRL510	1
IRL520	1
IRL520N	1
IRL530N	3
IRL540	1
IRL540N	3
IRL630	1
IRL640	2
IRL1004	1
IRL1404	2
IRL1404Z	3
IRL2203N	2
IRL2505	1
IRL2910	3
IRL3103	2

Device	No. of symbols
IRL3302	1
IRL3705N	3
IRL3705Z	3
IRL3803	3
IRL6342	1
IRL6372	1
IRL7833	3
IRLB3034	1
IRLB3036	1
IRLB3813	1
IRLB4030	1
IRLB8721	1
IRLB8743	1
IRLB8748	1
IRLD014	1
IRLD024	1
IRLD110	1
IRLD120	1
IRLH5030	1
IRLH5034	1
IRLH6224	1
IRLH6276	1
IRLHM620	1
IRLHM630	1
IRLHS2242	1
IRLHS6242	1
IRLHS6342	1
IRLHS6376	1
IRLI520N	1
IRLI640G	1
IRLI3705N	1
IRLIZ34N	1
IRLL014	1
IRLL014N	1
IRLL024N	1
IRLL024Z	1
IRLL110	1
IRLL2705	1
IRLL3303	1
IRLML0030	1
IRLML0040	1
IRLML0060	1
IRLML0100	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRLML2030	1
IRLML2060	1
IRLML2244	1
IRLML2246	1
IRLML2402	1
IRLML2502	1
IRLML2803	1
IRLML5103	1
IRLML5203	1
IRLML6244	1
IRLML6246	1
IRLML6302	1
IRLML6344	1
IRLML6346	1
IRLML6401	1
IRLML6402	1
IRLML9301	1
IRLML9303	1
IRLMS1503	1
IRLMS2002	1
IRLMS5703	1
IRLMS6702	1
IRLMS6802	1
IRLP3034	1
IRLR014	1
IRLR024	1
IRLR024N	1
IRLR110	1
IRLR120	1
IRLR120N	1
IRLR2705	1
IRLR2905	1
IRLR2905Z	1
IRLR2908	1
IRLR3103	1
IRLR3105	1
IRLR3110Z	1
IRLR3114Z	1
IRLR3410	1
IRLR3636	1
IRLR3705Z	1
IRLR3915	1
IRLR6225	1

Device	No. of symbols
IRLR7807Z	1
IRLR7833	1
IRLR7843	1
IRLR8103	1
IRLR8256	1
IRLR8743	1
IRLR9343	1
IRLS3034	1
IRLS3036	1
IRLS3813	1
IRLS4030	1
IRLSL3034	1
IRLSL3036	1
IRLSL4030	1
IRLTS2242	1
IRLTS6342	1
IRLU014	1
IRLU024	1
IRLU024N	1
IRLU110	1
IRLU120	1
IRLU120N	1
IRLU2705	1
IRLU2905	1
IRLU2905Z	1
IRLU2908	1
IRLU3103	1
IRLU3105	1
IRLU3110Z	1
IRLU3114Z	1
IRLU3410	1
IRLU3636	1
IRLU3705Z	1
IRLU3915	1
IRLU7807Z	1
IRLU7833	1
IRLU7843	1
IRLU8256	1
IRLU8743	1
IRLU9343	1
IRLZ14	1
IRLZ24	1
IRLZ24N	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
IRLZ34N	1
IRLZ44	1
IRLZ44N	3
IRLZ44Z	3
ISL9N315AD3	2
IXFA3N120	1
IXFA4N85X	1
IXFA5N100P	1
IXFA6N120P	1
IXFA7N80P	1
IXFA7N100P	1
IXFA8N65X2	1
IXFA8N85XHV	1
IXFA10N60P	1
IXFA10N80P	1
IXFA12N50P	1
IXFA12N65X2	1
IXFA14N60P	1
IXFA14N85XHV	1
IXFA16N50P	2
IXFA16N60P3	1
IXFA18N60X	1
IXFA18N65X2	1
IXFA20N50P3	1
IXFA20N85XHV	1
IXFA22N60P3	1
IXFA22N65X2	1
IXFA24N60X	1
IXFA26N30X3	1
IXFA26N50P3	1
IXFA30N25X3	1
IXFA30N60X	1
IXFA34N65X2	1
IXFA36N20X3	1
IXFA36N30P3	1
IXFA38N30X3	1
IXFA56N30X3	1
IXFA60N25X3	1
IXFA72N20X3	1
IXFA72N30X3	1
IXFA76N15T2	1
IXFA80N25X3	1
IXFA90N20X3	1

Device	No. of symbols
IXFA102N15T	1
IXFA110N15T2	1
IXFA130N10T2	1
IXFA130N15X3	1
IXFA180N10T2	1
IXFA220N06T3	1
IXFA230N075T2	2
IXFA270N06T3	1
IXFH5N100P	1
IXFH6N120	2
IXFH7N100P	1
IXFH10N80P	1
IXFH10N100P	1
IXFH12N65X2	1
IXFH12N80P	1
IXFH12N90P	1
IXFH12N100P	1
IXFH12N120P	1
IXFH14N60P	1
IXFH14N80P	1
IXFH14N85X	1
IXFH15N80Q	1
IXFH15N100P	2
IXFH16N50P	2
IXFH16N60P3	1
IXFH16N80P	1
IXFH16N120P	1
IXFH18N60	2
IXFH18N65X2	1
IXFH18N90P	1
IXFH18N100Q3	1
IXFH20N50P3	1
IXFH20N80P	1
IXFH20N100P	1
IXFH22N50P	1
IXFH22N60P	2
IXFH22N65X2	1
IXFH24N60X	1
IXFH24N80P	1
IXFH24N90P	1
IXFH26N50P	2
IXFH26N60P	1
IXFH28N60P3	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXFH30N50	2
IXFH30N60	2
IXFH30N85X	1
IXFH34N50P3	1
IXFH34N60X2A	1
IXFH34N65X2	1
IXFH36N50P	1
IXFH36N60P	1
IXFH40N50Q	1
IXFH40N85X	1
IXFH42N50P2	1
IXFH42N60P3	1
IXFH44N50	2
IXFH46N65X2	1
IXFH50N30Q	1
IXFH50N60	2
IXFH50N85X	1
IXFH52N30P	1
IXFH52N50P2	1
IXFH56N30X3	1
IXFH60N50P3	1
IXFH60N60X	2
IXFH60N65X2	2
IXFH69N30P	1
IXFH70N20Q2	1
IXFH70N30Q3	1
IXFH72N30X3	1
IXFH74N30P	1
IXFH76N15T2	1
IXFH80N25X3	1
IXFH80N60X2A	1
IXFH80N65X2	2
IXFH86N30T	1
IXFH88N30P	1
IXFH90N20X3	1
IXFH94N30	2
IXFH96N15P	1
IXFH96N20P	1
IXFH100N25P	1
IXFH100N30X3	1
IXFH102N15T	1
IXFH110N10P	1
IXFH110N15T2	1

Device	No. of symbols
IXFH110N25T	1
IXFH120N15P	1
IXFH120N20P	1
IXFH120N25	2
IXFH120N30X3	1
IXFH130N15X3	1
IXFH140N10P	1
IXFH140N20X3	1
IXFH150N15P	1
IXFH150N17T2	1
IXFH150N20T	1
IXFH150N25X3	1
IXFH150N30X3	1
IXFH160N15T2	1
IXFH170N10P	1
IXFH170N25X3	1
IXFH180N20X3	1
IXFH220N06T3	1
IXFH220N20X3	1
IXFH230N10T	1
IXFH230N075T2	1
IXFH270N06T3	1
IXFH320N10T2	1
IXFH340N075T2	1
IXFH400N075T2	1
IXFJ20N85X	1
IXFJ26N50P3	1
IXFJ80N25X3	1
IXFK20N120P	1
IXFK21N100F	1
IXFK24N80P	1
IXFK26N100P	1
IXFK26N129P	1
IXFK27N80Q	1
IXFK32N80	2
IXFK32N90P	1
IXFK32N100	2
IXFK34N80	1
IXFK36N60P	1
IXFK40N90P	1
IXFK44N50	2
IXFK44N60	1
IXFK44N80	2

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXFK48N50	1
IXFK48N60	2
IXFK50N85X	1
IXFK52N100X	1
IXFK64N50	2
IXFK64N60	3
IXFK66N85X	1
IXFK78N50P3	1
IXFK80N50	2
IXFK80N60P3	1
IXFK80N65X2	1
IXFK88N30P	1
IXFK90N60X	1
IXFK94N50P2	1
IXFK96N50P3	1
IXFK100N65X2	1
IXFK102N30P	1
IXFK120N20P	1
IXFK120N25P	1
IXFK120N30	2
IXFK120N65X2	1
IXFK140N20P	1
IXFK140N25T	1
IXFK140N30P	1
IXFK150N15P	1
IXFK150N30	2
IXFK160N30T	1
IXFK170N10P	1
IXFK170N20	2
IXFK170N25X3	1
IXFK180N15P	1
IXFK180N25T	1
IXFK200N10P	1
IXFK210N30X3	1
IXFK220N15P	1
IXFK220N17T2	1
IXFK230N20T	1
IXFK240N15T2	1
IXFK240N25X3	1
IXFK240N100Q3	1
IXFK250N10P	1
IXFK300N20X3	1
IXFK320N17T2	1

Device	No. of symbols
IXFK360N10T	1
IXFK360N15T2	1
IXFK420N10T	1
IXFK520N075T2	1
IXFP3N120	1
IXFP4N85X	2
IXFP4N100P	2
IXFP5N100P	1
IXFP6N120P	1
IXFP7N80P	1
IXFP7N100P	1
IXFP8N65X2	1
IXFP8N85X	1
IXFP10N60P	1
IXFP10N80P	1
IXFP12N50P	1
IXFP12N65X2	2
IXFP14N60P	1
IXFP14N85X	2
IXFP16N50P	2
IXFP16N60P3	1
IXFP18N60X	1
IXFP18N65X2	2
IXFP20N50P3	2
IXFP20N85X	1
IXFP22N60P3	1
IXFP22N65X2	2
IXFP24N60X	1
IXFP26N30X3	1
IXFP26N50P3	1
IXFP30N25X3	2
IXFP30N60X	1
IXFP34N65X2	2
IXFP36N20X3	2
IXFP36N30P3	1
IXFP38N30X3	1
IXFP56N30X3	2
IXFP60N25X3	2
IXFP72N20X3	2
IXFP72N30X3	2
IXFP76N15T2	1
IXFP80N25X3	1
IXFP90N20X3	2

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXFP102N15T	1
IXFP110N15T2	1
IXFP130N10T2	1
IXFP130N15X3	1
IXFP180N10T2	1
IXFP220N06T3	1
IXFP230N075T2	1
IXFP270N06T3	1
IXFQ8N85X	1
IXFQ10N80P	1
IXFQ12N80P	1
IXFQ14N80P	1
IXFQ20N50P3	1
IXFQ22N60P3	1
IXFQ24N50P2	1
IXFQ24N60X	1
IXFQ26N50P3	1
IXFQ28N60P3	1
IXFQ30N60X	1
IXFQ34N50P3	1
IXFQ50N60	2
IXFQ60N25X3	1
IXFQ60N50P3	1
IXFQ60N60X	1
IXFQ72N20X3	1
IXFQ72N30X3	1
IXFQ80N25X3	1
IXFQ90N20X3	1
IXFQ94N30P3	1
IXFQ120N25X3	1
IXFQ140N20X3	1
IXFT6N120P	1
IXFT14N80P	1
IXFT15N80Q	1
IXFT15N100Q3	1
IXFT16N80P	1
IXFT16N120P	1
IXFT18N90P	1
IXFT18N100Q3	1
IXFT20N80P	1
IXFT20N100P	1
IXFT24N80P	1
IXFT24N90P	1

Device	No. of symbols
IXFT26N60P	1
IXFT30N50	2
IXFT30N60	2
IXFT30N85XHV	1
IXFT36N50P	1
IXFT36N60P	1
IXFT40N50Q	1
IXFT40N85XHV	1
IXFT42N50P2	1
IXFT44N50	2
IXFT50N30Q3	1
IXFT50N60	2
IXFT50N85XHV	1
IXFT52N50P2	1
IXFT60N50P3	1
IXFT60N65X2HV	1
IXFT69N30P	1
IXFT70N20Q3	1
IXFT70N30Q3	1
IXFT80N65X2HV	1
IXFT86N30T	1
IXFT88N30P	1
IXFT94N30	2
IXFT96N20P	1
IXFT100N30X3HV	1
IXFT120N15P	1
IXFT120N25	2
IXFT120N39X3HV	1
IXFT140N10P	1
IXFT140N20X3HV	1
IXFT150N17T2	1
IXFT150N20T	1
IXFT150N25X3HV	1
IXFT150N30X3HV	1
IXFT170N25X3HV	1
IXFT180N20X3HV	1
IXFT220N20X3HV	1
IXFT320N10T2	1
IXFT340N075T2	1
IXFT400N075T2	1
IXFY4N85X	1
IXFY8N65X2	1
IXFY26N30X3	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXFY30N25X3	1
IXFY36N20X3	1
IXKH20N60C5	1
IXKH24N60C5	1
IXKH30N60C5	1
IXKH35N60C5	1
IXKH47N60C5	1
IXKH70N60C5	1
IXKK85N60C	1
IXKP20N60C5	1
IXKP24N60C5	1
IXKT70N60C5	1
IXTA1N80P	1
IXTA1N100P	1
IXTA1N120P	1
IXTA1N170DHV	1
IXTA1N200P3HV	1
IXTA1R4N100P	1
IXTA1R4N120P	1
IXTA1R6N50D2	1
IXTA1R6N100D2	2
IXTA2N100P	1
IXTA02N250HV	1
IXTA02N450HV	1
IXTA2R4N120P	1
IXTA3N50	2
IXTA3N100	3
IXTA3N120	2
IXTA3N150	1
IXTA4N65X2	1
IXTA4N80P	1
IXTA4N150HV	1
IXTA05N100	3
IXTA6N50	2
IXTA6N100D2	1
IXTA06N120P	1
IXTAP08N50D2	1
IXTA8N50P	1
IXTA8N65X2	1
IXTA8N70X2	1
IXTA08N100	3
IXTA08N120P	1
IXTA10N60P	1

Device	No. of symbols
IXTA10P15T	1
IXTA10P50P	1
IXTA12N50P	1
IXTA12N65X2	1
IXTA12N70X2	1
IXTA14N60P	1
IXTA14N65X2	1
IXTA15N50L2	1
IXTA15P15T	1
IXTA16N50P	1
IXTA18P10T	1
IXTA20N65X	2
IXTA24N65X2	1
IXTA24P085T	1
IXTA26P10T	1
IXTA26P20P	1
IXTA28P065T	1
IXTA32N20T	1
IXTA32P05T	1
IXTA32P20T	1
IXTA34N65X2	1
IXTA36N30P	1
IXTA36P15P	1
IXTA42P25P	1
IXTA44P15T	1
IXTA48N05T	1
IXTA48N20T	1
IXTA48P05T	1
IXTA50N20P	1
IXTA50N25T	1
IXTA52P10P	1
IXTA56N15T	1
IXTA60N10T	1
IXTA60N20T	1
IXTA62N15P	1
IXTA64N10L2	1
IXTA70N075L2	1
IXTA75N10P	1
IXTA76N25T	1
IXTA76P10T	1
IXTA80N10T	1
IXTA80N12T2	1
IXTA80N075L2	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXTA86N20T	1
IXTA90N05T2	1
IXTA96P085T	1
IXTA100N04T2	1
IXTA102N15T	1
IXTA110N12T2	1
IXTA110N055T2	1
IXTA120N04T2	1
IXTA120N075T2	1
IXTA130N10T	1
IXTA140N12T2	1
IXTA140N055T2	1
IXTA140P05T	1
IXTA160N04T2	1
IXTA160N10T	1
IXTA170N075T2	1
IXTA180N10T	1
IXTA200N055T2	1
IXTA220N04T2	2
IXTA230N04T2	1
IXTA230N075T2	2
IXTA260N055T2	2
IXTA270N04T4	2
IXTA300N04T2	1
IXTA340N04T4	2
IXTA380N036T4-7	1
IXTA460P2	1
IXTH1N200P3	1
IXTH2N150L	1
IXTH2N170D2	1
IXTH2R4N120P	1
IXTH3N100P	1
IXTH3N120	1
IXTH3N150	1
IXTH4N100L	1
IXTH4N150	1
IXTH6N50D2	1
IXTH6N100D2	1
IXTH6N120	1
IXTH6N150	1
IXTH8P50	1
IXTH10N100D	2
IXTH10P50P	1

Device	No. of symbols
IXTH10P60	1
IXTH11P50	1
IXTH12N65X2	1
IXTH12N70X2	1
IXTH12N100L	1
IXTH12N150	1
IXTH14N65X2	1
IXTH15N50L2	1
IXTH16N10D2	1
IXTH16N20D2	1
IXTH16N50D2	1
IXTH16P60P	1
IXTH20N65X	2
IXTH20P50P	1
IXTH22N50P	1
IXTH24N50L	1
IXTH24N65X2	1
IXTH24P20	1
IXTH26N60P	1
IXTH26P20P	1
IXTH30N50	3
IXTH30N60	2
IXTH32N65X	1
IXTH32P20T	1
IXTH34N65X2	1
IXTH36N50P	1
IXTH36P10	1
IXTH36P15P	1
IXTH38N30L2	1
IXTH40N50L2	1
IXTH44P15T	1
IXTH48N65X2	1
IXTH48P20P	1
IXTH50N25T	1
IXTH50N30L2	1
IXTH50P10	1
IXTH52N65X	1
IXTH52P10P	1
IXTH60N20L2	1
IXTH62N65X2	1
IXTH64N10L2	1
IXTH64N65X	1
IXTH68P20T	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXTH75N10L2	1
IXTH76N25T	1
IXTH76P10T	1
IXTH80N20L	1
IXTH80N65X2	1
IXTH80N075L2	1
IXTH88N15	1
IXTH88N30P	1
IXTH90P10P	1
IXTH96N20P	1
IXTH96N25T	1
IXTH96P085T	1
IXTH102N15T	1
IXTH110N10L2	1
IXTH110N25T	1
IXTH120P065T	1
IXTH130P15X4	1
IXTH130N20T	1
IXTH140N075L2	1
IXTH140P05T	1
IXTH140P10T	1
IXTH150N15X4	1
IXTH200N10T	1
IXTH240N15X4	1
IXTH260N055T2	1
IXTH270N04T4	1
IXTH300N04T2	1
IXTH340N04T4	1
IXTH360N055T2	1
IXTH420N04T2	1
IXTH440N055T2	1
IXTH450P2	1
IXTH460P2	1
IXTH500N04T2	1
IXTI76N25T	1
IXTI90N055T2	1
IXTK3N250L	1
IXTK8N150L	1
IXTK17N120L	1
IXTK20N150	1
IXTK22N100L	1
IXTK32P60P	1
IXTK40P50P	1

Device	No. of symbols
IXTK46N50L	1
IXTK60N50L2	1
IXTK82N25P	1
IXTK88N30P	1
IXTK90N25L2	1
IXTK90P20P	1
IXTK100N25P	1
IXTK102N30P	1
IXTK102N65X2	1
IXTK110N20L2	1
IXTK120N20P	1
IXTK120N25P	1
IXTK120N65X2	1
IXTK120P20T	1
IXTK140N20P	1
IXTK140N30P	1
IXTK150N15P	1
IXTK170N10P	1
IXTK170P10P	1
IXTK180N15P	1
IXTK200N10P	1
IXTK210P10T	1
IXTK240N075L2	1
IXTK550N055T2	1
IXTK600N04T2	1
IXTP1N80P	1
IXTP01N100D	1
IXTP1N100P	1
IXTP1N120P	1
IXTP1R4N100P	1
IXTP1R4N120P	1
IXTP1R6N50D2	1
IXTP1R6N100D2	1
IXTP02N50D	1
IXTP2N65X2	1
IXTP2N100P	1
IXTP02N120P	1
IXTP2R4N50P	1
IXTP2R4N120P	1
IXTP3N50D2	1
IXTP3N50P	1
IXTP3N100	2
IXTP3N120	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXTP4N65X2	1
IXTP4N80P	1
IXTP05N100	3
IXTP6N50	2
IXTP6N100D2	1
IXTP06N120P	1
IXTP08N50D2	1
IXTP8N50P	1
IXTP8N65X2	2
IXTP8N70X2	2
IXTP08N100	2
IXTP08N120P	1
IXTP10N60P	1
IXTP10P15T	1
IXTP10P50P	1
IXTP12N50P	1
IXTP12N65X2	1
IXTP12N70X2	1
IXTP14N60P	2
IXTP14N65X2	1
IXTP15N50L2	1
IXTP15P15T	1
IXTP16N50P	1
IXTP18P10T	1
IXTP20N65X	4
IXTP24N65X2	2
IXTP24P085T	1
IXTP26P10T	1
IXTP26P20P	1
IXTP28P065T	1
IXTP32N20T	1
IXTP32N65X	2
IXTP32P05T	1
IXTP32P20T	1
IXTP34N65X2	1
IXTP36N30P	1
IXTP36P15P	1
IXTP42P25P	1
IXTP44N10T	1
IXTP44P15T	1
IXTP48N05T	1
IXTP48N20T	1
IXTP48P05T	1

Device	No. of symbols
IXTP50N20P	2
IXTP50N25T	1
IXTP52P10P	1
IXTP56N15T	1
IXTP60N10T	1
IXTP60N20T	1
IXTP62N15P	1
IXTP64N10L2	1
IXTP70N075L2	1
IXTP75N10P	1
IXTP76N25T	1
IXTP76P10T	1
IXTP80N10T	1
IXTP80N12T2	1
IXTP80N075L2	1
IXTP86N20T	1
IXTP90N055T2	1
IXTP96P085T	1
IXTP100N04T2	1
IXTP102N15T	1
IXTP110N12T2	1
IXTP110N055T2	1
IXTP120N04T2	1
IXTP120N075T2	1
IXTP120P065T	1
IXTP130N10T	1
IXTP130N15X4	1
IXTP140N12T2	1
IXTP140N055T2	1
IXTP140P05T	1
IXTP150N15X4	2
IXTP160N04T2	1
IXTP160N10T	1
IXTP170N075T2	1
IXTP180N10T	1
IXTP200N055T2	1
IXTP220N04T2	1
IXTP230N04T	2
IXTP230N075T2	1
IXTP260N055T2	1
IXTP270N04T4	1
IXTP300N04T2	1
IXTP340N04T4	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IOTP450P2	1
IOTP460P2	1
IOTQ3N150M	1
IOTQ10P50P	1
IOTQ14N60P	1
IOTQ16N50P	1
IOTQ18N60P	1
IOTQ22N50P	1
IOTQ22N60P	1
IOTQ26N50P	1
IOTQ26N60P	1
IOTQ26P20P	1
IOTQ30N50	3
IOTQ30N60	2
IOTQ32N65X	1
IOTQ32P20T	1
IOTQ36N30P	1
IOTQ36N50P	1
IOTQ36P15P	1
IOTQ40N50L2	1
IOTQ42P25P	1
IOTQ44N50P	1
IOTQ44P15T	1
IOTQ48N20T	1
IOTQ50N20P	1
IOTQ50N25T	1
IOTQ52N30P	1
IOTQ52P10P	1
IOTQ60N20	2
IOTQ62N15P	1
IOTQ64N25P	1
IOTQ69N30P	1
IOTQ74N20P	1
IOTQ75N10P	1
IOTQ76N25T	1
IOTQ82N25P	1
IOTQ86N20T	1
IOTQ88N30P	1
IOTQ96N15P	1
IOTQ96N20P	1
IOTQ96N25T	1
IOTQ100N25P	1
IOTQ102N15T	1

Device	No. of symbols
IOTQ110N10P	1
IOTQ120N15P	1
IOTQ120N20P	1
IOTQ130N20T	1
IOTQ140N10P	1
IOTQ150N15P	1
IOTQ170N10P	1
IOTQ200N10T	1
IOTQ450P2	1
IOTQ460P2	1
IOTQ470P2	1
IOTQ480P2	1
IOTT1N250HV	1
IOTT1N300P3HV	1
IOTT1N450HV	1
IOTT2N170D2	1
IOTT2N300P3HV	1
IOTT02N450HV	1
IOTT3N200P3HV	1
IOTT4N150HV	1
IOTT6N120	1
IOTT6N150	1
IOTT8P50	1
IOTT10N100D	2
IOTT10P60	1
IOTT11P50	1
IOTT12N150	2
IOTT16N10D2	1
IOTT16N20D2	1
IOTT16N50D2	1
IOTT16P60P	1
IOTT20P50P	1
IOTT24P20	1
IOTT26N50P	1
IOTT26N60P	1
IOTT30N50	3
IOTT30N60	2
IOTT34N65X2HV	1
IOTT36N50P	1
IOTT38N30L2HV	1
IOTT40N50L2	1
IOTT48P20P	1
IOTT50P10	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
IXTT52N30P	1
IXTT60N20L2	1
IXTT64N25P	1
IXTT68P20T	1
IXTT69N30P	1
IXTT74N20P	1
IXTT75N10L2	1
IXTT76P10T	1
IXTT80N20L	1
IXTT82N25P	1
IXTT88N15	1
IXTT88N30P	1
IXTT90P10P	1
IXTT96N15P	1
IXTT96N20P	1
IXTT100N25P	1
IXTT110N10L2	1
IXTT110N10P	1
IXTT120N15P	1
IXTT140N10P	1
IXTT140N075L2H	1
IXTT140P10T	1
IXTT170N10P	1
IXTT240N15X4HV	1
IXTT360N055T2	1
IXTT440N04T4HV	1
IXTT440N055T2	1
IXTT500N04T2	1
IXTU1N80P	1
IXTU01N100	2
IXTU02N50D	1
IXTU8N70X2	1
IXTY1N80P	1
IXTY01N100	2
IXTY1N100P	1
IXTY1N120P	1
IXTY1R4N120P	2
IXTY1R6N50D2	1
IXTY1R6N100D2	1
IXTY02N50D	1
IXTY2N65X2	1
IXTY2N100P	1
IXTY02N120P	1

Device	No. of symbols
IXTY2R4N50P	1
IXTY3N50P	1
IXTY4N65X2	1
IXTY08N50D2	1
IXTY8N65X2	1
IXTY8N70X2	1
IXTY08100	2
IXTY10P15T	1
IXTY15P15T	1
IXTY18P10T	1
IXTY26P10T	1
IXTY32P05T	1
IXTY44N10T	1
IXTY48N05T	1
IXTY48P05T	1
IXTY90N055T2	1
LND150	3
LP0701N3	1
LSIC1MO120E008	1
LSIC1MO120E012	1
LSIC1MO120E016	1
LSIC1MO170E100	1
MGSF1N02L	1
MGSF2N02LE	1
MMBF170	1
MMBT7002DW	1
MMBT7002K	1
MMDF2N05ZR2	1
MMDF2P01HD	1
MMDFS2P102	1
MMFTN20	1
MMFTN123	1
MMFTN138	1
MMFTN170	1
MMFTN3018W	1
MMFTN3402	1
MMFTN6001	1
MMFTP84	1
MMFTP3401	1
MTD20N03HDL	1
MTD20N06HDL	1
MTD20P03HDL	1
MTD20P06HDL	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
NDB6060L	1
NDC7001C	1
NDC7002N	1
NDC7003P	1
NDP6060L	1
NDS331N	1
NDS351N	1
NDS352AP	1
NDS355AN	1
NDS356AP	1
NDS0605	1
NDS0610	1
NDS7002A	1
NDS9407	1
NDS9945	1
NDS9948	1
NDT451AN	1
NDT2955	1
NDT3055L	1
NTA4001N	1
NTA4153N	1
NTD20N06L	3
NTD20P06L	2
NTD24N06LT4G	1
NTD25P03L	1
NTD40N03R	1
NTD60N02R	1
NTD85N02R-1G	1
NTD3055L104	3
NTD5865NL	2
NTD5867NL	2
NTF3055-100	1
NTGS3443	1
NTH4L020N120	1
NTH4L040N120	1
NTH4L080N120	1
NTH4L160N120	1
NTHL020N090	1
NTHL020N120	1
NTHL027N65	1
NTHL033N65	1
NTHL040N65	1
NTHL040N90	1

Device	No. of symbols
NTHL040N120	1
NTHL065N65	1
NTHL080N120	1
NTHL082N65	1
NTHL110N65	1
NTHL160N120	1
NTJD4105C	1
NTJD4401N	1
NTJD5121N	1
NTK3134N	1
NTK3139P	1
NTMFS4835N	1
NTR1P02L	1
NTR0202PL	1
NTR4003N	1
NTR4101P	1
NTR4171P	1
NTR4501N	1
NTR4502P	1
NTR5103N	1
NTS4101P	1
NTS4409N	1
NTTFS5820NL	1
NTZD3152P	1
NTZD3154N	1
NTZD3155C	1
NVHL020N090	1
NVMFS5C430NL	1
NVTR4503N	1
NX138AK	1
NX138BK	1
NX2301P	1
NX3008	10
NX3020NAKW	1
NX7002AK	1
PHB66NQ03LT	1
PHC2300	1
PHD66NQ03LT	1
PMBF170	1
PMF170XP	1
PMF370XN	1
PMGD280UN	1
PMGD780SN	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
PMV20EN	1
PMV30XPEA	1
PMV32UP	1
PMV40UN2	1
PMV45EN2	1
PMV65XP	1
PMV160UP	1
PMV213SN	1
PMV250EPEA	1
PSMN0R7-25YLD	1
PSMD0R9-25YLC	1
PSMN1R0-25YLD	1
PSMN1R7-30YL	1
PSMN1R7-60BS	1
PSMN1R8-40YLC	1
PSMN2R0-30	3
PSMN2R0-60	2
PSMN2R2-25YLC	1
PSMN2R2-30YLC	1
PSMN2R2-40PS	1
PSMN2R6-40YS	1
PSMN2R9-30MLC	1
PSMN3R0-30MLC	1
PSMN3R8-100BS	1
PSMN004-60B	1
PSMN4R0-30YL	1
PSMN4R0-40YS	1
PSMN4R2-60PL	1
PSMN4R8-100BS	1
PSMN005-30K	1
PSMN5R0-30YL	1
PSMN5R5-60YS	1
PSMN6R0-30YLB	1
PSMN6R5-25YLC	1
PSMN7R0-60YS	1
PSMN012-60YS	1
PSMN012-80PS	1
PSMN012-100YS	1
PSMN013-30YLC	1
PSMN013-100BS	1
PSMN014-40YS	1
PSMN015-100	2
PSMN017-60YS	1

Device	No. of symbols
PSMN018-80YS	1
PSMN020-100YS	1
PSMN025-100D	1
PSMN026-80YS	1
PSMNR90-30BL	1
RF1S50N06SM	1
RF1S70N06	2
RFD12N06RLESM	1
RFD14N05	3
RFD15P05	2
RFD16N05	2
RFD16N06LESM	1
RFD3055LE	2
RFG50N06	1
RFG70N06	1
RFM04U6P	1
RFP12N10L	1
RFP14N05L	1
RFP15P05	1
RFP50N06	1
RFP70N06	1
SCT20N120	1
SCT30N120	1
SCT50N120	1
SCT2450KE	1
Si1012R	1
Si1013R	1
Si1022R	1
Si1026X	1
Si1034CX	1
Si1302DL	1
Si1403CDL	1
Si1411DH	1
Si1424EDH	1
Si1428EDH	1
Si2301CDS	1
Si2302	2
Si2304DDS	1
Si2305CDS	1
Si2306BDS	1
Si2307CDS	1
Si2308BDS	1
Si2309CDS	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
Si2312CDS	1
Si2315BDS	1
Si2316DS	1
Si2318CDS	1
Si2319CDS	1
Si2323	2
Si2324DS	1
Si2325DS	1
Si2328DS	1
Si2329DS	1
Si2334DS	1
Si2336DS	1
Si2337DS	1
Si2367DS	1
Si2374DS	1
Si2377EDS	1
Si3407DV	1
Si3429EDV	1
Si3443	4
Si3457CDV	1
Si3483CDV	1
Si3585CDV	1
Si4062DY	1
Si4128DY	1
Si4134DY	1
Si4162DY	1
Si4174DY	1
Si4178DY	1
Si4288DY	1
Si4401BDY	1
Si4403DDY	1
Si4410BDY	1
Si4425DDY	1
Si4435	2
Si4436DY	1
Si4455DY	1
Si4459ADY	1
Si4463BDY	1
Si4483ADY	1
Si4490DY	1
Si4497DY	1
Si4590DY	1
Si4686DY	1

Device	No. of symbols
Si4800BDY	1
Si4816BDY	1
Si4833DY	1
Si4835DDY	1
Si4850EY	1
Si4894BDY	1
Si4896DY	1
Si4925	2
Si4936CDY	1
Si4946BEY	1
Si6926ADQ	1
Si7149ADP	1
Si7308DN	1
Si7414DN	1
Si7415DN	1
Si7461DP	1
Si7615CDN	1
Si7810DN	1
Si7848BDP	1
Si9407BDY	1
Si9433BDY	1
Si9435BDY	1
Si9926CDY	1
Si9933	2
Si9936BDY	1
Si9956DY	1
SiDR626DP	1
SiHB12N60E	1
SiHB33N60E	1
SiHF9Z24	2
SiHF9Z34	1
SiHF30N60E	1
SiHF510	2
SiHF520	1
SiHF530	2
SiHF540	2
SiHF610	1
SiHF620	1
SiHF630	2
SiHF634	1
SiHF640	3
SiHF644	2
SiHF710	2

Table list of all devices included in this library (cont.)

Device	No. of symbols
SiHF720	1
SiHF730	1
SiHF740	2
SiHF740A	3
SiHF740LC	1
SiHF820	1
SiHF820A	1
SiHF830	2
SiHF840	2
SiHF840A	3
SiHF840LC	1
SiHF9510	2
SiHF9520	2
SiHF9530	2
SiHF9540	2
SiHF9610	1
SiHF9620	1
SiHF9630	2
SiHF9640	3
SiHFB9N60A	1
SiHFB9N65A	1
SiHFB11N50A	1
SiFHB17N50L	1
SiFHB18N50K	1
SiHFB20N50K	1
SiFHBC20	3
SiFHBC30	1
SiHFBC40	3
SiHFBC40A	1
SiHFBC40LC	1
SiHFBE20	1
SiHFBE30	3
SiHFBF20	3
SiHFBF30	1
SiHFBG20	1
SiHFBG30	1
SiHFD014	1
SiHFD024	1
SiHFD110	1
SiHFD120	1
SiHFD210	1
SiHFD220	1
SiHFD320	1

Device	No. of symbols
SiHFD420	1
SiHFD9014	1
SiHFD9024	1
SiHFD9110	1
SiHFD9120	1
SiHFD9210	1
SiHFD9220	1
SiHFI9Z34G	1
SiHFI520G	1
SiHFI530G	1
SiHFI540G	1
SiHFI630G	1
SiHFI640G	1
SiHFI644G	1
SiHFI740G	1
SiHFI820G	1
SiHFI830G	1
SiHFI840GLC	1
SiHFI9520G	1
SiHFI9530G	1
SiHFI9540G	1
SiHFI9630G	1
SiHFI9634G	1
SiHFI9640G	1
SiHFIB6N60A	1
SiHFIB7N50A	1
SiHFIBC20G	1
SiHFIBC30G	1
SiHFIBC40G	1
SiHFIBE30G	1
SiHFIBF20G	1
SiHFIBF30G	1
SiHFIZ34G	1
SiHFIZ48G	1
SiHFL014	1
SiHFL110	1
SiHFL210	1
SiHFL9014	1
SiHFL9110	1
SiHFP22N50A	1
SiHFP23N50L	1
SiHFP27N60K	1
SiHFP31N50L	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
SiHFP32N50K	1
SiHFP054	1
SiHFP064	1
SiHFP140	1
SiHFP150	1
SiHFP240	1
SiHFP244	1
SiHFP250	1
SiHFP254	1
SiHFP260	1
SiHFP264	1
SiHFP340	1
SiHFP350	1
SiHFP360	2
SiHFP440	1
SiHFP450	3
SiHFP460	4
SiHFP9140	1
SiHFP9240	1
SiHFPC40	1
SiHFPC50	2
SiHFPC60LC	1
SiHFPE30	1
SiHFPE50	1
SiHFPP40	1
SiHFPP50	1
SiHFPG30	1
SiHFPG40	1
SiHFPG50	1
SiHFR1N60A	1
SiHFR014	1
SiHFR024	1
SiHFR110	1
SiHFR120	1
SiHFR210	1
SiHFR220	1
SiHFR224	1
SiHFR310	1
SiHFR320	1
SiHFR420	2
SiHFR430A	1
SiHFR9014	1
SiHFR9024	1

Device	No. of symbols
SiHFR9110	1
SiHFR9120	1
SiHFR9210	1
SiHFR9214	1
SiHFR9220	1
SiHFR9310	1
SiHFRC20	1
SiHFS9N60A	1
SiHFS11N50A	1
SiHFSL11N50A	1
SiHFU1N60A	1
SiHFU014	1
SiHFU024	1
SiHFU110	1
SiHFU120	1
SiHFU210	1
SiHFU220	1
SiHFU224	1
SiHFU310	1
SiHFU320	1
SiHFU420	2
SiHFU430A	1
SiHFU9014	1
SiHFU9024	1
SiHFU9110	1
SiHFU9120	1
SiHFU9210	1
SiHFU9214	1
SiHFU9220	1
SiHFU9310	1
SiHFUC20	1
SiHFZ14	1
SiHFZ34	1
SiHFZ44	1
SiHFZ48R	1
SiHG20N50C	1
SiHG30N60C	1
SiHG47N60	2
SiHG73N60E	1
SiHL510	1
SiHL520	1
SiHL540	1
SiHL630	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
SiHL640	2
SiHLD014	1
SiHLD024	1
SiHLD110	1
SiHLD120	1
SiHLI640G	1
SiHLL014	1
SiHLL110	1
SiHLR014	1
SiHLR024	1
SiHLR110	1
SiHLR120	1
SiHLU014	1
SiHLR024	1
SiHLR110	1
SiHLR120	1
SiHLU014	1
SiHLU024	1
SiHLU110	1
SiHLU120	1
SiHLZ14	1
SiHLZ24	1
SiHLZ44	1
SiHP14N50D	1
SiHP25N40D	1
SiHP30N60AEL	1
SiHP065N60E	1
SiS402DN	1
SiS892ADN	1
SiSS05DN	1
SN7002N	1
SN7002W	1
SPA07N60C3	1
SPA17N80C3	1
SPA20N60	2
SPA21N50C3	1
SPB17N80C3	1
SPB18P06PG	1
SPB20N60S5	1
SPB80P06PG	1
SPD03N60C3	1
SPD04N50C3	1
SPD04P10P	2

Device	No. of symbols
SPD08N50C3	1
SPD08P06PG	1
SPD09P06PLG	1
SPD15P10P	2
SPD18P06PG	1
SPD30N03S2L	1
SPD30P06PG	1
SPD50N03S2	1
SPD50P03LG	1
SPI07N60	2
SPI11N60S5	1
SPI11N80C3	1
SPI20N60C3	1
SPI21N50C3	1
SPP04N80C3	1
SPP06N80C3	1
SPP07N60	2
SPP11N60S5	1
SPP15P10P	2
SPP17N80C3	1
SPP18P06PH	1
SPP20N60	3
SPP21N50C3	1
SPP24N60C3	1
SPP80P06PH	1
SPU03N60C3	1
SPW11N80C3	1
SPW17N80C3	1
SPW20N60	2
SPW35N60C	2
SPW47N60C	2
SPW47N65C3	1
SQ1421EDH	1
SQ2301ES	1
SQ2310ES	1
SQ2318AES	1
SQ2319ADS	1
SQ2337ES	1
SQ2351ES	1
SQ3461EV	1
SQ4153EY	1
SQ4284EY	1
SQ4850EY	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
SQ9945BEY	1
SQA401EEJ	1
SQD19P06-60L	1
SQD25N15-52	1
SQD45P03-12	1
SQD50N04-4m5L	1
SQD50N05-11L	1
SQD40031EL	1
SQM100N04-2m7	1
SQM100P10-19L	1
SQM120N06-3m5	1
SQM120N10-3m8	1
SSM3J16FS	1
SSM3J327R	1
SSM3J328R	1
SSM3J331R	1
SSM3J332R	1
SSM3J334R	1
SSM3J355R	1
SSM3K15AF	2
SSM3K16FU	1
SSM3K35MFV	1
SSM3K36FS	1
SSM3K37MFV	1
SSM3K72	3
SSM3K123TU	1
SSM3K324R	1
SSM3K329R	1
SSM3K333R	1
SSM3K339R	1
SSM3K341R	1
SSM3K7002KFU	1
SSM6J501NU	1
SSM6J502NU	1
SSM6J503NU	1
SSM6K403TU	1
SSM6L12TU	1
SSM6N15AFU	1
SSM6N35FE	1
SSM6N40TU	1
SSM6N7002	2
SSS7N60A	1
STB2N62K3	1

Device	No. of symbols
STB3N62K3	1
STB3NK60ZT4	1
STB4N62K3	1
STB4NK60Z	2
STB5N52K3	1
STB5N62K3	1
STB5NK50Z	2
STB6N52K3	1
STB6N80K5	1
STB6NK60Z	2
STB6NK90Z	1
STB7NK80Z	2
STB8N65M5	1
STB9NK50Z	2
STB9NK60Z	1
STB9NK70Z	2
STB9NK90Z	1
STB10N60M2	1
STB10N95K5	1
STB10NK60Z	2
STB11NK40Z	1
STB11NK50Z	1
STB11NM50	2
STB11NM60FD	2
STB11NM80	1
STB12NK80Z	1
STB13N60M2	1
STB13N80K5	1
STB13NK60ZT4	1
STB13NM60N	1
STB14NK50Z	2
STB14NK60ZT4	1
STB15N80K5	1
STB15NK50Z	2
STB16NF06L	1
STB18N55M5	1
STB18N60M2	1
STB18N65M5	1
STB18NF20	1
STB18NM60N	1
STB18NM80	1
STB19NF20	1
STB20N65M5	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
STB20N95K5	1
STB20NM60	2
STB21N65M5	1
STB21N90K5	1
STB21NM60ND	1
STB22NM60N	1
STB23NM50N	1
STB24N60	2
STB24NF10	1
STB25N80K5	1
STB28N60M2	1
STB28NM50N	1
STB28NM60ND	1
STB30NF10	1
STB30NF20	1
STB31N65M5	1
STB32N65M5	1
STB34N65M5	1
STB34NM60ND	1
STB35NF10	1
STB36NF06L	1
STB36NM60ND	1
STB38N65M5	1
STB38N65M5	1
STB40NF10L	1
STB40NF20	1
STB42N60M2-EP	1
STB42N65M5	1
STB45N65M5	1
STB55NF06	3
STB57N65M5	1
STB60NF06L	1
STB60NF10	2
STB75NF20	1
STB75NF75	2
STB80N20M5	1
STB80NF06	1
STB80NF10	1
STB80NF55	3
STB100NF04T4	1
STB120NF10	1
STB140NF75	2
STD1HN60K3	1

Device	No. of symbols
STD1NK60	2
STD1NK80Z	2
STD2LN60K3	1
STD2N62K3	1
STD2N80K5	1
STD2N95K5	1
STD2N105K5	1
STD2NK90Z	2
STD2NK100Z	1
STD3LN62K3	1
STD3N62K3	1
STD3NK50Z	2
STD3NK60Z	2
STD3NK80Z	2
STD3NK90ZT4	1
STD4N52K3	1
STD4N62K3	1
STD4NK50Z	2
STD4NK60Z	2
STD4NK80Z	2
STD5N52K3	1
STD5N62K3	1
STD5NK40Z	2
STD5NK50Z	2
STD6N52K3	1
STD6N80K5	1
STD6NF10	1
STD6NK50Z	1
STD7N52DK3	1
STD7N60M2	1
STD7N80K5	1
STD7NK40Z	2
STD7NM60N	1
STD7NM80	2
STD8N65M5	1
STD8N80K5	1
STD8NM50N	1
STD10N60M2	1
STD10NF10	2
STD10NM60N	1
STD10P6F6	1
STD11NM60N	1
STD12NF06	3

Table list of all devices included in this library (cont.)

Device	No. of symbols
STD13N60M2	1
STD13NM60N	1
STD15NF10	1
STD16NF06	3
STD16NF25	1
STD17NF03L	2
STD17NF25	1
STD18N55M5	1
STD18N65M5	1
STD18NF20	1
STD19NF20	1
STD20NF06	3
STD20NF20	1
STD25NF10	3
STD26P3LLH6	1
STD30NF03L	2
STD30NF06L	2
STD30PF03L	2
STD35NF06	1
STD35P6LLF	1
STD46P4LLF	1
STD60NF06	1
STD60NF55L	2
STD65NF55F3	1
STF2LN60K3	1
STF2N62K3	1
STF2N80K5	1
STF2N95K5	1
STF3LN62K3	1
STF3N62K3	1
STF3NK80Z	1
STF4N52K3	1
STF5N62K3	1
STF5KN100Z	1
STF6N52K3	1
STF6N60M2	1
STF6N62K3	1
STF6N95K5	1
STF6NK50Z	1
STF7N52DK3	1
STF7N95K3	1
STF7NM60N	1
STF7NM80	1

Device	No. of symbols
STF8N65M5	1
STF8NK100Z	1
STF9NK90Z	1
STF10N95K5	1
STF10N105K5	1
STF10NM60N	1
STF10P6F6	1
STF11NM60ND	1
STF11NM80	1
STF12N120K5	1
STF12NK80Z	1
STF13N80K5	1
STF14NM50N	1
STF15N65M5	1
STF15N80K5	1
STF16N65M5	1
STF16NF25	1
STF17NF25	1
STF18N55M5	1
STF18NF20	1
STF18NM60N	1
STF18NM80	1
STF19NF20	1
STF19NM50N	1
STF20N95K5	1
STF20NF20	1
STF20NM60D	1
STF21N65M5	1
STF21N90K5	1
STF21NM60ND	1
STF22NM60N	1
STF23NM50N	1
STF24NM60N	1
STF25N80K5	1
STF28NM50N	1
STF28NM60ND	1
STF31N65M5	1
STF32N65M5	1
STF33N60M2	1
STF34NM60ND	1
STF35N60DM2	1
STF40NF03L	1
STF40NF20	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
STF42N65M5	1
STF45N65M5	1
STF57N65M5	1
STF120NF10	1
STFW3N150	1
STFW4N150	1
STFW12N120K5	1
STFW69N65M5	1
STH3N150	1
STH12N120K5	1
STI6N62K3	1
STI6N80K5	1
STI8N65M5	1
STI10NM60N	1
STI11NM60ND	1
STI11NM80	1
STI14NM50N	1
STI16N65M5	1
STI20N65M5	1
STI21N65M5	1
STI22NM60N	1
STI24N60M2	1
STI24NM60N	1
STI32N65M5	1
STI33N60M2	1
STI34N65M5	1
STI42N65M5	1
STI57N65M5	1
STL20N6F7	1
STL130N8F7	1
STN1Hnk60	1
STN1NK60Z	1
STN1NK80Z	1
STN3N40K3	1
STN3N45K3	1
STN3P6F6	1
STN4NF03L	1
STP2N62K3	1
STP2N80K5	1
STP2N95K5	1
STP2N105K5	1
STP2NK90Z	1
STP2NK100Z	1

Device	No. of symbols
STP3LN62K3	1
STP3N62K3	1
STP3N150	1
STP3NK60Z	2
STP3NK80Z	1
STP3NK90Z	2
STP4N52K3	1
STP4N150	1
STP4NK50Z	2
STP4NK60Z	2
STP4NK80Z	2
STP5N52K3	1
STP5N62K3	1
STP5N105K5	1
STP5NK40Z	2
STP5NK50Z	2
STP5NK80Z	2
STP5NK100Z	1
STP6N52K3	1
STP6N60M2	1
STP6N62K3	1
STP6N80K5	1
STP6NB80	2
STP6NK50Z	1
STP6NK60Z	2
STP6NK90Z	2
STP7N52DK3	1
STP7N60M2	1
STP7N80K5	1
STP7N95K3	1
STP7NK40Z	2
STP7NK80Z	2
STP7NM60N	1
STP7NM80	1
STP8N65M5	1
STP8NK80Z	2
STP8NK100Z	1
STP8NM50N	1
STP9NK50Z	2
STP9NK60Z	2
STP9NK70Z	2
STP9NK90Z	1
STP10N60M2	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
STP10N95K5	1
STP10N105K5	1
STP10NK60Z	2
STP10NK80Z	2
STP10NM60N	1
STP10P6F6	1
STP11NK40Z	2
STP11NK50Z	2
STP11NM50	2
STP11NM60FD	2
STP11NM80	1
STP12N120K5	1
STP12NK30Z	1
STP12NK80Z	1
STP13N80K5	1
STP13NK60Z	2
STP14NF10	1
STP14NK50Z	2
STP14NK60ZFP	1
STP14NM50N	1
STP15N65M5	1
STP15N80K5	1
STP15N95K5	1
STP15NK50Z	2
STP16N65M5	1
STP16NF06	4
STP16NF25	1
STP17NF25	1
STP17NK40Z	2
STP18N55M5	1
STP18N60M2	1
STP18NF20	1
STP18NM60N	1
STP18NM80	1
STP19NF20	1
STP19NM50N	1
STP20N65M5	1
STP20N90K5	1
STP20N95K5	1
STP20NF06L	1
STP20NF20	1
STP20NM60	3
STP21N65M5	1

Device	No. of symbols
STP21N90K5	1
STP21NM60ND	1
STP22NM60ND	1
STP23NM50N	1
STP24N60	2
STP24NF10	1
STP24NM60N	1
STP25N80K5	1
STP26N60M2	1
STP28N60M2	1
STP28NM50N	1
STP28NM60ND	1
STP30NF10	2
STP30NF20	1
STP31N65M5	1
STP32N65M5	1
STP33N60M2	1
STP34N65M5	1
STP34NM60D	1
STP35N60DM2	1
STP35NF10	1
STP36N55M5	1
STP36NF06L	1
STP38N65M5	1
STP40NF03L	1
STP40NF10	2
STP40NF20	1
STP42N60M2-EP	1
STP42N65M5	1
STP45N65M5	1
STP45NF06	1
STP55NF06	3
STP57N65M5	1
STP60NF06	3
STP60NF10	1
STP75NF20	1
STP75NF75	2
STP80N20M5	1
STP80NF06	1
STP80NF10	2
STP80NF12	1
STP80NF55-06	2
STP80NF55L-06	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
STP100N6F7	1
STP100NF04	1
STP120NF10	1
STP140NF75	1
STP310N10F7	1
STQ1Hnk60R	2
STQ1NK60ZR	1
STQ1NK80ZR	1
STQ3NK50ZR	1
STR2N2VH	1
STR2P3LLH6	1
STS4DNF60L	1
STS5DNF20V	1
STS5NF60L	1
STS5P3LLH6	1
STS8C5H30L	1
STS11NF30L	1
STU1HN60K3	1
STU2LN60K3	1
STU2N62K3	1
STU2N80K5	1
STU2N95K5	1
STU2N105K5	1
STU2NK100Z	1
STU3LN62K3	1
STU3N62K3	1
STU4N52K3	1
STU5N52K3	1
STU5N62K3	1
STU6N60M2	1
STU6N62K3	1
STU6NF10	1
STU7N60M2	1
STU7N80K5	1
STU7NM60N	1
STU8N65M5	1
STU8NM50N	1
STU10N60M2	1
STU10NM60N	1
STU10P6F6	1
STU11NM60ND	1
STU16N65M5	1
STW3N150	1

Device	No. of symbols
STW4N150	1
STW5NK100Z	1
STW7N95K3	1
STW7NK90Z	1
STW8NK80Z	1
STW9N150	1
STW9NK70Z	1
STW9NK90Z	1
STW10N95K5	1
STW10N105K5	1
STW10NK60Z	1
STW10NK80Z	1
STW11NK100Z	1
STW11NM80	1
STW12N120K5	1
STW12N150K5	1
STW12NK80Z	1
STW12NK90Z	1
STW13N80K5	1
STW13NK60Z	1
STW13NK100Z	1
STW14NK50Z	1
STW15N80K5	1
STW15N95K5	1
STW15NK50Z	1
STW15NK90Z	1
STW16N65M5	1
STW18N60	2
STW18NM60N	1
STW18NM80	1
STW19NM50N	1
STW20N65M5	1
STW20N95K5	1
STW20NK50Z	1
STW20NM50FD	1
STW20NM60	2
STW21N65M5	1
STW21N90K5	1
STW21N150K5	1
STW21NM60ND	1
STW22N95K5	1
STW22NM60ND	1
STW23NM50N	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
STW24N60	2
STW24NM60N	1
STW25N80K5	1
STW26N60M2	1
STW26NM50	1
STW26NM60N	1
STW28N60M2	1
STW28NM50N	1
STW28NM60ND	1
STW30NF20	1
STW31N65M5	1
STW32N65M5	1
STW33N60M2	1
STW34N65M5	1
STW34NM60N	2
STW35N60DM2	1
STW36N55M5	1
STW36NM60ND	1
STW38N65M5	1
STW40N95K5	1
STW40NF20	1
STW42N60M2-EP	1
STW42N65M5	1
STW45N60DM2A	1
STW45NM50	1
STW45NM60	1
STW48N60M2-4	1
STW48NM60N	1
STW50N65DM2A	1
STW52NK25Z	1
STW56N60DM2	1
STW56N65DM2	1
STW57N65M5-4	1
STW62N65M5	1
STW69N65M5	1
STW70N60	2
STW75NF20	1
STW77N65M5	1
STW78N65M5	1
STW80NF06	1
STW88N65M5	1
STW120NF10	1
STWA12N120K5	1

Device	No. of symbols
STWA48N60M2	1
STWA63N65DM2	1
STWA88N65M5	1
SUB85N10-10	1
SUD19N20-90	1
SUD19P06-60	1
SUD23N06-31	1
SUD50N6-09L	1
SUM55P06-09L	1
SUM65N20-30	1
SUM90N10-8m2P	1
SUM90P10-19L	1
SUM110P04-05	1
SUM110P06-07L	1
SUM110P08-11L	1
SUM10250E	1
SUM70040E	1
SUM80090E	1
SUM90140E	1
SUP57N20-33	1
SUP85N10-10	1
SUP90P06-09L	1
SUP10250E	1
SUP80090E	1
T2N7002	2
TJ9A10M3	1
TJ15S06M3L	1
TJ30S06M3L	1
TK1P90A	1
TK3A65D	1
TK3P50D	1
TK6A50D	1
TK6A60W	1
TK6A65	2
TK6A80E	1
TK6P60W	1
TK6A65W	1
TK6Q60W	1
TK6Q65W	1
TK6R7P06PL	1
TK7A60W	1
TK8A50D	1
TK8P60W	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
TK9J90E	1
TK10A60W	1
TK10A80W	1
TK10E60W	1
TK11P65W	1
TK12P60W	1
TK12Q60W	1
TK13A60D	1
TK13P25D	1
TK14A65W	1
TK15J50D	1
TK16A60W	2
TK16E60W	1
TK16N60W	2
TK18A30D	1
TK20A60W	1
TK20G60W	1
TK20N60W5	1
TK20P04M1	1
TK22E10N1	1
TK25S06N1L	1
TK30E06N1	1
TK31E60W	1
TK32E12N1	1
TK34E10N1	1
TK39J60W	1
TK39N60X	1
TK40A10N1	1
TK40E06N1	1
TK40E10N1	1
TK40J60U	1
TK040N65Z	1
TK42A12N1	1
TK49N65W	1
TK56E12N1	1
TK58E06N1	1
TK60S06K3L	1
TK60S10N1L	1
TK62J60W	1
TK62N60	3
TK65A10N1	1
TK65E10N1	1
TK65G10N1	1

Device	No. of symbols
TK65S04N1L	1
TK72E08N1	1
TK72E12N1	1
TK100A06N1	1
TK100E06N1	1
TK100E10N1	1
TK110P10PL	1
TK380A60Y	1
TK650A60F	1
TN0104	2
TN0106N3	1
TN0110N3	1
TN0604N3	1
TN0606N3	1
TN0610N3	1
TN0620N3	1
TN0702N3	1
TN2106	2
TN2124K1	1
TN2130K1	1
TN2404K	2
TN2425N8	1
TN2435N8	1
TN2501N8	1
TN2504N8	1
TN2510N8	1
TN2524N8	1
TN2540	2
TN2640	2
TN5325	3
TN5335	2
TP0604N3	1
TP0606N3	1
TP0610	2
TP0620N3	1
TP2104	2
TP2424N8	1
TP2502N8	1
TP2510N8	1
TP2520N8	1
TP2522N8	1
TP2535N3	1
TP2540	2

Table list of all devices included in this library (cont.)

Device	No. of symbols
TP2635N3	1
TP2640N3	1
TP5322	2
TP5335K1	1
TPC8124	1
TPC8125	1
TPH1R005PL	1
TPH1R204PL	1
TPH1R306PL	1
TPH2R903PL	1
TPH3R003PL	1
TPH4R10ANL	1
TPH4R50ANH	1
TPH4R606NH	1
TPH6R003NL	1
TPH6R30ANL	1
TPH11006NL	1
TPHR6503PL	1
TPHR8504PL	1
TPHR9003PL	1
TPN6R003NL	1
TPN8R903NL	1
TPN1600ANH	1
TPN13008NH	1
TPW1R306PL	1
TPW1500CNH	1
TSM1N80CW	1
TSM1NB60C	3
TSM2N60SCW	1
TSM2N7002K	1
TSM05N03CW	1
TSM35N10CP	1
TSM042N03CS	1
TSM320N03CX	1
TSM2301ACX	1
TSM2302CX	1
TSM2305CX	1
TSM2306CX	1
TSM2307CX	1
TSM2309CX	1
TSM2312CX	1
TSM2314CX	1
TSM2318CX	1

Device	No. of symbols
TSM2323CX	1
TSM3401CX	1
TSM4424	1
TSM4936D	1
TSM9926D	1
VN10	3
VN0104N3	1
VN0106N3	1
VN0300L	1
VN0550N3	1
VN0606L	1
VN0808L	1
VN1206L	1
VN2106N3	1
VN2110K1	1
VN2210N2	1
VN2222LL	1
VN2406L	1
VN2410L	1
VN2450N	2
VN2460N	2
VN3205N	2
VN4012L	1
VP0104N3	1
VP0106N3	1
VP0109N3	1
VP0550N3	1
VP0808L	1
VP2106N3	1
VP2110K1	1
VP2206N	2
VP2450N	2
VP3203N	2
ZVN2106G	1
ZVN2110G	1
ZVN3310F	1
ZVN3320F	1
ZVN4206G	1
ZVN4310G	1
ZVN4525E6	1
ZVNL110G	1
ZVNL120G	1
ZVP0545G	1

Table list of all devices included in this library (cont.)

Device	No. of symbols
ZVP1320F	1
ZVP2106G	1
ZVP2110A	1
ZVP3306	2
ZVP3310F	1
ZVP4424	3
ZVP4525	2
ZXM61N02F	1
ZXM61N03F	1
ZXM61P02F	1
ZXM61P03F	1
ZXM62P03E6	1
ZXM64P03X	1
ZXMC3A16DN8	1
ZXMC3A17DN8	1
ZXMC3F31DN8	1
ZXMC6A09DN8	1
ZXMC10A81N8	1
ZXMC4559DN8	1
ZXMD63N03X	1
ZXMHC6A07T8	1
ZXMHC10A07N8	1
ZXMN2A03E6	1
ZXMN2A14F	1
ZXMN2F30FHQ	1
ZXMN2F34FH	1
ZXMN3A01F	1
ZXMN3A03E6	1
ZXMN3A14FQ	1
ZXMN3F30FH	1
ZXMN4A06	2
ZXMN6A07Z	1
ZXMN6A08G	1
ZXMN6A09G	1
ZXMN6A11DN8	1
ZXMN6A25K	1
ZXMN7A11G	1
ZXMN10A07	2
ZXMN10A09K	1
ZXMN10A11	2
ZXMN10A25G	1
ZXMN10B08E6	1
ZXMP3A13F	1

Device	No. of symbols
ZXMP3A16G	1
ZXMP4A16G	2
ZXMP6A16K	1
ZXMP6A17	2
ZXMP6A18	2
ZXMP7A17GQ	1
ZXMP10A13F	1
ZXMP10A16K	1
ZXMP10A17E6	1
ZXMP10A18G	1
ZXMP2120G4	1

2.35. TRIAC Library

This library contains TRIACs (triode for alternating current, bidirectional triode thyristor or bilateral triode thyristor)

All TRIACs have Q as their reference designator.

All available orderable part numbers for each device with different package and electrical characteristics have separate specific symbols.

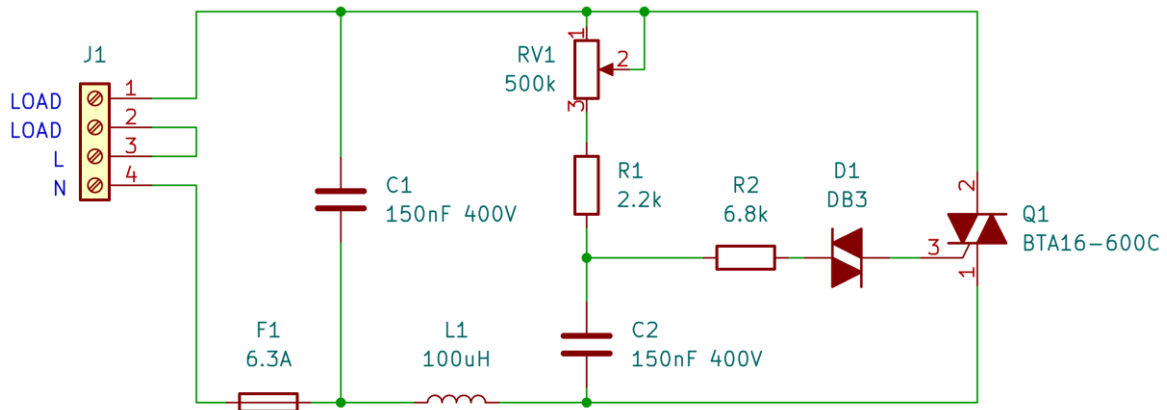
Filename: Triac_AKL	
Total symbols:	814
Generic symbols:	2
Specific symbols:	812



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

AC power control circuit based on a BTA16-600C TRIAC.

Table list of all devices included in this library

Device Family	Example symbol names	No. of symbols
2N6071	2N6071A, 2N6071B	2
2N6073	2N6073A, 2N6073B	2
2N6075	2N6075A, 2N6075B	2
2N6344	2N6344	1
2N6349	2N6349	1
BT131	BT131-600	1
BT131W	BT131W-600D	1
BT134W	BT134W-600, BT134W-600D, BT134W-800	3
BT136	BT136-600D, BT136-600E, BT136-800E	3
BT136S	BT136S-600D, BT136S-800E	2
BT136X	BT136X-600, BT136X-800, BT136X-800E	3
BT137	BT137-600, BT137-600D, BT137-600E, BT137-800 ...	5
BT137B	BT137B-600E, BT137B-800	2
BT137S	BT137S-600, BT137S-600D, BT137S-800F	3
BT137X	BT137X-600, BT137X-600D, BT137X-600G ...	5
BT138	BT138-600, BT138-600E, BT138-800, BT138-800E ...	5
BT138B	BT138B-600, BT138B-800E	2
BT138X	BT138X-600, BT138X-800	2
BT139	BT139-600, BT139-600E, BT139-800, BT139-800E ...	5
BT139B	BT139B-600E, BT139B-800E, BT139B-800G	3
BT139X	BT139X-600, BT139X-600E, BTX139X-600F, BT139X...	5
BT1308W	BT1308W-600D	1
BTA06	BTA06-600B, BTA06-600BW, BTA06-600C, BTA06...	12
BTA06T	BTA06T-600CW	1
BTA08	BTA08-600B, BTA08-600BW, BTA08-600C, BTA08...	9
BTA10	BTA10-600B, BTA10-600BW, BTA10-600C, BTA10...	8
BTA12	BTA12-600B, BTA12-600BW, BTA12-600C, BTA12...	10
BTA16	BTA16-600B, BTA16-600BW, BTA16-600C, BTA16...	9
BTA20	BTA20-600CW, BTA20-700BW, BTA20-700CW	3
BTA24	BTA24-600B, BTA24-600BW, BTA24-600CW ...	6
BTA25	BTA25-600CW3G, BTA25-800CW3G	2
BTA26	BTA26-600B, BTA26-600BW, BTA26-600CW, BTA26...	6
BTA30	BTA30-600CW3G, BTA30-800CW3G	2
BTA41	BTA41-600B, BTA41-800B	2
BTA140	BTA140-600, BTA140-800	2
BTA201W	BTA201W-600D, BTA201W-800E	2
BTA203	BTA203-800CT	1
BTA204	BTA204-800E	1
BTA204S	BTA204S-600C, BTA204S-600D, BTA204S-600E ...	4
BTA204W	BTA204W-800E	1
BTA208	BTA208-600E, BTA208-800B, BTA208-800E	3
BTA208B	BTA208B-1000C	1
BTA208S	BTA208S-600B, BTA208S-600E, BTA208S-800B ...	4

Table list of all devices included in this library (cont.)

Device Family	Example symbol names	No. of symbols
BTA208X	BTA208X-600B	1
BTA212	BTA212-500B, BTA212-600B, BTA212-800B	3
BTA212X	BTA212X-500B, BTA212X-600B, BTA212X-800B	3
BTA216	BTA216-500B, BTA216-600B, BTA216-600D ...	6
BTA216X	BTA216X-500B, BTA216X-600B, BTA216X-800B	3
BTA225	BTA225-800B	1
BTA225B	BTA225B-800B	1
BTA308Y	BTA308Y-800COT	1
BTA312	BTA312-600D	1
BTA312B	BTA312B-600B, BTA312B-600CT	2
BTA312X	BTA312X-600E, BTA312X-800B, BTA312X-800CT	3
BTA312Y	BTA312Y-600C	1
BTA316	BTA316-600BT, BTA316-600C, BTA316-600D ...	4
BTA316B	BTA316B-600C, BTA316B-600E, BTA316B-800C	3
BTA316X	BTA316X-600B, BTA316X-600E	2
BTA316Y	BTA316Y-800BT, BTA316Y-800CT	2
BTA318	BTA318-800B, BTA318-800C, BTA318-800E, BTA318...	4
BTA330B	BTA330B-800BT, BTA330B-800CT	2
BTA330X	BTA330X-800BT	1
BTA330Y	BTA330Y-800BT	1
BTA408X	BTA408X-1000COT	1
BTA410Y	BTA410Y-600CT	1
BTA412Y	BTA412Y-600B, BTA412Y-600C, BTA412Y-800B ...	4
BTA416Y	BTA416Y-600C, BTA416-800C	2
BTA440Z	BTA440Z-800BT	1
BTA2008W	BTA2008W-600D	1
BTB04	BTB04-600SL	1
BTB06	BTB06-600B, BTB06-600BW, BTB06-600C, BTB06...	12
BTB08	BTB08-600B, BTB08-600BW, BTB08-600C, BTB08...	9
BTB10	BTB10-600B, BTB10-600BW, BTB10-600C, BTB10...	4
BTB12	BTB12-600B, BTB12-600BW, BTB12-600C, BTB12...	7
BTB16	BTB16-600B, BTB16-600BW, BTB16-600C, BTB16...	9
BTB24	BTB24-600B, BTB24-600BW, BTB24-600CW, BTB24...	6
BTB26	BTB26-600B, BTB26-600BW, BTB26-600CW, BTB26...	6
BTB41	BTB41-600B, BTB41-800B	2
CLA30MT1200	CLA30MT1200NPB, CLA30MT1200NPZ	2
CLA40MT1200	CLA40MT1200NPB, CLA40MT1200NPZ	2
CLA60MT1200	CLA60MT1200NHB, CLA60MT1200NTZ	2
CLA80MT1200	CLA80MT1200NHB, CLA80MT1200NHR	2
CMA60MT1600	CMA60MT1600NHB, CMA60MT1600NHR	2
CMA80MT1600	CMA80MT1600NHB	1
HQ6025	HQ6025KH5, HQ6025LH5, HQ6025NH5, HQ6025RH5	4
L4X8E	L4X8E3, L4X8E5, L4X8E6, L4X8E8	4

Table list of all devices included in this library (cont.)

Device Family	Example symbol names	No. of symbols
L6X8E	L6X8E3, L6X8E5, L6X8E6, L6X8E8	4
L0103	L0103DE, L0103DT, L0103ME, L0103MT, L0103NE ...	6
L0107	L0107DE, L0107DT, L0107ME, L0107MT, L0107NE ...	6
L0109	L0109DE, L0109DT, L0109ME, L0109MT, L0109NE ...	6
L401E	L401E3, L401E5, L401E6, L401E8	4
L601E	L601E3, L601E5, L601E6, L601E8	4
L4004	L4004D3, L4004D5, L4004D6, L4004D8, L4004L3 ...	12
L4006	L4006D5, L4006D6, L4006D8, L4006L5, L4006L6 ...	12
L4008	L4008D6, L4008D8, L4008L6, L4008L8, L4008R6 ...	8
L6004	L6004D3, L6004D5, L6004D6, L6004D8, L6004L3 ...	12
L6006	L6006D5, L6006D6, L6006D8, L6006L5, L6006L6 ...	12
L6008	L6008D6, L6008D8, L6008L6, L6008L8, L6008R6 ...	8
LJ4004	LJ4004D8, LJ4004V8	2
LJ4006	LJ4006D8, LJ4006V8	2
LJ6004	LJ6004D8, LJ6004V8	2
LJ6006	LJ6006D8, LJ6006V8	2
LX803	LX803DE, LX803DT, LX803ME, LX803MT	4
LX807	LX807DE, LX807DT, LX807ME, LX807MT	4
MAC4	MAC4DCM, MAC4DCMT, MAC4DCN, MAC4DCNT	4
MAC08	MAC08BT1, MAC08MT1	2
MAC8	MAC8DG, MAC8MG, MAC8NG, MAC8SDG, MAC8S...	6
MAC9	MAC9DG, MAC9MG, MAC9NG	3
MAC12	MAC12D, MAC12M, MAC12N, MAC12SM, MAC12SN	5
MAC15	MAC15-8G, MAC15-10G, MAC15A6G, MAC15A8G ...	8
MAC97	MAC97A8	1
MAC228	MAC228A4, MAC228A6, MAC228A8, MAC228A10	4
MCR8	MCR8MG, MCR8NG	2
Q4X8E	Q4X8E3, Q4X8E4	2
Q6X8E	Q6X8E3, Q6X8E4	2
Q401E	Q401E3, Q401E4	2
Q601E	Q601E3, Q601E4	2
Q4004	Q4004D3, Q4004D4, Q4004L3, Q4004L4, Q4004R3 ...	8
Q4006	Q4006DH3, Q4006DH4, Q4006L4, Q4006LH3 ...	12
Q4008	Q4008DH3, Q4008DH4, Q4008L4, Q4008LH4 ...	12
Q4010	Q4010L4, Q4010L5, Q4010LH5, Q4010N4 ...	9
Q4015	Q4015L5, Q4015N5, Q4015R5	3
Q4016	Q4016LH2, Q4016LH3, Q4016LH4, Q4016NH2 ...	12
Q4025	Q4025K6, Q4025L6, Q4025LH5, Q4025N5 ...	9
Q4040	Q4040K4, Q4040K5, Q4040K7, Q4040KH6	4
Q6004	Q6004D3, Q6004D4, Q6004L3, Q6004L4, Q6004R3 ...	8
Q6006	Q6006DH3, Q6006DH4, Q6006L5, Q6006LH3 ...	12
Q6008	Q6008DH3, Q6008DH4, Q6008L5, Q6008LH4 ...	12
Q6010	Q6010L4, Q6010L5, Q6010LH5, Q6010N4 ...	9

Table list of all devices included in this library (cont.)

Device Family	Example symbol names	No. of symbols
Q6015	Q6015L5, Q6015N5, Q6015R5	3
Q6016	Q6016LH2, Q6016LH3, Q6016LH4, Q6016LH6 ...	12
Q6025	Q6025K6, Q6025L6, Q6025LH5, Q6025N5 ...	9
Q6040	Q6040K4, Q6040K5, Q6040K7, Q6040KH6	4
Q8004	Q8004D3, Q8004D4, Q8004L3, Q8004L4, Q8004R3 ...	8
Q8006	Q8006DH4, Q8006L5, Q8006LH4, Q8006N5 ...	8
Q8008	Q8008DH4, Q8008L5, Q8008LH4, Q8008N5 ...	8
Q8010	Q8010L4, Q8010L5, Q8010LH5, Q8010N4 ...	9
Q8015	Q8015L5, Q8015N5, Q8015R5	3
Q8016	Q8016LH2, Q8016LH3, Q8016LH4, Q8016LH6 ...	12
Q8025	Q8025K6, Q8025L6, Q8025LH5, Q8025N5 ...	9
Q8040	Q8040K3, Q8040K4, Q8040K5, Q8040K7 ...	5
QJ4004	QJ4004D3, QJ4004D4, QJ4004V3, QJ4004V4	4
QJ4006	QJ4006DH2, QJ4006DH3, QJ4006DH4, QJ4006VH2 ...	6
QJ6004	QJ6004D3, QJ6004D4, QJ6004V3, QJ6004V4	4
QJ6006	QJ6006DH2, QJ6006DH3, QJ6006DH4, QJ6006VH2 ...	6
QK004	QK004D4, QK004L4, QK004R4, QK004V4	4
QK006	QK006LDH4, QK006L5, QK006LH4, QK006N5 ...	8
QK008	QK008DH4, QK008L5, QK008LH4, QK008N5 ...	8
QK010	QK010L4, QK010L5, QK010LH5, QK010N4 ...	9
QK015	QK015L5, QK015N5, QK015R5	3
QK016LH2	QK016LH2, QK016LH3, QK016LH4, QK016LH6 ...	12
QK025	QK025K6, QK025L6, QK025N5, QK025NH6 ...	6
QK040	QK040K4, QK040K7, QK040KH6	3
T405	T405-600B, T405-600H, T405-600T, T405-600W ...	7
T410	T410-600B, T410-600H, T410-600T, T410-600W ...	8
T435	T435-600B, T435-600H, T435-600T, T435-600W ...	9
T810	T810-600B, T810-600G, T810-800B	3
T835	T835-600G, T835-600H, T835-800G	3
T835T	T835T-8T	1
T850	T850-600G, T850-800G	2
T1010H	T1010H-6G, T1010H-6T	2
T1035H	T1035H-6G, T1035H-6I, T1035H-6T	3
T1050H	T1050H-6G, T1050H-6I, T1050H-6T	3
T1205	T1205-600G	1
T1210	T1210-6G, T1210-800G	2
T1235	T1235-600G, T1235-800G	2
T1235H	T1235H-6H, T1235H-6I, T1235H-6T	3
T1250	T1250-600G	1
T1250H	T1250H-6G, T1250H-6I, T1250H-6T	3
T1610	T1610-600G, T1610-800G	2
T1610H	T1610H-6T	1
T1610T	T1610T-6I	1

Table list of all devices included in this library (cont.)

Device Family	Example symbol names	No. of symbols
T1620T	T1620T-6I, T1620T-8I	2
T1635	T1635-600G, T1635-800G	2
T1635H	T1635H-6G, T1635H-6I, T1635-6T	3
T1635T	T1635T-6I, T1635T-8I	2
T1650	T1650-600G	1
T1650H	T1650H-6G, T1650H-6I, T1650H-6T	3
T2035H	T2035H-6G, T2035H-6I, T2035H-6T	3
T2050H	T2050H-6G, T2050H-6I, T2050H-6T	3
T2535	T2535-600G, T2535-800G	2
T3035H	T3035H-6G, T3035H-6I, T3035H-6T	3
T3050H	T3050H-6G, T3050H-6I, T3050H-6T	3
TPDV825	TPDV825RG	1
TPDV840	TPDV840RG	1
TPDV1025	TPDV1025RG	1
TPDV1040	TPDV1040RG	1
TPDV1225	TPDV1225RG	1
TPDV1240	TPDV1240RG	1
TXDV812	TXDV812RG	1
TXDV1212RG	TXDV1212RG	1
Z0103	Z0103MA, Z0103MN, Z0103NA, Z0103NN	4
Z0107	Z0107MA, Z0107MN, Z0107NA, Z0107NN	4
Z0109	Z0109MA, Z0109MN, Z0109NA, Z0109NN	4
Z0110	Z0110MA, Z0110MN, Z0110NA, Z0110NN	4

3. Footprint libraries

To mount components to a PCB, specific collections of pads (copper areas without soldermask coverage) and holes (for THT packages) need to be included in the design. Each component package type needs a specific Land Pattern or, as it is called in KiCad, a Footprint.

Alternate KiCad Library provides over 9300 footprints distributed across 57 libraries.

AKL contains footprints for:

- capacitors,
- crystal resonators and oscillators,
- diodes and rectifier bridges,
- inductors and ferrite beads,
- fuses and fuse holders,
- wire jumpers,
- IC packages (DIP, SO, QFN, DFN, QFP, PLCC etc.),
- transistor packages (SOT, TO etc.),
- resistors and potentiometers.

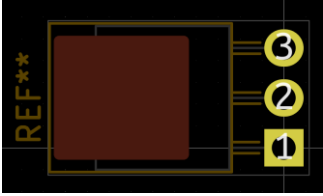

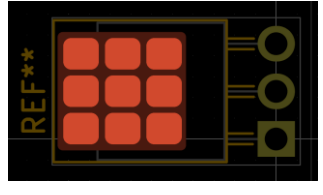
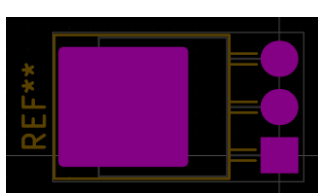
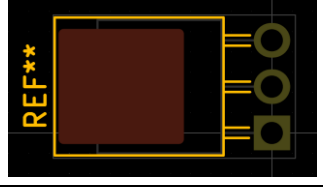
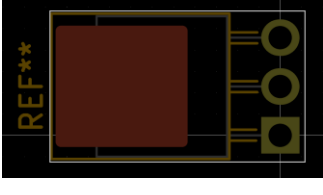
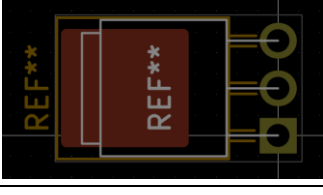
All footprints are either improved versions of the standard KiCad footprints or completely made from scratch with emphasis on PCB clarity both on the silkscreen and fabrication layers.

Section 3.1 introduces footprints by going over their base components, shows examples of THT and SMD footprints and explains their features. It explains how PCB fabrication capabilities might restrict the use of certain footprints, shows how to edit footprint text fields and how to review or add 3D models. Lastly the section explains different footprint library variants, lists their advantages, disadvantages and recommendations.

Further sections (3.2 to 3.28) review each footprint library by listing footprint count, library variants and names/naming conventions of every footprint included in the library.

3.1. Footprint Library Features

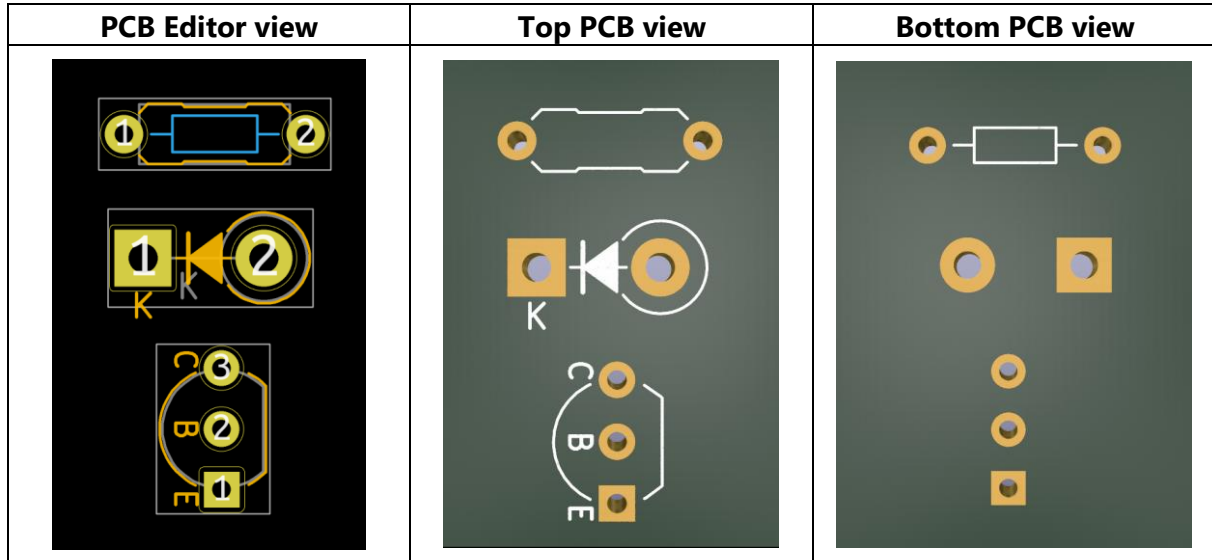
3.1.1. Typical Footprint Components

Footprint part	Description	Image
Through-Hole Pads	Copper pads included on all copper layers (this behavior can be changed in pad properties) with plated through hole (PTH) in the center. Used to mount THT components. Number of the pad corresponds to a pin number on a symbol.	
SMD Pads	Copper pads included on only one copper layer without any holes (some footprints have thermal vias included). Number of the pad corresponds to a pin number on a symbol.	
Solder Paste Aperture	Openings in solder paste stencil. During automated assembly areas marked on this layer will be covered by solder paste. Standard SMD pads have solder paste apertures of the same size as the pad by default and need to have solder paste clearance input by the user in the board setup window.	
Soldermask Windows	Openings in soldermask (solder resist) exposing solderable features on the PCB. All pads have soldermask openings of the same size. Soldermask clearance must be entered into the board setup by the user according to PCB supplier capabilities.	
Legend (Silkscreen)	PCB legend or silkscreen (typically white lines/text on the PCB) contains reference designators, component outlines (THT parts) or courtyards (SMD parts) and mounting direction indicators if applicable.	
Courtyard	Courtyard is a shape around a footprint denoting a minimum component to component clearance. If courtyards of two components intersect, a DRC error will be generated. Typically, courtyard extends 0.25mm from nearest pad or component outline.	
Fabrication layer	Fabrication layer contains reference designator, component outline and mounting direction marks if applicable. This layer is used to generate assembly drawings.	

3.1.2. Through Hole (THT) Footprints

Through-hole components have leads intended to go through holes in the PCB and then soldered on the other side.

THT Footprints and corresponding PCB views.



Through-Hole Pads:

Set of Plated Through Holes of sufficient spacing and diameters to ensure that the component can be mounted to a board. Copper pads around the holes are typically round or oval, with pad number 1 being square or rectangular. Some footprints have versions with enlarged pads (name contains "BigPads" keyword).

AKL symbols use footprint versions with larger pads where applicable.

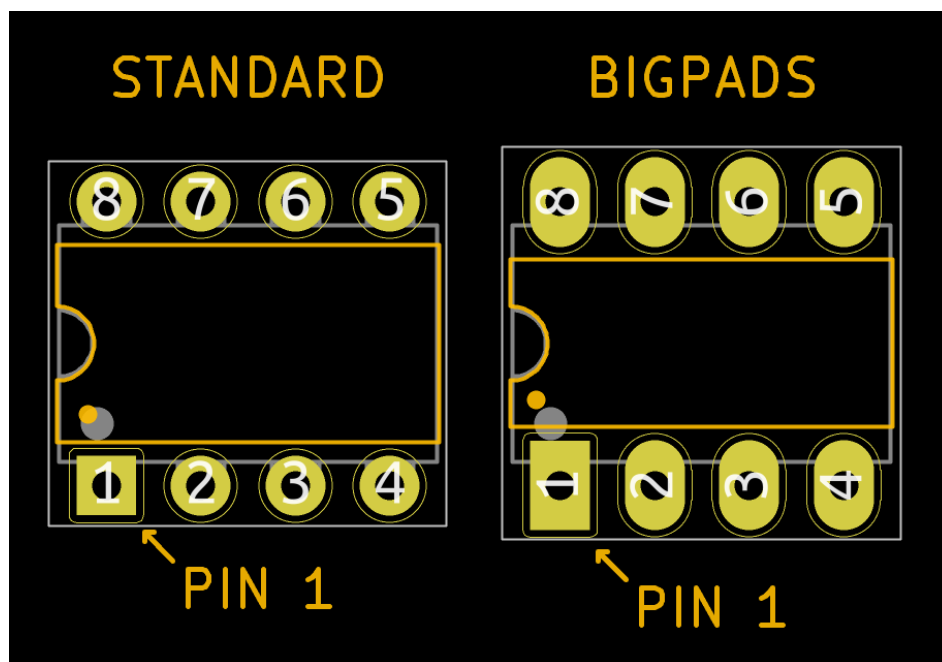


Figure 3.1 DIP-8 footprint with standard pads (left) and enlarged pads (right).

Silkscreen legend:

Shows the component outline, reference designator, polarity or pin 1 marks and optionally symbol of the component either on the same layer as the part is mounted or both layers. Double-sided silkscreen legend is available only for select footprints (footprint libraries with “Double” keyword in the name). AKL symbols don’t use double-sided silkscreen by default, you need to change the footprints manually.

Some footprints have pin markings included on the silkscreen legend (example: E B C marks near transistor pins). AKL symbols have the correct pin-marking footprint variant pre-assigned if available. You can change the pin markings by changing the footprint manually.

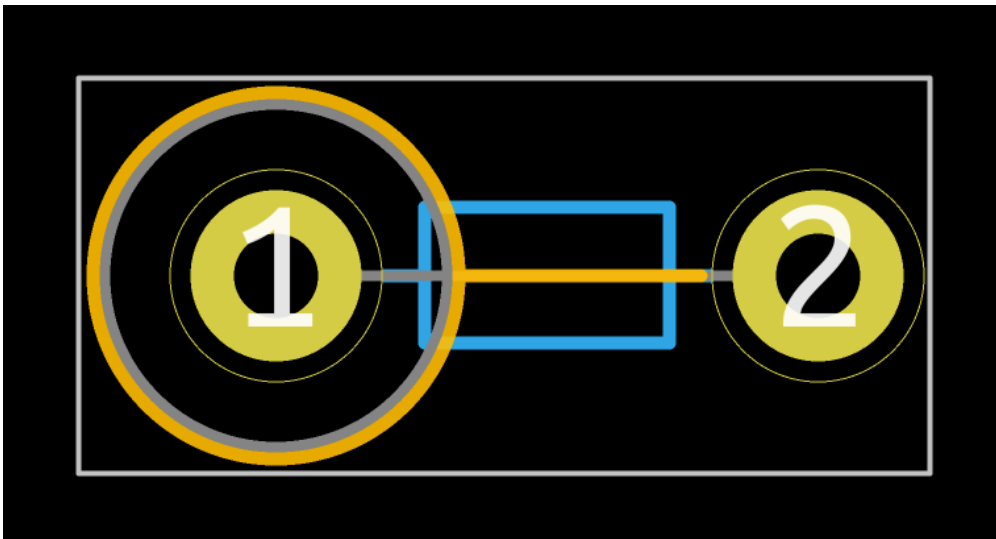


Figure 3.2. Vertically mounted axial resistor footprint with double-sided silkscreen. Top silkscreen (yellow) contains just the component outline and bottom silkscreen (light blue) contains a resistor symbol.

Fabrication layer:

Contains component outline, reference designator and polarity/mounting direction marks. It’s used to generate assembly drawings. “Value” text is hidden on AKL footprints by default for clarity reasons, you need to re-enable it manually if you need to include component value.

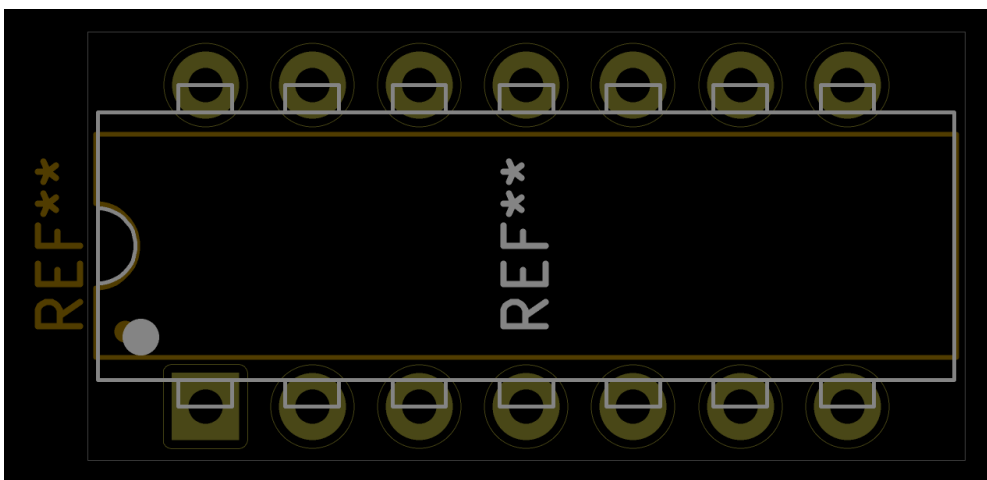


Figure 3.3. DIP-14 fabrication layer view.

Courtyard:

Typically has a form of rectangle extending 0.25mm away from copper pads or any part of the component outline. Courtyard is not tuned to any specific insertion machines or assembly houses and is primarily meant to prevent component collisions.

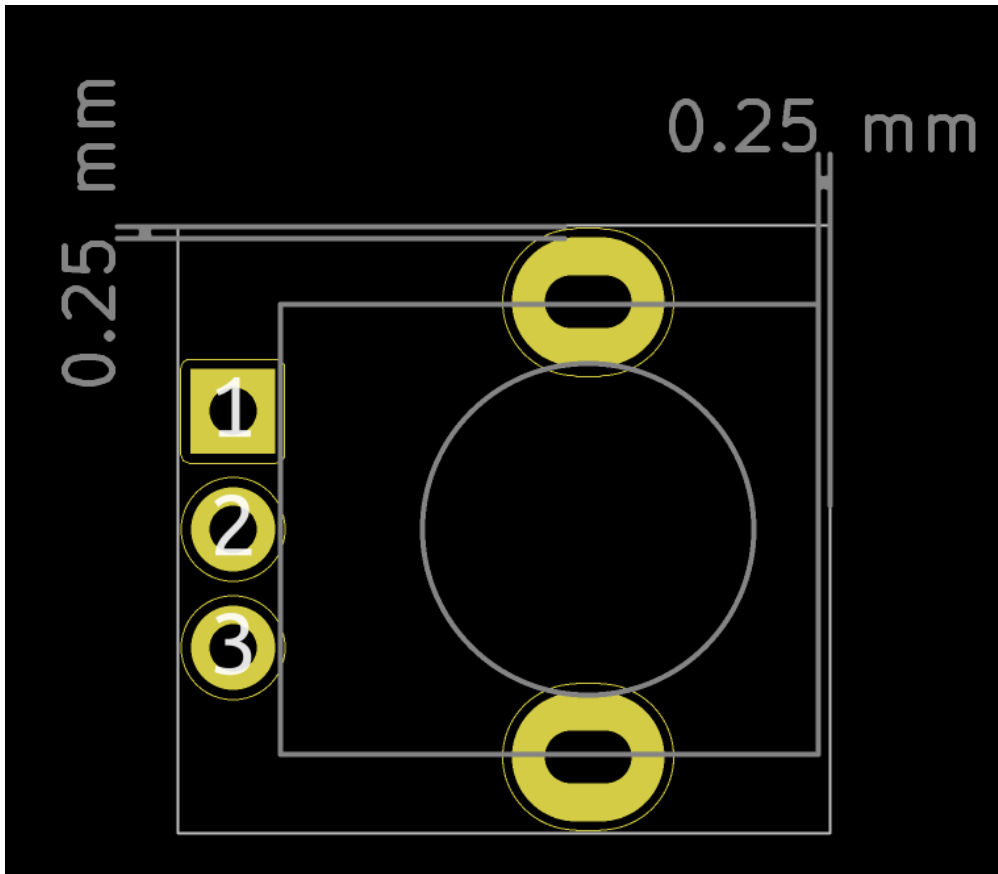
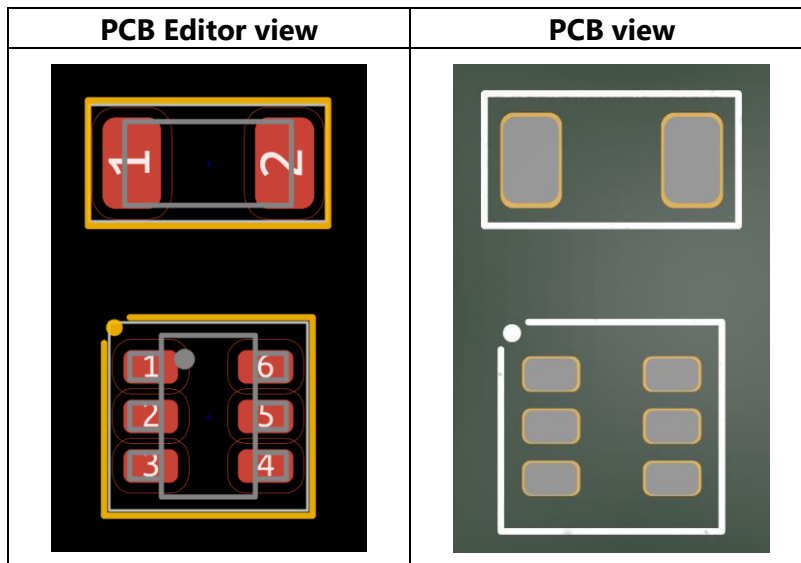


Figure 3.4. Potentiometer footprint with distance from pad to courtyard and fabrication outline to courtyard shown (silkscreen layer hidden for clarity).

3.1.3. Surface Mount (SMD) Footprints

SMD components have leads or pads intended to be soldered to the surface of the PCB.

SMD Footprints and corresponding PCB view.



SMD Pads:

Set of exposed copper features of specific size, shape and spacing to ensure that a component can be mounted to a board. All standard pads are rounded rectangles with corner radius of 0.25mm or 25% (whichever is smaller). Rounded pads reduce risks of incomplete solder coverage without compromising electrical and mechanical strength of the connection. Solder paste stencils are also typically based on the pad shape and rounded corners make the paste application more reliable and uniform.

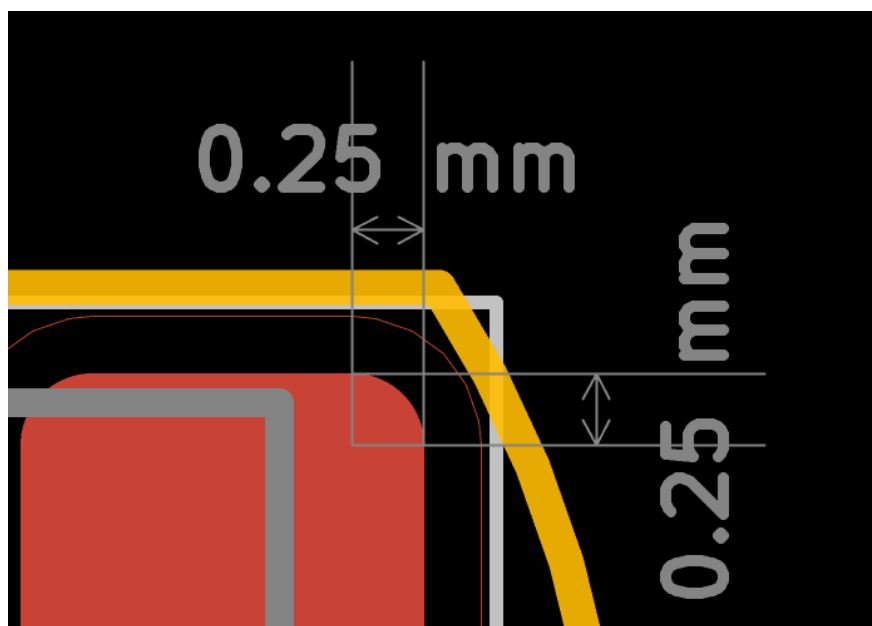


Figure 3.5. Closeup of an SMD pad rounded corner, with corner radius indicated.

Exposed (Heatsink) Pad solder paste apertures:

Solder paste used during reflow soldering can generate significant amount of gas from evaporating fluxes. Some components have large-area heatsink tabs that use the PCB copper planes to dissipate heat. During soldering, some of resulting gas might be trapped under the part forming a bubble or a void. These voids can lead to increased and unreliable thermal resistance between the part and the PCB or can even prevent the signal pins from making contact with the PCB.

Solder paste stencil openings used for these parts need to be modified to leave escape channels for the resulting gasses. AKL footprints divide the pad into an array of rectangular solder paste apertures (openings in the stencil) that leave channels for escaping gasses, increasing the reliability of the joint.

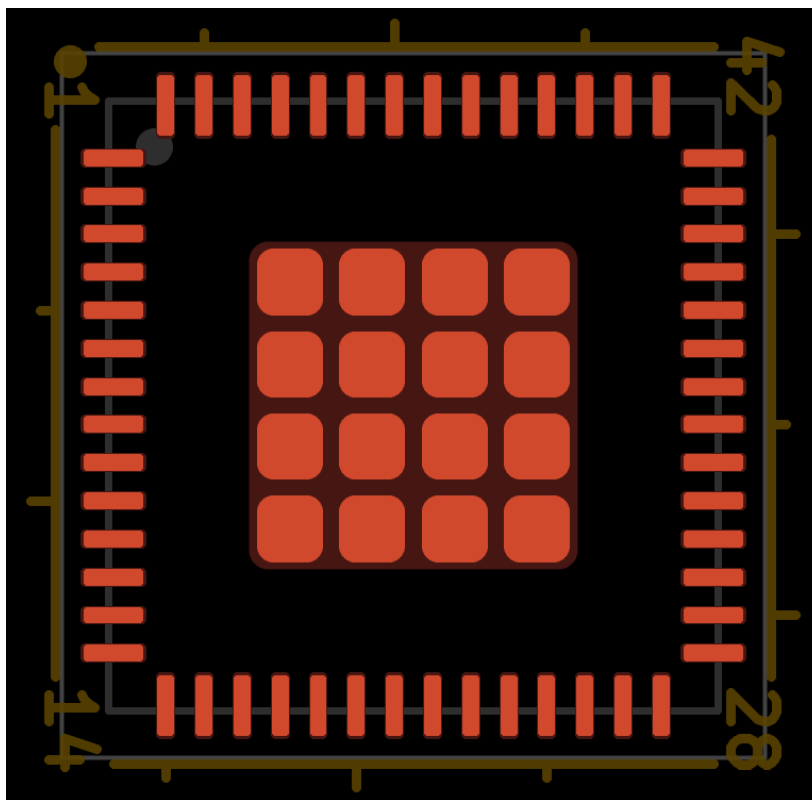


Figure 3.6. QFP footprint with visible solder paste apertures on the heatsink pad.

Thermal (Heatsink) Vias:

Small diameter ($\leq 0.3\text{mm}$) vias present on select footprints (“ThermalVias” keyword in the footprint name) for parts with exposed thermal tab on the bottom of the package. Vias act as a thermal bridge between the top layer thermal pad and copper planes on other layers. Exposed copper pad is also present on the bottom layer, where all thermal vias terminate.

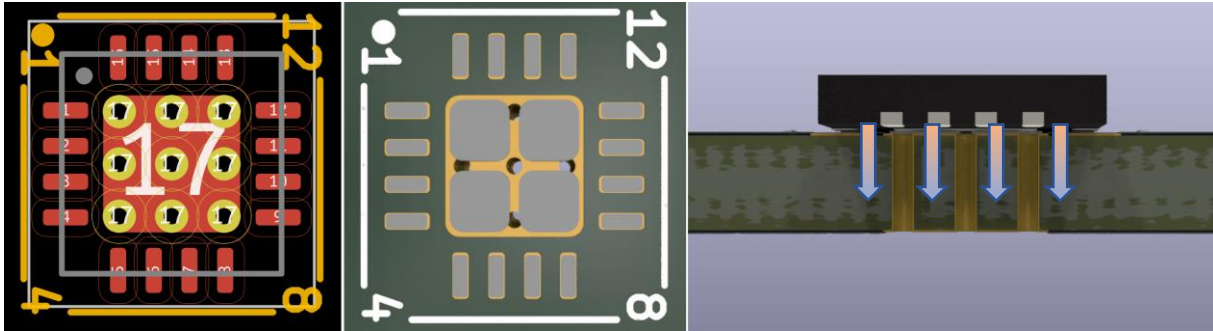


Figure 3.7. QFN-16 footprint (left), corresponding PCB view (center) and a cutaway of the PCB showing the thermal vias and the direction of heat transfer.

Thermal vias can potentially wick solder away from under the part or otherwise contribute to appearance of voids inside the solder joint during reflow soldering. This phenomenon can be mitigated by using Plating Over Filled Via (POFV) technology, potentially raising cost of the PCB.

All thermal vias are PTH pads with “Heatsink” fabrication property. If you need to use POFV for thermal vias, communicate it with your PCB fabricator as that information is not included in fabrication output files (Gerber).

During hand-assembly, soldering the bottom-side exposed pad is achievable by applying soldering iron to the bottom side of the PCB and flowing solder through the thermal vias. Bottom pad solder joint is still at risk of increased void presence and the assembly needs to be temperature-tested to ensure that the part is not overheating.

Better solutions for thermal vias in EP footprints are coming in future AKL updates.

Silkscreen Legend:

Typically includes a rectangular outline around the component that acts as a sort-of secondary courtyard that snaps to 0.1mm grid. Silkscreen outline is further away than 0.25mm (standard courtyard) from component outlines or exposed copper pads. Silkscreen legend also contains additional features indicating polarity or mounting direction of the component. Some large IC footprints contain pin number indicators allowing for easier pin identification during testing or servicing.

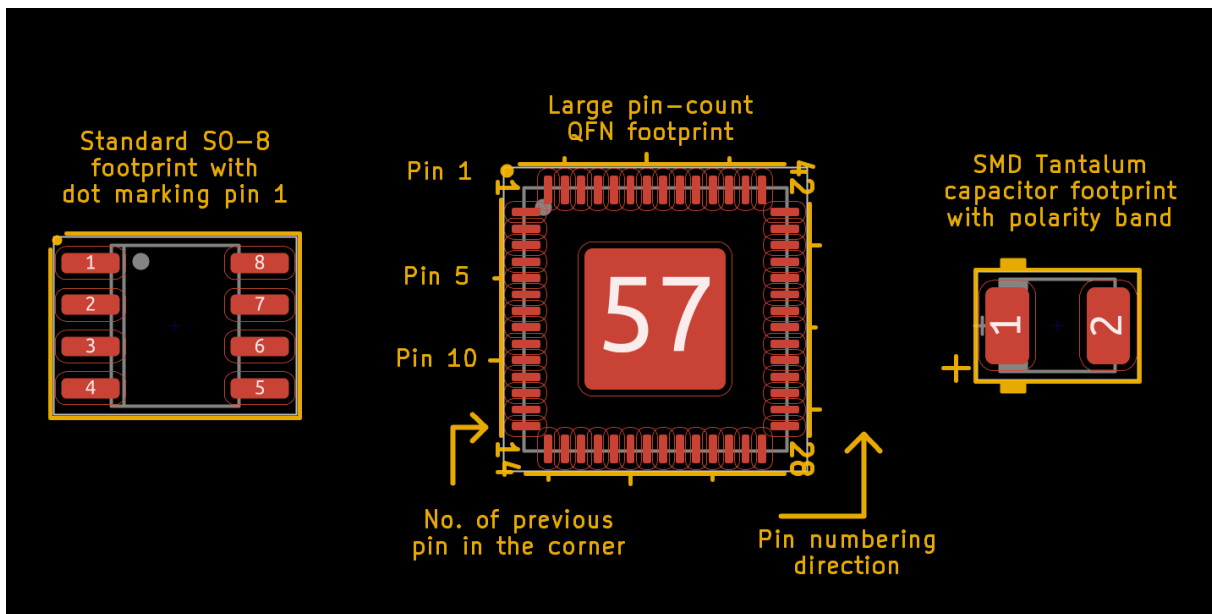


Figure 3.8. Collection of footprints with polarity or orientation marks on the silkscreen legend.

Fabrication layer:

Contains component outline, reference designator and polarity/mounting direction marks. It's used to generate assembly drawings. "Value" text is hidden on AKL footprints by default for clarity reasons, you need to re-enable it manually if you need to include component value.

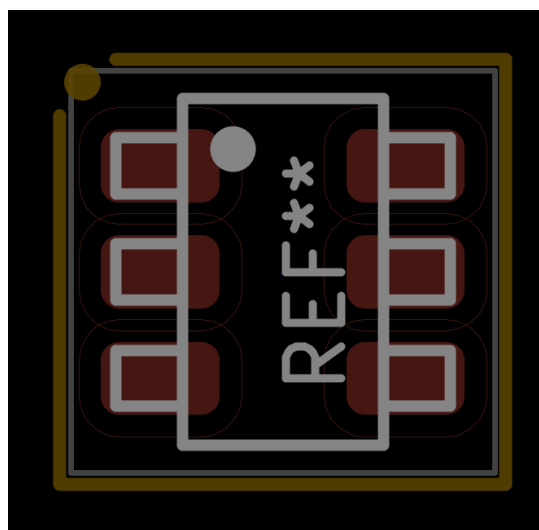


Figure 3.9. SOT-23-6 fabrication layer view.

Courtyard:

Typically has a form of rectangle 0.25mm away from copper pads or any part of the component outline. Courtyard is not tuned to any specific pick&place machines or assembly houses and is primarily meant to prevent component collisions.

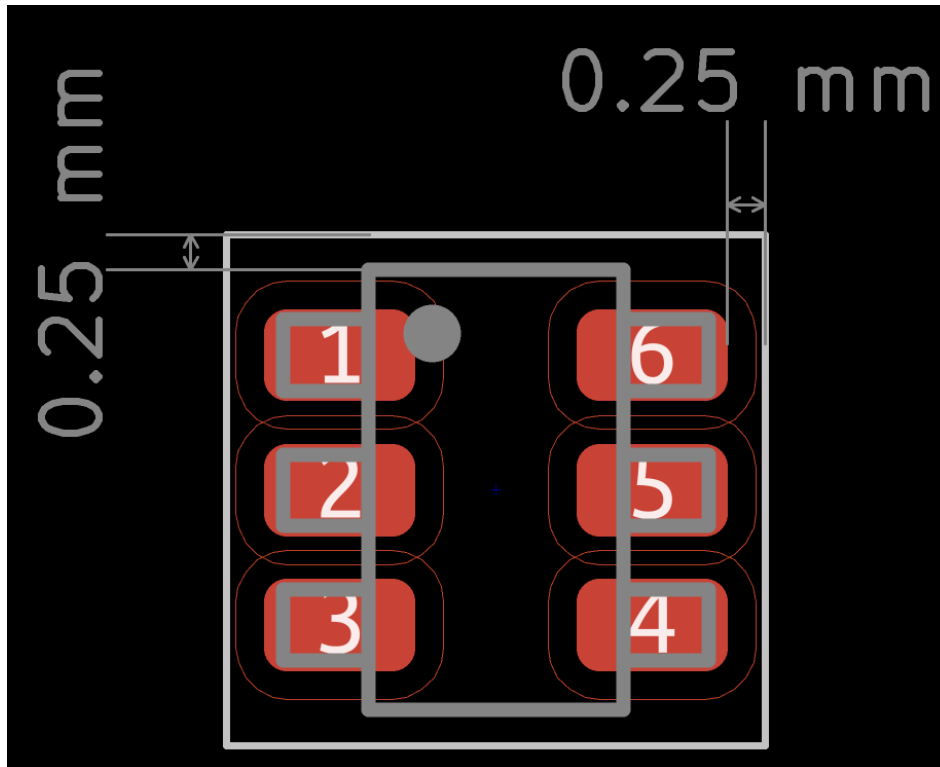


Figure 3.10. SOT-23-6 footprint with distance from pad to courtyard and fabrication outline to courtyard shown (silkscreen layer hidden for clarity).

Please note that the secondary courtyard on the silkscreen layer is always larger than the actual courtyard.

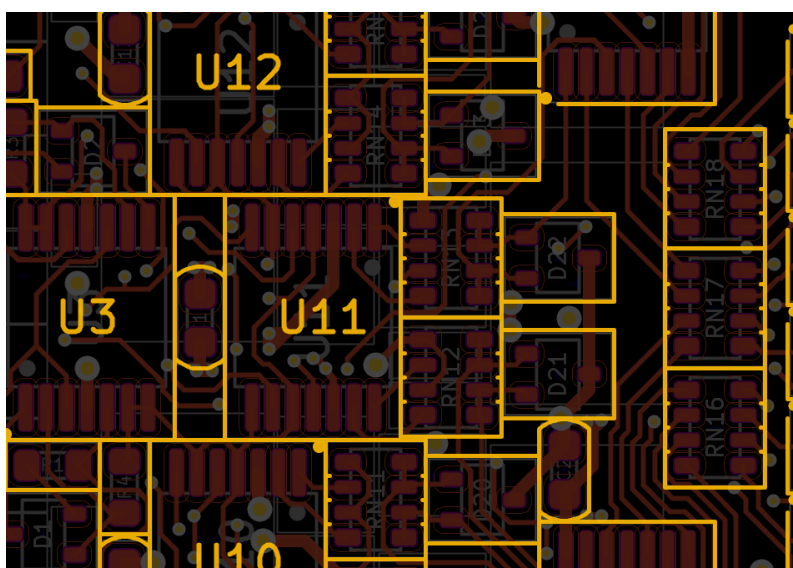


Figure 3.11. Layout example showing that silkscreen secondary courtyard that snaps to 0.1mm grid leads to even and efficient component placement.

3.1.4. Footprint Minimum Clearances

Part and package choices have a huge effect on the minimal clearances and hole sizes used during the PCB manufacturing. Any footprints used in the design need to comply with the chosen PCB fabricator capabilities.

Footprint pin or pad pitch is the main factor behind PCB clearance requirements. Devices with finer pitch will require smaller copper to copper clearance, hole to hole clearance, soldermask web width or annular ring. Small copper to copper distance between pads might require the entire pad row to be exposed if soldermask minimum web requirement is not met.

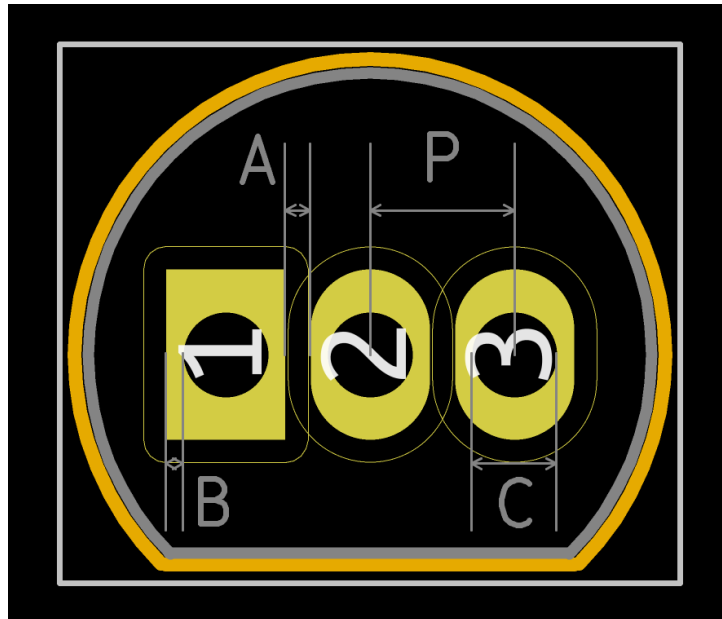


Figure 3.12. THT footprint with pin pitch (P), copper to copper clearance (A), minimum annular ring (B) and hole diameter (C) indicated.

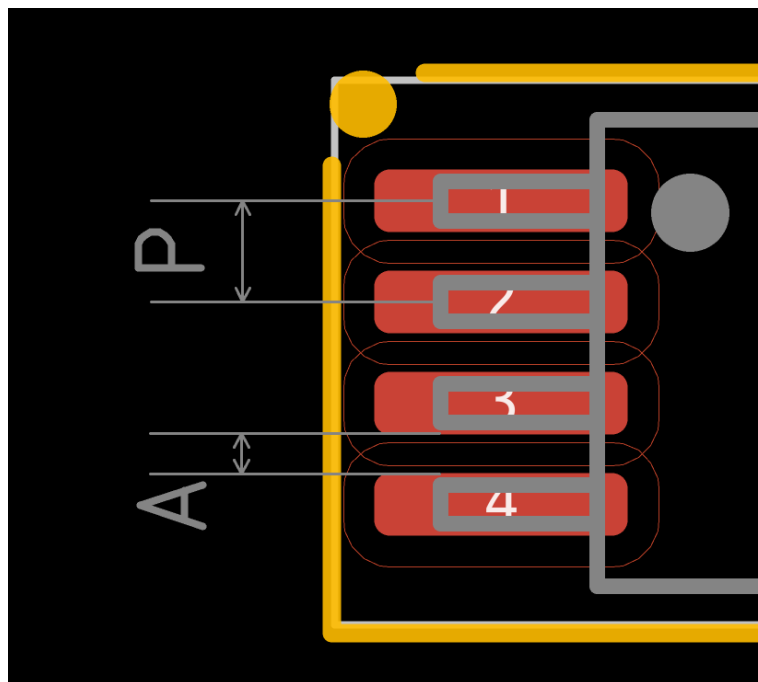


Figure 3.13 SMD footprint with pin pitch (P) and copper to copper clearance indicated.

3.1.5. Footprint Text

AKL footprints include text strings on silkscreen and fabrication layers. Some text is enabled and visible by default (reference designators, pin indicators), while other is hidden (component values).

To enable or disable certain text fields, select the footprint and open **Footprint Properties** ("E" hotkey). In the popup window you can select which text strings are visible and change their layers as needed.

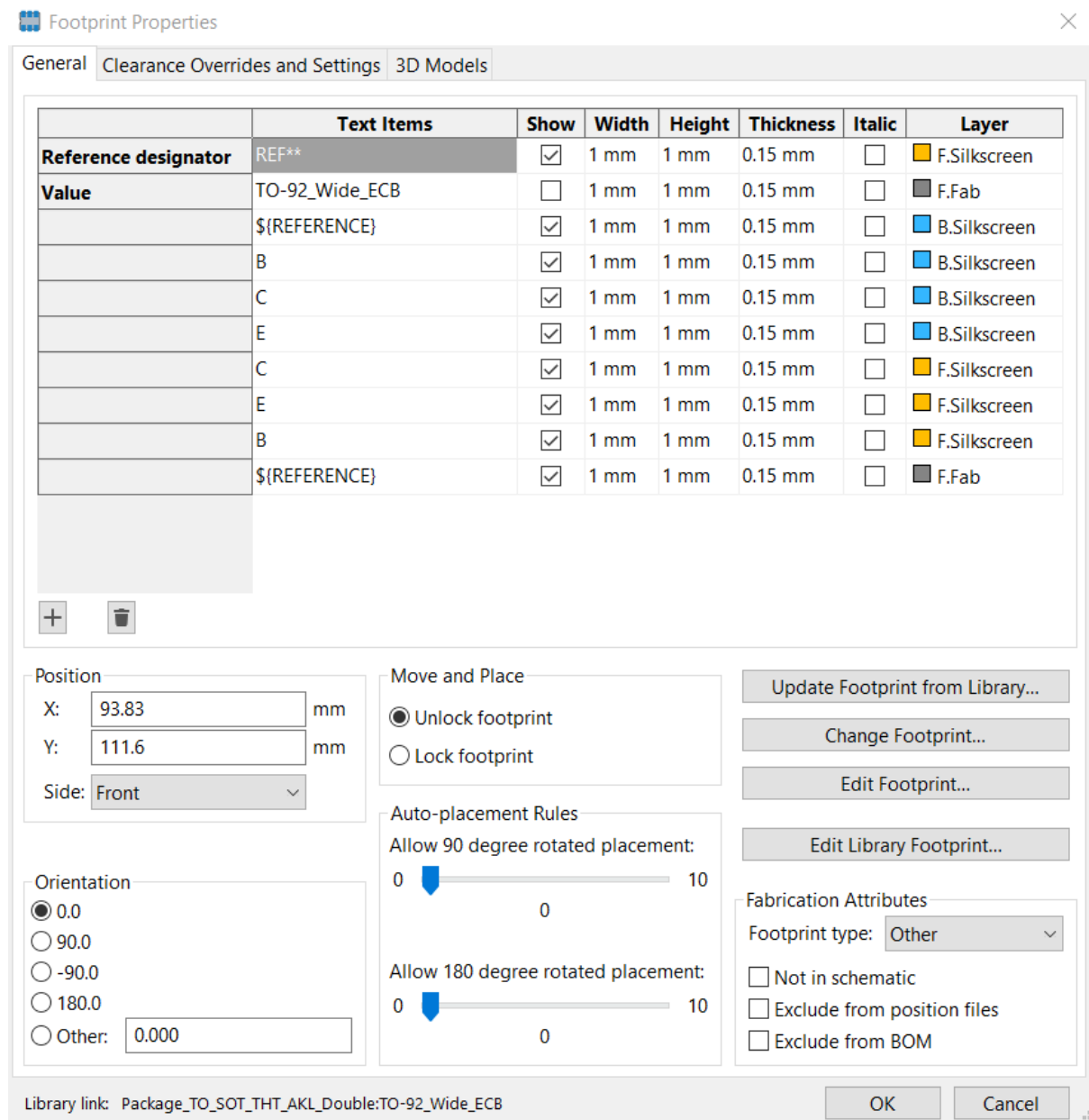


Figure 3.14. Footprint properties window of "TO-92_Wide_ECB" footprint from "TO_SOT_THT_AKL_Double" library. Each text string has its own field and can be easily modified.

3.1.6. 3D Models

Alternate KiCad Library does not provide its own 3D models, but since it is a modified version of the standard KiCad library, it is designed to link to existing 3D models whenever they're available. You can review and modify the 3D model location within **Footprint Properties** either within PCB Editor or Footprint Editor (keep in mind that future updates via Plugin and Content Manager will overwrite any changes you make to the library. Make a copy of the library in a different location to safely apply any changes). To view or edit 3D model references select the "3D Models" tab at the top of the Footprint Properties window.

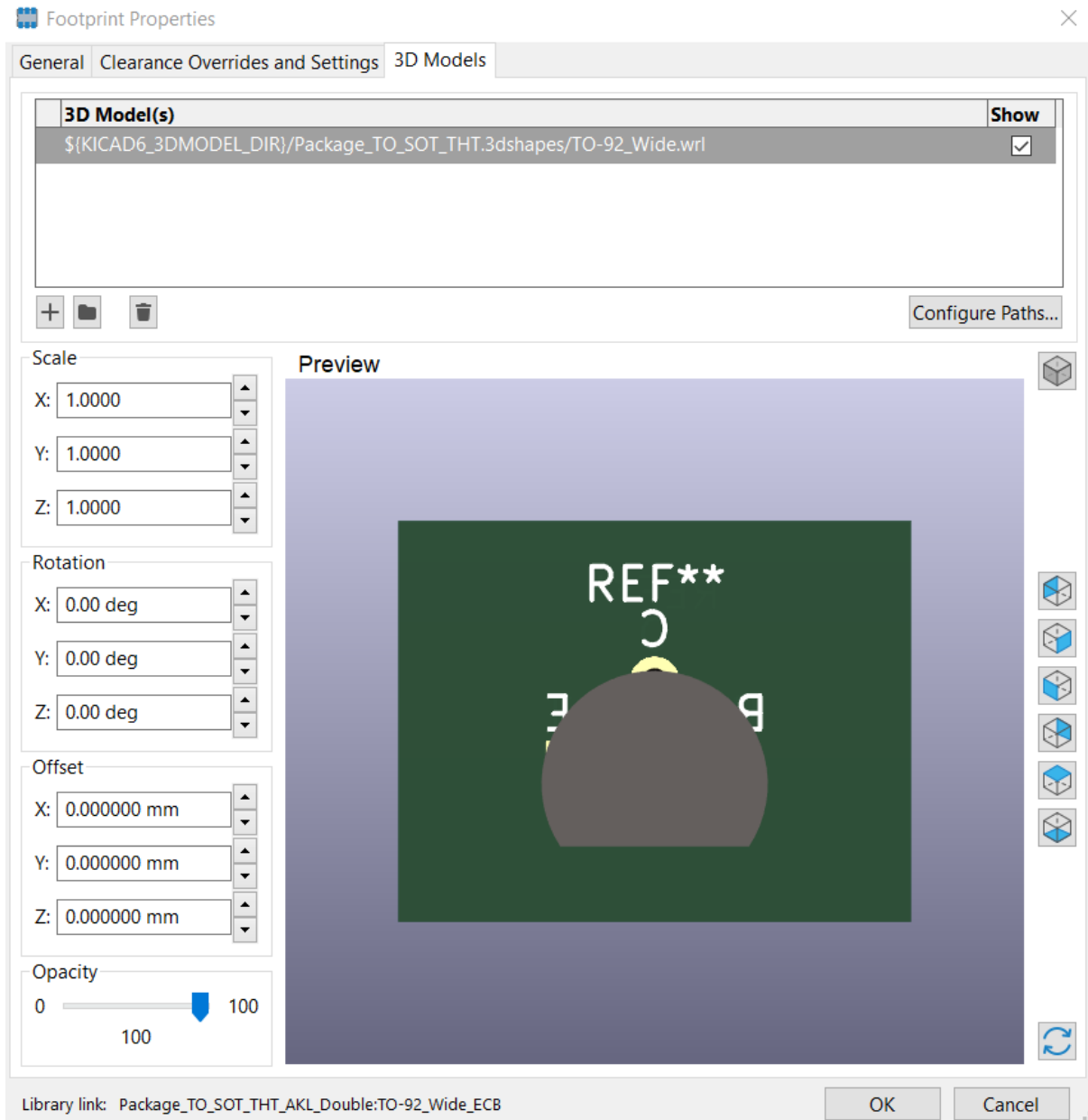


Figure 3.15. Footprint Properties window switched to "3D Models" tab. You can add/edit 3D model's location in the 3D Model(s) table.

3.1.7. Footprint Variants

Alternate KiCad Library often contains many different variants of the same footprint. Some of these variants include complete duplicate libraries with different silkscreen drawings. (Example: “Double” variant of a library has THT footprints with silkscreen markings on both sides of the PCB).

Designer can switch between these footprint variants depending on the required result (Example: PCB uses only THT components and is meant to be easy to troubleshoot – double sided silkscreen is recommended).

Replacing footprints by swapping libraries is relatively easy from the schematic window. Open the “Bulk-edit fields of all symbols in schematic” tool (table icon in the upper right-hand corner) and rename the library reference of a footprint to a desired library variant. Keep in mind that not all footprints might be present in the chosen variant library. After forward annotating changes to the PCB all footprints will be created or replaced as indicated in the table.

The figure shows two screenshots of the 'Symbol Fields Table' dialog box. The top screenshot shows the initial footprint references, and the bottom screenshot shows the edited references. The changes are highlighted with red boxes in the 'Footprint' column.

Field	Show	Group By	Reference	Value	Footprint
Reference	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	> C1, C6, C9	10uF 35V	Capacitor_SMD_AKL:_1206_3216Metric
Value	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	> C2-C5, C7, C8, C10-C18	100nF	Capacitor_SMD_AKL:_0603_1608Metric
Footprint	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	> D1, D2	BAT54SW	Package_TO_SOT_SMD_AKL:SOT-323_SC-70
Datasheet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	D3	RED	LED_THT_AKL:LED_Rectangular_W5.0mm_H2.0mm
			D4	YELLOW	LED_THT_AKL:LED_Rectangular_W5.0mm_H2.0mm

Field	Show	Group By	Reference	Value	Footprint
Reference	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	> C1, C6, C9	10uF 35V	Capacitor_SMD_Handsoldering_AKL:_1206_3216Metric
Value	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	> C2-C5, C7, C8, C10-C18	100nF	Capacitor_SMD_Handsoldering_AKL:_0603_1608Metric
Footprint	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	> D1, D2	BAT54SW	Package_TO_SOT_SMD_AKL:SOT-323_SC-70
Datasheet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	D3	RED	LED_THT_AKL:LED_Rectangular_W5.0mm_H2.0mm
			D4	YELLOW	LED_THT_AKL:LED_Rectangular_W5.0mm_H2.0mm

Figure 3.16. Symbol fields table with initial footprint references (top) and edited footprint references (bottom). Library for the footprints was changed by adding “_Hand soldering” – new footprints will have silkscreen symbols under the parts.

Hand soldering libraries:

Naming:

<Library name>_Hand soldering_AKL

These libraries contain SMD footprints with silkscreen symbols underneath the packages.

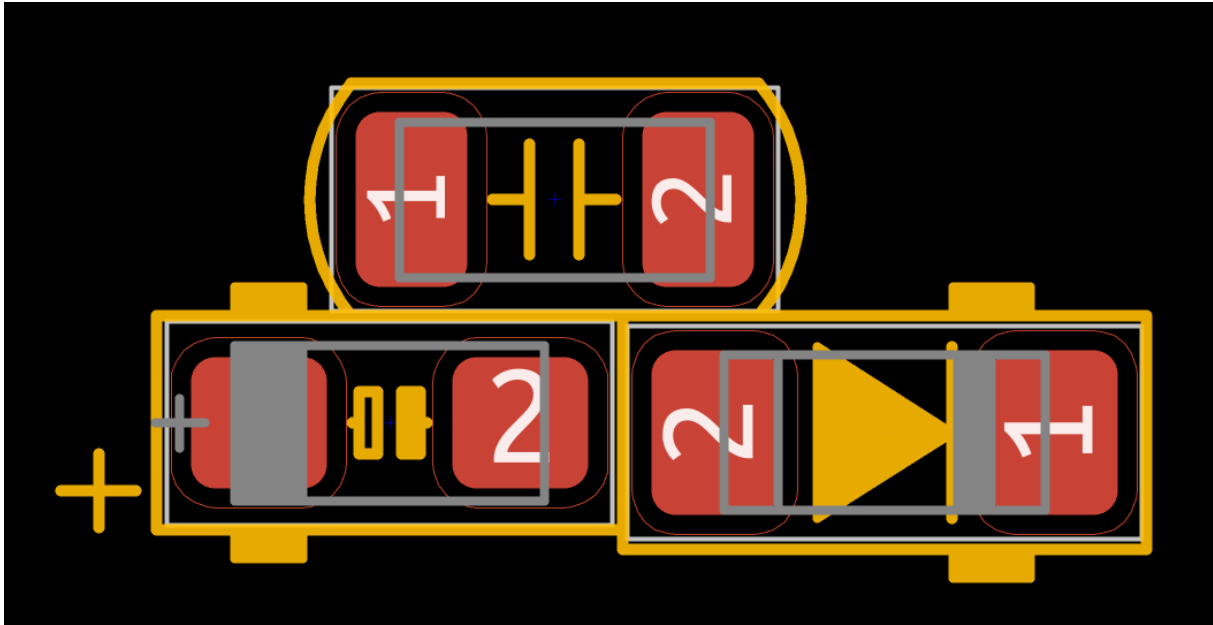


Figure 3.17. "Hand soldering" footprint examples.

Footprints with silkscreen symbols underneath the part bodies provide more clear information about component type and orientation, which might reduce placement errors during hand-assembly.

During reflow soldering height of the silkscreen under the part might lead to the component wobbling side-to-side and causing "tombstoning" (occurrence where a component is pulled into vertical orientation by liquid solder adhesion force on one of the pads). "Hand soldering" footprints are only recommended for prototypes or very low volume production where only hand-assembly is used.

Double-sided libraries:

Naming:

<Library name>_AKL_Double

These libraries contain THT footprints with silkscreen on both sides of the PCB.

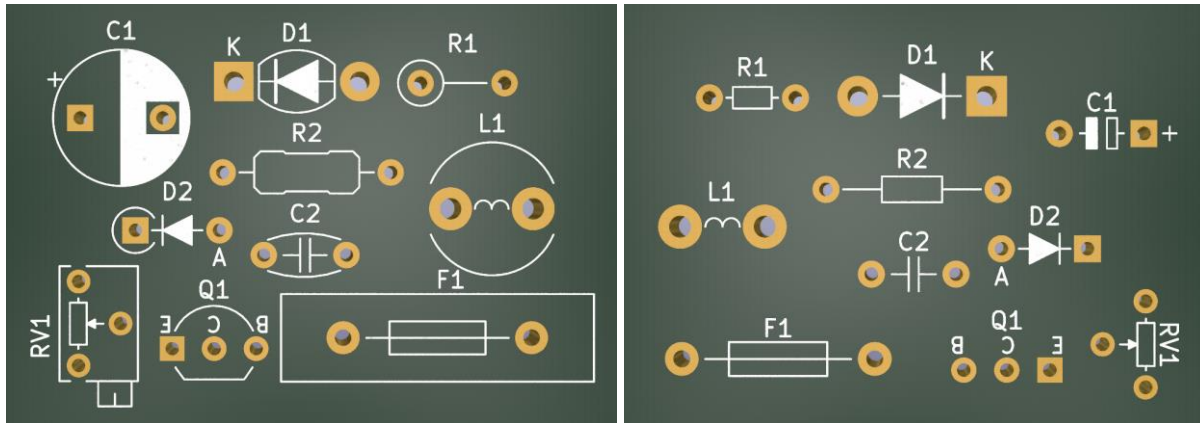


Figure 3.18. "Double" footprint examples. PCB top view (left) and bottom view (right).

Bottom silkscreen layer contains footprint electrical symbol, reference designator and optionally pin indicators. This information helps identify a component while looking at the bottom side of the PCB and is helpful during troubleshooting.

Silkscreen on the bottom side of the PCB might raise costs or potentially take away bottom-side component real estate and it's not recommended for high-density designs.

US-style symbol libraries

Naming:

<Library name>_US_AKL

<Library name>_US_Handsoldering_AKL

<Library name>_US_AKL_Double

Cross-compatible libraries:

<Library name>_AKL and <Library name>_US_AKL

These libraries contain footprints with alternate silkscreen symbols. Cross-compatible libraries have the exact same footprints (name, pads, spacing etc.) with only silkscreen layer being different. One or the other footprint library variants can be omitted during installation process without reducing effective functionality.

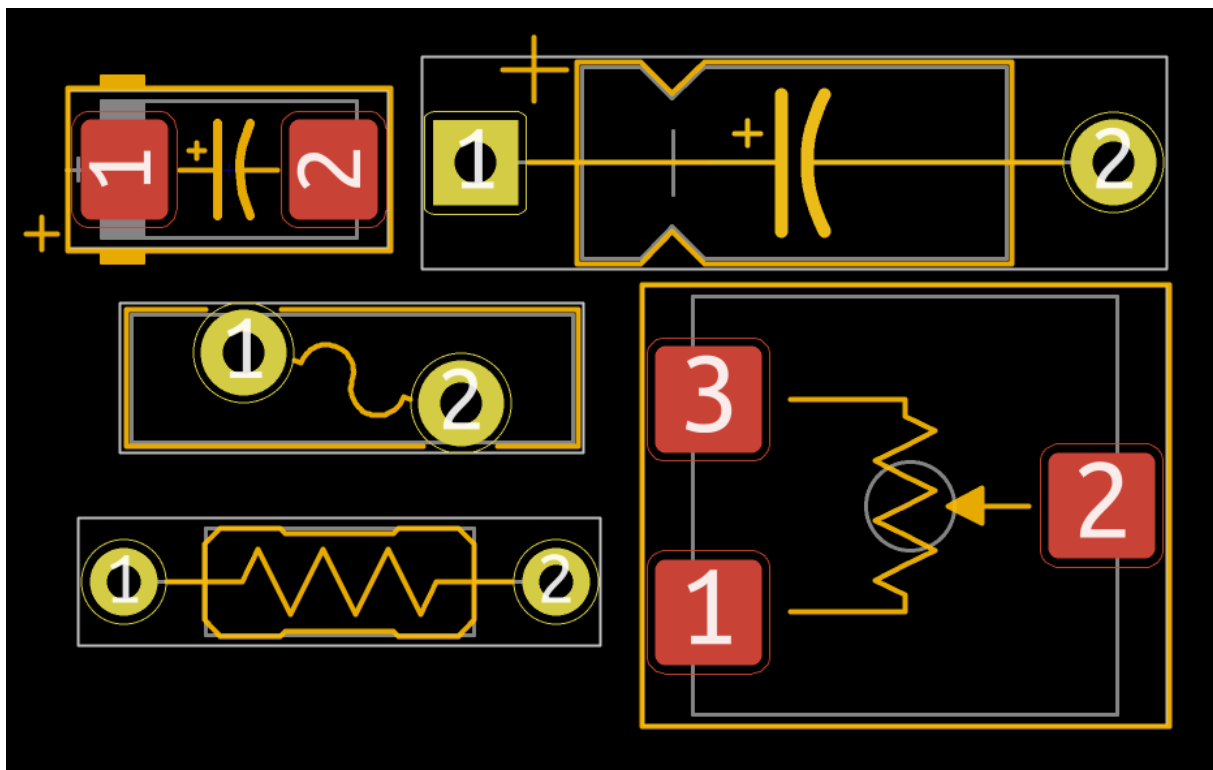


Figure 3.19. "US" library variant footprint examples.

3.2. SMD Capacitor Libraries

These libraries contain footprints for:

- MLCC chip capacitors,
- SMD aluminum polarized and bipolar electrolytic capacitors,
- SMD trimmers and variable capacitors.

Hand soldering library variant contains additional symbols on the silkscreen layer placed under the part.

Hand soldering (US symbol) library variant has additional US - style symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: Capacitor_SMD_AKL	
Footprint count:	102
Hand soldering variant	
Folder name: Capacitor_SMD_Handsoldering_AKL	
Footprint count:	102
Hand soldering variant (US symbol)	
Folder name: Capacitor_SMD_US_Handsoldering_AKL	
Footprint count:	102
Total footprints:	306

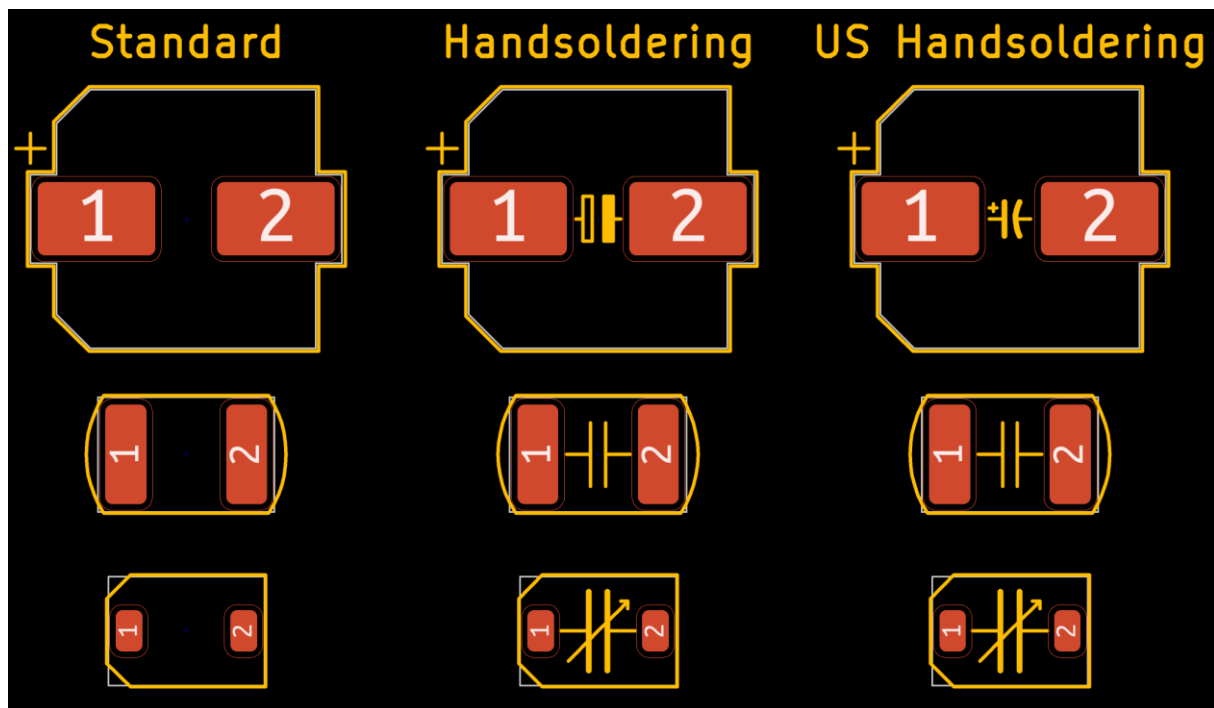


Figure 3.20. Comparison between SMD capacitor footprints from different library variants.

Polarized SMD electrolytic capacitor footprints

Footprint count: 42

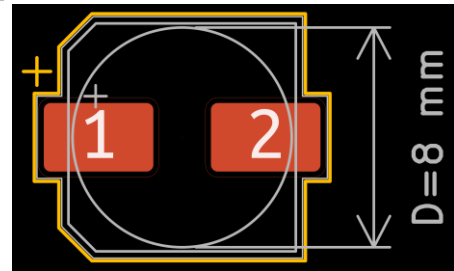
Footprint naming convention:

CP_Elec_<diаметer>x<height>

Name examples:

CP_Elec_5x5.9

CP_Elec_8x6.9



SMD electrolytic capacitor footprint with its diameter indicated.

Bipolar SMD electrolytic capacitor footprints

Footprint count: 9

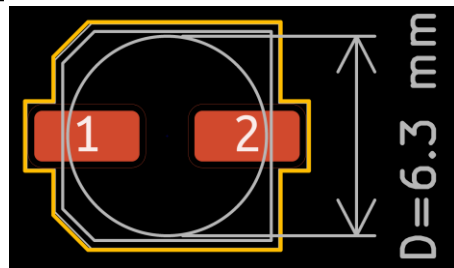
Footprint naming convention:

C_Elec_<diаметer>x<height>

Name examples:

C_Elec_5x5.8

C_Elec_8x6.2



SMD bipolar electrolytic capacitor footprint with its diameter indicated.

SMD multi-layer chip capacitor (MLCC) footprints

Footprint count: 40

Footprint naming convention:

C_<imp. size code>_<metric size code>Metric
(optional: **_Pad<pad width>x<pad length>mm**)

Name examples:

C_0805_2012Metric

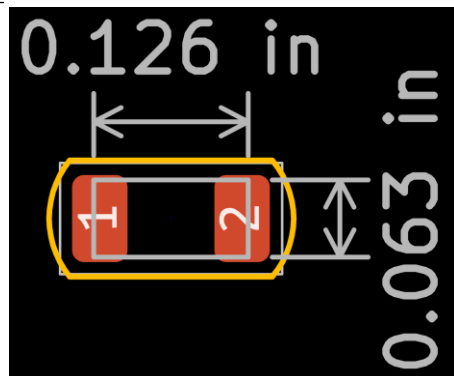
C_0603_1608Metric_Pad1.08x095mm

Imperial size code:

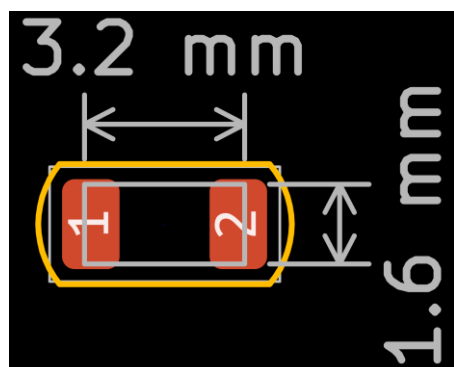
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.01 in. Example: 0805 size code means package length of 0.08 in and width of 0.05 in.

Metric size code:

First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.1 mm. Example: 2012 metric size code means package length of 2 mm and width of 1.2 mm.



MLCC with 1206 imperial size code with length and width of the package indicated.



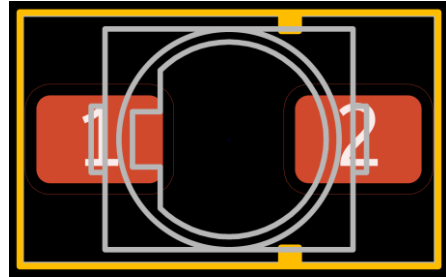
MLCC with 3216 metric size code with length and width of the package indicated.

Murata TZB4-A SMD trimmer footprint

Footprint name:

C_Trimmer_Murata_TZB4-A

Two squares on the silkscreen layer line up with the cutout in the underside of TZB4-A trimmer. If mounting direction is observed, external electrode is connected to pad 2.



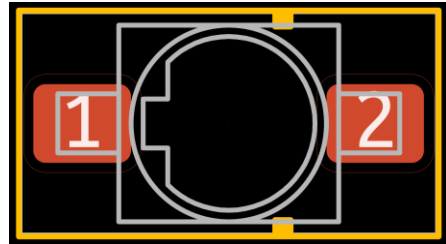
TZB4-A trimmer footprint.

Murata TZB4-B SMD trimmer footprint

Footprint name:

C_Trimmer_Murata_TZB4-B

Two squares on the silkscreen layer line up with the cutout in the underside of TZB4-B trimmer. If mounting direction is observed, external electrode is connected to pad 2.



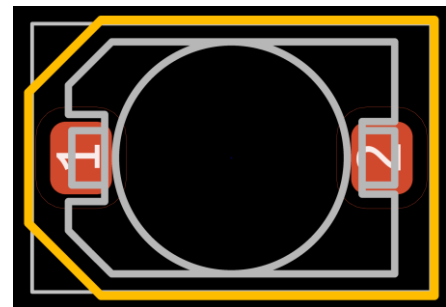
TZB4-B trimmer footprint.

Murata TZC3 SMD trimmer footprint

Footprint name:

C_Trimmer_Murata_TZC3

Slanted outline on the silkscreen layer lines up with the shape of the TZC3 trimmer body. If mounting direction is observed, external electrode is connected to pad 2.



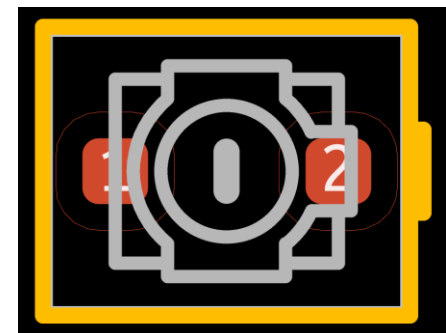
TZC3 trimmer footprint.

Murata TZR1 SMD trimmer footprint

Footprint name:

C_Trimmer_Murata_TZR1

Mark on the silkscreen layer lines up with the stator terminal of the TZR1 trimmer. If mounting direction is observed, external electrode is connected to pad 2.



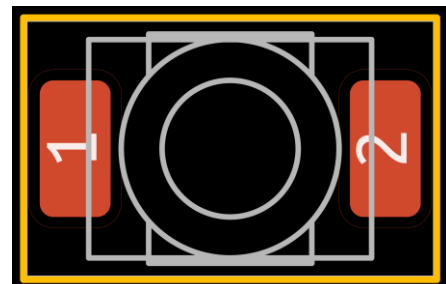
TZR1 trimmer footprint.

Murata TZW4 SMD trimmer footprint

Footprint name:

C_Trimmer_Murata_TZW4

TZW4 trimmer has no visible directional marks on its body, so there are no marks on the silkscreen and fab layers.



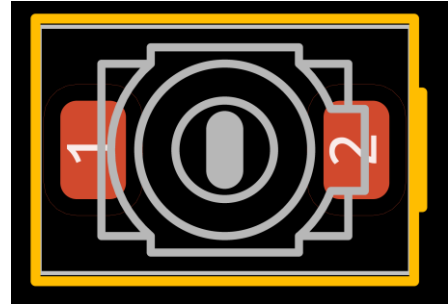
TZW4 trimmer footprint.

Murata TZY2 SMD trimmer footprint

Footprint name:

C_Trimmer_Murata_TZY2

Mark on the silkscreen layer lines up with the stator terminal of the TZY2 trimmer. If mounting direction is observed, external electrode is connected to pad 2.



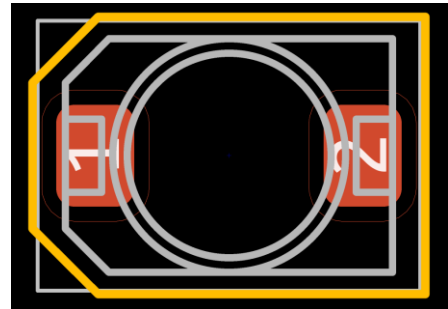
TZY2 trimmer footprint.

Sprague-Goodman SGC3 SMD trimmer footprint

Footprint name:

C_Trimmer_Sprague-Goodman_SGC3

Slanted outline on the silkscreen layer lines up with the shape of the SGC3 trimmer body. If mounting direction is observed, external electrode is connected to pad 2.



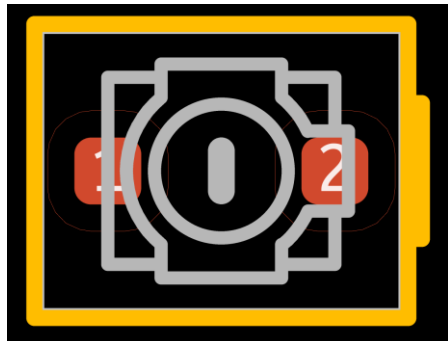
SGC3 trimmer footprint.

Voltronics JN SMD trimmer footprint

Footprint name:

C_Trimmer_Voltronics_JN

Mark on the silkscreen layer lines up with the stator terminal of the JN trimmer. If mounting direction is observed, external electrode is connected to pad 2.



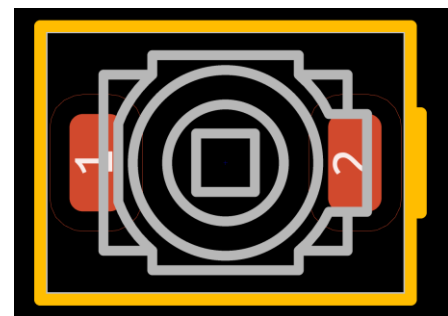
JN trimmer footprint.

Voltronics JQ SMD trimmer footprint

Footprint name:

C_Trimmer_Voltronics_JQ

Mark on the silkscreen layer lines up with the stator terminal of the JQ trimmer. If mounting direction is observed, external electrode is connected to pad 2.



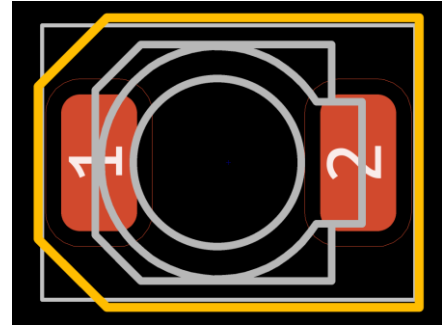
JQ trimmer footprint.

Voltronics JR SMD trimmer footprint

Footprint name:

C_Trimmer_Voltronics_JR

Slanted outline on the silkscreen layer lines up with the shape of the JR trimmer body. If mounting direction is observed, external electrode is connected to pad 2.



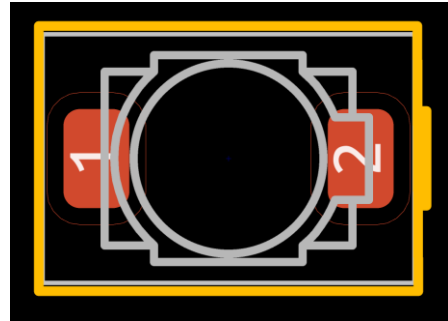
JR trimmer footprint.

Voltronics JV SMD trimmer footprint

Footprint name:

C_Trimmer_Voltronics_JV

Mark on the silkscreen layer lines up with the stator terminal of the JV trimmer. If mounting direction is observed, external electrode is connected to pad 2.



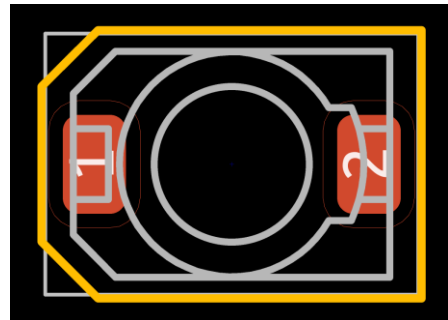
JV trimmer footprint.

Voltronics JZ SMD trimmer footprint

Footprint name:

C_Trimmer_Voltronics_JZ

Slanted outline on the silkscreen layer lines up with the shape of the JZ trimmer body. If mounting direction is observed, external electrode is connected to pad 2.



JZ trimmer footprint.

3.3. SMD Tantalum Capacitor Libraries

These libraries contain SMD tantalum capacitor footprints

Handsoldering library variant contains additional symbols on the silkscreen layer placed under the part.

Handsoldering (US symbol) library variant has additional US - style symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name:	Capacitor_Tantalum_SMD_AKL
Footprint count:	56
Handsoldering variant	
Folder name:	Capacitor_Tantalum_SMD_Handsoldering_AKL
Footprint count:	56
Handsoldering variant (US symbol)	
Folder name:	Capacitor_Tantalum_SMD_US_Handsoldering_AKL
Footprint count:	56
Total footprints:	168

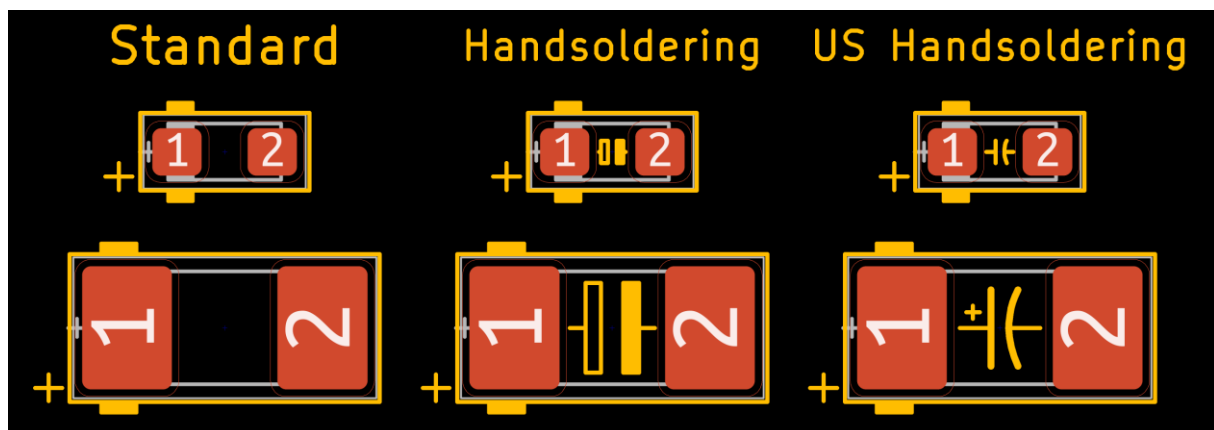


Figure 3.21. Comparison between SMD tantalum capacitor footprints from different library variants.

SMD tantalum capacitor footprints

Footprint count: 56

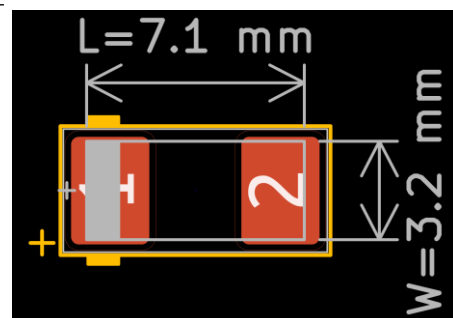
Footprint naming convention:

CP_EIA-<metric size code>-<height>-<manufacturer size>
(optional: **_Pad**<pad width>**x**<pad length>**mm**)

Name examples:

CP_EIA-3216-12_Kemet-S

CP_EIA-6032-28_Kemet-C_Pad2.25x2.35mm



7132 SMD tantalum capacitor footprint with its length and width indicated.

Two rectangles on the silkscreen layer line up with the positive electrode marking band on the capacitor package. Positive terminal is additionally marked with a plus sign on the silkscreen layer.

3.4. THT Capacitor Libraries

These libraries contain footprints for:

- Axial electrolytic capacitors,
- Radial electrolytic capacitors,
- Axial non-polarized capacitors,
- Ceramic disc capacitors,
- Radial non-polarized capacitors,
- THT tantalum capacitors,
- Rectangular film capacitors,
- Trimmers and variable capacitors.

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

US symbol library variants use the US - style electrolytic capacitor symbol instead of the standard one on the silkscreen.

Standard variant	
Folder name: Capacitor_THT_AKL	
Footprint count:	597
Double-sided variant	
Folder name: Capacitor_THT_AKL_Double	
Footprint count:	597
Standard variant (US symbol)	
Folder name: Capacitor_THT_US_AKL	
Footprint count:	597
Double-sided variant (US symbol)	
Folder name: Capacitor_THT_US_AKL_Double	
Footprint count:	597
Total footprints:	2388

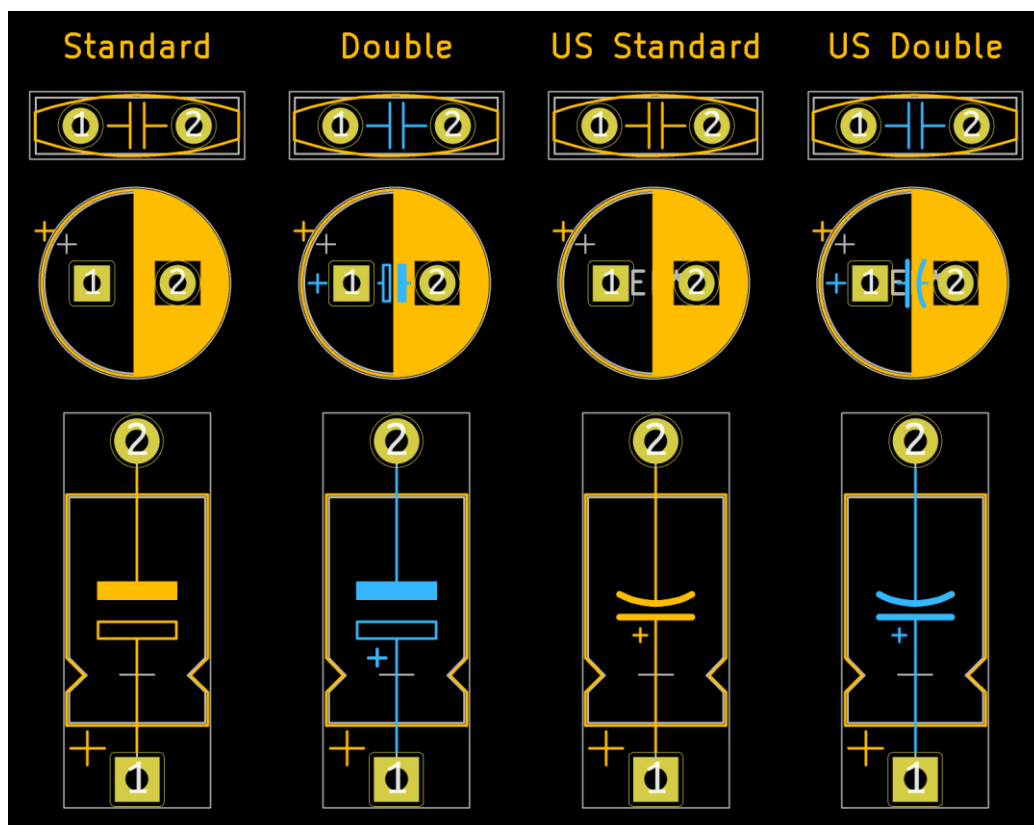


Figure 3.22. Comparison between THT capacitor footprints from different library variants.

Axial electrolytic capacitor footprints

Footprint count: 99

Footprint naming convention:

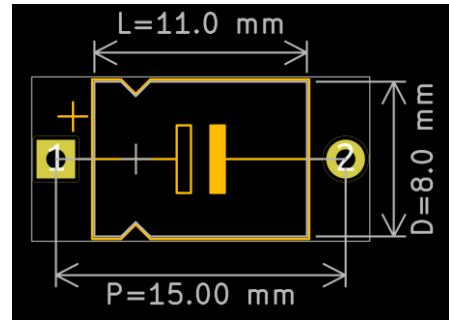
CP_Axial_L<length>_D<diameter>_P<pitch>_Horizontal

(optional: **_Supported** for footprint variants with holes along the capacitor body meant to serve as structural supports)

Name examples:

CP_Axial_L25.0mm_D10.0mm_P30.00mm_Horizontal

CP_Axial_L37.0mm_D13.0mm_P43.00mm_Horizontal_Supported



Axial electrolytic capacitor footprint with its dimensions indicated.

Radial electrolytic capacitor footprints

Footprint count: 28

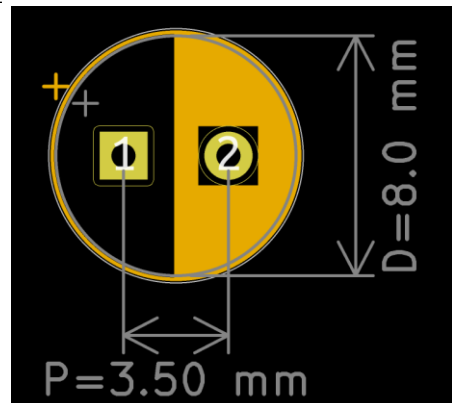
Footprint naming convention:

CP_Axial_D<diameter>_P<pitch>

Name examples:

CP_Radial_D5.0mm_P2.00mm

CP_Radial_D10.0mm_P2.50mm_P5.00mm



Radial electrolytic capacitor footprint with its dimensions indicated.

Horizontal radial electrolytic capacitor footprints

Footprint count: 136

Footprint naming convention:

CP_Radial_D<diameter>_P<pitch>_H<height>_Horizontal

<1 – bent down, 2 – bent up>

(optional: **_Supported** for footprint variants with holes along the capacitor body meant to serve as structural supports)

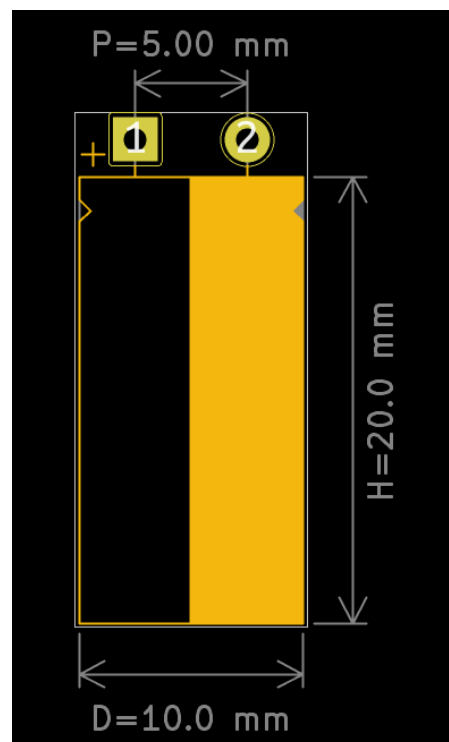
Name examples:

CP_Radial_D10.0mm_P5.00mm_H40mm_Horizontal1

CP_Radial_D8.0mm_P3.50mm_H30mm_Horizontal1_Supported

CP_Radial_D16.0mm_P7.50mm_H35mm_Horizontal2

CP_Radial_D18.0mm_P7.50mm_H60mm_Horizontal2_Supported



Horizontal radial electrolytic capacitor footprint with its diameter indicated.

Snap-in electrolytic capacitor footprints

Footprint count: 14

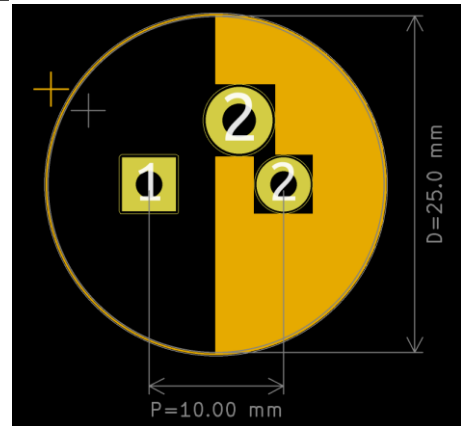
Footprint naming convention:

CP_Radial_D<diameter>_P<pitch>_<SnapIn or 3pin_SnapIn>

Name examples:

CP_Radial_D22.0mm_P10.00mm_SnapIn

CP_Radial_D35.0mm_P10.00mm_3pin_SnapIn



Axial electrolytic snap-in capacitor footprint with its dimensions indicated.

Radial tantalum electrolytic capacitor footprints

Footprint count: 16

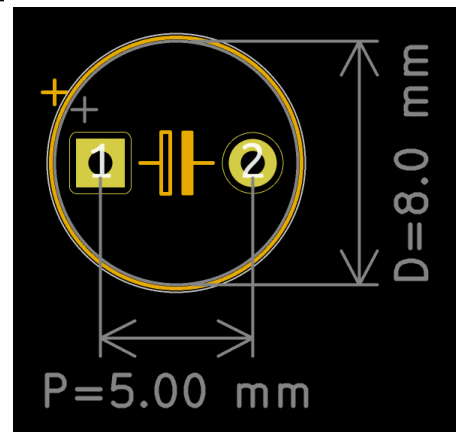
Footprint naming convention:

CP_Radial_Tantal_D<diameter>_P<pitch>

Name examples:

CP_Radial_Tantal_D4.5mm_P2.50mm

CP_Radial_Tantal_D9.0mm_P5.00mm



Tantalum electrolytic capacitor footprint with its dimensions indicated.

Axial non-polarized capacitor footprints

Footprint count: 56

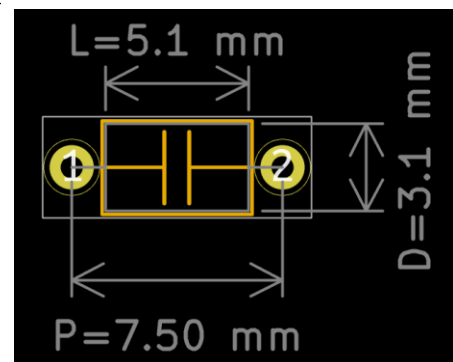
Footprint naming convention:

C_Axial_L<length>_D<diameter>_P<pitch>_Horizontal

Name examples:

C_Axial_L3.0mm_D2.3mm_P20.00mm_Horizontal

C_Axial_L19.0mm_D8.0mm_P25.00mm_Horizontal



Axial capacitor footprint with its dimensions indicated.

Disc ceramic capacitor footprints

Footprint count: 38

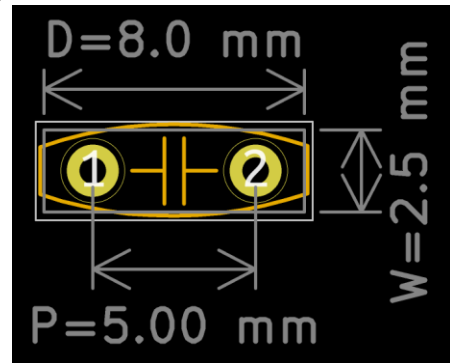
Footprint naming convention:

C_Disc_D<diiameter>_**W**<width>_**P**<pitch>

Name examples:

C_Disc_D3.8mm_W2.6mm_P2.50mm

C_Disc_D8.0mm_W5.0mm_P10.00mm



Disc ceramic capacitor footprint with its dimensions indicated.

Radial non-polarized capacitor footprints

Footprint count: 18

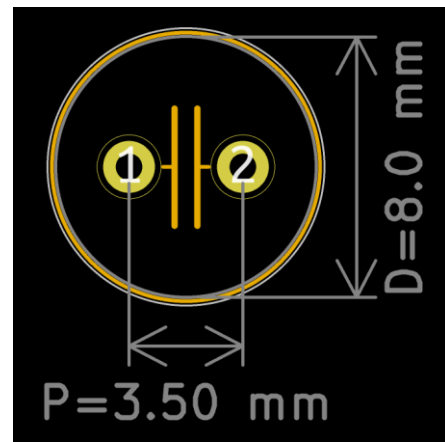
Footprint naming convention:

C_Radial_D<diiameter>_**H**<height>_**P**<pitch>

Name examples:

C_Radial_D5.0mm_H7.0mm_P2.00mm

C_Radial_D16.0mm_H25.0mm_P7.50mm



Radial non-polarized capacitor footprint with its dimensions indicated.

Rectangular film capacitor footprints

Footprint count: 179

Footprint naming convention:

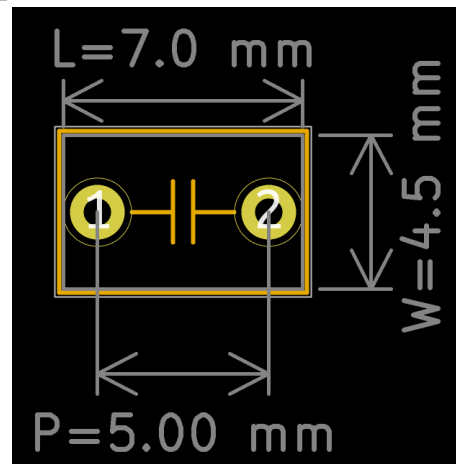
C_Rect_L<length>_**W**<width>_**P**<pitch>

Name examples:

C_Rect_L4.6mm_W5.5mm_P2.50mm_MKS02_FKP02

C_Rect_L10.0mm_W5.0mm_P5.000mm_P7.50mm

C_Rect_L27.0mm_W9.0mm_P22.00mm



Rectangular footprint with its dimensions indicated.

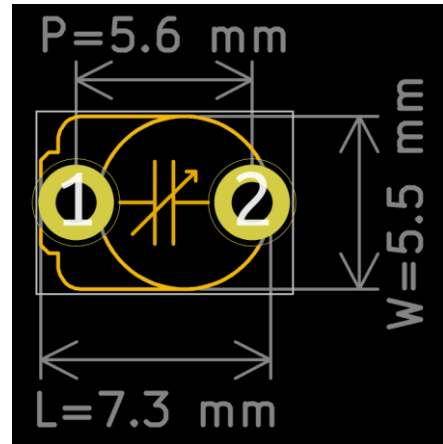
BFC2-808 5mm series trimmer footprints

Footprint names:

C_Trimmer_BFC2-808_L7.3mm_W5.5mm_P5.6mm
 C_Trimmer_BFC2-808_L7.3mm_W5.5mm_P5.6mm_Hole
 C_Trimmer_BFC2-808_L7.3mm_W5.5mm_P5.08mm

Silkscreen outline matches the body shape of BFC2-808 trimmer. If mounting orientation is observed, external electrode is connected to pad 2.

Footprint variant with '_Hole' suffix has a NPTH hole included in the footprint meant to provide access to trimmer's head from the bottom of the PCB.



BFC2-808 trimmer footprint with all relevant dimensions indicated.

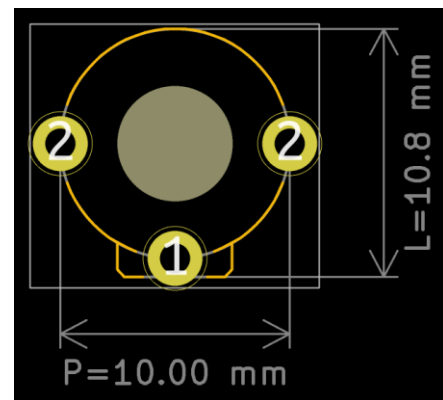
BFC2-808 10mm series trimmer footprints

Footprint names:

C_Trimmer_BFC2-808_L10.8mm_W10.6mm_P5mm
 C_Trimmer_BFC2-808_L10.8mm_W10.6mm_P5mm_Hole
 C_Trimmer_BFC2-808_L10.8mm_W10.6mm_P10mm
 C_Trimmer_BFC2-808_L10.8mm_W10.6mm_P10mm_Hole

Silkscreen outline matches the body shape of BFC2-808 trimmer. If mounting orientation is observed, external electrode is connected to pads number 2.

Footprint variant with '_Hole' suffix has a NPTH hole included in the footprint meant to provide access to trimmer's rotor from the bottom of the PCB.



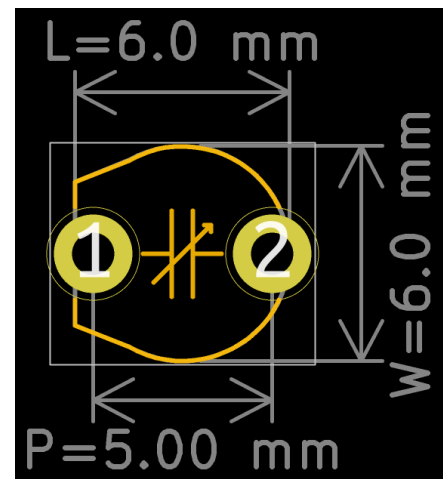
BFC2-808 trimmer footprint with all relevant dimensions indicated. Variant with NPTH hole for bottom access.

GKG15 trimmer footprint

Footprint name:

C_Trimmer_GKG15_L6.0mm_W6.0mm_P5.0mm

Silkscreen outline matches the body shape of GKG15 trimmer. If mounting orientation is observed, external electrode is connected to pad 2.



GKG15 trimmer footprint.

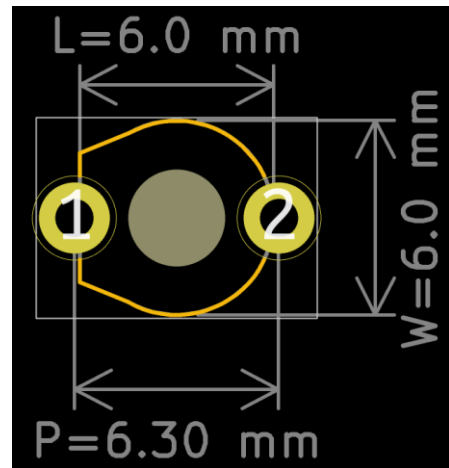
GKG16 trimmer footprint

Footprint name:

C_Trimmer_GKG16_L6.0mm_W6.0mm_P6.3mm_Hole

Silkscreen outline matches the body shape of GKG16 trimmer. If mounting orientation is observed, external electrode is connected to pad 2.

This footprint has a NPTH hole included, that allows access to trimmer's rotor.



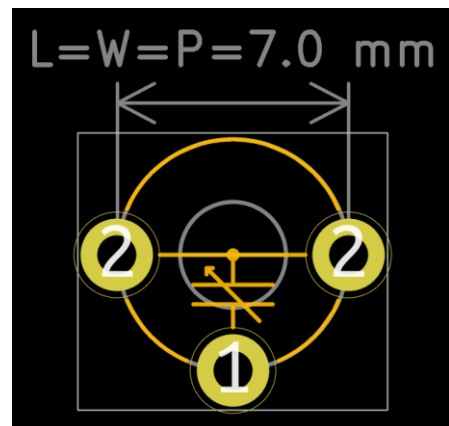
GKG16 trimmer footprint.

GKT trimmer footprint

Footprint name:

C_Trimmer_GKT_L7.0mm_W7.0mm_P7.0mm_Hole

Silkscreen outline matches the body shape of GKT trimmer. If mounting orientation is observed, external electrode is connected to pads number 2.



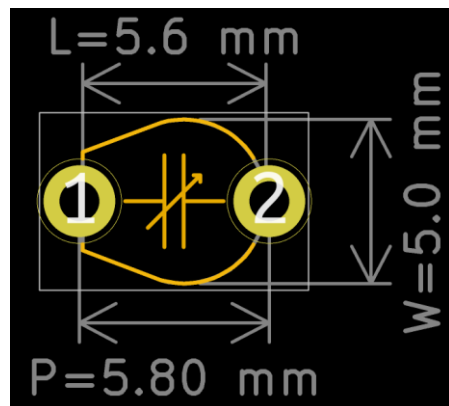
GKT trimmer footprint.

GKU trimmer footprint

Footprint name:

C_Trimmer_GKU_L7.0mm_W7.0mm_P7.0mm_Hole

Silkscreen outline matches the body shape of GKU trimmer. If mounting orientation is observed, external electrode is connected to pads number 2.



GKU trimmer footprint.

3.5. Crystal Resonator Libraries

These libraries contain footprints for:

- THT crystal resonators
- SMD crystal resonators
- THT ceramic resonators/filters
- SMD ceramic resonators/filters

Double-sided library variant contains THT footprints with both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Hand soldering library variant contains SMD footprints with additional symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: Crystal_AKL	
Footprint count:	179
Double-sided variant	
Folder name: Crystal_AKL_Double	
Footprint count:	56
Hand soldering variant	
Folder name: Crystal_Handsoldering_AKL	
Footprint count:	103
Total footprints:	338

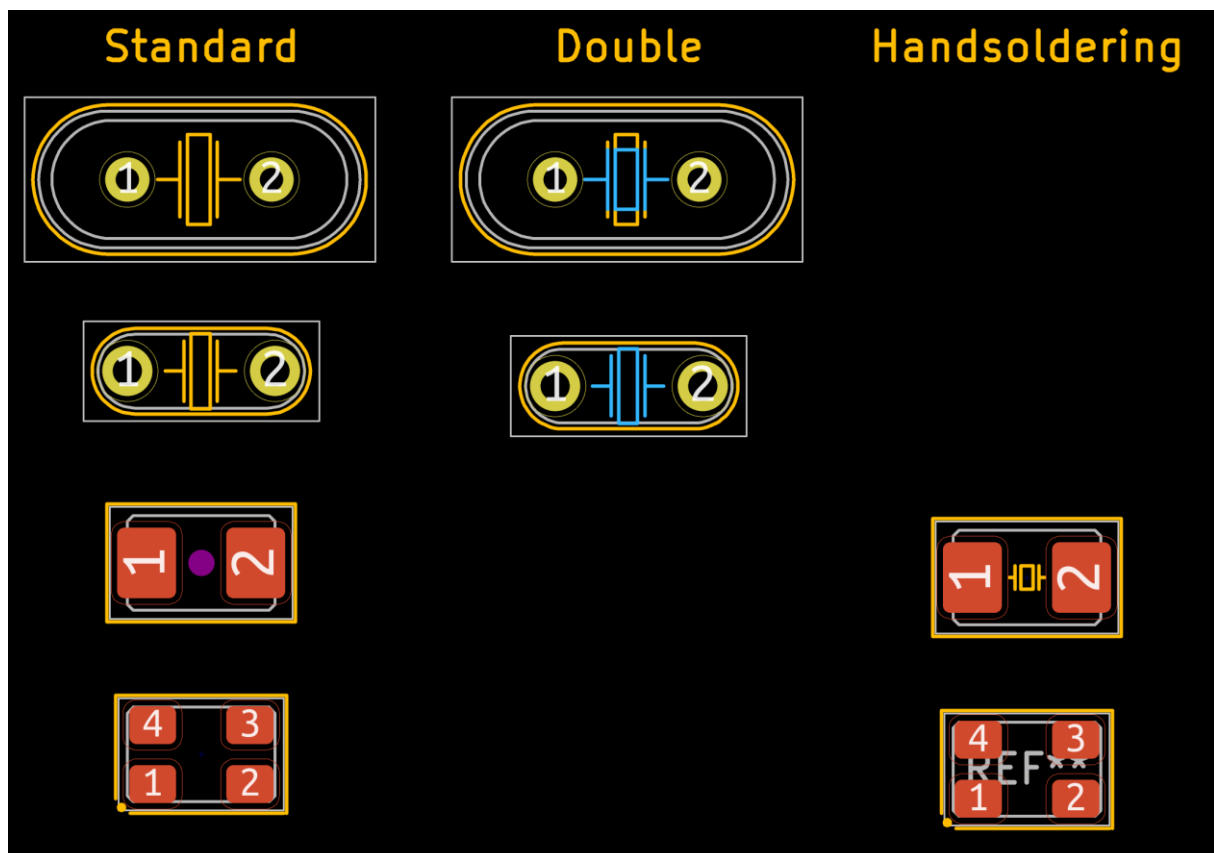


Figure 3.23. Comparison between crystal footprints from different library variants.

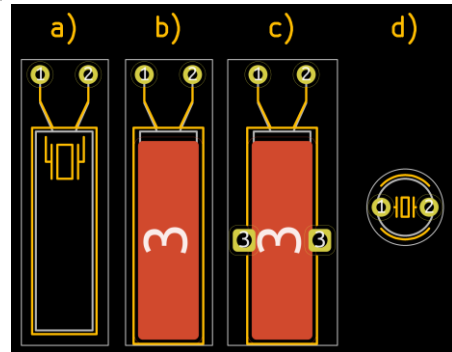
AT310 crystal footprints

Footprint names:

Crystal_AT310_D3.0mm_L10.0mm_Horizontal
 Crystal_AT310_D3.0mm_L10.0mm_Horizontal_1EP-style1
 Crystal_AT310_D3.0mm_L10.0mm_Horizontal_1EP-style2
 Crystal_AT310_D3.0mm_L10.0mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



AT310 crystal footprint variants.

- a) Standard horizontal footprint.
- b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
- c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
- d) Standard vertical footprint.

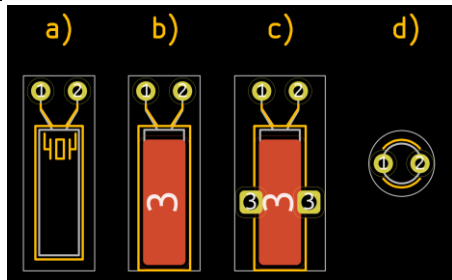
C26-LF crystal footprints

Footprint names:

Crystal_C26-LF_D2.1mm_L6.5mm_Horizontal
 Crystal_C26-LF_D2.1mm_L6.5mm_Horizontal_1EP-style1
 Crystal_C26-LF_D2.1mm_L6.5mm_Horizontal_1EP-style2
 Crystal_C26-LF_D2.1mm_L6.5mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



C26-LF crystal footprint variants.

- a) Standard horizontal footprint.
- b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
- c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
- d) Standard vertical footprint.

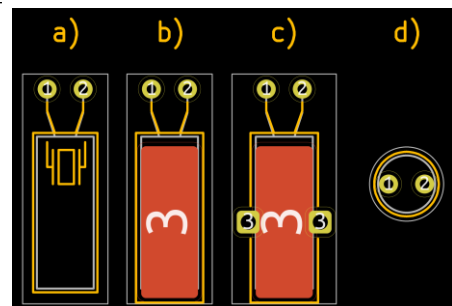
C38-LF crystal footprints

Footprint names:

Crystal_C38-LF_D3.0mm_L8.0mm_Horizontal
 Crystal_C38-LF_D3.0mm_L8.0mm_Horizontal_1EP-style1
 Crystal_C38-LF_D3.0mm_L8.0mm_Horizontal_1EP-style2
 Crystal_C38-LF_D3.0mm_L8.0mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



C38-LF crystal footprint variants.

- a) Standard horizontal footprint.
- b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
- c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
- d) Standard vertical footprint.

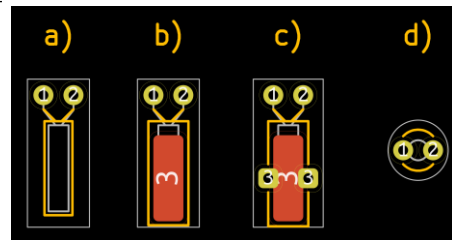
DS10 crystal footprints

Footprint names:

Crystal_DS10_D1.0mm_L4.3mm_Horizontal
 Crystal_DS10_D1.0mm_L4.3mm_Horizontal_1EP-style1
 Crystal_DS10_D1.0mm_L4.3mm_Horizontal_1EP-style2
 Crystal_DS10_D1.0mm_L4.3mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



DS10 crystal footprint variants.

- a) Standard horizontal footprint.
- b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
- c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
- d) Standard vertical footprint.

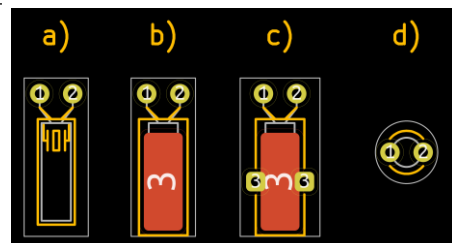
DS15 crystal footprints

Footprint names:

Crystal_DS15_D1.5mm_L5.0mm_Horizontal
 Crystal_DS15_D1.5mm_L5.0mm_Horizontal_1EP-style1
 Crystal_DS15_D1.5mm_L5.0mm_Horizontal_1EP-style2
 Crystal_DS15_D1.5mm_L5.0mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



DS15 crystal footprint variants.

- a) Standard horizontal footprint.
- b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
- c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
- d) Standard vertical footprint.

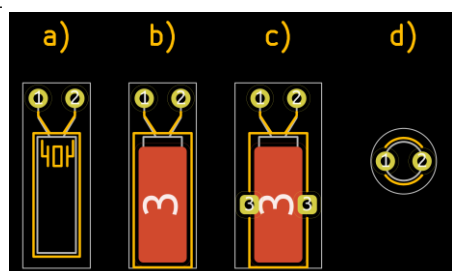
DS26 crystal footprints

Footprint names:

Crystal_DS26_D2.0mm_L6.0mm_Horizontal
 Crystal_DS26_D2.0mm_L6.0mm_Horizontal_1EP-style1
 Crystal_DS26_D2.0mm_L6.0mm_Horizontal_1EP-style2
 Crystal_DS26_D2.0mm_L6.0mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



DS26 crystal footprint variants.

- a) Standard horizontal footprint.
- b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
- c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
- d) Standard vertical footprint.

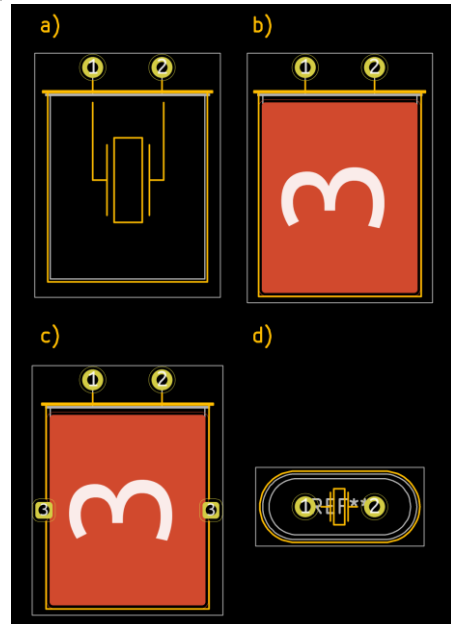
HC18 crystal footprints

Footprint names:

Crystal_HC18-U_Horizontal
 Crystal_HC18-U_Horizontal_1EP-style1
 Crystal_HC18-U_Horizontal_1EP-style2
 Crystal_HC18-U_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



HC18 crystal footprint variants.
 a) Standard horizontal footprint.
 b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
 c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
 d) Standard vertical footprint.

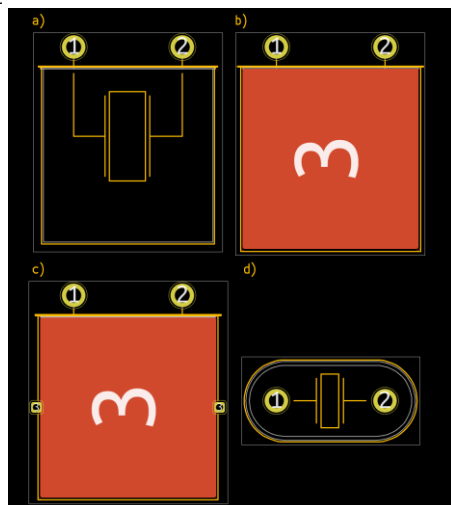
HC33 crystal footprints

Footprint names:

Crystal_HC33-U_Horizontal
 Crystal_HC33-U_Horizontal_1EP-style1
 Crystal_HC33-U_Horizontal_1EP-style2
 Crystal_HC33-U_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.

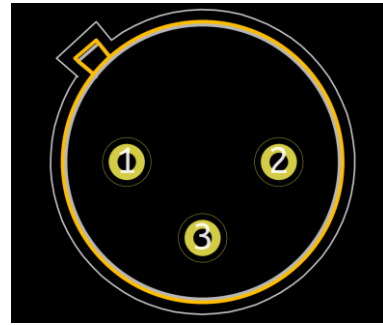


HC33 crystal footprint variants.
 a) Standard horizontal footprint.
 b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
 c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
 d) Standard vertical footprint.

HC35 crystal footprint

Footprint name:

Crystal_HC35-U



HC35 Crystal footprint.

HC49 crystal footprints

Footprint names:

Crystal_HC49-4H_Vertical

Crystal_HC49-U-3Pin_Vertical

Crystal_HC49-U_Horizontal

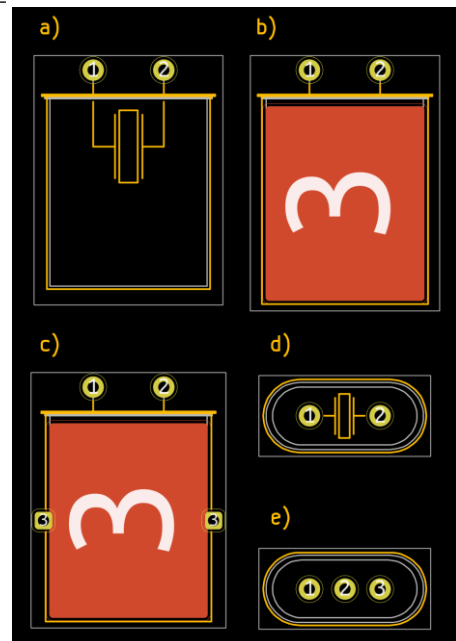
Crystal_HC49-U_Horizontal_1EP-style1

Crystal_HC49-U_Horizontal_1EP-style2

Crystal_HC49-U_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



HC49 crystal footprint variants.

a) Standard horizontal footprint.

b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).

c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).

d) Standard vertical footprint.

e) 3-pin vertical footprint.

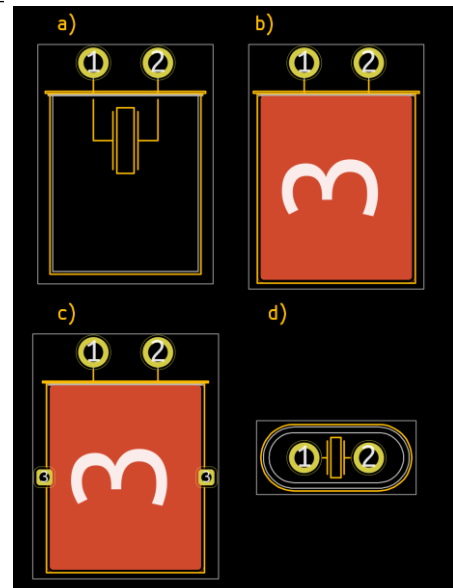
HC50 crystal footprints

Footprint names:

Crystal_HC50_Horizontal
 Crystal_HC50_Horizontal_1EP-style1
 Crystal_HC50_Horizontal_1EP-style2
 Crystal_HC50_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



HC50 crystal footprint variants.
 a) Standard horizontal footprint.
 b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
 c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
 d) Standard vertical footprint.

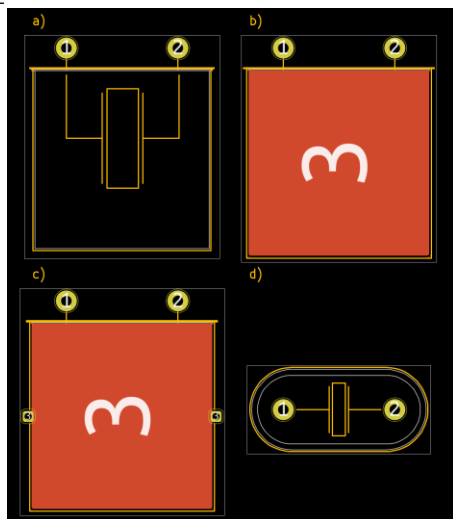
HC51 crystal footprints

Footprint names:

Crystal_HC51_Horizontal
 Crystal_HC51_Horizontal_1EP-style1
 Crystal_HC51_Horizontal_1EP-style2
 Crystal_HC51-U_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



HC51 crystal footprint variants.
 a) Standard horizontal footprint.
 b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
 c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
 d) Standard vertical footprint.

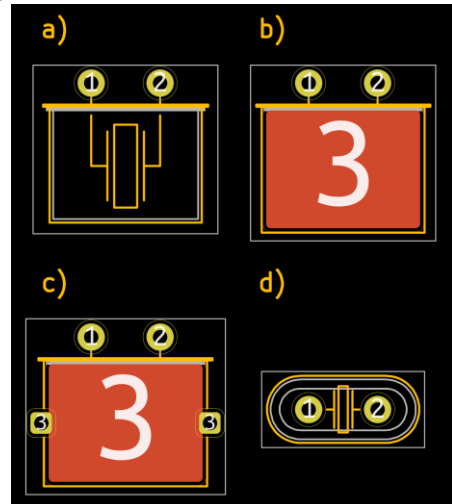
HC52 6mm crystal footprints

Footprint names:

Crystal_HC52-6mm_Horizontal
 Crystal_HC52-6mm_Horizontal_1EP-style1
 Crystal_HC52-6mm_Horizontal_1EP-style2
 Crystal_HC52-6mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



HC52 crystal (6mm package height) footprint variants.

- a) Standard horizontal footprint.
- b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
- c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
- d) Standard vertical footprint.

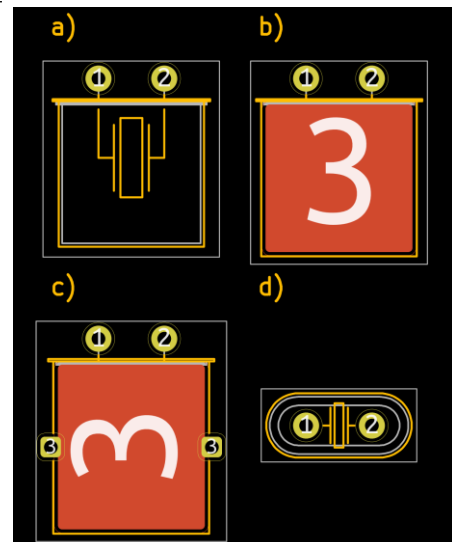
HC52 8mm crystal footprints

Footprint names:

Crystal_HC52-8mm_Horizontal
 Crystal_HC52-8mm_Horizontal_1EP-style1
 Crystal_HC52-8mm_Horizontal_1EP-style2
 Crystal_HC52-8mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



HC52 crystal (8mm package height) footprint variants.

- a) Standard horizontal footprint.
- b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
- c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
- d) Standard vertical footprint.

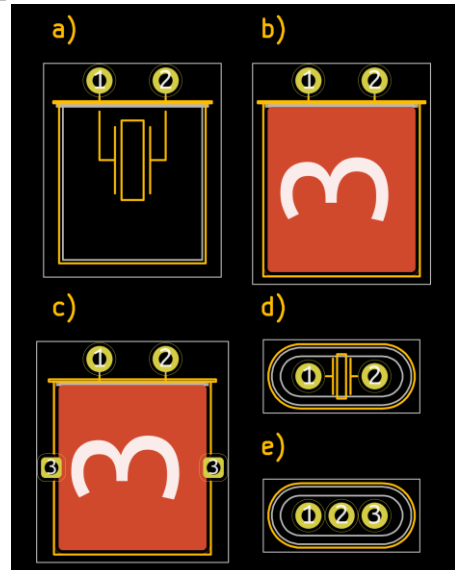
HC52 standard crystal footprints

Footprint names:

Crystal_HC52-U_Horizontal
 Crystal_HC52-U_Horizontal_1EP-style1
 Crystal_HC52-U_Horizontal_1EP-style2
 Crystal_HC52-U_Vertical
 Crystal_HC52-U-3Pin_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



HC52 crystal (standard 9mm package height) footprint variants.

- a) Standard horizontal footprint.
- b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
- c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
- d) Standard vertical footprint.
- e) 3-pin vertical footprint.

Round crystal footprints

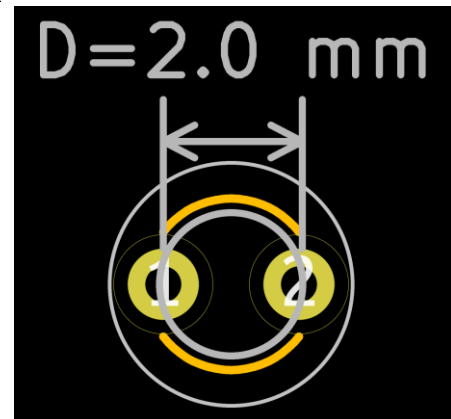
Footprint count: 4

Footprint naming convention:

Crystal_Round_D<diаметer>_Vertical

Name examples:

Crystal_Round_D1.0mm_Vertical
 Crystal_Round_D3.0mm_Vertical



Round crystal footprint with its diameter indicated.

SMD Crystal footprints

Footprint count: 17

Footprint naming convention:

Crystal_SMD_*<size code>*-*<no. of pads>*

Pin_*<length>*x*<width>*mm

(optional: **_BigPads** suffix denotes a footprint with enlarged pads)

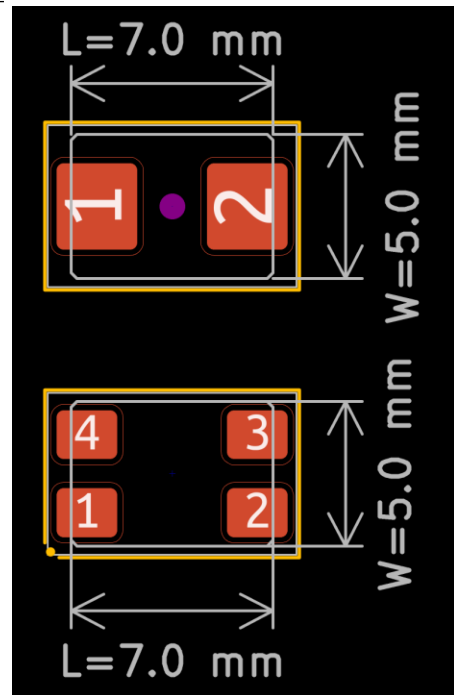
Note: crystal footprints with size code of 0603 (mfg. size code) are in fact sized like their code should be 6035 (their dimensions are 6.0x3.5mm, not 0.6x0.3mm).

Name examples:

Crystal_SMD_2012-2Pin_2.0x1.2mm

Crystal_SMD_5032-4Pin_5.0x3.2mm

Crystal_SMD_0603-2Pin_6.0x3.5mm_HandSoldering



Two crystal footprints with a size of 7050.
Top: 2-pin variant.
Bottom: 4-pin variant.

Abracon ABM3 series crystal footprints

Footprint names:

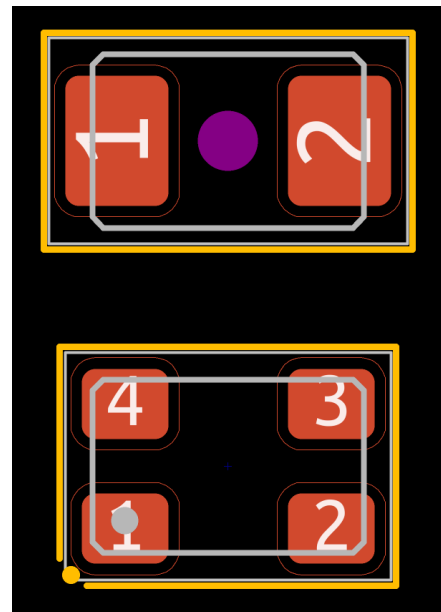
Crystal_SMD_Abracon_ABM3-2Pin_5.0x3.2mm

Crystal_SMD_Abracon_ABM3_2Pin_5.0x3.2mm_BigPads

Crystal_SMD_Abracon_ABM3B-4Pin_5.0x3.2mm

Crystal_SMD_Abracon_ABM3C-4Pin_5.0x3.2mm

Note: BigPads suffix denotes a footprint with enlarged pads.

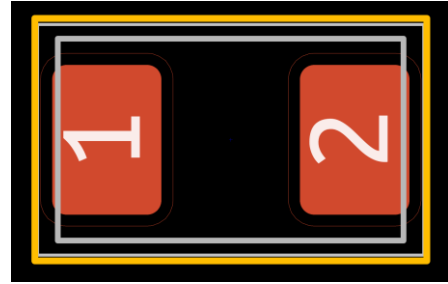


ABM3 crystal footprint examples.

Abracon ABM7 series crystal footprint

Footprint name:

Crystal_SMD_Abracon_ABM7-2Pin_6.0x3.5mm

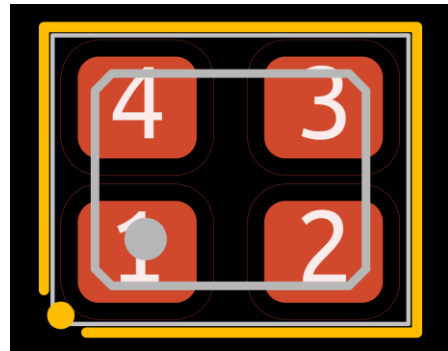


ABM7 crystal footprint.

Abracon ABM8G series crystal footprint

Footprint name:

Crystal_SMD_Abracon_ABM8G-4Pin_3.2x2.5mm

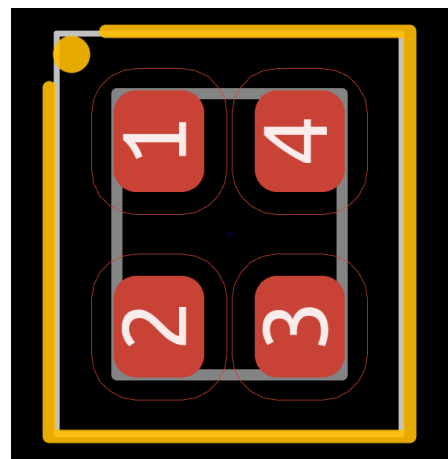


ABM8G crystal footprint.

Abracon ABM10 series crystal footprint

Footprint name:

Crystal_SMD_Abracon_ABM10-4Pin_2.5x2.0mm

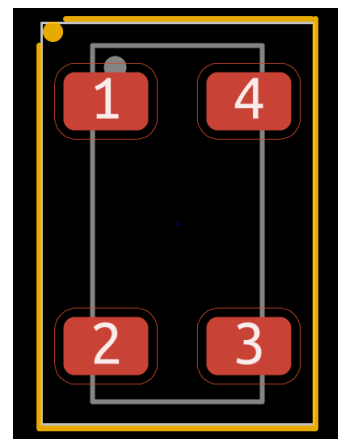


ABM10 crystal footprint.

Abracon ABS25 series crystal footprint

Footprint name:

Crystal_SMD_Abracon_ABS25-4Pin_8.0x3.8mm

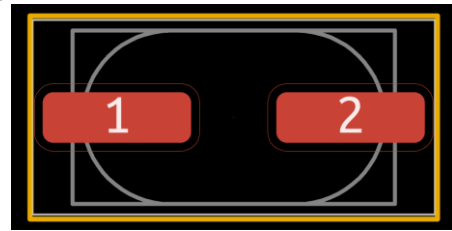


ABS25 crystal footprint.

ECS CSM3X series crystal footprint

Footprint name:

Crystal_SMD_ECS_CSM3X-2Pin_7.6x4.1mm



CSM3X crystal footprint.

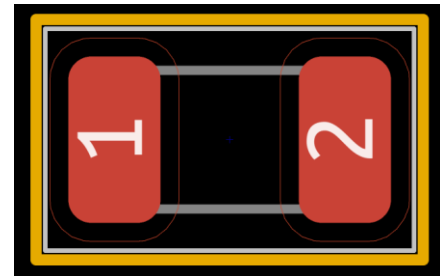
Euro Quartz EQ161 series crystal footprints

Footprint names:

Crystal_SMD_EuroQuartz_EQ161-2Pin_3.2x1.5mm

Crystal_SMD_EuroQuartz_EQ161-2Pin_3.2x1.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



EQ161 crystal footprint.

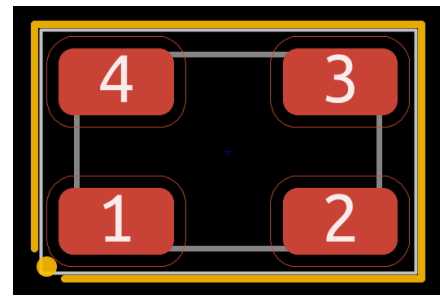
Euro Quartz MJ series crystal footprints

Footprint names:

Crystal_SMD_EuroQuartz_MJ-4Pin_5.0x3.2mm

Crystal_SMD_EuroQuartz_MJ-4Pin_5.0x3.2mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



MJ crystal footprint.

Euro Quartz MQ series crystal footprints

Footprint names:

Crystal_SMD_EuroQuartz_MQ-4Pin_7.0x5.0mm

Crystal_SMD_EuroQuartz_MQ-4Pin_7.0x5.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



MQ crystal footprint.

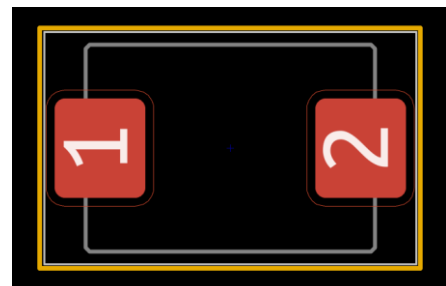
Euro Quartz MQ2 series crystal footprints

Footprint names:

Crystal_SMD_EuroQuartz_MQ2-2Pin_7.0x5.0mm

Crystal_SMD_EuroQuartz_MQ2-2Pin_7.0x5.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



MQ2 crystal footprint.

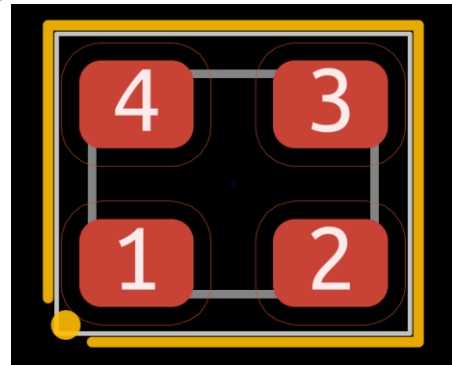
Euro Quartz MT series crystal footprints

Footprint names:

Crystal_SMD_EuroQuartz_MT-4Pin_3.2x2.5mm

Crystal_SMD_EuroQuartz_MT-4Pin_3.2x2.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



MT crystal footprint.

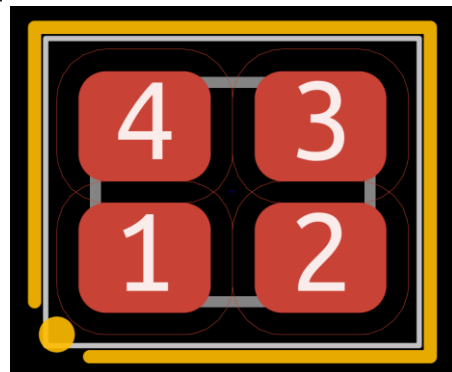
Euro Quartz X22 series crystal footprints

Footprint names:

Crystal_SMD_EuroQuartz_X22-4Pin_2.5x2.0mm

Crystal_SMD_EuroQuartz_X22-4Pin_2.5x2.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



X22 crystal footprint.

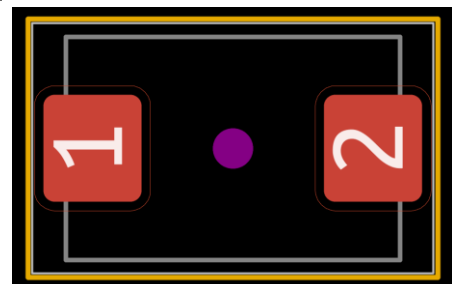
FOX FE series crystal footprints

Footprint names:

Crystal_SMD_FOX_FE-2Pin_7.5x5.0mm

Crystal_SMD_FOX_FE-2Pin_7.5x5.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



FE crystal footprint.

FOX FQ7050 series crystal footprints

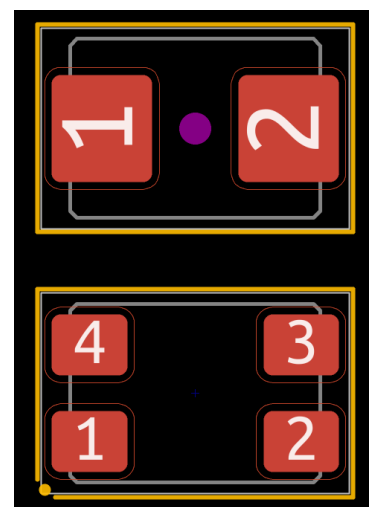
Footprint names:

Crystal_SMD_FOX_FQ7050-2Pin_7.0x5.0mm

Crystal_SMD_FOX_FQ7050-2Pin_7.0x5.0mm_BigPads

Crystal_SMD_FOX_FQ7050-4Pin_7.0x5.0mm

Note: BigPads suffix denotes a footprint with enlarged pads.

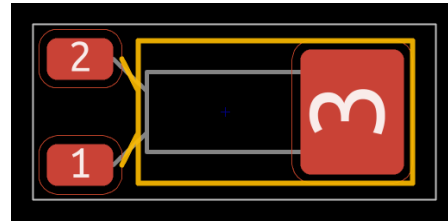


FQ7050 crystal footprints (2-pin and 4-pin).

Frontier Electronics FM206 series crystal footprint

Footprint name:

Crystal_SMD_FrontierElectronics_FM206



FM206 crystal footprint.

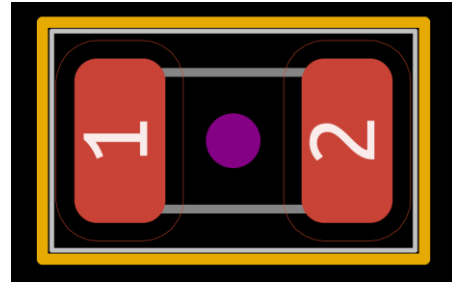
G8 series crystal footprints

Footprint names:

Crystal_SMD_G8-2Pin_3.2x1.5mm

Crystal_SMD_G8-2Pin_3.2x1.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



G8 crystal footprint.

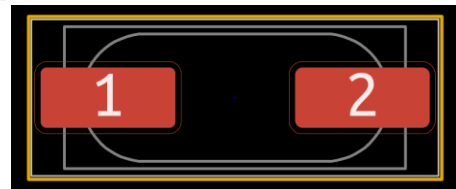
HC49 SMD crystal footprints

Footprint names:

Crystal_SMD_HC49-SD

Crystal_SMD_HC49-SD_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



HC49 SMD crystal footprint.

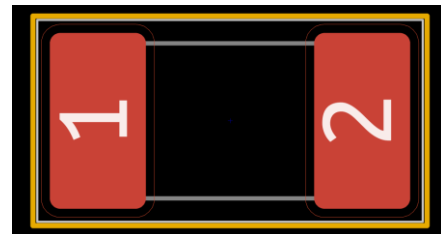
Micro Crystal CC1V-T1A series crystal footprints

Footprint names:

Crystal_SMD_MicroCrystal_CC1V_T1A-2Pin_8.0x3.7mm

Crystal_SMD_MicroCrystal_CC1V_T1A-2Pin_8.0x3.7mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



CC1V-T1A crystal footprint.

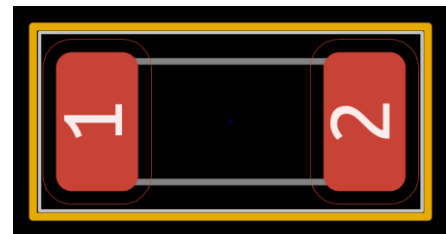
Micro Crystal CC4V-T1A series crystal footprints

Footprint names:

Crystal_SMD_MicroCrystal_CC4V_T1A-2Pin_5.0x1.9mm

Crystal_SMD_MicroCrystal_CC4V_T1A-2Pin_5.0x1.9mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



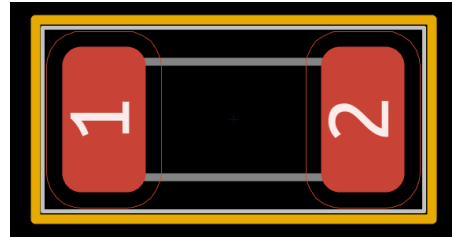
CC4V-T1A crystal footprint.

Micro Crystal CC5V-T1A series crystal footprints

Footprint names:

Crystal_SMD_MicroCrystal_CC5V_T1A-2Pin_4.1x1.5mm
Crystal_SMD_MicroCrystal_CC5V_T1A-2Pin_4.1x1.5mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



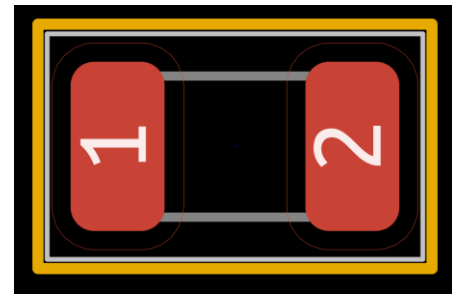
CC5V-T1A crystal footprint.

Micro Crystal CC7V-T1A series crystal footprints

Footprint names:

Crystal_SMD_MicroCrystal_CC7V_T1A-2Pin_3.2x1.5mm
Crystal_SMD_MicroCrystal_CC7V_T1A-2Pin_3.2x1.5mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



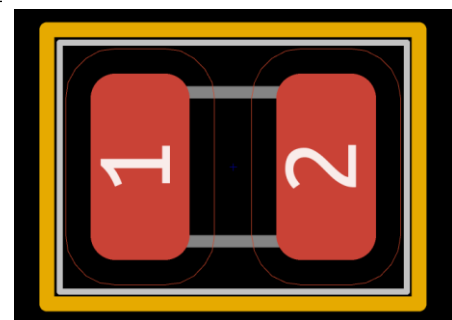
CC7V-T1A crystal footprint.

Micro Crystal CC8V-T1A series crystal footprints

Footprint names:

Crystal_SMD_MicroCrystal_CC8V_T1A-2Pin_2.0x1.2mm
Crystal_SMD_MicroCrystal_CC8V_T1A-2Pin_2.0x1.2mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



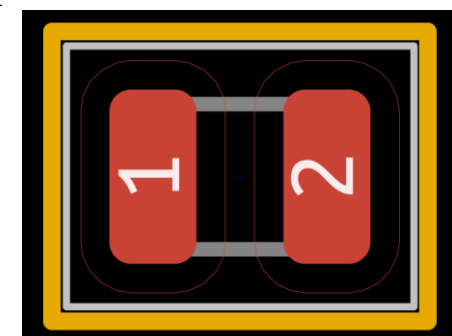
CC8V-T1A crystal footprint.

Micro Crystal CM9V-T1A series crystal footprints

Footprint names:

Crystal_SMD_MicroCrystal_CM9V_T1A-2Pin_1.6x1.0mm
Crystal_SMD_MicroCrystal_CM9V_T1A-2Pin_1.6x1.0mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

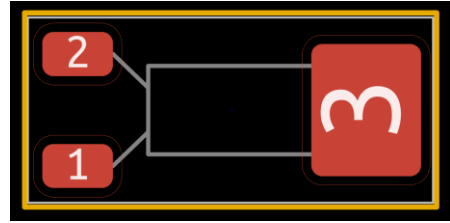


CM9V-T1A crystal footprint.

Micro Crystal MS1V-T1K series crystal footprint

Footprint name:

Crystal_SMD_MicroCrystal_MS1V-T1K

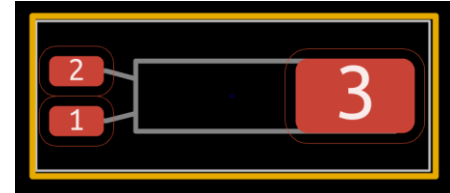


MS1V-T1K crystal footprint.

Micro Crystal MS3V-T1K series crystal footprint

Footprint name:

Crystal_SMD_MicroCrystal_MS3V-T1K



MS3V-T1K crystal footprint.

Qantek QC5CB series crystal footprint

Footprint name:

Crystal_SMD_Qantek_QC5CB-2Pin_5x3.2mm



QC5CB crystal footprint.

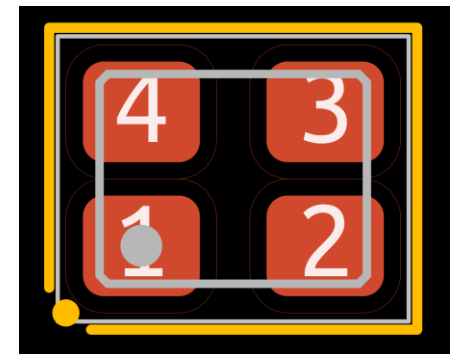
Seiko Epson FA238 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_FA238-4Pin_3.2x2.5mm

Crystal_SMD_SeikoEpson_FA238-4Pin_3.2x2.5mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



FA238 crystal footprint.

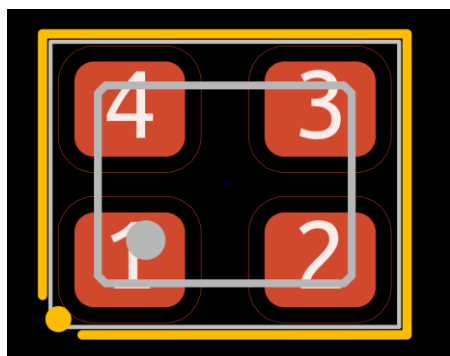
Seiko Epson FA238V series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_FA238V-4Pin_3.2x2.5mm

Crystal_SMD_SeikoEpson_FA238V-4Pin_3.2x2.5mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



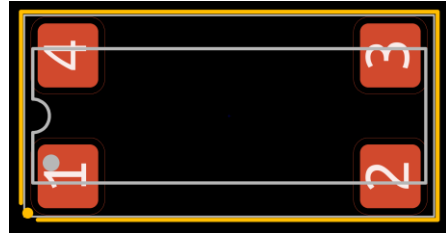
FA238V crystal footprint.

Seiko Epson MA406 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_MA406-4Pin_11.7x4.0mm
 Crystal_SMD_SeikoEpson_MA406-4Pin_11.7x4.0mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



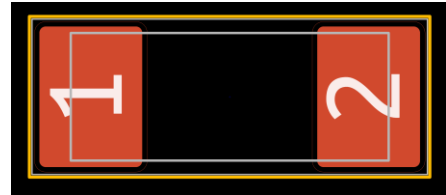
MA406 crystal footprint.

Seiko Epson MA505 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_MA505-2Pin_12.7x5.1mm
 Crystal_SMD_SeikoEpson_MA505-2Pin_12.7x5.1mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



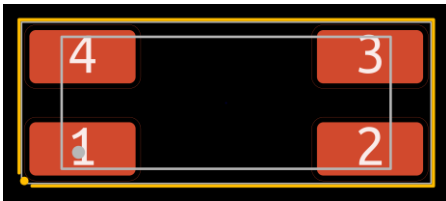
MA505 crystal footprint.

Seiko Epson MA506 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_MA506-4Pin_12.7x5.1mm
 Crystal_SMD_SeikoEpson_MA506-4Pin_12.7x5.1mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



MA506 crystal footprint.

Seiko Epson MC146 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_MC146-4Pin_6.7x1.5mm
 Crystal_SMD_SeikoEpson_MC146-4Pin_6.7x1.5mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



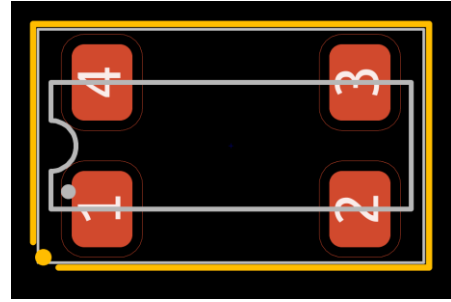
MC146 crystal footprint.

Seiko Epson MC156 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_MC156-4Pin_7.1x2.5mm
 Crystal_SMD_SeikoEpson_MC156-4Pin_7.1x2.5mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



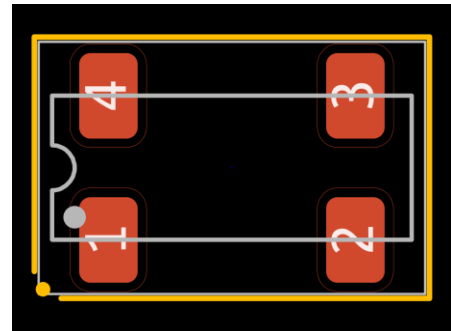
MC156 crystal footprint.

Seiko Epson MC306 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_MC306-4Pin_8.0x3.2mm
 Crystal_SMD_SeikoEpson_MC306-4Pin_8.0x3.2mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



MC306 crystal footprint.

Seiko Epson MC405 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_MC405-2Pin_9.6x4.1mm
 Crystal_SMD_SeikoEpson_MC405-2Pin_9.6x4.1mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



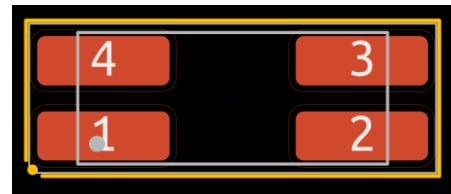
MC405 crystal footprint.

Seiko Epson MC406 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_MC406-4Pin_9.6x4.1mm
 Crystal_SMD_SeikoEpson_MC406-4Pin_9.6x4.1mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



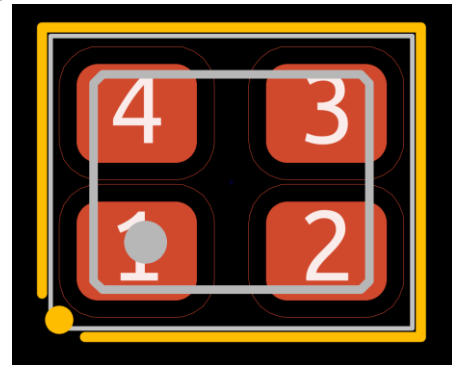
MC406 crystal footprint.

Seiko Epson TSX3225 series crystal footprints

Footprint names:

Crystal_SMD_SeikoEpson_TSSX3225-4Pin_3.2x2.5mm
 Crystal_SMD_SeikoEpson_TSSX3225-4Pin_3.2x2.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



TSX3225 crystal footprint.

TXC 7A series crystal footprint

Footprint name:

Crystal_SMD_TXC_7A-2Pin_5x3.2mm



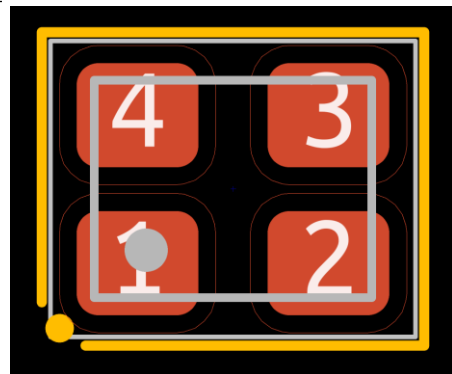
7A crystal footprint.

TXC 7M series crystal footprints

Footprint names:

Crystal_SMD_TXC_7M-4Pin_3.2x2.5mm
 Crystal_SMD_TXC_7M-4Pin_3.2x2.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



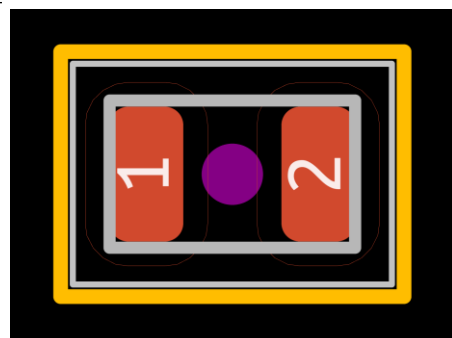
7M crystal footprint.

TXC 9HT11 series crystal footprints

Footprint names:

Crystal_SMD_TXC_9HT11-2Pin_2.0x1.2mm
 Crystal_SMD_TXC_9HT11-2Pin_2.0x1.2mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

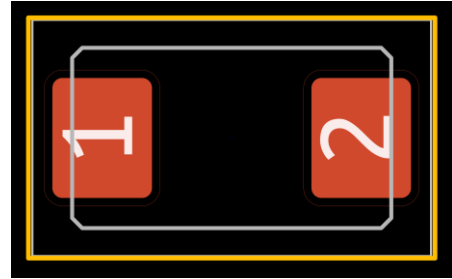


9HT11 crystal footprint.

TXC AX 8045 series crystal footprint

Footprint name:

Crystal_SMD_TXC_AX_8045-2Pin_8.0x4.5mm



AX 8045 crystal footprint.

Ceramic resonator footprints

Footprint count: 8

Footprint naming convention:

Resonator-<no. of pins>**Pin_W**<width>**mm_**

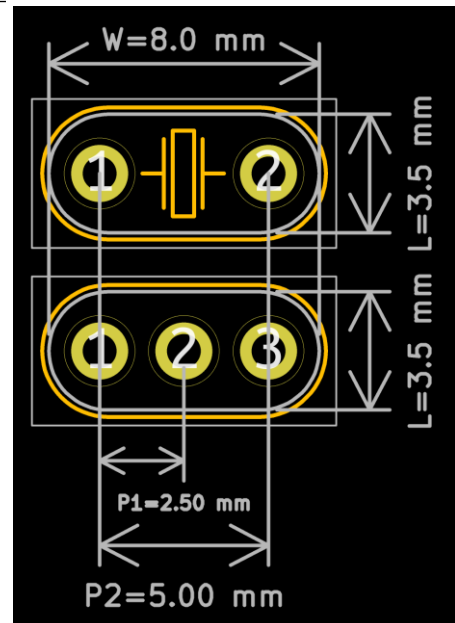
H<height>**mm**

Pin pitch is 2.50mm for 3-pin and 5.00mm for 2-pin resonator footprints.

Name examples:

Resonator-2Pin_W6.0mm_H3.0mm

Resonator-3Pin_W8.0mm_H3.5mm



Two resonator footprints (2-pin and a 3-pin) with all relevant dimensions indicated.

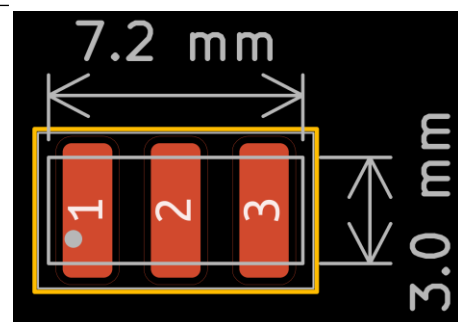
SMD 3-pin 7.2x3.0mm resonator footprints

Footprint names:

Resonator_SMD-3Pin_7.2x3.0mm

Resonator_SMD-3Pin_7.2x3.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



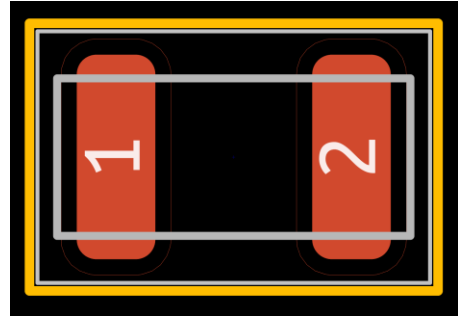
7.2x3.0mm 3-pin resonator footprint with its dimensions indicated.

muRata CDSCP series resonator footprints

Footprint names:

Resonator_SMD_muRata_CDSCB-2Pin_4.5x2.0mm
Resonator_SMD_muRata_CDSCB-2Pin_4.5x2.0mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



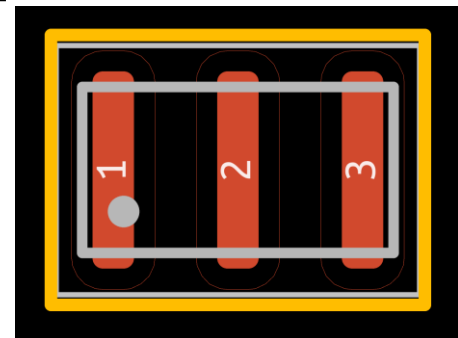
CDSCP resonator footprint.

muRata CSTxExxV series resonator footprints

Footprint names:

Resonator_SMD_muRata_CSTxExxV-3Pin_3.0x1.1mm
Resonator_SMD_muRata_CSTxExxV-3Pin_3.0x1.1mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



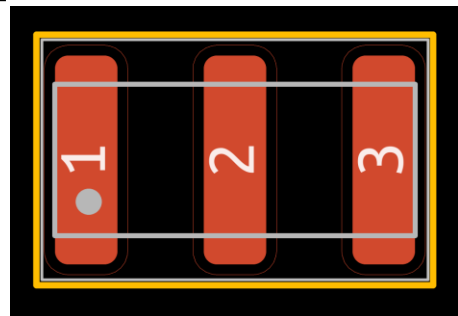
CSTxExxV resonator footprint.

muRata SFECV series resonator footprints

Footprint names:

Resonator_SMD_muRata_SFECV-3Pin_6.9x2.9mm
Resonator_SMD_muRata_SFECV-3Pin_6.9x2.9mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



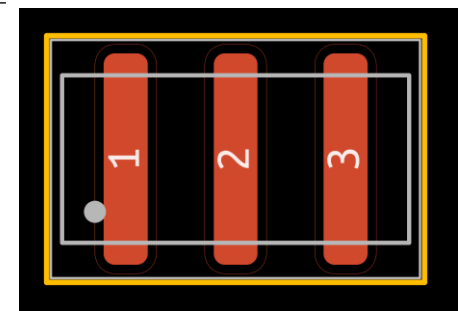
SFECV resonator footprint.

muRata SFSKA series resonator footprints

Footprint names:

Resonator_SMD_muRata_SFSKA-3Pin_7.9x3.8mm
Resonator_SMD_muRata_SFSKA-3Pin_7.9x3.8mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



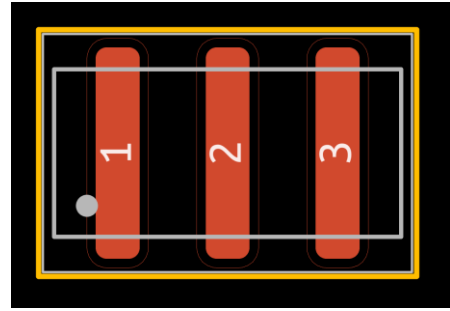
SFSKA resonator footprint.

muRata TPSKA series resonator footprints

Footprint names:

Resonator_SMD_muRata_TPSKA-3Pin_7.9x3.8mm
 Resonator_SMD_muRata_TPSKA-3Pin_7.9x3.8mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



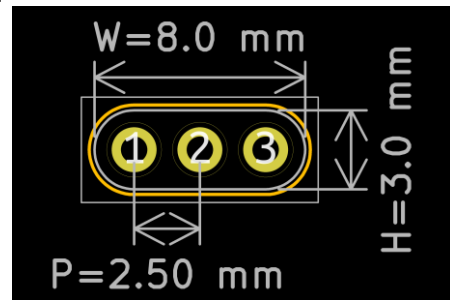
TPSKA resonator footprint.

muRata CSTLSxxxG series resonator footprints

Footprint names:

Resonator_muRata_CSTLSxxxG-3Pin_W8.0mm_H3.0mm
 Resonator_muRata_CSTLSxxxG-3Pin_W8.0mm_H3.0mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



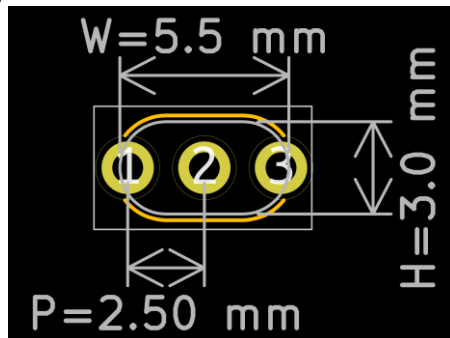
CSTLSxxxG resonator footprint with its dimensions indicated.

muRata CSTLSxxxX series resonator footprints

Footprint names:

Resonator_muRata_CSTLSxxxX-3Pin_W5.5mm_H3.0mm
 Resonator_muRata_CSTLSxxxX-3Pin_W5.5mm_H3.0mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



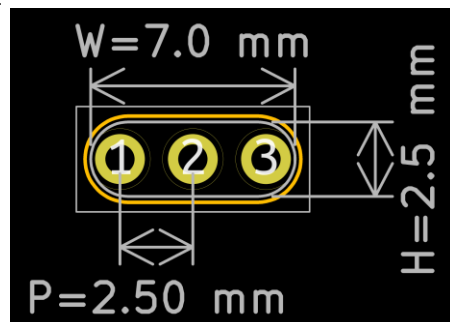
CSTLSxxxX resonator footprint with its dimensions indicated.

muRata DSN6 series resonator footprints

Footprint names:

Resonator_muRata_DSN6-3Pin_W7.0mm_H2.5mm
 Resonator_muRata_DSN6-3Pin_W7.0mm_H2.5mm
 _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



DSN6 resonator footprint with its dimensions indicated.

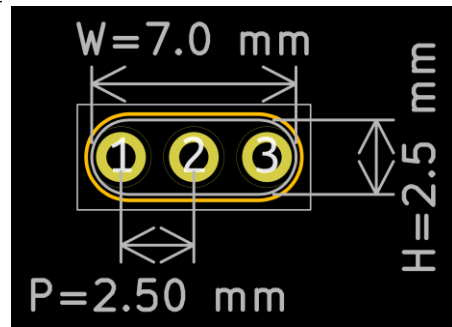
muRata DSS6 series resonator footprints

Footprint names:

Resonator_muRata_DSS6-3Pin_W7.0mm_H2.5mm

Resonator_muRata_DSS6-3Pin_W7.0mm_H2.5mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



DSS6 resonator footprint with its dimensions indicated.

3.6. SMD Diode and Diode Bridge Libraries

These libraries contain footprints for:

- SMD single diode footprints
- SMD dual diode footprints (that are not covered by TO-SOT library)
- SMD diode rectifier bridges.

Hand soldering library variant contains footprints with additional symbols on the silkscreen layer placed under the part.

Silkscreen layer marks the cathode terminal with two rectangles on the outer edge of the outline. Some footprints have dedicated variants for bidirectional TVS (Transient Voltage Suppressors) which have no polarity markings on the silkscreen. Hand soldering library variant contains additional footprint variants for Zener/unidirectional TVS diodes.

Standard variant	
Folder name: Diode_SMD_AKL	
Footprint count:	118
Hand soldering variant	
Folder name: Diode_SMD_Handsoldering_AKL	
Footprint count:	143
Total footprints:	261






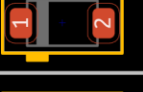




Footprint		Library Variant	
		Standard	Hand soldering
MELF	Standard		
	TVS		
	Zener		
SOD-123	Standard		
	TVS		
	Zener		

Figure 3.24. Comparison between SMD diode footprints from different library variants.

Rectangular diode footprints

Footprint count: 50 (60 for handsoldering lib.)

Footprint naming convention:

D<imp. size code>_<metric size code>**Metric**<variant>

Name examples:

D_0805_2012Metric

D_1206_3216Metric_Castellated

D_0603_1608Metric_Pad1.05x0.95mm

D_1210_3225Metric_TVS

D_0805_2012Metric_Zener

Available variants:

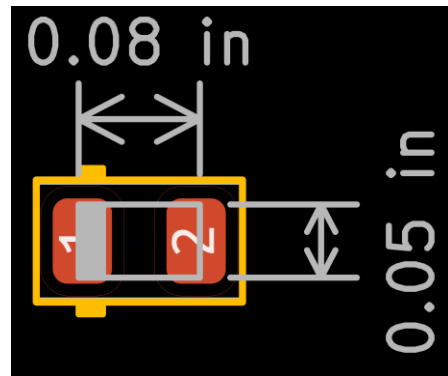
- Castellated – pad size optimized for castellated pads.
- Enlarged pads – variant name states the pad size, useful for manual soldering.
- TVS – has no cathode markings, intended to be used for bidirectional TVS diodes.
- Zener – handsoldering library variant only, has a Zener diode symbol on the silkscreen layer.

Imperial size code:

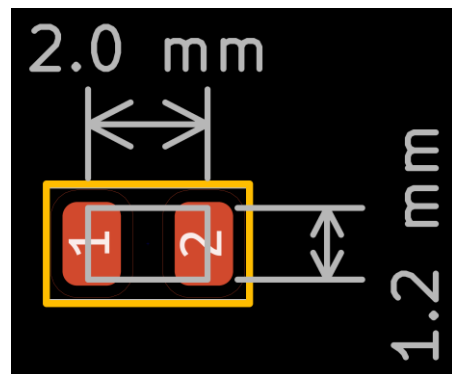
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.01 in. Example: 0805 size code means package length of 0.08 in and width of 0.05 in.

Metric size code:

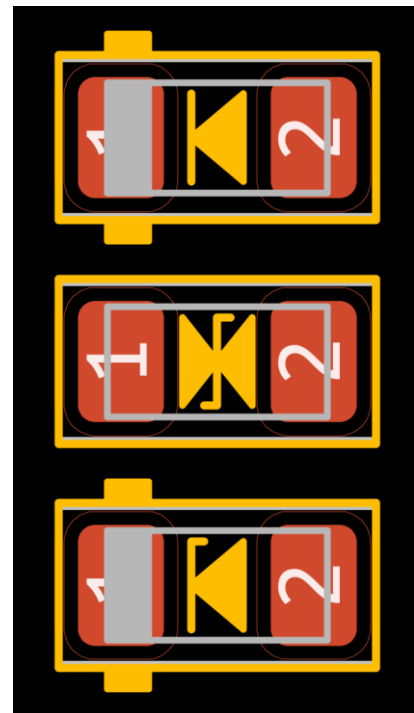
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.1 mm. Example: 2012 metric size code means package length of 2 mm and width of 1.2 mm.



Standard diode footprint with 0805 imperial size code with length and width of the package indicated.



TVS diode footprint variant with 2012 metric size code with length and width of the package indicated.



1206 diode footprints from the handsoldering library. Standard, TVS and Zener variants respectively.

Metal Electrode Leadless Face (MELF) diode footprints

Footprint names:

D_MELF

Standard footprint.

D_MELF-RM10_Universal

Footprints containing both SMD pads for mounting the MELF diode and plated through-holes for mounting a THT diode in the same place.

D_MELF_BigPads

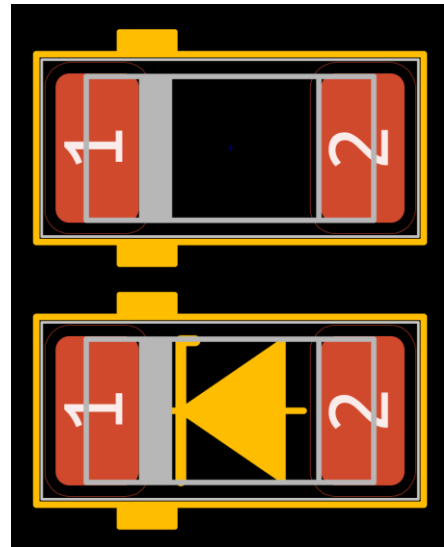
Standard footprint with enlarged pads.

D_MELF_TVS

Footprint variant without polarity marks intended for bidirectional devices.

D_MELF_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.



MELF diode footprint form the standard library (top) and a Zener variant of the footprint from the hand soldering library (bottom).

Mini Metal Electrode Leadless Face (MiniMELF) diode footprints

Footprint names:

D_MinimELF

Standard footprint.

D_MinimELF_BigPads

Standard footprint with enlarged pads.

D_MinimELF_TVS

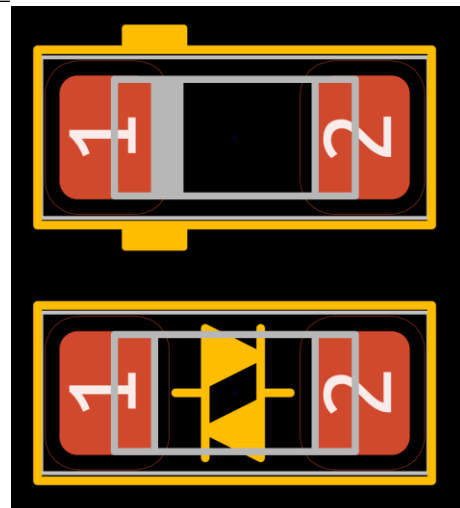
Footprint variant without polarity marks intended for bidirectional devices.

D_MinimELF_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.

D_MinimELF_Diac

Hand soldering library variant only. Footprint with Diac (AC trigger diode) symbol instead of a standard one.



MiniMELF diode footprint form the standard library (top) and a Diac variant of the footprint from the hand soldering library (bottom).

Micro Metal Electrode Leadless Face (MicroMELF) diode footprints

Footprint names:

D_MicroMELF

Standard footprint.

D_MicroMELF_BigPads

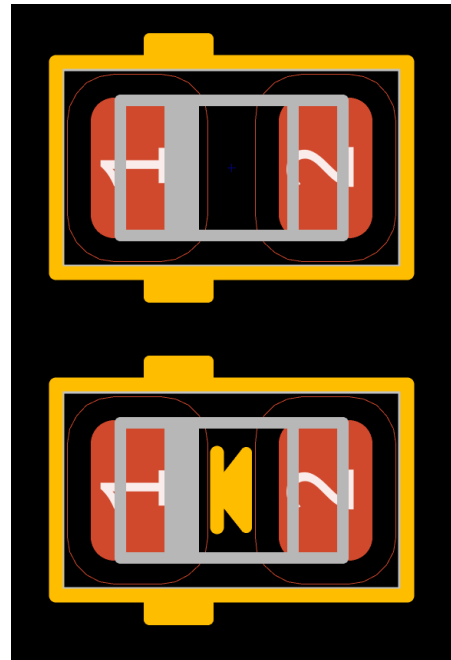
Standard footprint with enlarged pads.

D_MicroMELF_TVS

Footprint variant without polarity marks intended for bidirectional devices.

D_MicroMELF_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.

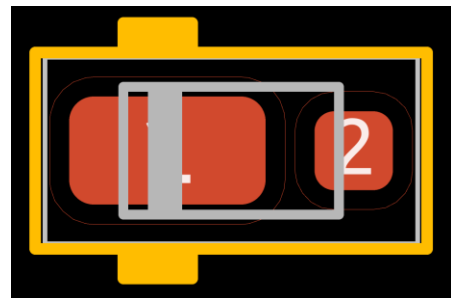


MicroMELF diode footprint form the standard library (top) and from the hand soldering library (bottom).

MicroSMP (DO-219AD) diode footprint

Footprint name:

D_MicroSMP



MicroSMP diode footprint.

PowerDI-5 diode footprint

Footprint name:

D_PowerDI-5

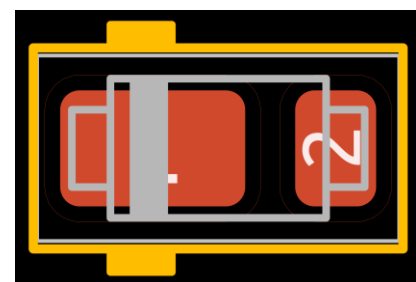


PowerDI-5 diode footprint.

PowerDI-123 diode footprint

Footprint name:

D_PowerDI-123



PowerDI-5 diode footprint.

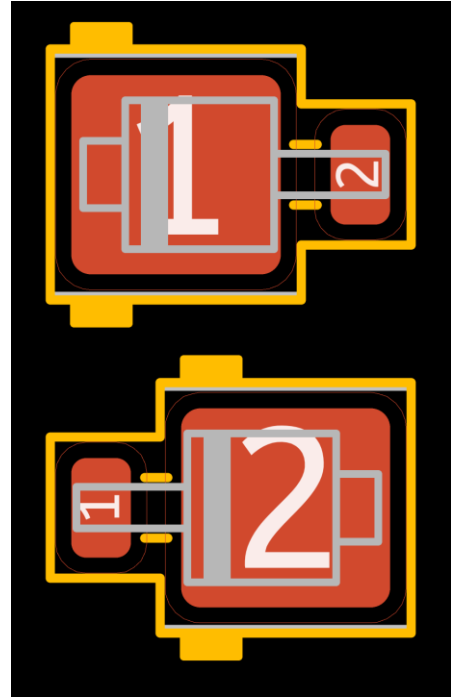
Powermite 1 diode footprints

Footprint names:

D_Powermite_AK

D_Powermite_KA

AK or KA suffix refers to pin configuration of the package, AK has the cathode markings near the pig pad, KA has the markings near the small pad



Powermite 1 diode footprints. AK variant (top) has the pin 1 (cathode) defined as the big pad. KA variant (bottom) has reversed pad configuration.

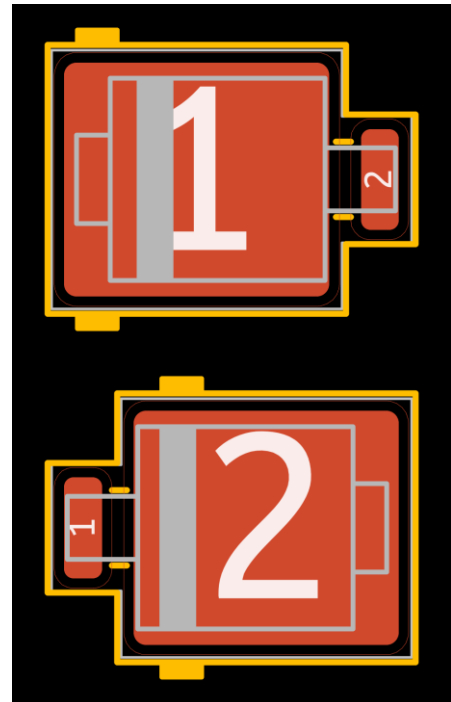
Powermite 2 diode footprints

Footprint names:

D_Powermite2_AK

D_Powermite2_KA

AK or KA suffix refers to pin configuration of the package, AK has the cathode markings near the pig pad, KA has the markings near the small pad

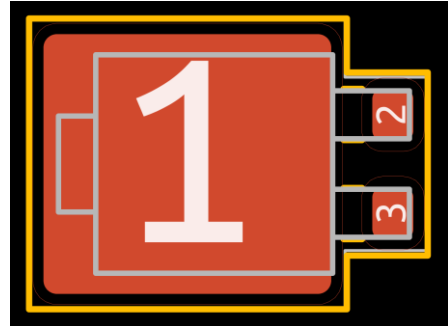


Powermite 2 diode footprints. AK variant (top) has the pin 1 (cathode) defined as the big pad. KA variant (bottom) has reversed pad configuration.

Powermite 3 diode footprint

Footprint name:

D_Powermite3



Powermite 3 diode footprint.

SC-80 series diode footprints

Footprint names:**D_SC-80**

Standard footprint.

D_SC-80_BigPads

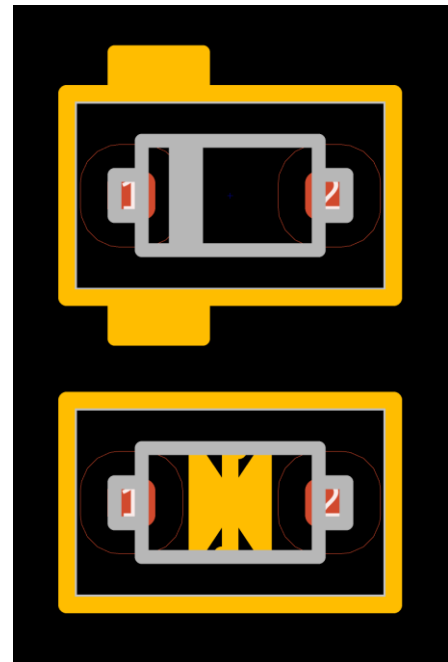
Standard footprint with enlarged pads.

D_SC-80_TV5

Footprint variant without polarity marks intended for bidirectional devices.

D_SC-80_Zener

Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SC-80 diode footprint from the standard library (top) and a TV5 footprint from the handsoldering library (bottom).

SMA (DO-214AC) series diode footprints

Footprint names:

D_SMA

Standard footprint.

D_SMA-SMB_Universal

Footprint allows for installing both SMA and SMB diodes.

D_SMA_BigPads

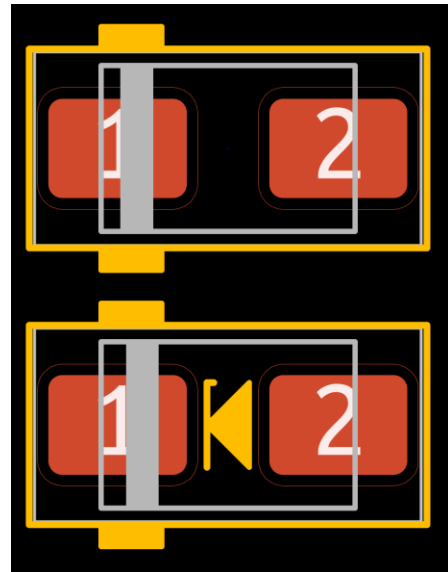
Standard footprint with enlarged pads.

D_SMA_TV

Footprint variant without polarity marks intended for bidirectional devices.

D_SMA_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SMA diode footprint from the standard library (top) and a TVS footprint from the hand soldering library (bottom).

SMB (DO-214AA) series diode footprints

Footprint names:

D_SMB

Standard footprint.

D_SMB-SMC_Universal

Footprint allows for installing both SMA and SMB diodes.

D_SMB_BigPads

Standard footprint with enlarged pads.

D_SMB_Modified

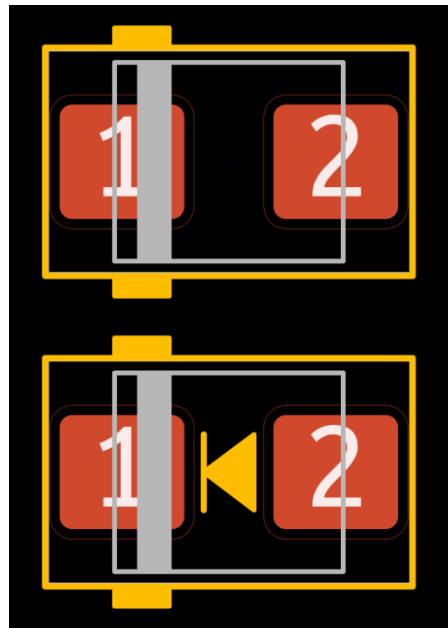
Footprint for a 3-pin version of the SMB diode package.

D_SMB_TV

Footprint variant without polarity marks intended for bidirectional devices.

D_SMB_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SMB diode footprint from the standard library (top) and a Zener footprint from the hand soldering library (bottom).

SMC (DO-214AB) series diode footprints

Footprint names:

D_SMC

Standard footprint.

D_SMC-RM10_Universal

Footprints containing both SMD pads for mounting the SMC diode and plated through-holes for mounting a THT diode in the same place.

D_SMC_BigPads

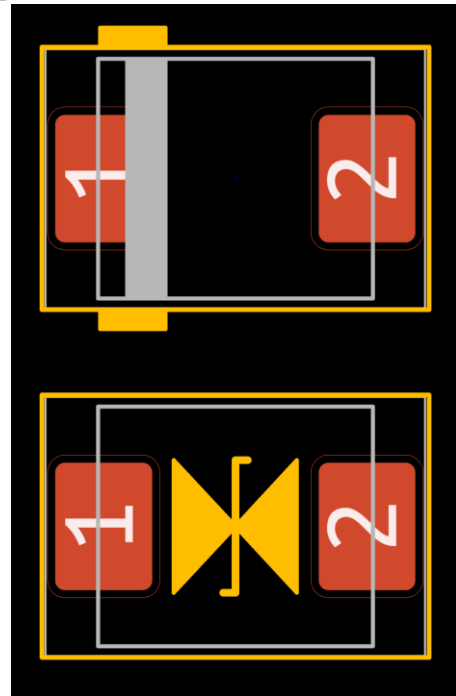
Standard footprint with enlarged pads.

D_SMC_TV5

Footprint variant without polarity marks intended for bidirectional devices.

D_SMC_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.



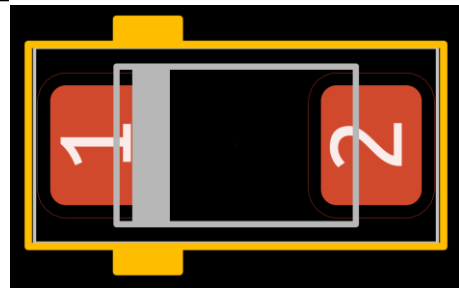
SMC diode footprint from the standard library (top) and a TVS footprint from the hand soldering library (bottom).

SMA flat-lead diode footprint

Footprint name:

D_SMAFL

Footprint intended for use with flat-lead variant of the SMA diode package.



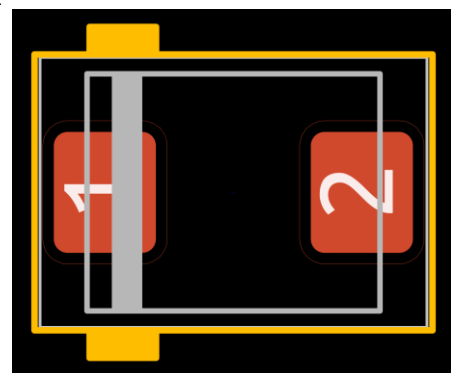
SMA flat-lead diode footprint.

SMB flat-lead diode footprint

Footprint name:

D_SMBFL

Footprint intended for use with flat-lead variant of the SMB diode package.



SMB flat-lead diode footprint.

SMF (DO-219AB) series diode footprints

Footprint names:

D_SMF

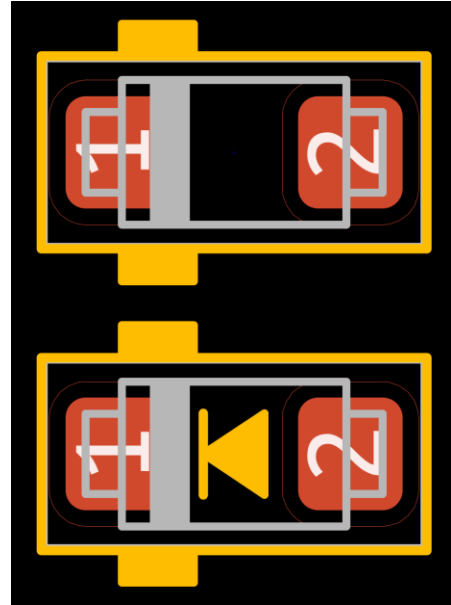
Standard footprint.

D_SMF_TVS

Footprint variant without polarity marks intended for bidirectional devices.

D_SMF_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.

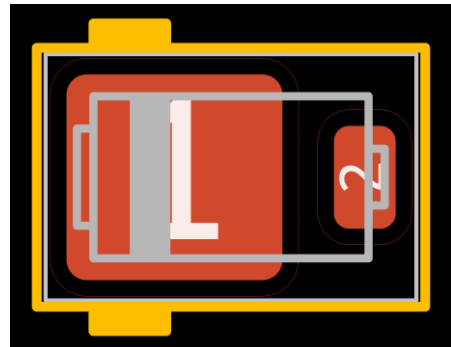


SMF diode footprint from the standard library (top) and a footprint from the hand soldering library (bottom).

SMP (DO-220AA) diode footprint

Footprint name:

D_SMP



SMP diode footprint.

SOD-110 series diode footprints

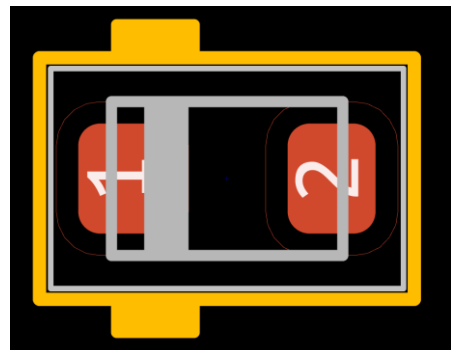
Footprint names:

D_SOD-110

Standard footprint.

D_SOD-110_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SOD-110 diode footprint.

SOD-123 series diode footprints

Footprint names:

D_SOD-123

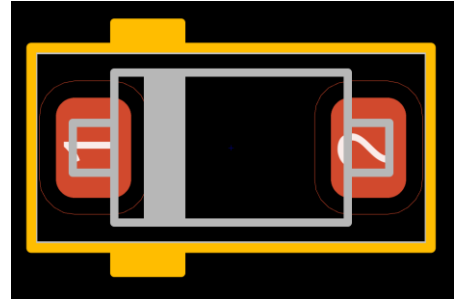
Standard footprint.

D_SOD-123_TV5

Footprint variant without polarity marks intended for bidirectional devices.

D_SOD-123_Zener

Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SOD-123 diode footprint.

SOD-123 flat-lead series diode footprints

Footprint names:

D_SOD-123F

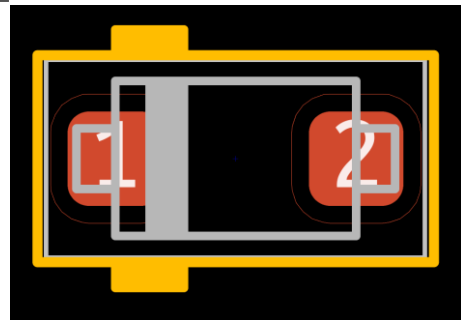
Standard footprint.

D_SOD-123F_TV5

Footprint variant without polarity marks intended for bidirectional devices.

D_SOD-123F_Zener

Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SOD-123 flat-lead diode footprint.

SOD-128 series diode footprints

Footprint names:

D_SOD-128

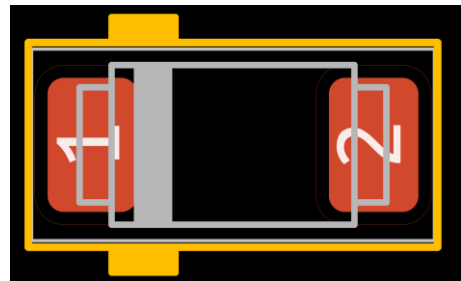
Standard footprint.

D_SOD-128_TV5

Footprint variant without polarity marks intended for bidirectional devices.

D_SOD-128_Zener

Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SOD-128 diode footprint.

SOD-323 series diode footprints

Footprint names:

D_SOD-323

Standard footprint.

D_SOD-323_BigPads

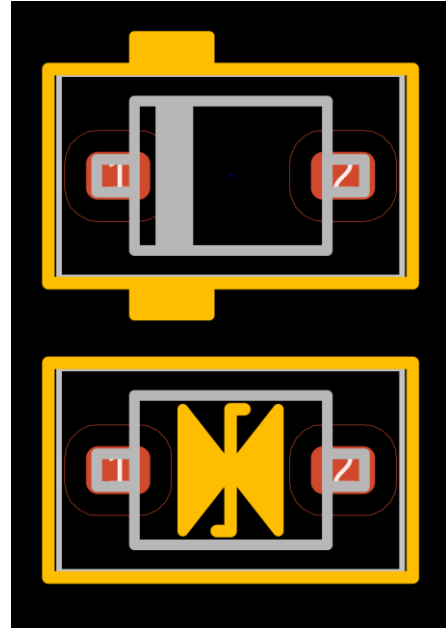
Standard footprint with enlarged pads.

D_SOD-323_TV5

Footprint variant without polarity marks intended for bidirectional devices.

D_SOD-323_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SOD-323 diode footprint from the standard library (top) and a TVS footprint from the hand soldering library (bottom).

SOD-323 flat-lead series diode footprints

Footprint names:

D_SOD-323F

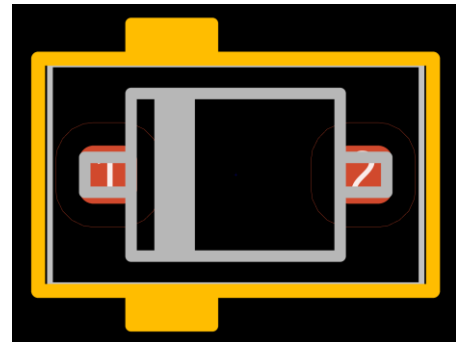
Standard footprint.

D_SOD-323F_TV5

Footprint variant without polarity marks intended for bidirectional devices.

D_SOD-323F_Zener

Hand soldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SOD-323 flat-lead diode footprint.

SOD-523 series diode footprints

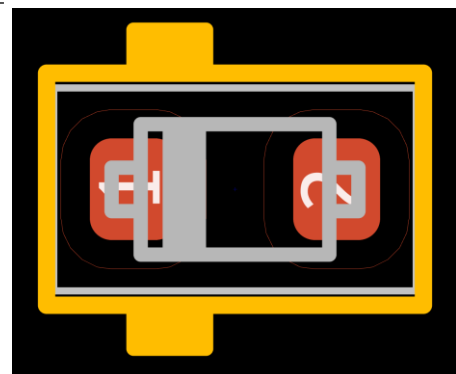
Footprint names:

D_SOD-523

Standard footprint.

D_SOD-523_TV5

Footprint variant without polarity marks intended for bidirectional devices.



SOD-523 diode footprint.

SOD-882 (DFN1006-2) series diode footprints

Footprint names:

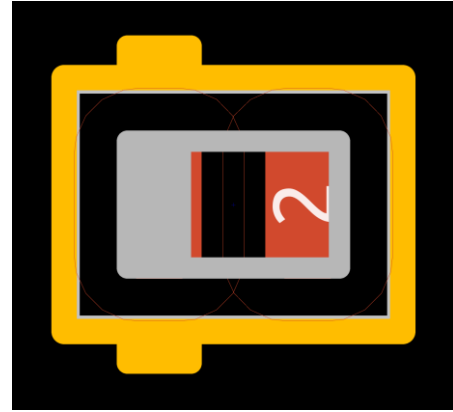
D_SOD-882_DFN1006-2

Standard footprint.

D_SOD-882_DFN1006-2_TV5

Footprint variant without polarity marks intended for bidirectional devices.

Note: Courtyard of this footprint has been reduced to 0.15mm (instead of standard 0.25mm).



SOD-882 diode footprint.

SOD-923 series diode footprints

Footprint names:

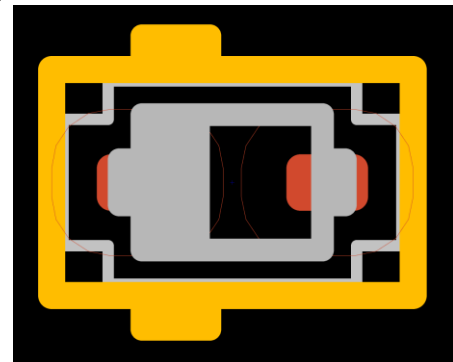
D_SOD-923

Standard footprint.

D_SOD-923_TV5

Footprint variant without polarity marks intended for bidirectional devices.

Note: Courtyard of this footprint has been reduced to 0.15mm (instead of standard 0.25mm).

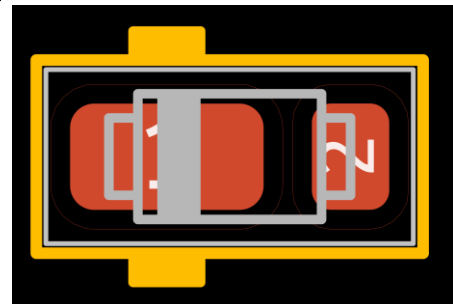


SOD-923 diode footprint.

TUMD2 diode footprint

Footprint name:

D_TUMD2

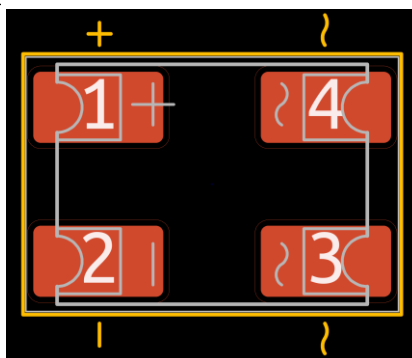


TUMD2 diode footprint.

Bourns CD-DF4xxS series rectifier bridge footprint

Footprint name:

Diode_Bridge_Bourns_CD-DF4xxS

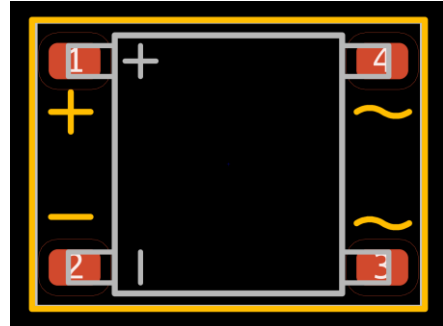


CD-DF4xxS bridge footprint.

Diotec ABS series rectifier bridge footprint

Footprint name:

Diode_Bridge_Diotec_ABS

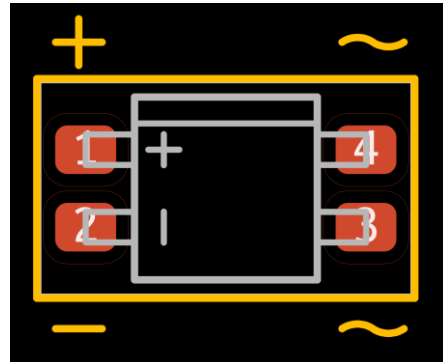


ABS bridge footprint.

Diotec MicroDIL rectifier bridge footprint

Footprint name:

Diode_Bridge_Diotec_MicroDil_3.0x3.0x1.8mm

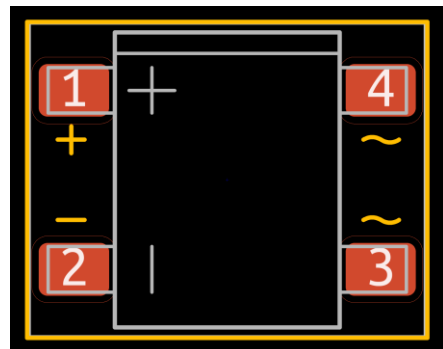


MicroDIL bridge footprint.

Diotec SO-DIL rectifier bridge footprint

Footprint name:

Diode_Bridge_Diotec_SO-DIL-Slim

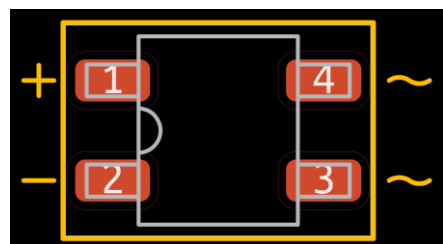


SO-DIL bridge footprint.

Diodes MBF rectifier bridge footprint

Footprint name:

Diode_Bridge_MBF

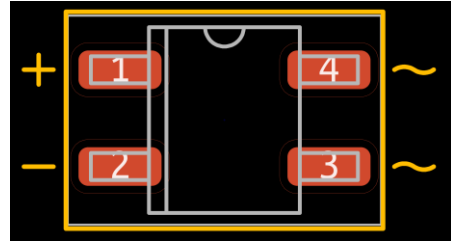


MBF bridge footprint.

Diodes MBS rectifier bridge footprint

Footprint name:

Diode_Bridge_MBS

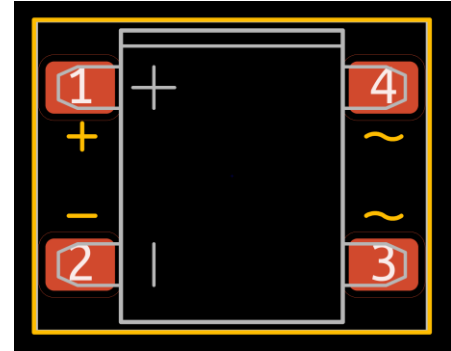


MBS bridge footprint.

Vishay DFS rectifier bridge footprint

Footprint name:

Diode_Bridge_Vishay_DFS

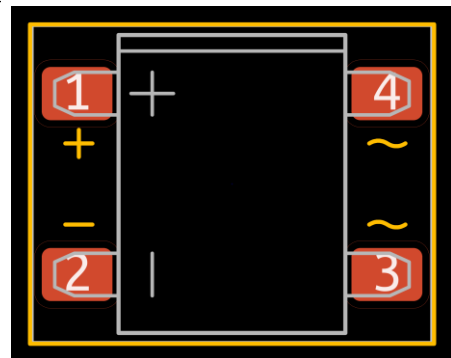


DFS bridge footprint.

Vishay DFS-Flat low-profile rectifier bridge footprint

Footprint name:

Diode_Bridge_Vishay_DFSFlat

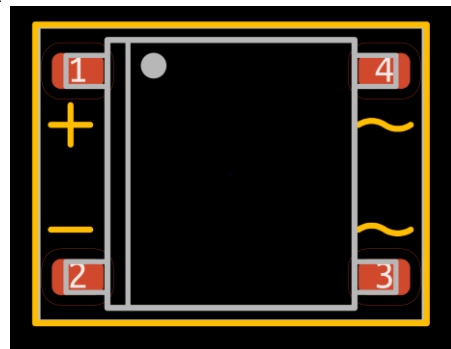


DFS-Flat bridge footprint.

Vishay MBLS rectifier bridge footprint

Footprint name:

Diode_Bridge_Vishay_MBLS



DFS-Flat bridge footprint.

3.7. THT Diode and Diode Bridge Libraries

These libraries contain footprints for:

- THT diodes
- THT diode rectifier bridges.

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Standard variant	
Folder name: Diode_THT_AKL	
Footprint count:	409
Double-sided variant	
Folder name: Diode_THT_AKL_Double	
Footprint count:	409
Total footprints:	818

Diode footprints come in three basic variants:

- Standard variant with a regular diode symbol on the silkscreen layer,
- Zener variant with a Zener diode symbol on the silkscreen layer,
- TVS variant with no polarity marks and a bidirectional TVS diode symbol on the silkscreen layer.

Cathode is additionally indicated by a square pad and a letter 'K' on the silkscreen (KiCad standard libraries use Kathode instead of Cathode in their naming. Letter K and footprint names are kept identical to the standard KiCad library for interoperability reasons).

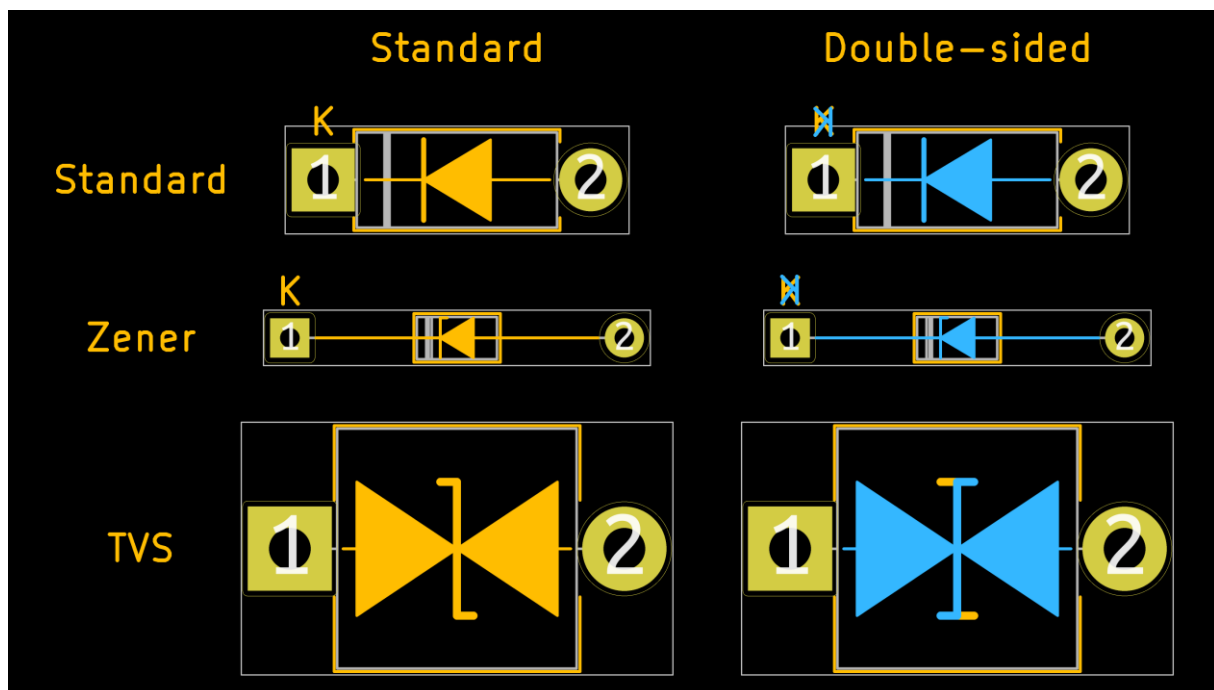


Figure 3.25. Comparison between THT diode footprints from different library variants.

5KPW diode footprints

Footprint count: 17

Footprint naming convention:

D_5KPW_P<pitch>**mm_**<orientation>**_**<variant>

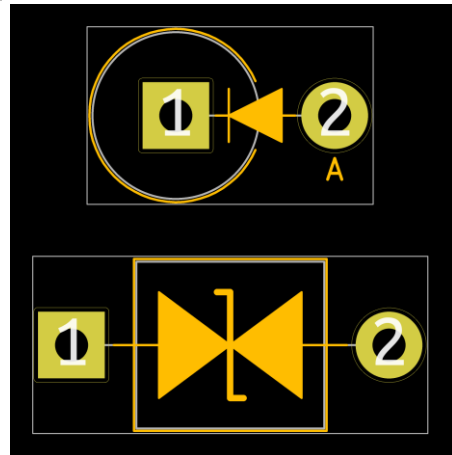
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

Name examples:

D_5KPW_P12.70mm_Horizontal
 D_5KPW_P7.62mm_Vertical_AnodeUp
 D_5KPW_P30.48mm_Horizontal_TVS



Vertical 5KPW diode standard footprint (top) and a horizontal 'TVS' footprint (bottom).

5KP diode footprints

Footprint count: 19

Footprint naming convention:

D_5KP_P<pitch>**mm_**<orientation>**_**<variant>

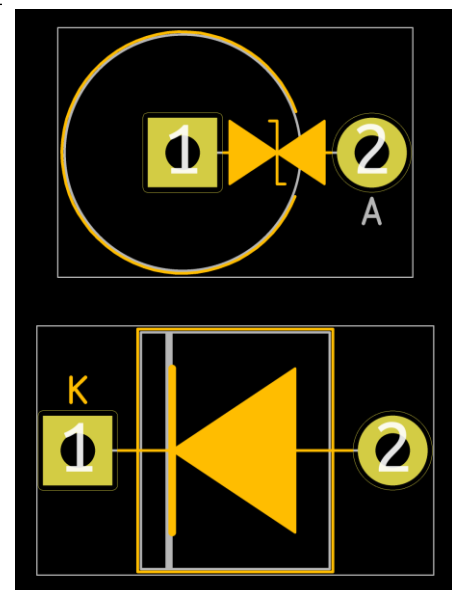
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

Name examples:

D_5KP_P15.24mm_Horizontal
 D_5KP_P7.62mm_Vertical_TVS
 D_5KP_P10.16mm_Horizontal_TVS



Vertical 5KP diode 'TVS' footprint (top) and a horizontal standard footprint (bottom).

5W / CASE-017AA diode footprints

Footprint count: 23

Footprint naming convention:

D_5W_CASE-017AA_P<pitch>**mm_**<orientation>_
<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_5W_CASE-017AA_P5.08mm_Vertical_AnodeUp_Zener

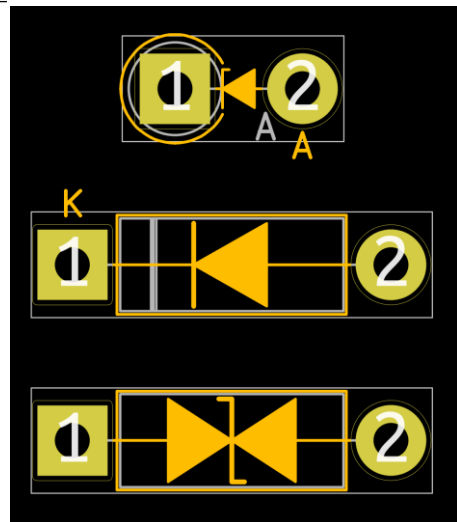
D_5W_CASE-017AA_P12.70mm_Horizontal

D_5W_CASE-017AA_P5.08mm_Vertical_TVS

D_5W_CASE-017AA_P25.40mm_Horizontal_Zener

D_5W_CASE-017AA_P5.08mm_Vertical_KathodeUp

D_5W_CASE-017AA_P10.16mm_Horizontal_TVS



Vertical 5W diode 'Zener' footprint (top), a horizontal standard footprint (middle) and a horizontal 'TVS' footprint (bottom).

A-405 diode footprints

Footprint count: 23

Footprint naming convention:

D_A-405_P<pitch>**mm_**<orientation>**_**<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_A-405_P2.54mm_Vertical_AnodeUp_Zener

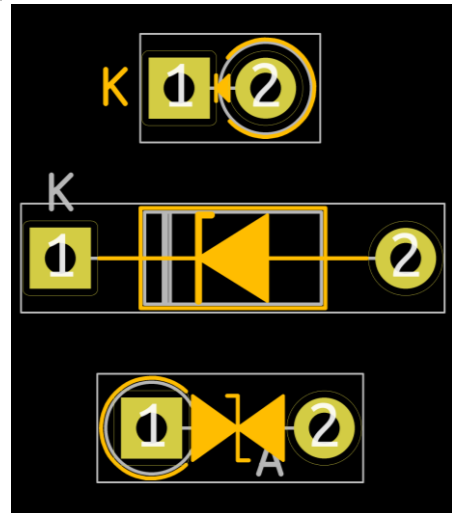
D_A-405_P10.16mm_Horizontal

D_A-405_P5.08mm_Vertical_KathodeUp

D_A-405_P20.32mm_Horizontal_TVS

D_A-405_P2.54mm_Vertical_TVS

D_A-405_P12.70mm_Horizontal_Zener



Vertical A-405 diode standard footprint (top), a horizontal 'Zener' footprint (middle) and a vertical 'TVS' footprint (bottom).

DO-15 diode footprints

Footprint count: 30

Footprint naming convention:

D_DO-15_P<pitch>**mm_**<orientation>**_**<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-15_P3.81mm_Vertical_AnodeUp_Zener

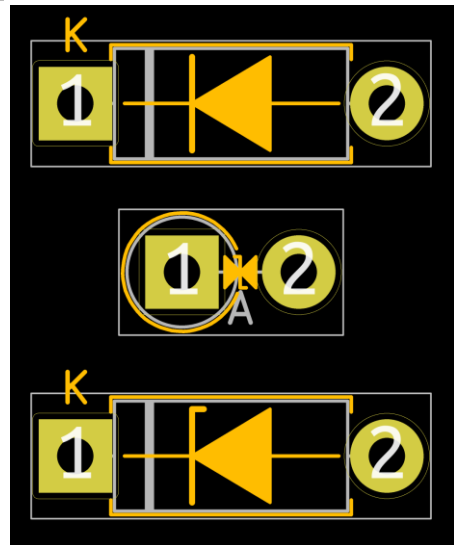
D_DO-15_P25.40mm_Horizontal

D_DO-15_P5.08mm_Vertical_KathodeUp

D_DO-15_P12.70mm_Horizontal_TVS

D_DO-15_P5.08mm_Vertical_TVS

D_DO-15_P10.16mm_Horizontal_Zener



Horizontal DO-15 diode standard footprint (top), a vertical 'TVS' footprint (middle) and a horizontal 'Zener' footprint (bottom).

DO-27 diode footprints

Footprint count: 20

Footprint naming convention:

D_DO-27_P<pitch>**mm_**<orientation>**_**<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-27_P5.08mm_Vertical_AnodeUp_Zener

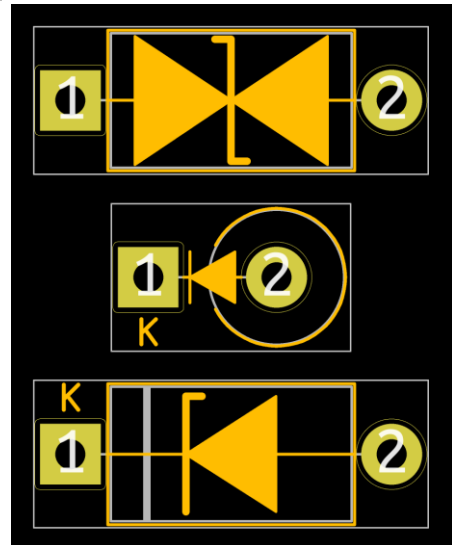
D_DO-27_P10.16mm_Horizontal

D_DO-27_P5.08mm_Vertical_KathodeUp

D_DO-27_P20.32mm_Horizontal_TVS

D_DO-27_P5.08mm_Vertical_TVS

D_DO-27_P12.70mm_Horizontal_Zener



Horizontal DO-27 diode 'TVS' footprint (top), a vertical standard footprint (middle) and a horizontal 'Zener' footprint (bottom).

DO-34 / SOD-68 diode footprints

Footprint count: 20

Footprint naming convention:

D_DO-34_SOD68_P<pitch>**mm_**<orientation>**_**<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

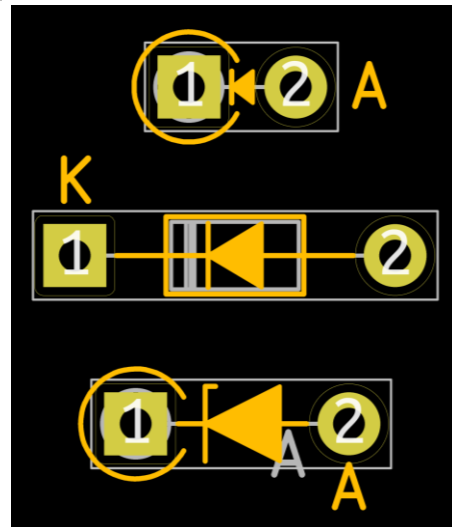
Name examples:

D_DO-34_SOD68_P2.54mm_Vertical_AnodeUp_Zener

D_DO-34_SOD68_P7.62mm_Horizontal

D_DO-34_SOD68_P5.08mm_Vertical_KathodeUp

D_DO-34_SOD68_P12.70mm_Horizontal_Zener



Vertical DO-34 diode standard footprint (top), a horizontal standard footprint (middle) and a vertical 'Zener' footprint (bottom).

DO-35 / SOD-27 diode footprints

Footprint count: 32

Footprint naming convention:

D_DO-35_SOD27_P<pitch>**mm_**<orientation>**_**<variant>

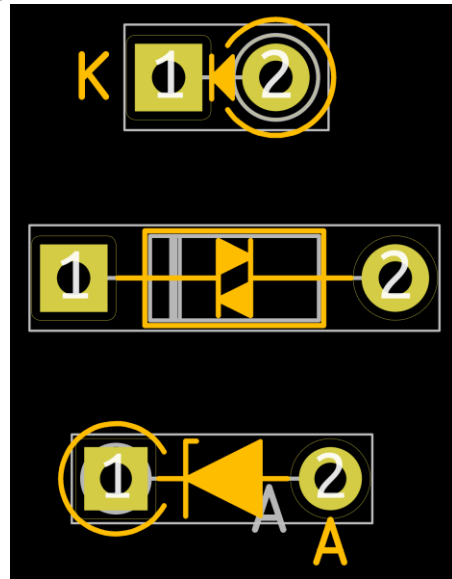
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'Diac' variant with no polarity markings and a Diac symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-35_SOD27_P3.81mm_Vertical_AnodeUp
 D_DO-35_SOD27_P10.16mm_Horizontal_Diac
 D_DO-35_SOD27_P2.54mm_Vertical_KathodeUp_Zener
 D_DO-35_SOD27_P12.70mm_Horizontal
 D_DO-35_SOD27_P5.08mm_Vertical_Diac
 D_DO-35_SOD27_P20.32mm_Horizontal_Zener



Vertical DO-35 diode standard footprint (top), a horizontal 'Diac' footprint (middle) and a vertical 'Zener' footprint (bottom).

DO-41 / SOD-81 diode footprints

Footprint count: 33

Footprint naming convention:

D_DO-41_SOD81_P<pitch>**mm_**<orientation>**_**<variant>

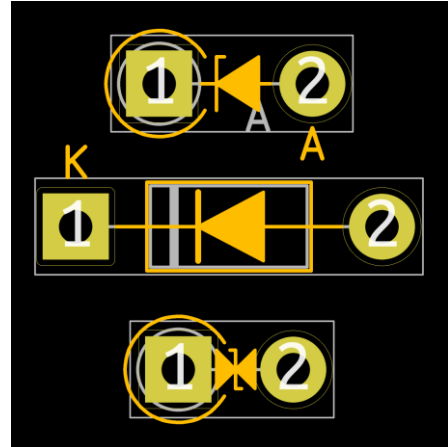
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-41_SOD81_P3.81mm_Vertical_AnodeUp
 D_DO-41_SOD81_P10.16mm_Horizontal_TVS
 D_DO-41_SOD81_P5.08mm_Vertical_KathodeUp_Zener
 D_DO-41_SOD81_P12.70mm_Horizontal
 D_DO-41_SOD81_P5.08mm_Vertical_TVS
 D_DO-41_SOD81_P20.32mm_Horizontal_Zener



Vertical DO-41 diode 'Zener' footprint (top), a horizontal standard footprint (middle) and a vertical 'TVS' footprint (bottom).

DO-201AD diode footprints

Footprint count: 25

Footprint naming convention:

D_DO-201AD_P<pitch>**mm_**<orientation>**_**<variant>

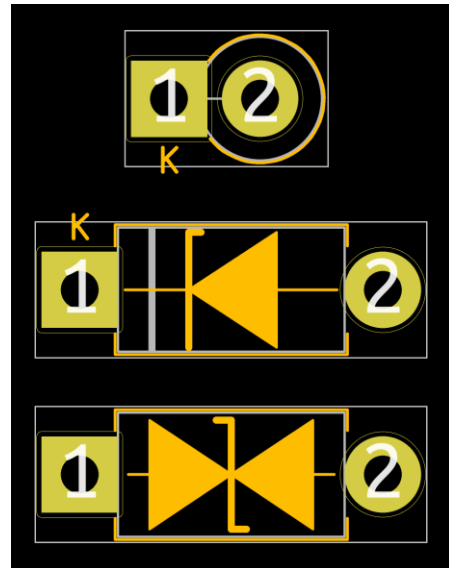
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-201AD_P3.81mm_Vertical_AnodeUp
 D_DO-201AD_P12.70mm_Horizontal_TVS
 D_DO-201AD_P5.08mm_Vertical_KathodeUp_Zener
 D_DO-201AD_P15.24mm_Horizontal
 D_DO-201AD_P5.08mm_Vertical_TVS
 D_DO-201AD_P20.32mm_Horizontal_Zener



Vertical DO-201AD diode standard footprint (top), a horizontal 'Zener' footprint (middle) and a horizontal 'TVS' footprint (bottom).

DO-201AE diode footprints

Footprint count: 28

Footprint naming convention:

D_DO-201AE_P<pitch>**mm_**<orientation>**_**<variant>

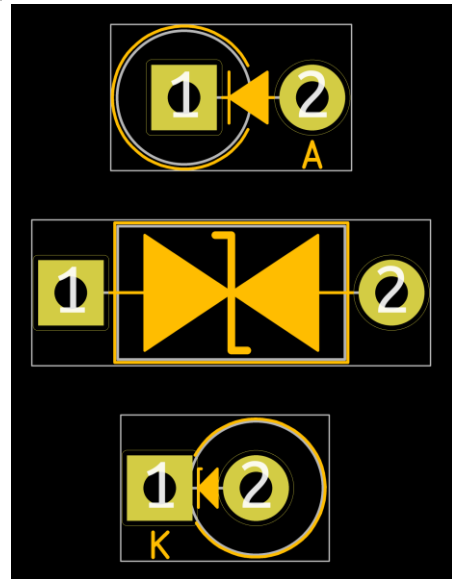
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-201AE_P3.81mm_Vertical_AnodeUp
 D_DO-201AE_P12.70mm_Horizontal_TVS
 D_DO-201AE_P5.08mm_Vertical_KathodeUp_Zener
 D_DO-201AE_P15.24mm_Horizontal
 D_DO-201AE_P3.81mm_Vertical_TVS
 D_DO-201AE_P20.32mm_Horizontal_Zener



Vertical DO-201AE diode standard footprint (top), a horizontal 'TVS' footprint (middle) and a vertical 'Zener' footprint (bottom).

DO-201 diode footprints

Footprint count: 28

Footprint naming convention:

D_DO-201_P<pitch>**mm_**<orientation>**_**<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-201_P3.81mm_Vertical_AnodeUp

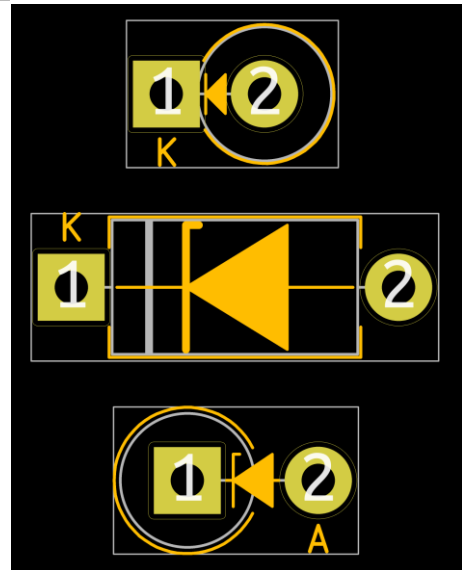
D_DO-201_P12.70mm_Horizontal_TVS

D_DO-201_P5.08mm_Vertical_KathodeUp_Zener

D_DO-201_P15.24mm_Horizontal

D_DO-201_P3.81mm_Vertical_TVS

D_DO-201_P20.32mm_Horizontal_Zener



Vertical DO-201 diode standard footprint (top), a horizontal 'Zener' footprint (middle) and a vertical 'TVS' footprint (bottom).

P600 / R-6 diode footprints

Footprint count: 25

Footprint naming convention:

D_P600_R-6_P<pitch>**mm_**<orientation>**_**<variant>

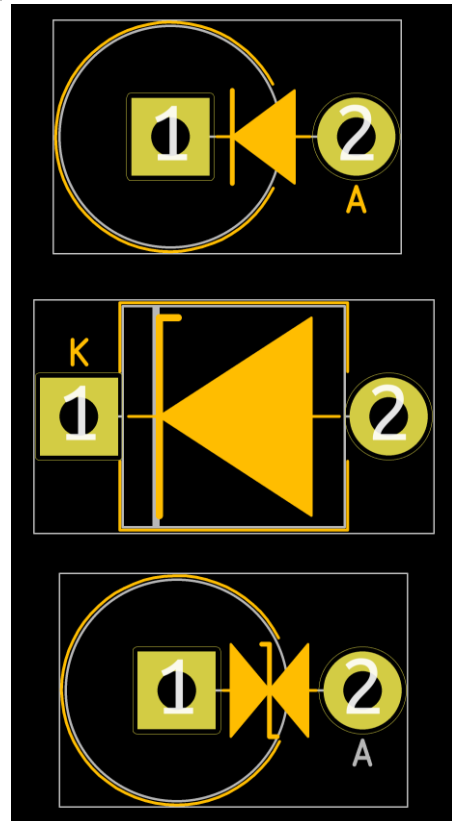
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_P600_R-6_P7.62mm_Vertical_AnodeUp
 D_P600_R-6_P12.70mm_Horizontal_TVS
 D_P600_R-6_P7.62mm_Vertical_KathodeUp_Zener
 D_P600_R-6_P15.24mm_Horizontal
 D_P600_R-6_P7.62mm_Vertical_TVS
 D_P600_R-6_P20.00mm_Horizontal_Zener



Vertical P600 diode standard footprint (top), a horizontal 'Zener' footprint (middle) and a vertical 'TVS' footprint (bottom).

SOD-57 diode footprints

Footprint count: 18

Footprint naming convention:

D_SOD-57_P<pitch>**mm_**<orientation>**_**<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

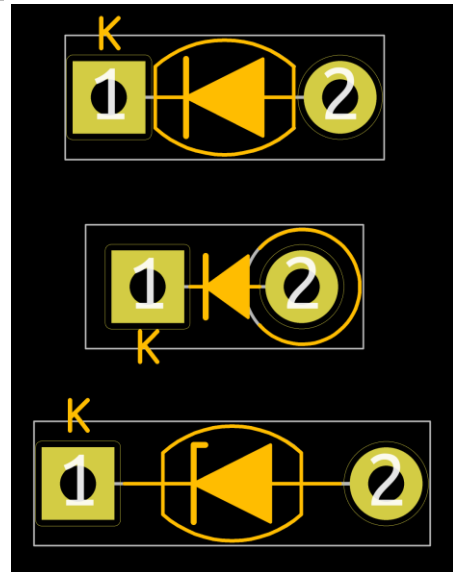
Name examples:

D_SOD-57_P5.08mm_Vertical_AnodeUp

D_SOD-57_P5.08mm_Vertical_KathodeUp_Zener

D_SOD-57_P15.24mm_Horizontal

D_SOD-57_P20.32mm_Horizontal_Zener



Vertical SOD-57 diode standard footprint (top), a horizontal standard footprint (middle) and a horizontal 'Zener' footprint (bottom).

SOD-64 diode footprints

Footprint count: 18

Footprint naming convention:

D_SOD-64_P<pitch>**mm_**<orientation>**_**<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

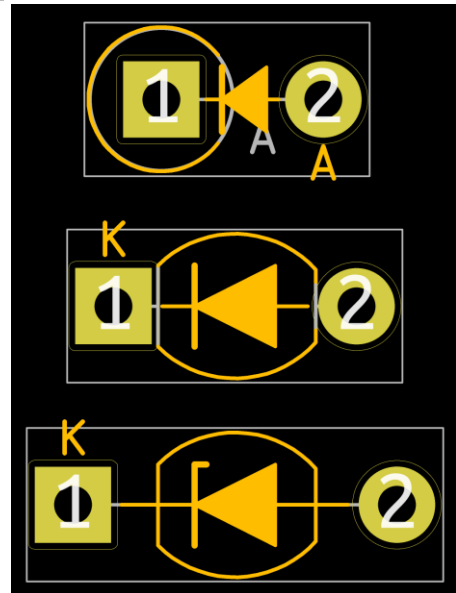
Name examples:

D_SOD-64_P5.08mm_Vertical_AnodeUp

D_SOD-64_P5.08mm_Vertical_KathodeUp_Zener

D_SOD-64_P15.24mm_Horizontal

D_SOD-64_P20.32mm_Horizontal_Zener



Vertical SOD-64 diode standard footprint (top), a horizontal standard footprint (middle) and a horizontal 'Zener' footprint (bottom).

T-1 diode footprints

Footprint count: 16

Footprint naming convention:

D_T-1_P<pitch>**mm_**<orientation>_**<variant>**

Orientation can either be vertical or horizontal.

Available footprint variants:

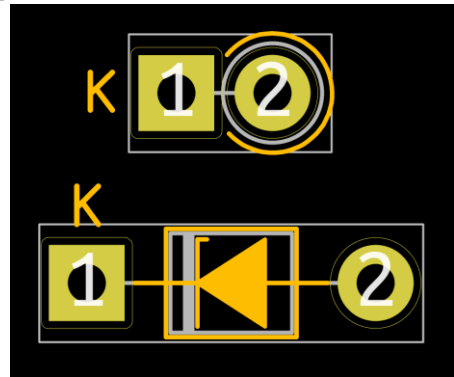
- Standard variant with a regular diode symbol
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

Name examples:

D_T-1_P5.08mm_Vertical_AnodeUp

D_T-1_P15.24mm_Horizontal

D_T-1_P20.32mm_Horizontal_Zener



Vertical T-1 diode standard footprint (top),
and a horizontal 'Zener' footprint
(bottom).

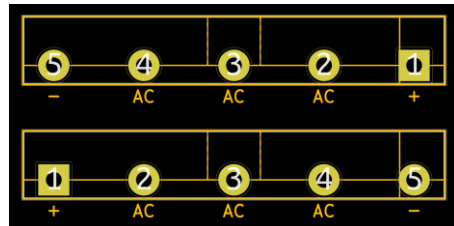
3-Phase 35x25x5.5mm vertical rectifier bridge footprints

Footprint names:

Diode_Bridge_3F_35x25x5.5mm_P7.5mm

Diode_Bridge_3F_35x25x5.5mm_P7.5mm_B

Note: B variant has different pin configuration.

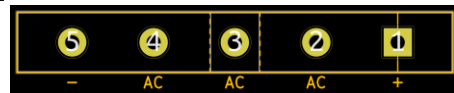


Standard rectifier bridge footprint (top).
'B' variant rectifier bridge footprint
(bottom)

3-Phase 40x21.5x5.4mm vertical rectifier bridge footprint

Footprint name:

Diode_Bridge_3F_40x21.5x5.4mm_P7.5mm



3-Phase 40x21.5x5.4mm bridge footprint.

Square rectifier bridge footprints

Footprint count: 6

Footprint naming convention:

Diode_Bridge_<width>x<length>x<height>mm_

P<pitch>mm

Footprint names:

Diode_Bridge_15.1x15.1x6.3mm_P10.9mm

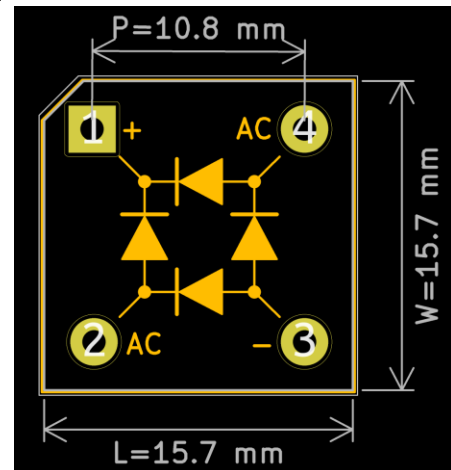
Diode_Bridge_15.2x15.2x6.3mm_P10.9mm

Diode_Bridge_15.7x15.7x6.3mm_P10.8mm

Diode_Bridge_16.7x16.7x6.3mm_P10.8mm

Diode_Bridge_19.0x19.0x6.8mm_P12.7mm

Diode_Bridge_28.6x28.6x7.3mm_P11.6mm



Square rectifier bridge footprint with all relevant dimensions indicated.

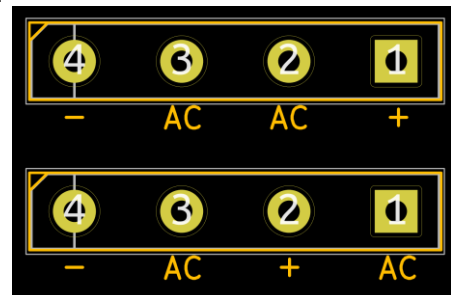
35x25x5.5mm vertical rectifier bridge footprints

Footprint names:

Diode_Bridge_19.0x3.5x10.0mm_P5.0mm

Diode_Bridge_19.0x3.5x10.0mm_P5.0mm_B

Note: B variant has different pin configuration.

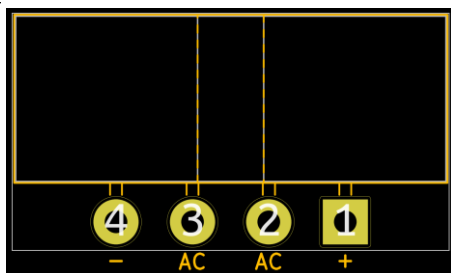


Standard rectifier bridge footprint (top).
'B' variant rectifier bridge footprint (bottom)

Square 28.6x28.6x7.3mm vertical rectifier bridge footprint

Footprint name:

Diode_Bridge_28.6x28.6x7.3mm_P5.08mm_Vertical



Vertical square bridge footprint.

32.0x5.6x17.0mm vertical rectifier bridge footprint

Footprint name:

Diode_Bridge_32x5.6x17.0mm_P10.0mm_P7.50mm



32.0x5.6x17.0mm bridge footprint.

DIP rectifier bridge footprints

Footprint count: 2

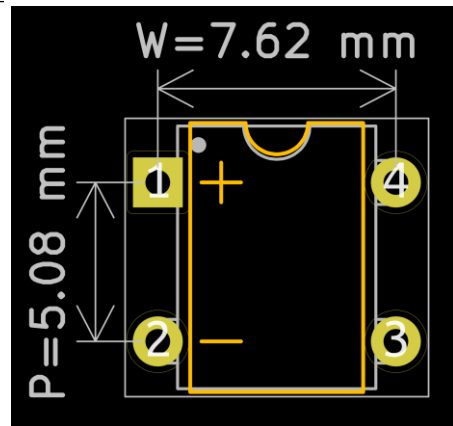
Footprint naming convention:

Diode_Bridge_DIP- \langle pin count \rangle _W \langle width \rangle mm_**P \langle pitch \rangle mm**

Footprint names:

Diode_Bridge_DIP-4_W5.08mm_P2.54mm

Diode_Bridge_DIP-4_W7.62mm_P5.08mm



DIP rectifier bridge footprint with all relevant dimensions indicated.

GBJ rectifier bridge footprint

Footprint name:

Diode_Bridge_GBJ



GBJ bridge footprint.

GBJL rectifier bridge footprint

Footprint name:

Diode_Bridge_GBJL



GBJL bridge footprint.

GBJS rectifier bridge footprint

Footprint name:

Diode_Bridge_GBJS



GBJS bridge footprint.

KBJ rectifier bridge footprint

Footprint name:

Diode_Bridge_KBJ



KBJ bridge footprint.

KBJL rectifier bridge footprint

Footprint name:

Diode_Bridge_KBJL



KBJL bridge footprint.

KBP rectifier bridge footprint

Footprint name:

Diode_Bridge_KBP



KBP bridge footprint.

Round rectifier bridge footprints

Footprint count: 3

Footprint naming convention:

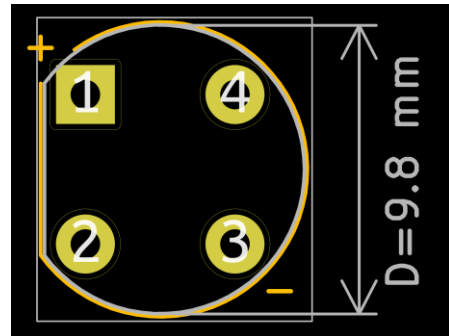
Diode_Bridge_Round_D<diаметer>mm

Footprint names:

Diode_Bridge_Round_D8.9mm

Diode_Bridge_Round_D9.0mm

Diode_Bridge_Round_D9.8mm



Round rectifier bridge footprint with its diameter indicated.

GBL rectifier bridge footprint

Footprint name:

Diode_Bridge_Vishay_GBL



GBL bridge footprint.

GBU rectifier bridge footprint

Footprint name:

Diode_Bridge_Vishay_GBU



GBU bridge footprint.

KBL rectifier bridge footprint

Footprint name:

Diode_Bridge_Vishay_KBL

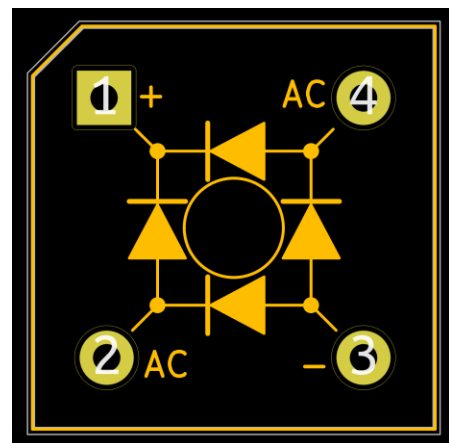


KBL bridge footprint.

KBPC1 rectifier bridge footprint

Footprint name:

Diode_Bridge_Vishay_KBPC1

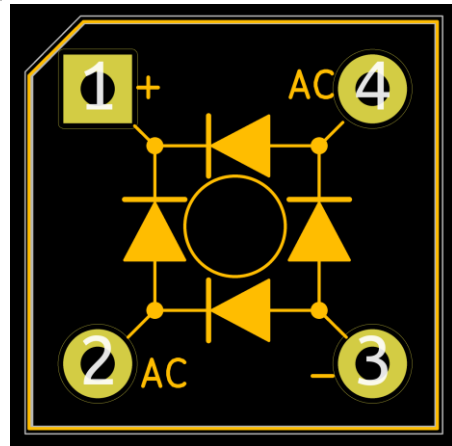


KBPC1 bridge footprint.

KBPC6 rectifier bridge footprint

Footprint name:

Diode_Bridge_Vishay_KBPC6



KBPC6 bridge footprint.

KBU rectifier bridge footprint

Footprint name:

Diode_Bridge_Vishay_KBU



KBU bridge footprint.

3.8. SMD Ferrite Libraries

These libraries contain footprints for SMD ferrite beads and common-mode chokes.

Hand soldering library variant contains footprints with additional symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: Ferrite_SMD_AKL	
Footprint count:	29
Hand soldering variant	
Folder name: Ferrite_SMD_Handsoldering_AKL	
Footprint count:	29
Total footprints:	58

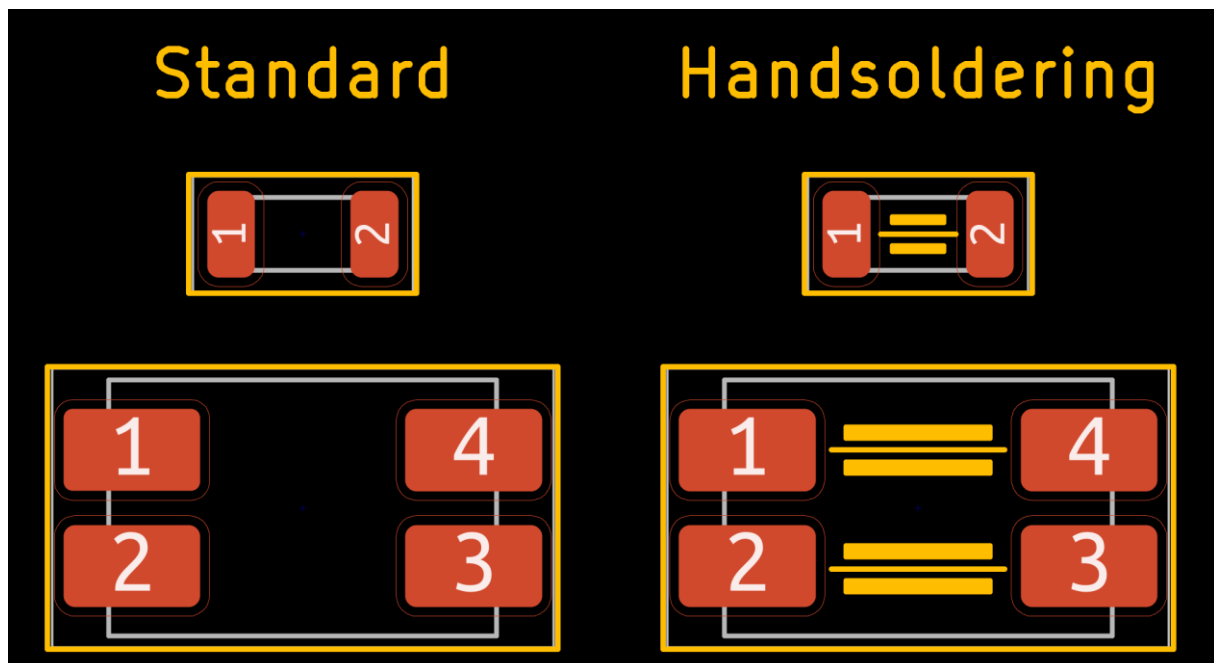


Figure 3.26. Comparison between SMD ferrite footprints from different library variants.

SMD Ferrite bead footprints

Footprint count: 28

Footprint naming convention:

Ferrite_*<imp. size code>*_*<metric size code>***Metric**
(optional: **_Pad***<pad width>***x***<pad length>***mm_BigPads**)

Name examples:

Ferrite_0805_2012Metric

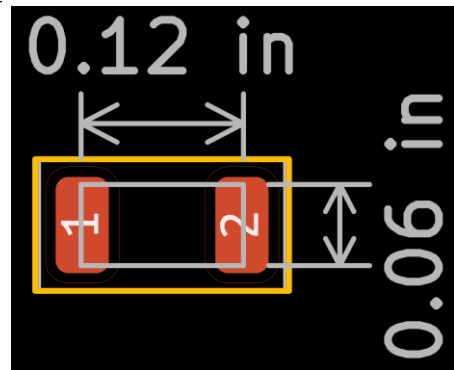
Ferrite_0603_1608Metric_Pad1.05x095mm_BigPads

Imperial size code:

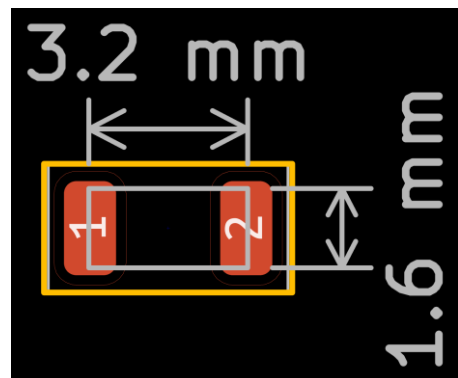
First two digits denote length of the capacitor package
last two digits correspond to its width measured in
0.01 in. Example: 0805 size code means package length
of 0.08 in and width of 0.05 in.

Metric size code:

First two digits denote length of the capacitor package
last two digits correspond to its width measured in
0.1 mm. Example: 2012 metric size code means package
length of 2 mm and width of 1.2 mm.



Ferrite with 1206 imperial size code with length and width of the package indicated.



Ferrite with 3216 metric size code with length and width of the package indicated.

Delevan 4222 common-mode ferrite filter footprint

Footprint name:

Ferrite_CommonMode_Delevan_4222



Delevan 4222 footprint.

3.9. THT Ferrite Libraries

These libraries contain footprints for THT ferrite beads and filters

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Standard variant	
Folder name: Ferrite_THT_AKL	
Footprint count:	208
Double-sided variant	
Folder name: Ferrite_THT_AKL_Double	
Footprint count:	198
Total footprints:	406

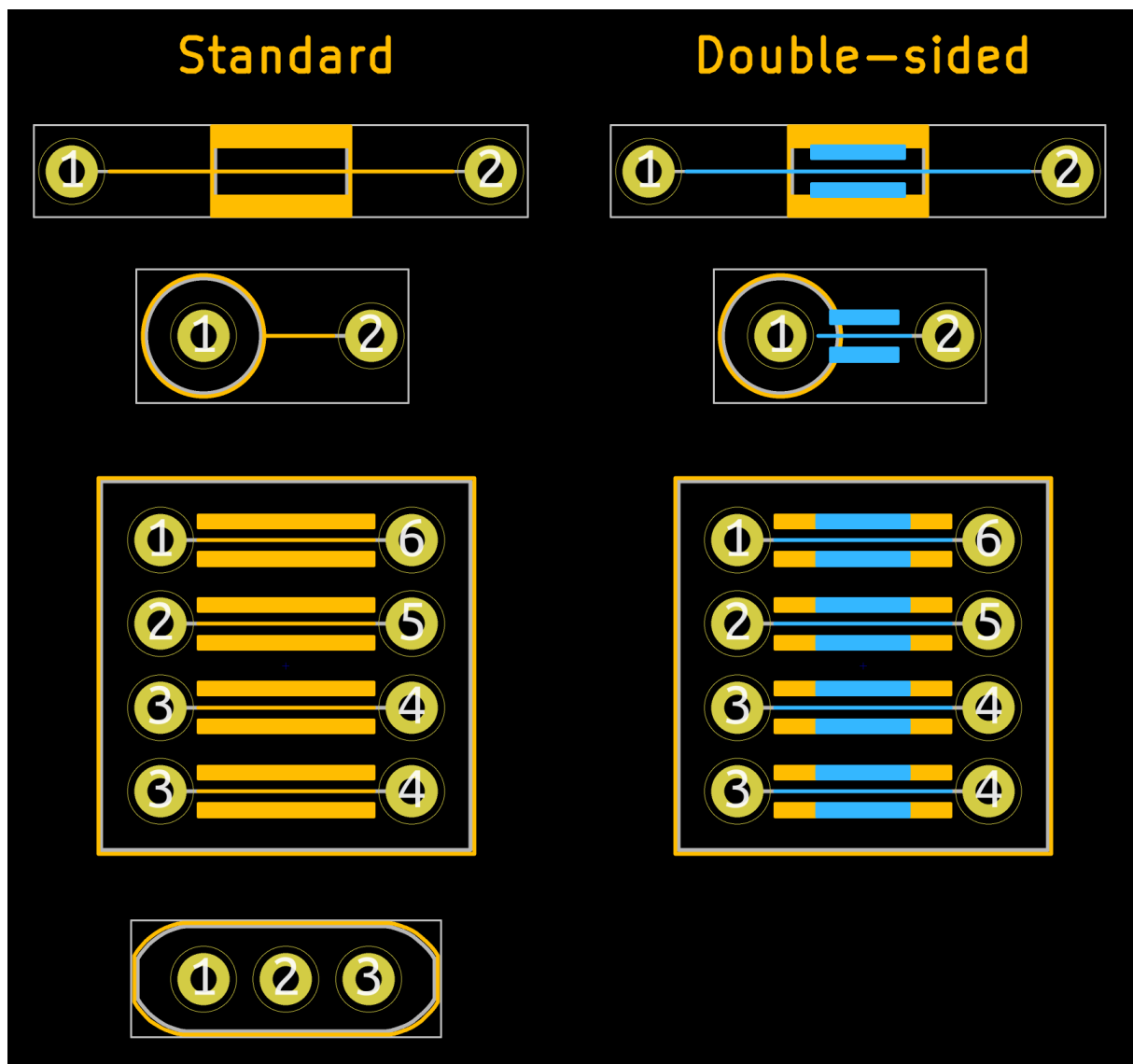


Figure 3.27. Comparison between THT ferrite bead and filter footprints from different library variants.

Axial ferrite bead footprints

Footprint count: 192

Footprint naming convention:

Ferrite_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_**
<optional: variant>

Available footprint variants:

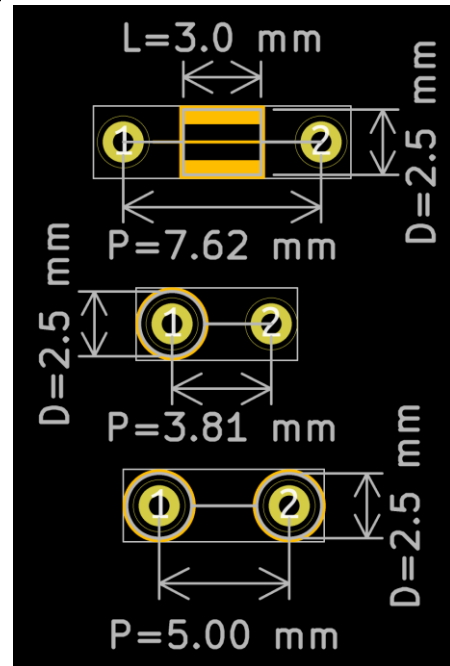
- 'Vertical' variant allows the part do be installed in vertical orientation.
- 'Vertical_Dual' variant is meant for parts with two beads meant for installation in vertical orientation.

Name examples:

Ferrite_L6.7mm_D3.5mm_P10.16mm

Ferrite_L5.0mm_D3.6mm_P3.81mm_Vertical

Ferrite_L4.0mm_D2.5mm_P5mm_Vertical_Dual



Horizontal ferrite bead footprint (top), vertical footprint (middle), vertical 'Dual' footprint (bottom) with all relevant dimensions indicated.

Horizontal ferrite choke footprints

Footprint count: 6

Footprint naming convention:

Ferrite_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_**
<optional: variant>

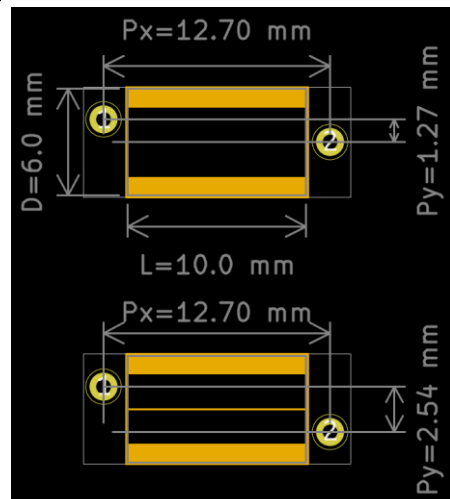
Available footprint variants:

- 'Wide' variant offers a different vertical pin pitch.

Name examples:

Ferrite_L10.0mm_D6.0mm_P12.70mm

Ferrite_L10.0mm_D6.0mm_P20.32mm_Wide

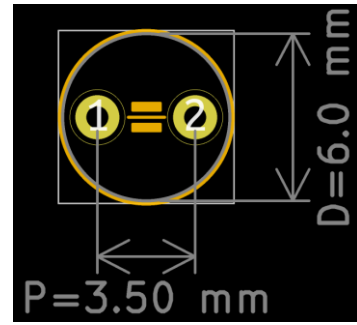


Horizontal ferrite choke standard footprint (top), 'Wide' footprint (bottom).

10.0x6.0mm Radial ferrite choke footprint

Footprint name:

Ferrite_L10.0mm_D6mm_P3.5mm_Radial



Radial ferrite choke footprint.

Dual ferrite choke footprints

Footprint count: 3

Footprint naming convention:

Ferrite_Dual_L<length>mm_**D**<diameter>mm_

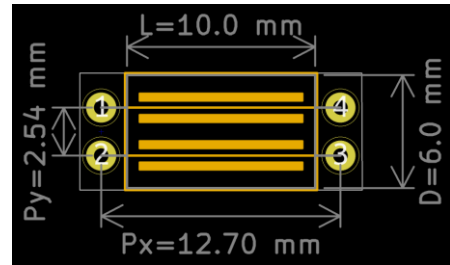
P<pitch>mm

Footprint Names:

Ferrite_L10.0mm_D6.0mm_P12.70mm

Ferrite_L10.0mm_D6.0mm_P15.24mm

Ferrite_L10.0mm_D6.0mm_P20.32mm



Dual ferrite choke footprint with all relevant dimensions indicated.

Ferrite LCL filter footprints

Footprint count: 3

Footprint naming convention:

Ferrite_Filter_L<length>mm_**W**<width>mm_

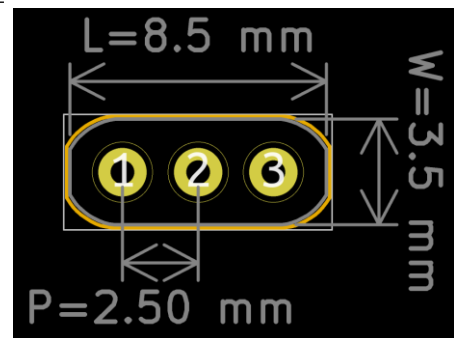
H<height>mm_**P**<pitch>mm

Footprint Names:

Ferrite_Filter_L8.5mm_W3.5mm_H7.5mm_P2.5mm

Ferrite_Filter_L8mm_W2.54mm_H10.5mm_P2.5mm

Ferrite_Filter_L9mm_W3.2mm_H8mm_P2.5mm

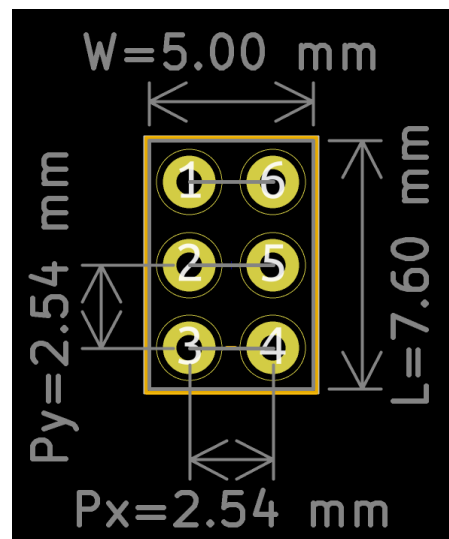


Ferrite LCL filter footprint with all relevant dimensions indicated.

Triple ferrite bead footprint

Footprint name:

Ferrite_Triple_L7.6mm_W5mm_P2.54mm



Triple ferrite footprint with all relevant dimensions indicated.

Quad ferrite bead footprints

Footprint count: 2

Footprint naming convention:

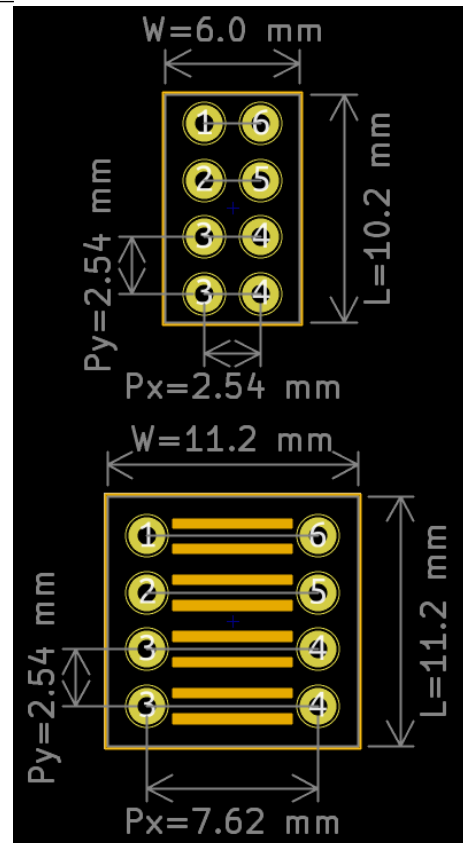
Ferrite_Quad_L<length>mm_**W**<width>mm_

P<pitch>mm

Footprint Names:

Ferrite_Quad_L10.2mm_W6mm_P2.54mm

Ferrite_Quad_L11.2mm_W11.2mm_P2.54mm



Quad ferrite bead footprints with all relevant dimensions indicated.

3.10. Fuse Libraries

These libraries contain footprints for:

- THT fuses and fuse holders
- SMD fuses and fuse holders

Double-sided library variant contains THT footprints with both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Handsoldering library variant contains SMD footprints with additional symbols on the silkscreen layer placed under the part.

US symbol library variants use the US - style fuse symbol instead of the European one on the silkscreen.

Standard variant	
Folder name: Fuse_AKL	
Footprint count:	104
Double-sided variant	
Folder name: Fuse_AKL_Double	
Footprint count:	61
Handsoldering variant	
Folder name: Fuse_Handsoldering_AKL	
Footprint count:	41
Standard variant (US Symbol)	
Folder name: Fuse_US_AKL	
Footprint count:	104
Double-sided variant (US Symbol)	
Folder name: Fuse_US_AKL_Double	
Footprint count:	61
Handsoldering variant (US Symbol)	
Folder name: Fuse_US_Handsoldering_AKL	
Footprint count:	41
Total footprints:	412

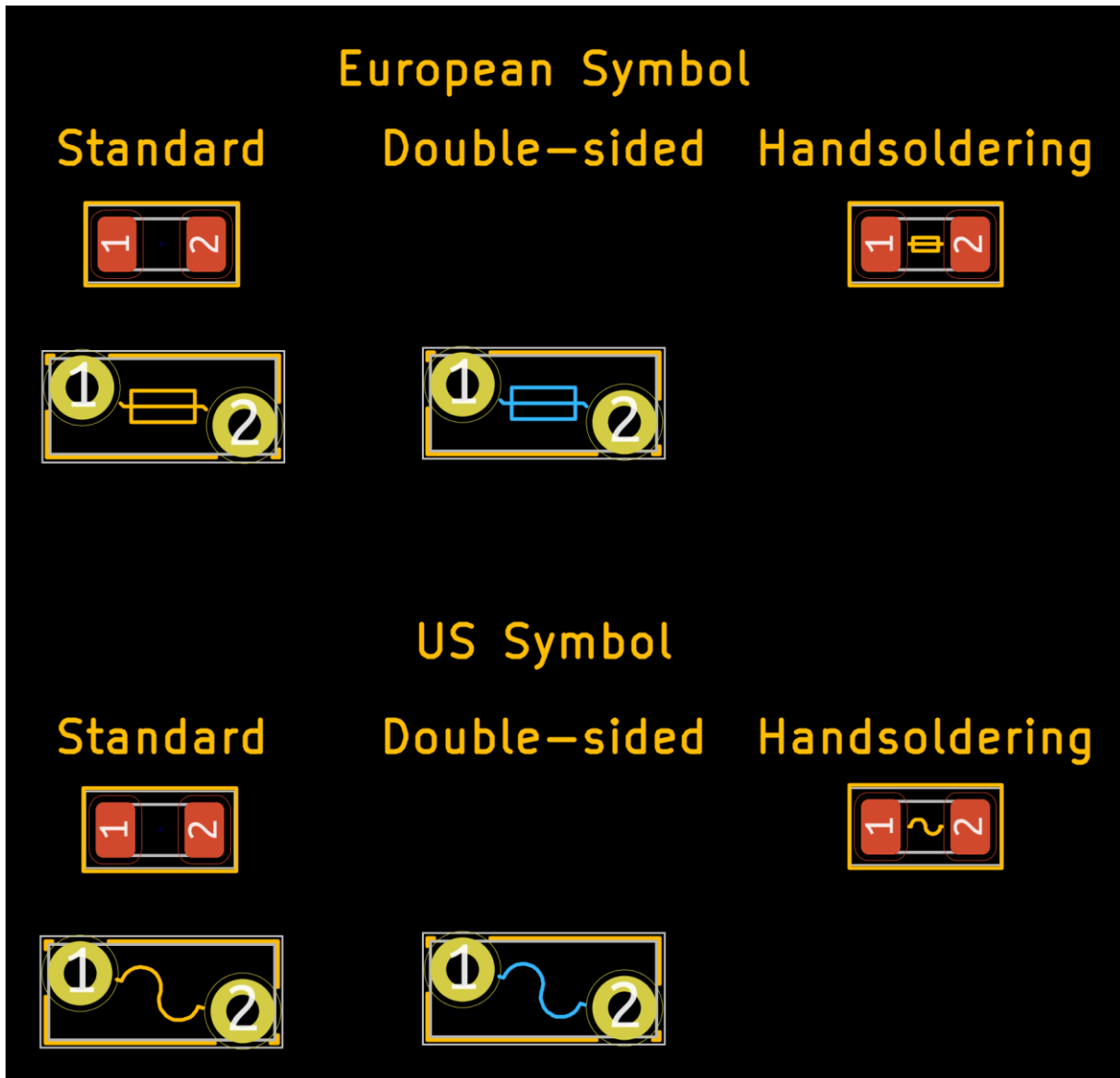


Figure 3.28. Comparison between fuse and fuse holder footprints from different library variants.

SMD chip fuse footprints

Footprint count: 33

Footprint naming convention:

Fuse_<imp. size code>_<metric size code>Metric_<variant>

Name examples:

Fuse_1206_3216Metric

Fuse_2512_6332Metric_Castellated

Fuse_0805_2012Metric_Pad1.15x1.40mm_BigPads

Available variants:

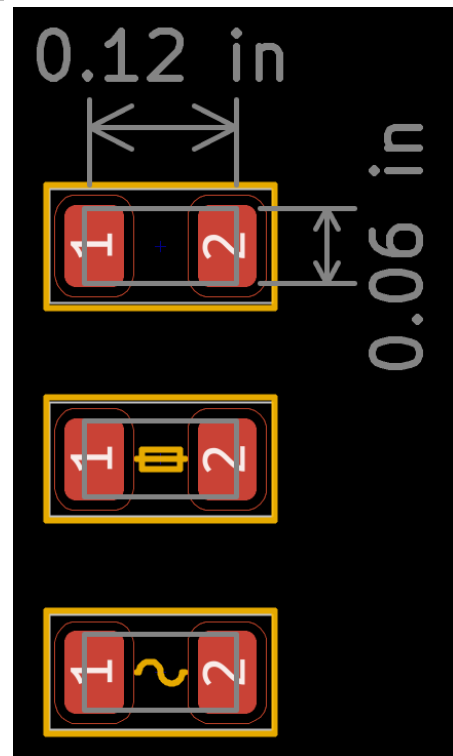
- Castellated – pad size optimized for castellated pads.
- BigPads– variant name states the pad size, useful for manual soldering.

Imperial size code:

First two digits denote length of the capacitor package
last two digits correspond to its width measured in
0.01 in. Example: 0805 size code means package length
of 0.08 in and width of 0.05 in.

Metric size code:

First two digits denote length of the capacitor package
last two digits correspond to its width measured in
0.1 mm. Example: 2012 metric size code means package
length of 2 mm and width of 1.2 mm.

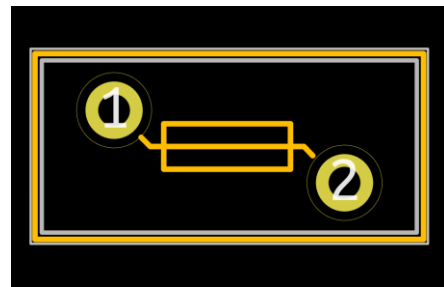


1206 Fuse standard footprint with its dimensions indicated (top), footprint from 'Hand soldering' library (middle) and a footprint from the 'US Hand soldering' library (bottom).

BelFuse OZRE0005FF PTC fuse footprint

Footprint name:

Fuse_BelFuse_OZRE0005FF_L8.3mm_W3.8mm

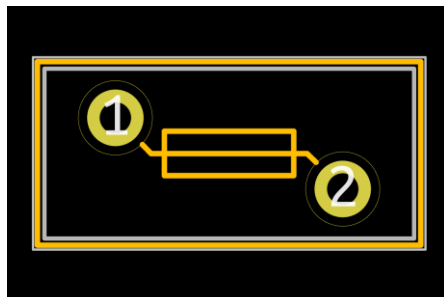


OZRE0005FF PTC fuse footprint.

BelFuse OZRE0008FF PTC fuse footprint

Footprint name:

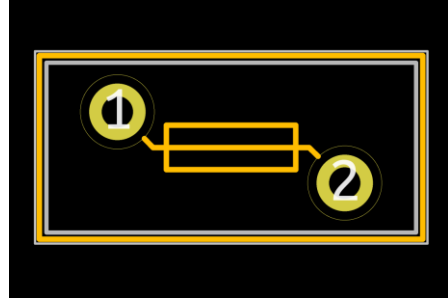
Fuse_BelFuse_OZRE0008FF_L8.3mm_W3.8mm



OZRE0008FF PTC fuse footprint.

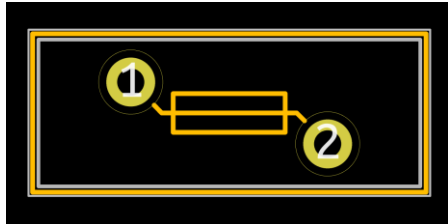
BelFuse 0ZRE0012FF PTC fuse footprint**Footprint name:**

Fuse_BelFuse_0ZRE0012FF_L8.3mm_W3.8mm

*0ZRE0012FF PTC fuse footprint.*

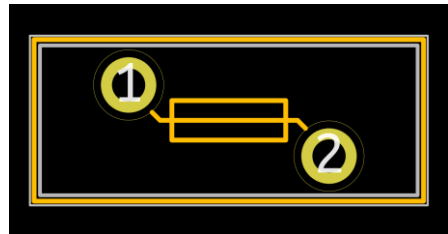
BelFuse 0ZRE0016FF PTC fuse footprint**Footprint name:**

Fuse_BelFuse_0ZRE0016FF_L9.9mm_W3.8mm

*0ZRE0016FF PTC fuse footprint.*

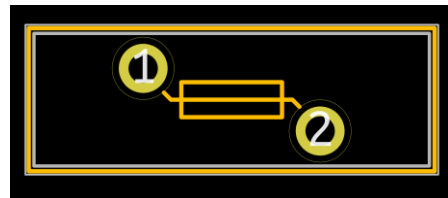
BelFuse 0ZRE0025FF PTC fuse footprint**Footprint name:**

Fuse_BelFuse_0ZRE0025FF_L9.6mm_W3.8mm

*0ZRE0025FF PTC fuse footprint.*

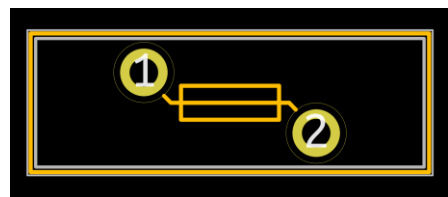
BelFuse 0ZRE0033FF PTC fuse footprint**Footprint name:**

Fuse_BelFuse_0ZRE0033FF_L11.4mm_W3.8mm

*0ZRE0033FF PTC fuse footprint.*

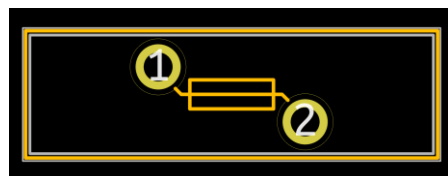
BelFuse 0ZRE0040FF PTC fuse footprint**Footprint name:**

Fuse_BelFuse_0ZRE0040FF_L11.5mm_W3.8mm

*0ZRE0040FF PTC fuse footprint.*

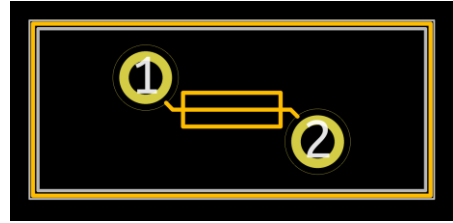
BelFuse 0ZRE0055FF PTC fuse footprint**Footprint name:**

Fuse_BelFuse_0ZRE0055FF_L14.0mm_W4.1mm

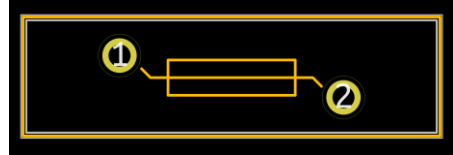
*0ZRE0055FF PTC fuse footprint.*

BelFuse 0ZRE0075FF PTC fuse footprint**Footprint name:**

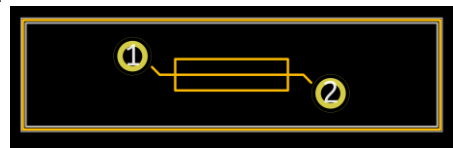
Fuse_BelFuse_0ZRE0075FF_L11.5mm_W4.8mm

*0ZRE0075FF PTC fuse footprint.***BelFuse 0ZRE0100FF PTC fuse footprint****Footprint name:**

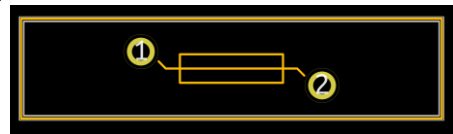
Fuse_BelFuse_0ZRE0100FF_L18.7mm_W5.1mm

*0ZRE0100FF PTC fuse footprint.***BelFuse 0ZRE0125FF PTC fuse footprint****Footprint name:**

Fuse_BelFuse_0ZRE0125FF_L21.2mm_W5.3mm

*0ZRE0125FF PTC fuse footprint.***BelFuse 0ZRE0150FF PTC fuse footprint****Footprint name:**

Fuse_BelFuse_0ZRE0150FF_L23.4mm_W5.3mm

*0ZRE0150FF PTC fuse footprint.***BelFuse 0ZRE0200FF PTC fuse footprint****Footprint name:**

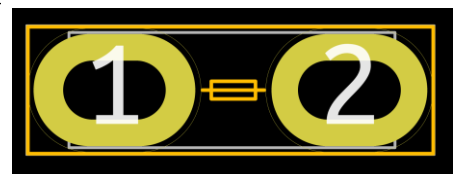
Fuse_BelFuse_0ZRE0200FF_L24.9mm_W6.1mm

*0ZRE0200FF PTC fuse footprint.***Automotive blade fuse footprint****Footprint name:**

Fuse_Blade_ATO_directSolder

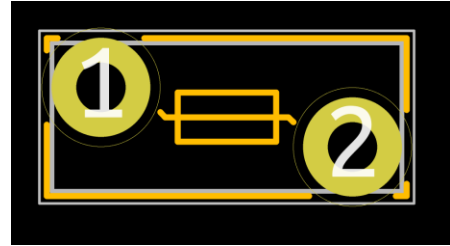
*Blade fuse footprint.***Automotive blade mini fuse footprint****Footprint name:**

Fuse_Blade_Mini_directSolder

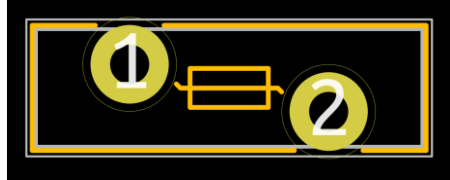
*Blade mini fuse footprint.*

Bourns MF-RG300 PTC fuse footprint**Footprint name:**

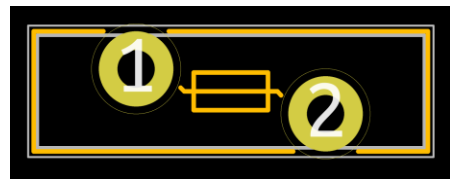
Fuse_Bourns_MF-RG300

*MF-RG300 fuse footprint.***Bourns MF-RG400 PTC fuse footprint****Footprint name:**

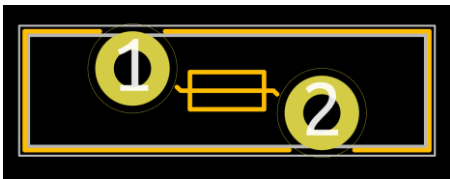
Fuse_Bourns_MF-RG400

*MF-RG400 fuse footprint.***Bourns MF-RG500 PTC fuse footprint****Footprint name:**

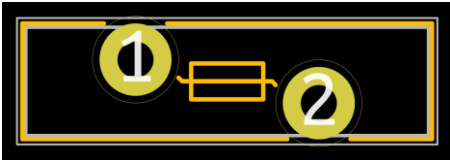
Fuse_Bourns_MF-RG500

*MF-RG500 fuse footprint.***Bourns MF-RG600 PTC fuse footprint****Footprint name:**

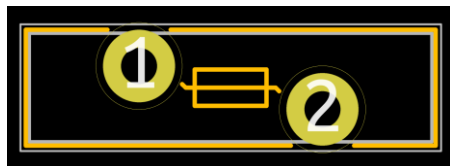
Fuse_Bourns_MF-RG600

*MF-RG600 fuse footprint.***Bourns MF-RG650 PTC fuse footprint****Footprint name:**

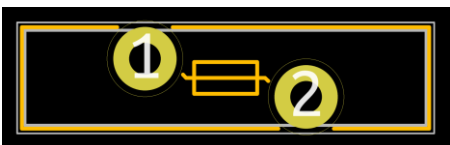
Fuse_Bourns_MF-RG650

*MF-RG650 fuse footprint.***Bourns MF-RG700 PTC fuse footprint****Footprint name:**

Fuse_Bourns_MF-RG700

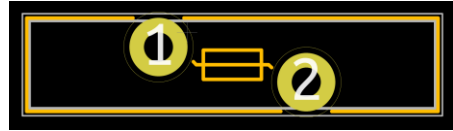
*MF-RG700 fuse footprint.***Bourns MF-RG800 PTC fuse footprint****Footprint name:**

Fuse_Bourns_MF-RG800

*MF-RG800 fuse footprint.*

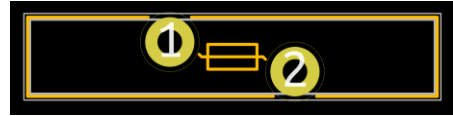
Bourns MF-RG900 PTC fuse footprint**Footprint name:**

Fuse_Bourns_MF-RG900

*MF-RG900 fuse footprint.*

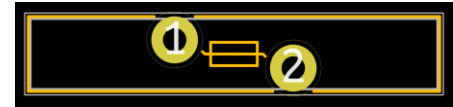
Bourns MF-RG1000 PTC fuse footprint**Footprint name:**

Fuse_Bourns_MF-RG1000

*MF-RG1000 fuse footprint.*

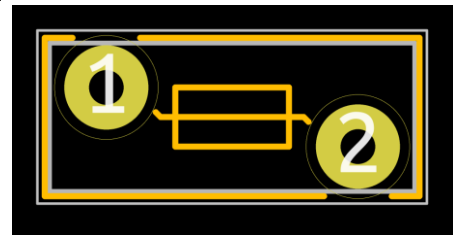
Bourns MF-RG1100 PTC fuse footprint**Footprint name:**

Fuse_Bourns_MF-RG1100

*MF-RG1100 fuse footprint.*

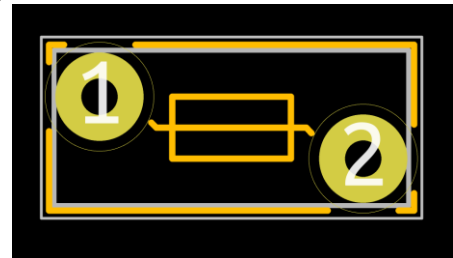
Bourns MF-RHT050 PTC fuse footprint**Footprint name:**

Fuse_Bourns_MF-RHT050

*MF-RHT050 fuse footprint.*

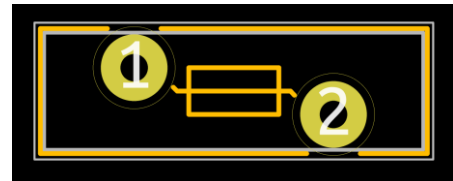
Bourns MF-RHT070 PTC fuse footprint**Footprint name:**

Fuse_Bourns_MF-RHT070

*MF-RHT070 fuse footprint.*

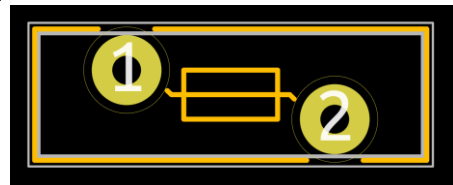
Bourns MF-RHT100 PTC fuse footprint**Footprint name:**

Fuse_Bourns_MF-RHT100

*MF-RHT100 fuse footprint.*

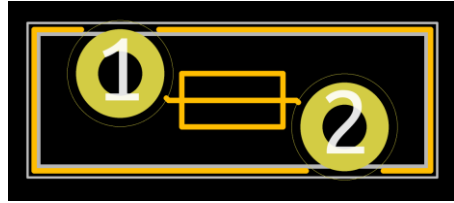
Bourns MF-RHT200 PTC fuse footprint**Footprint name:**

Fuse_Bourns_MF-RHT200

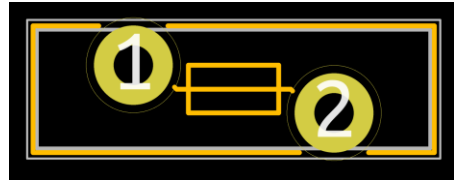
*MF-RHT200 fuse footprint.*

Bourns MF-RHT300 PTC fuse footprint**Footprint name:**

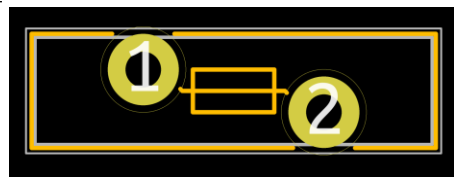
Fuse_Bourns_MF-RHT300

*MF-RHT300 fuse footprint.***Bourns MF-RHT400 PTC fuse footprint****Footprint name:**

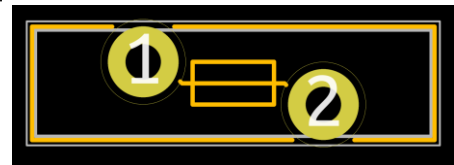
Fuse_Bourns_MF-RHT400

*MF-RHT400 fuse footprint.***Bourns MF-RHT500 PTC fuse footprint****Footprint name:**

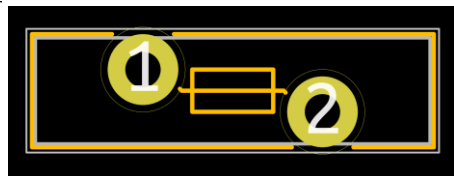
Fuse_Bourns_MF-RHT500

*MF-RHT500 fuse footprint.***Bourns MF-RHT550 PTC fuse footprint****Footprint name:**

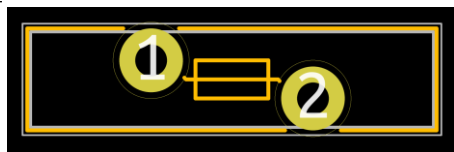
Fuse_Bourns_MF-RHT550

*MF-RHT550 fuse footprint.***Bourns MF-RHT600 PTC fuse footprint****Footprint name:**

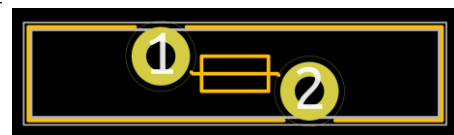
Fuse_Bourns_MF-RHT600

*MF-RHT600 fuse footprint.***Bourns MF-RHT650 PTC fuse footprint****Footprint name:**

Fuse_Bourns_MF-RHT650

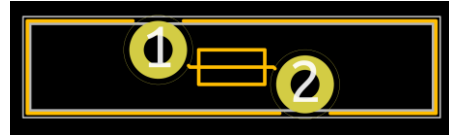
*MF-RHT650 fuse footprint.***Bourns MF-RHT700 PTC fuse footprint****Footprint name:**

Fuse_Bourns_MF-RHT700

*MF-RHT700 fuse footprint.*

Bourns MF-RHT750 PTC fuse footprint**Footprint name:**

Fuse_Bourns_MF-RHT750

*MF-RHT750 fuse footprint.***Bourns MF-RHT800 PTC fuse footprint****Footprint name:**

Fuse_Bourns_MF-RHT800

*MF-RHT800 fuse footprint.***Bourns MF-RHT900 PTC fuse footprint****Footprint name:**

Fuse_Bourns_MF-RHT900

*MF-RHT900 fuse footprint.***Bourns MF-RHT1000 PTC fuse footprint****Footprint name:**

Fuse_Bourns_MF-RHT1000

*MF-RHT1000 fuse footprint.***Bourns MF-RHT1100 PTC fuse footprint****Footprint name:**

Fuse_Bourns_MF-RHT1100

*MF-RHT1100 fuse footprint.***Bourns MF-RHT1300 PTC fuse footprint****Footprint name:**

Fuse_Bourns_MF-RHT1300

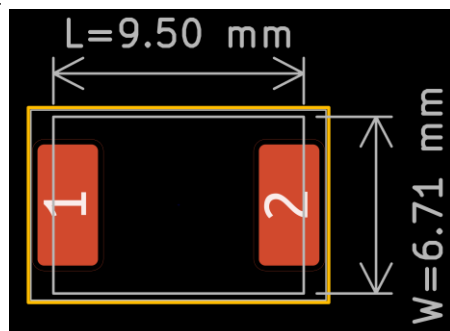
*MF-RHT1300 fuse footprint.***Bourns MF-SM Series fuse footprints****Footprint count:** 2**Footprint naming convention:**

Fuse_Bourns_MF-SM_<length>x<width>mm

Footprint names:

Fuse_Bourns_MF-SM_7.98x5.44mm

Fuse_Bourns_MF-SM_9.5x6.71mm

*MF-SM Series SMD fuse footprint with its dimensions indicated.***Littelfuse LVR100 PTC fuse footprint****Footprint name:**

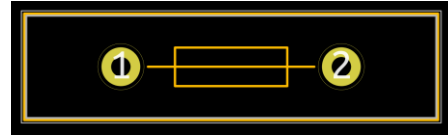
Fuse_Littelfuse-LVR100

*LVR100 fuse footprint.*

Littelfuse LVR125 PTC fuse footprint

Footprint name:

Fuse_Littelfuse-LVR125

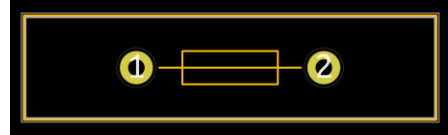


LVR125 fuse footprint.

Littelfuse LVR200 PTC fuse footprint

Footprint name:

Fuse_Littelfuse-LVR200

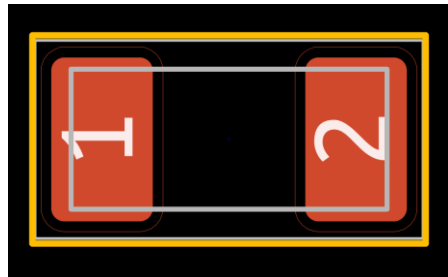


LVR200 fuse footprint.

Littelfuse NANO2 451/453 SMD fuse footprint

Footprint name:

Fuse_Littelfuse-NANO2-451_453

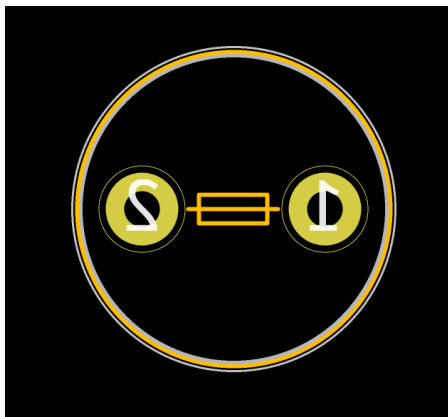


NANO2 451/453 fuse footprint.

Littelfuse 372 series fuse footprint

Footprint name:

Fuse_Littelfuse_372_D8.50mm

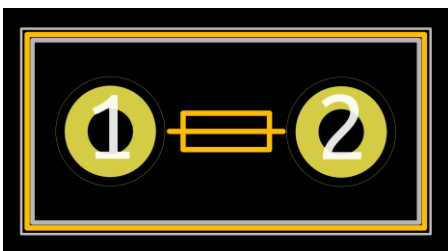


372 series fuse footprint.

Littelfuse 395 series fuse footprint

Footprint name:

Fuse_Littelfuse_395Series



395 series fuse footprint.

Littelfuse TSM600 series fuse footprint

Footprint name:

Fuse_Littelfuse_TSM600



TSM600 fuse footprint.

Schurter UMT250 series fuse footprint

Footprint name:

Fuse_Schurter_UMT250

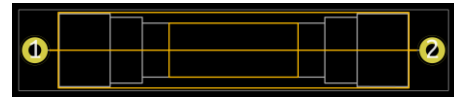


UMT250 fuse footprint.

SunFuse 6HP series fuse footprint

Footprint name:

Fuse_SunFuse-6HP

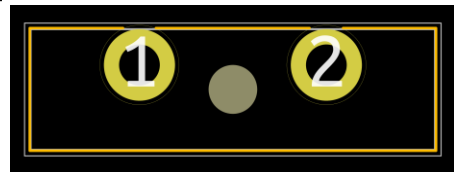


6HP fuse footprint.

Littelfuse Pudenz 2-pin blade fuse holder footprint

Footprint name:

Fuseholder_Blade_ATO_Littelfuse_Pudenz_2_Pin

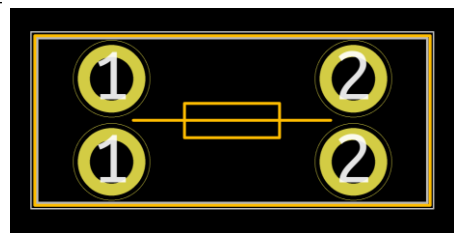


Blade fuse holder footprint.

Keystone 3568 mini blade fuse holder footprint

Footprint name:

Fuseholder_Blade_Mini_Keystone_3568

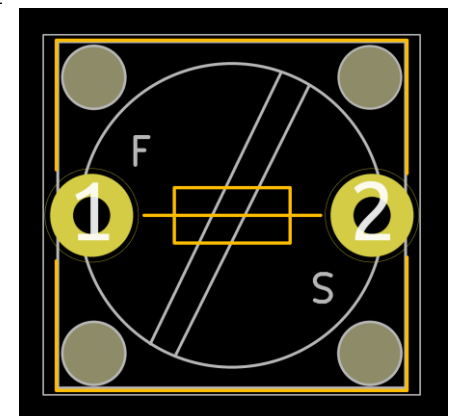


Mini blade fuse holder footprint.

Bulgin FX0456 fuse holder footprint

Footprint name:

Fuseholder_Cylinder-
5x20mm_Bulgin_FX0456_Vertical_Closed



FX0456 fuse holder footprint.

Bulgin FX0457 fuse holder footprint

Footprint name:

Fuseholder_Cylinder-
5x20mm_Bulgin_FX0457_Horizontal_Closed

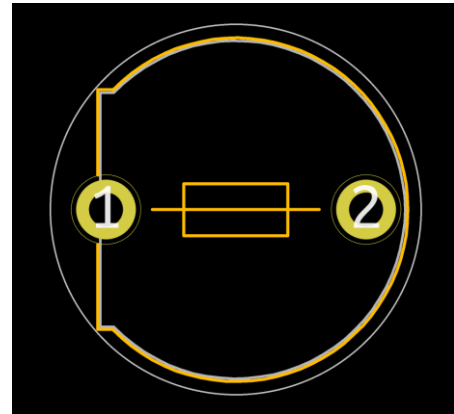


FX0457 fuse holder footprint.

EATON H15-V-1 fuse holder footprint

Footprint name:

Fuseholder_Cylinder-5x20mm_EATON_
H15-V-1_Vertical_Closed

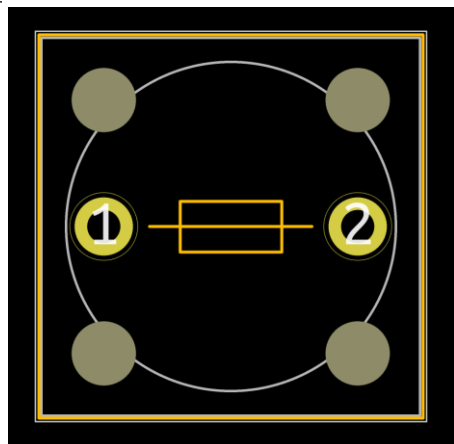


H15-V-1 fuse holder footprint.

EATON HBV fuse holder footprint

Footprint name:

Fuseholder_Cylinder-
5x20mm_EATON_HBV_Vertical_Closed

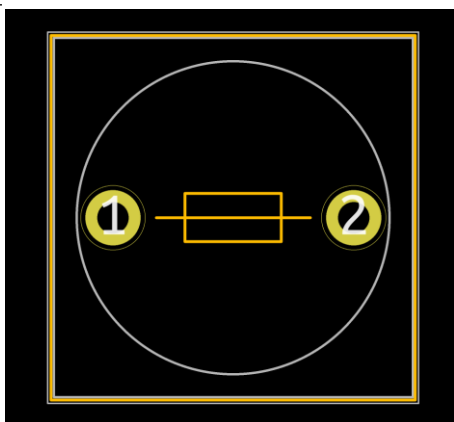


HBV fuse holder footprint.

EATON HBW fuse holder footprint

Footprint name:

Fuseholder_Cylinder-
5x20mm_EATON_HBW_Vertical_Closed

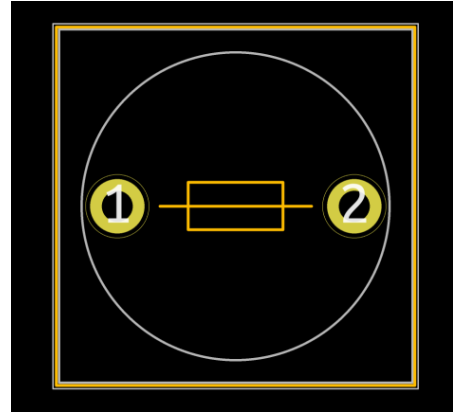


HBW fuse holder footprint.

EATON HBW fuse holder footprint

Footprint name:

Fuseholder_Cylinder-
5x20mm_EATON_HBW_Vertical_Closed

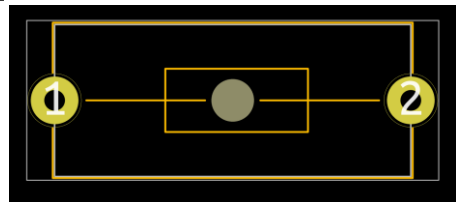


HBW fuse holder footprint.

Schurter 0031.8201 fuse holder footprint

Footprint name:

Fuseholder_Cylinder-
5x20mm_Schurter_0031_8201_Horizontal_Open

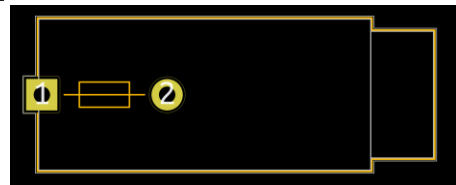


0031.8201 fuse holder footprint.

Schurter FAB fuse holder footprint

Footprint name:

Fuseholder_Cylinder-5x20mm_Schurter_FAB_0031-
355x_Horizontal_Closed

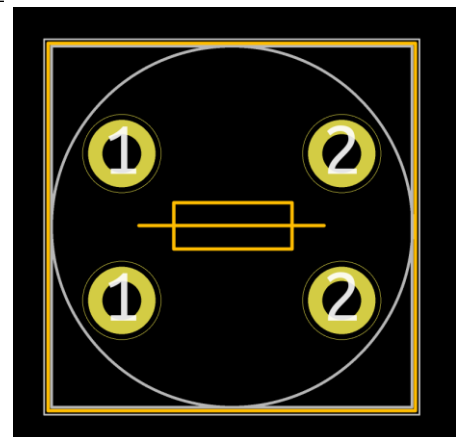


FAB fuse holder footprint.

Schurter FPG4 fuse holder footprint

Footprint name:

Fuseholder_Cylinder-
5x20mm_Schurter_FPG4_Vertical_Closed



FPG4 fuse holder footprint.

Schurter 0031.2510 fuse holder footprint

Footprint name:

Fuseholder_Cylinder-
5x20mm_Schurter_FUP_0031.2510_Horizontal_Closed

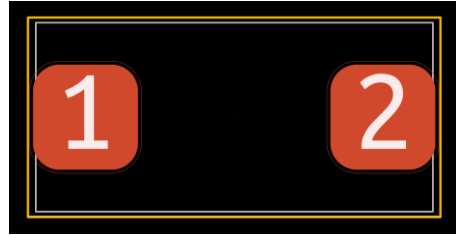


0031.2510 fuse holder footprint.

Schurter OGN SMD fuse holder footprint

Footprint name:

Fuseholder_Cylinder-5x20mm_Schurter_OGN-SMD_Horizontal_Closed



OGN fuse holder footprint.

Stelvio-Kontek PTF78 fuse holder footprint

Footprint name:

Fuseholder_Cylinder-5x20mm_SStelvio-Kontek_PTF78_Horizontal_Open

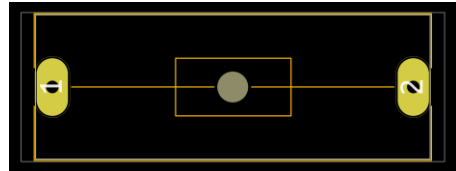


PTF78 fuse holder footprint.

Schurter 0031.8002 fuse holder footprint

Footprint name:

Fuseholder_Cylinder-6.3x32mm_Schurter_0031-8002_Horizontal_Open

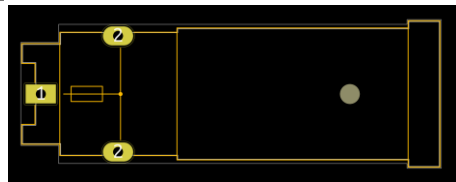


0031.8002 fuse holder footprint.

Schurter 0031.2520 fuse holder footprint

Footprint name:

Fuseholder_Cylinder-6.3x32mm_Schurter_FUP_0031.2520_Horizontal_Open

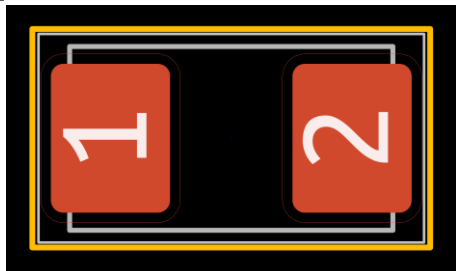


0031.2520 fuse holder footprint.

Littelfuse NANO2 157 series fuse holder footprint

Footprint name:

Fuseholder_Littelfuse_Nano2_157x



157 series fuse holder footprint.

Schurter OMH-125 fuse holder footprint

Footprint name:

Fuseholder_OMH-125_Schurter_6x12mm

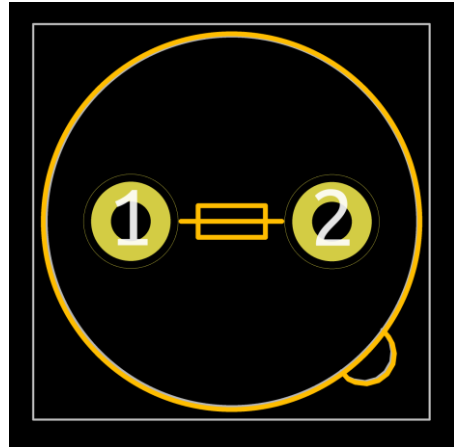


OMH-125 fuse holder footprint.

Littelfuse TR5 fuse holder footprint

Footprint name:

Fuseholder_TR5_Littelfuse_No560_No460



TR5 fuse holder footprint.

3.11. SMD Inductor Library

These libraries contain footprints for SMD inductors and common-mode chokes.

Hand soldering library variant contains footprints with additional symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: Inductor_SMD_AKL	
Footprint count:	214
Hand soldering variant	
Folder name: Inductor_SMD_Handsoldering_AKL	
Footprint count:	214
Total footprints:	428

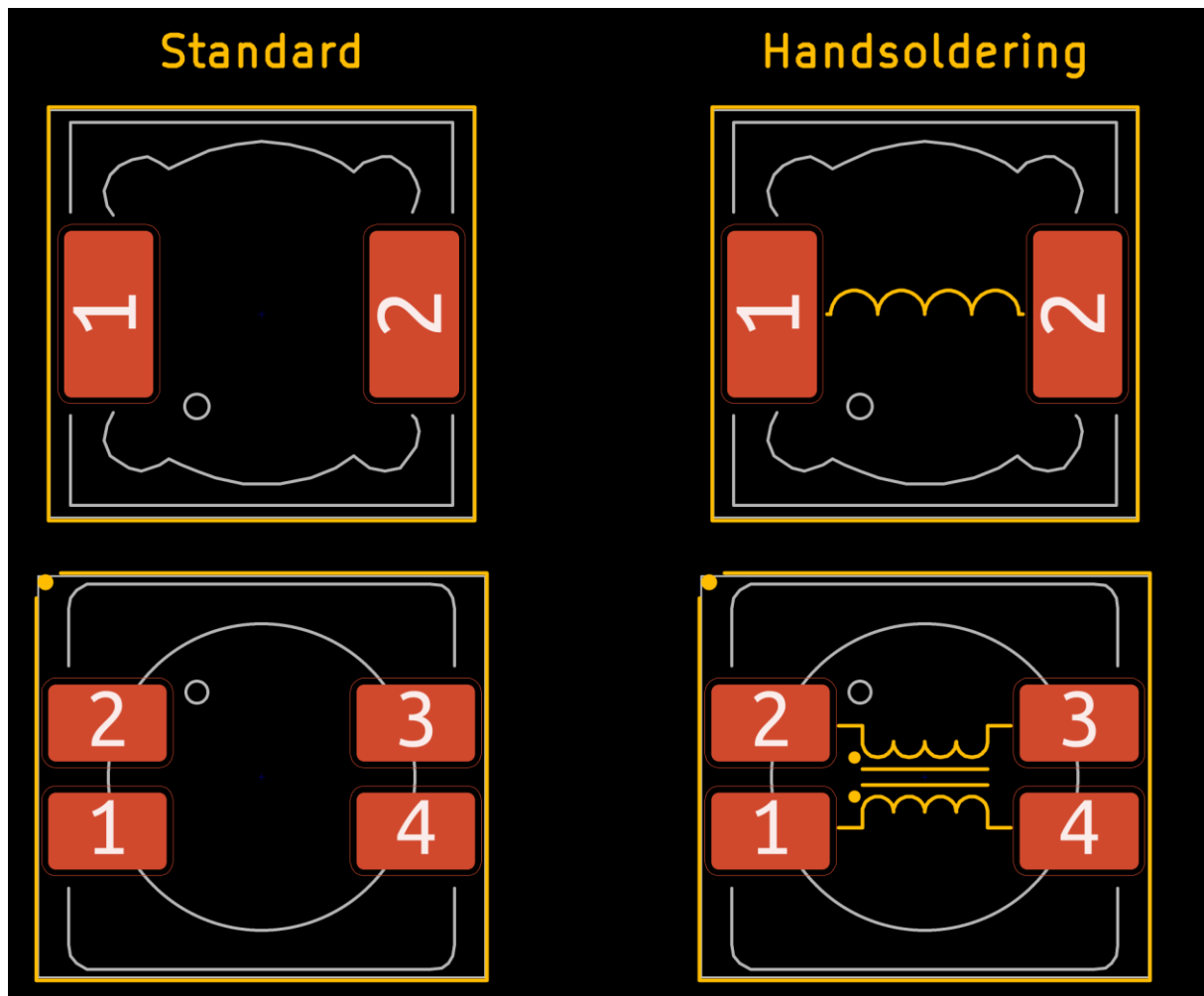
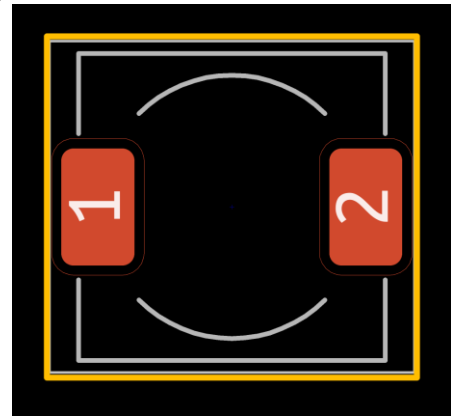


Figure 3.29. Comparison between footprints from Standard and Handsoldering SMD inductor libraries.

6.3x6.3mm inductor footprint

Footprint name:

L_6.3x6.3_H3



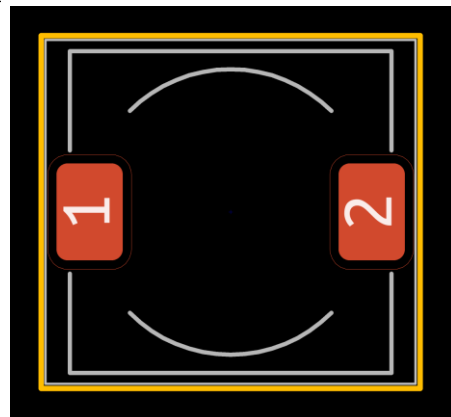
6.3x6.3mm inductor footprint.

7.3x7.3mm inductor footprints

Footprint names:

L_7.3x7.3_H3.5

L_7.3x7.3_H4.5

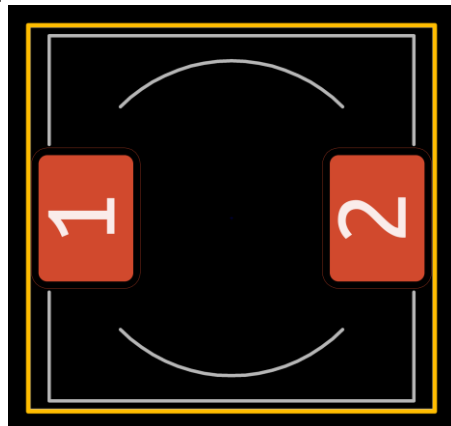


7.3x7.3mm inductor footprint.

10.4x10.4mm inductor footprint

Footprint name:

L_10.4x10.4_H4.8



10.4x10.4mm inductor footprint.

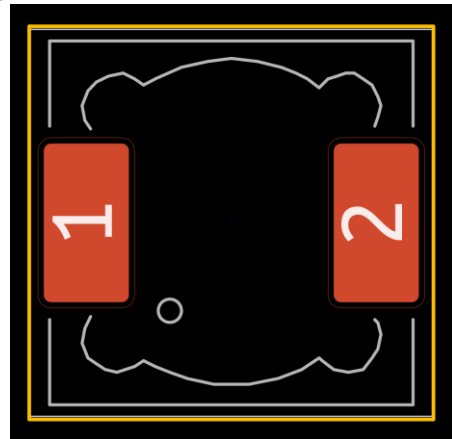
12x12mm inductor footprints

Footprint names:

L_12x12mm_H4.5mm

L_12x12mm_H6mm

L_12x12mm_H8mm



12x12mm inductor footprint.

SMD Inductor bead footprints

Footprint count: 28

Footprint naming convention:

L_<imp. size code>_<metric size code>**Metric**
(optional: **_Pad**<pad width>**x**<pad length>**mm**)

Name examples:

L_0805_2012Metric

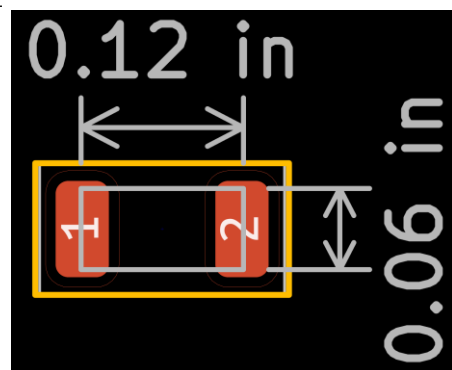
L_0603_1608Metric_Pad1.05x095mm

Imperial size code:

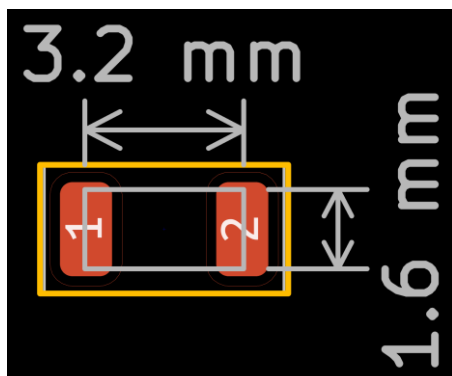
First two digits denote length of the capacitor package
last two digits correspond to its width measured in
0.01 in. Example: 0805 size code means package length
of 0.08 in and width of 0.05 in.

Metric size code:

First two digits denote length of the capacitor package
last two digits correspond to its width measured in
0.1 mm. Example: 2012 metric size code means package
length of 2 mm and width of 1.2 mm.



Inductor with 1206 imperial size code with length and width of the package indicated.

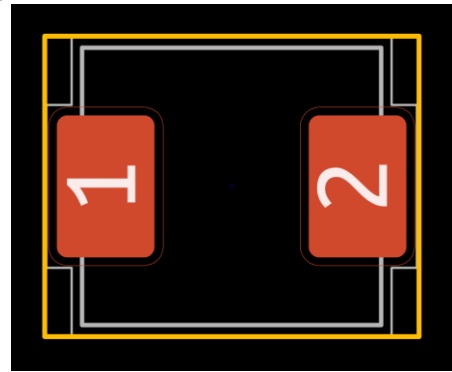


Inductor with 3216 metric size code with length and width of the package indicated.

Abracon ASPI-0630LR inductor footprint

Footprint name:

L_Abracon_ASPI-0630LR

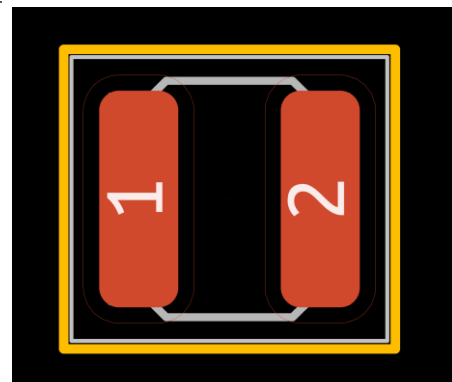


ASPI-0630LR inductor footprint.

Abracon ASPI-3012S inductor footprint

Footprint name:

L_Abracon_ASPI-3012S

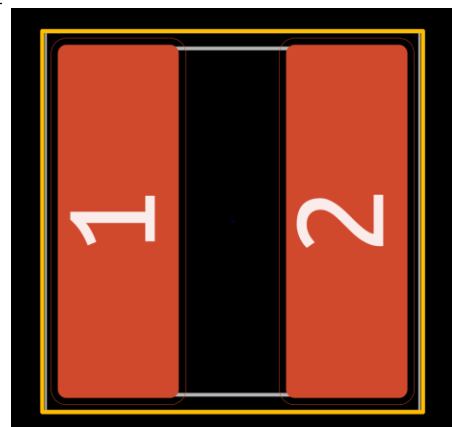


ASPI-3012S inductor footprint.

Bourns SRN1060 inductor footprint

Footprint name:

L_Bourns-SRN1060

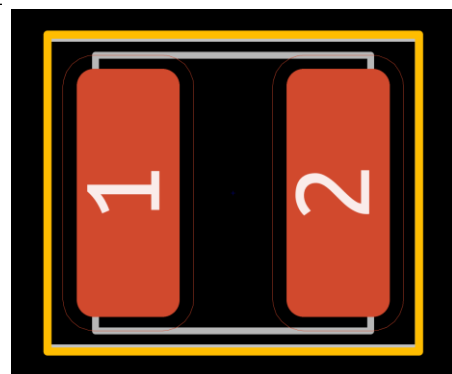


SRN1060 inductor footprint.

Bourns SRN4018 inductor footprint

Footprint name:

L_Bourns-SRN4018

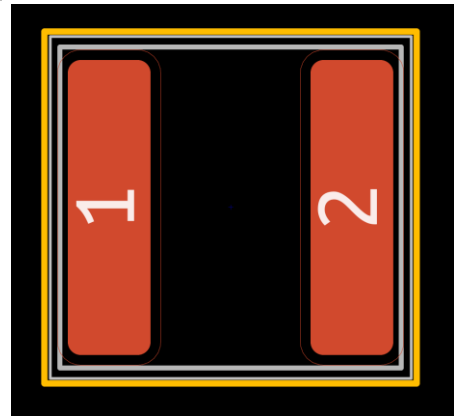


SRN4018 inductor footprint.

Bourns SRN6028 inductor footprint

Footprint name:

L_Bourns-SRN6028

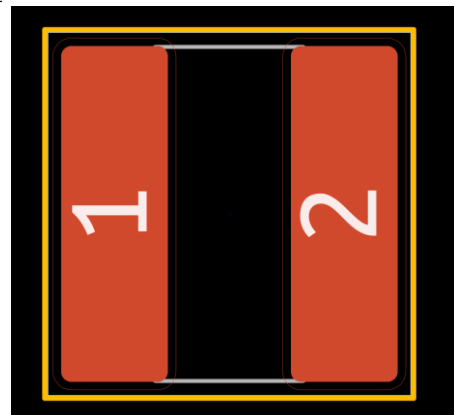


SRN6028 inductor footprint.

Bourns SRN8040 inductor footprint

Footprint name:

L_Bourns-SRN8040_8x8.15mm

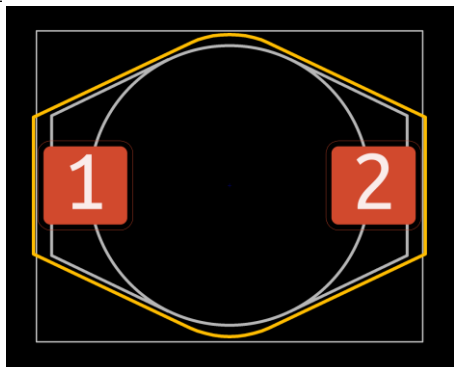


SRN8040 inductor footprint.

Bourns SRR1005 inductor footprint

Footprint name:

L_Bourns-SRR1005

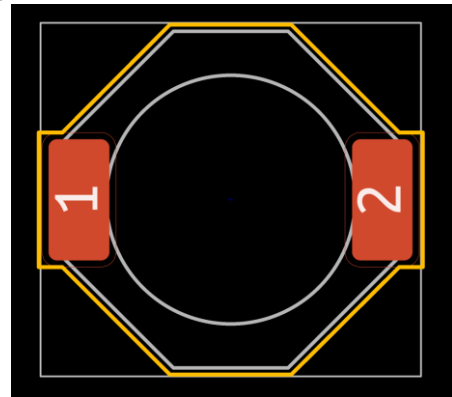


SRR1005 inductor footprint.

Bourns SRU1028 inductor footprint

Footprint name:

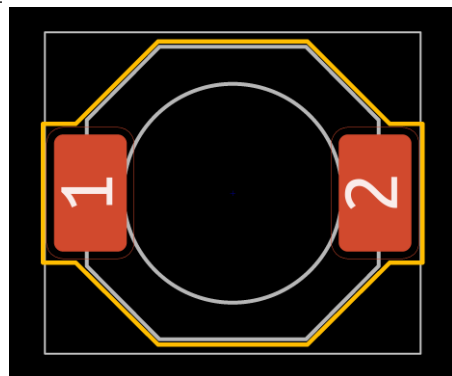
L_Bourns-SRU1028_10.0x10.0mm

*SRU1028 inductor footprint.*

Bourns SRU8028 inductor footprint

Footprint name:

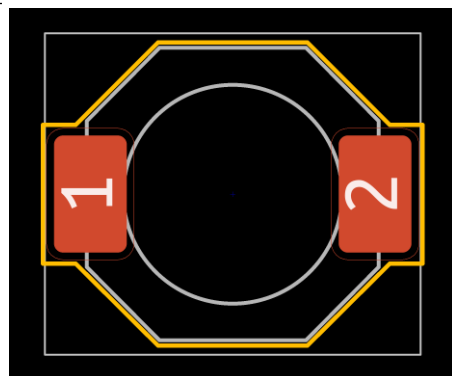
L_Bourns-SRU8028_8.0x8.0mm

*SRU8028 inductor footprint.*

Bourns SRU8043 inductor footprint

Footprint name:

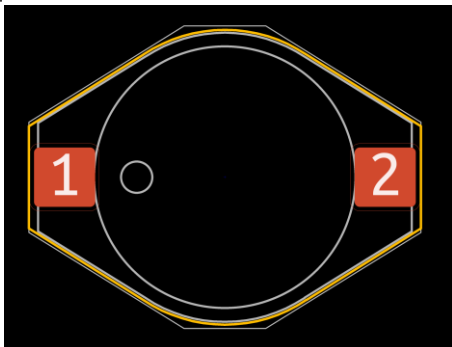
L_Bourns-SRU8043

*SRU8043 inductor footprint.*

Bourns SDR1806 inductor footprint

Footprint name:

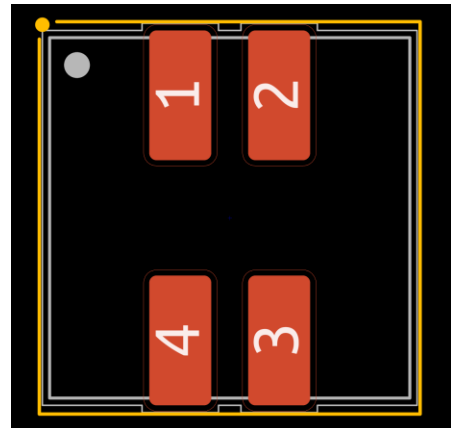
L_Bourns-SDR1806

*SDR1806 inductor footprint.*

Bourns SRF1260 inductor footprint

Footprint name:

L_Bourns-SRF1260

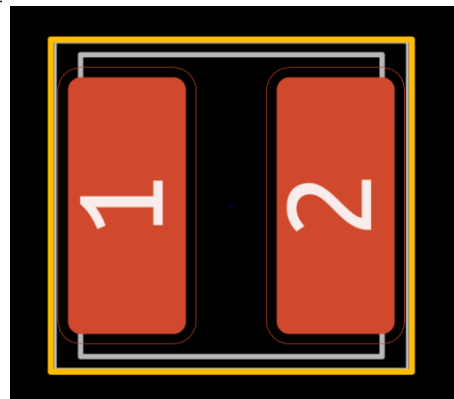


SRF1260 inductor footprint.

Bourns SRN6045TA inductor footprint

Footprint name:

L_Bourns-SRN6045TA

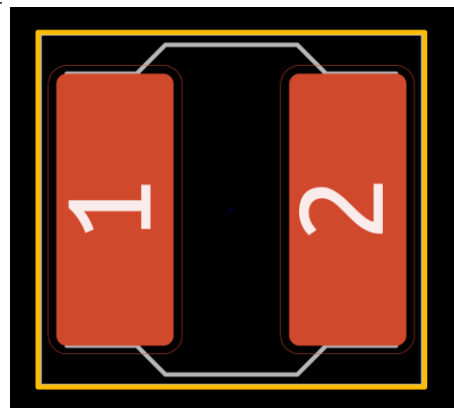


SRN6045TA inductor footprint.

Bourns SRN8040TA inductor footprint

Footprint name:

L_Bourns-SRN8040TA

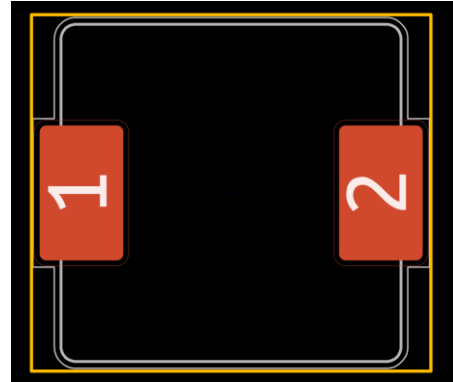


SRN8040TA inductor footprint.

Bourns SRP1245A inductor footprint

Footprint name:

L_Bourns-SRP1245A

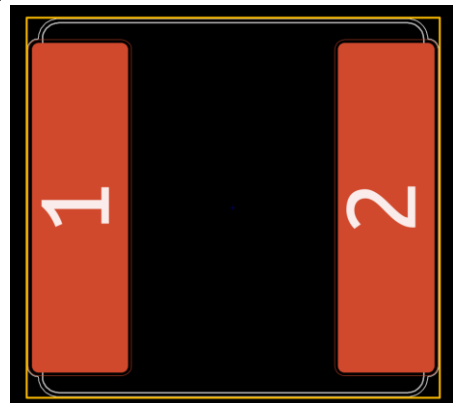


SRP1245A inductor footprint.

Bourns SRP2313AA inductor footprint

Footprint name:

L_Bourns-SRP2313AA

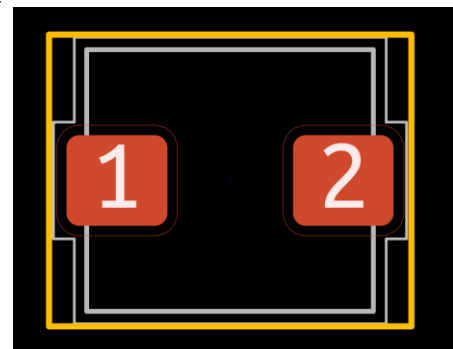


SRP2313AA inductor footprint.

Bourns SRP5030T inductor footprint

Footprint name:

L_Bourns-SRP5030T

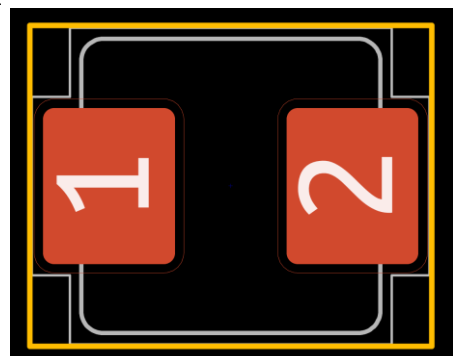


SRP5030T inductor footprint.

Bourns SRP7028A inductor footprint

Footprint name:

L_Bourns-SRP7028A_7.3x6.56mm

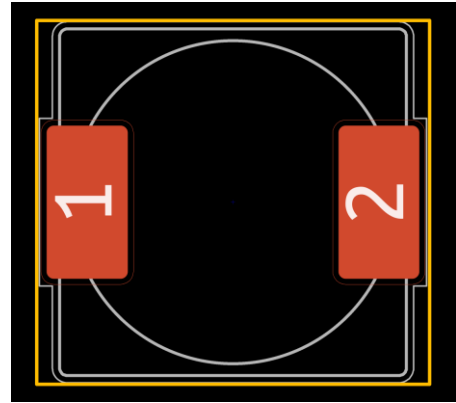


SRP7028A inductor footprint.

Bourns SRR1210A inductor footprint

Footprint name:

L_Bourns-SRR1210A

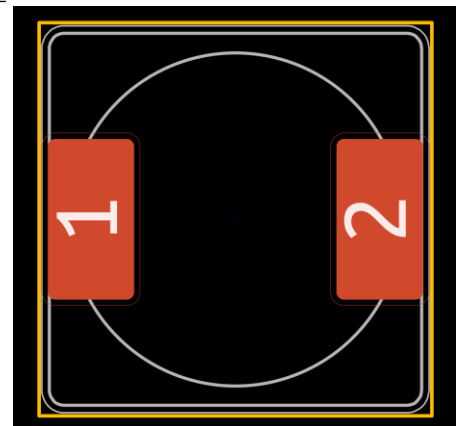


SRR1210A inductor footprint.

Bourns SRR1260 inductor footprint

Footprint name:

L_Bourns-SRR1260

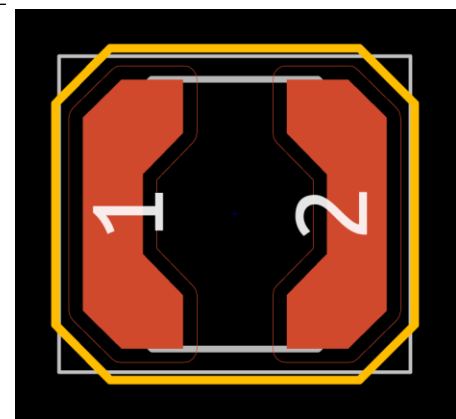


SRR1260 inductor footprint.

Coilcraft LPS4018 inductor footprint

Footprint name:

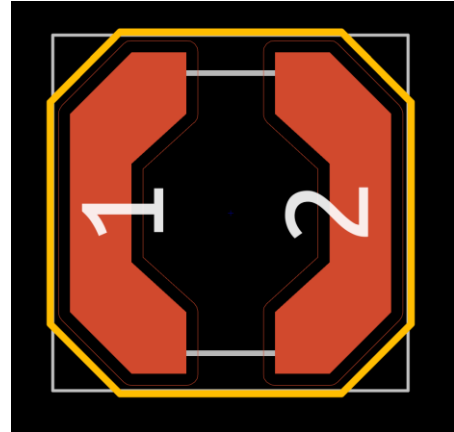
L_Coilcraft_LPS4018



LPS4018 inductor footprint.

Coilcraft LPS5030 inductor footprint

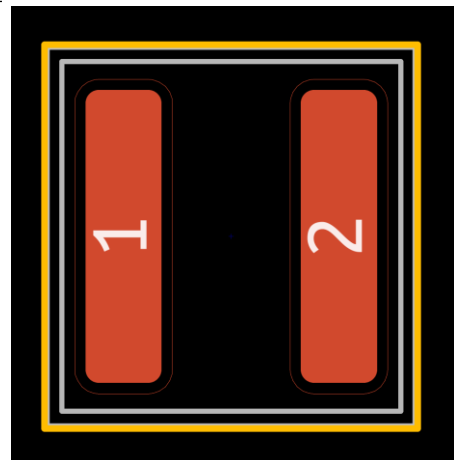
Footprint name:
L_Coilcraft_LPS5030



LPS5030 inductor footprint.

Coilcraft XAL60xx inductor footprint

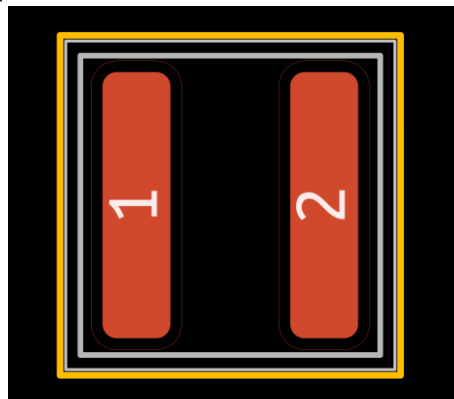
Footprint name:
L_Coilcraft_XAL60xx_6.36x6.56mm



XAL60xx inductor footprint.

Coilcraft XAL5030 inductor footprint

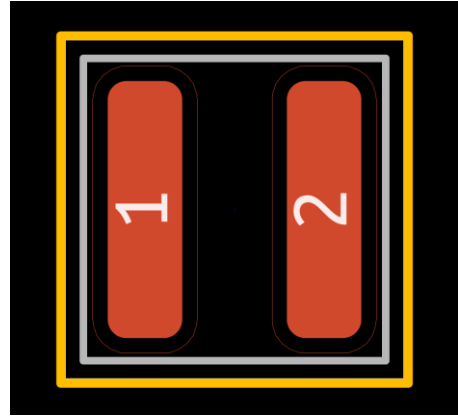
Footprint name:
L_Coilcraft_XAL5030



XAL5030 inductor footprint.

Coilcraft XxL4020 inductor footprint

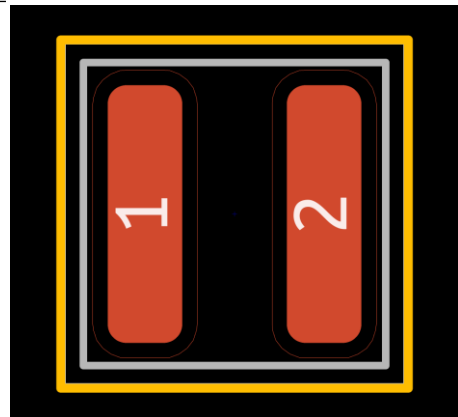
Footprint name:
L_Coilcraft_XxL4020



XxL4020 inductor footprint.

Coilcraft XxL4030 inductor footprint

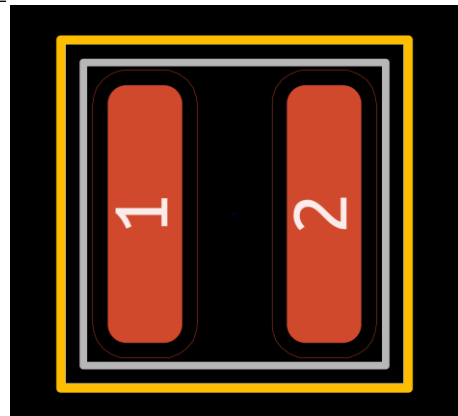
Footprint name:
L_Coilcraft_XxL4030



XxL4030 inductor footprint.

Coilcraft XxL4040 inductor footprint

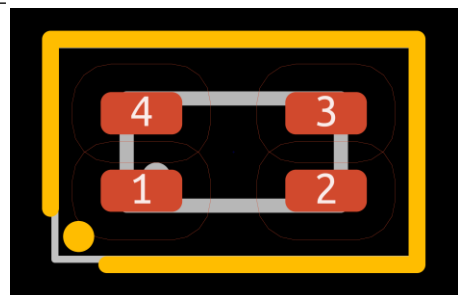
Footprint name:
L_Coilcraft_XxL4040



XxL4040 inductor footprint.

Coilcraft 0603USB common-mode choke footprint

Footprint name:
L_CommonModeChoke_Coilcraft_0603USB

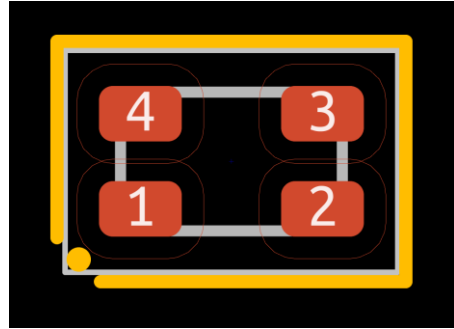


0603USB common-mode choke footprint.

Coilcraft 0805USB common-mode choke footprint

Footprint name:

L_CommonModeChoke_Coilcraft_0805USB

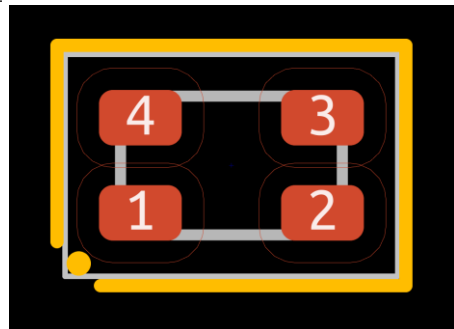


0805USB common-mode choke footprint.

Coilcraft 1812CAN common-mode choke footprint

Footprint name:

L_CommonModeChoke_Coilcraft_1812CAN

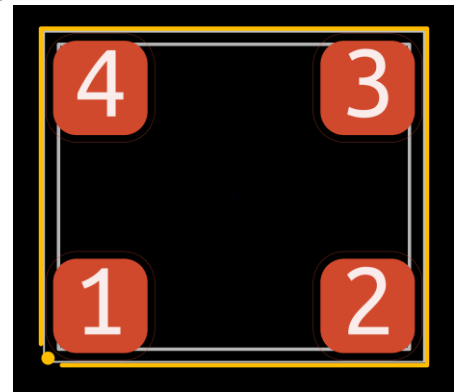


1812CAN common-mode choke footprint.

Würth WE-SL5 common-mode choke footprint

Footprint name:

L_CommonModeChoke_Wuerth_WE-SL5

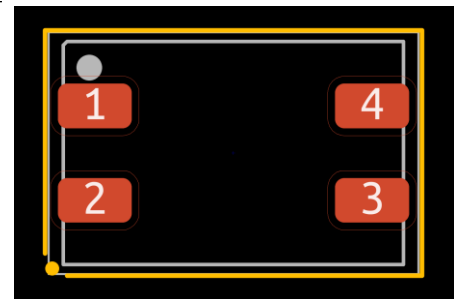


WE-SL5 common-mode choke footprint.

Würth WE-SL2 common-mode choke footprint

Footprint name:

L_CommonMode_Wuerth_WE-SL2



WE-SL2 common-mode choke footprint.

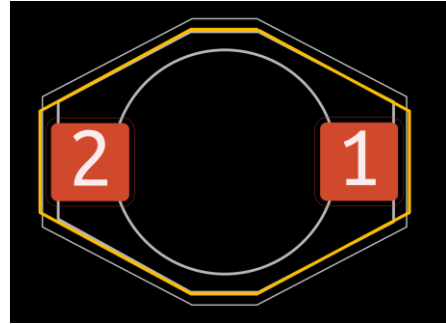
Fastron PISN inductor footprints

Footprint names:

Fastron_PISN

Fastron_PISN_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



PISN inductor footprint.

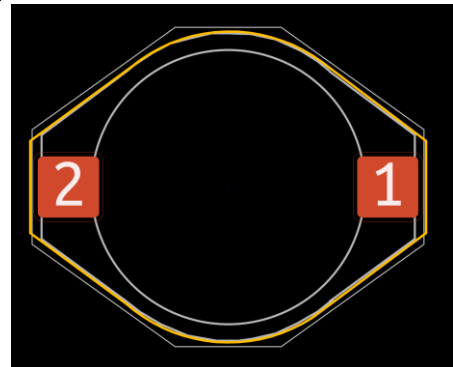
Fastron PISR inductor footprints

Footprint names:

Fastron_PISR

Fastron_PISR_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

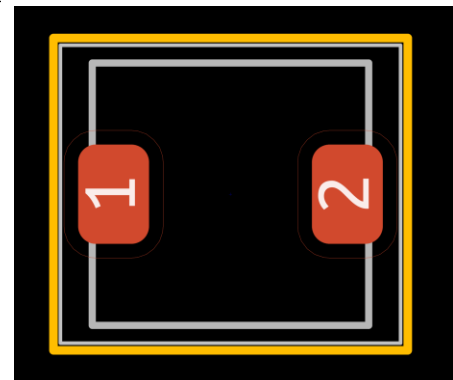


PISR inductor footprint.

Murata DEM35xxC inductor footprint

Footprint name:

L_Murata_DEM35xxC

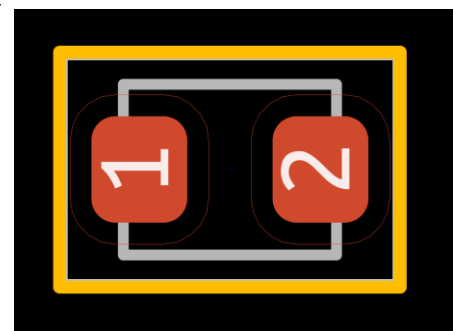


DEM35xxC inductor footprint.

Murata LQH2MCNxxxx02 series inductor footprint

Footprint name:

L_Murata_LQH2MCNxxxx02_2.0x1.6mm

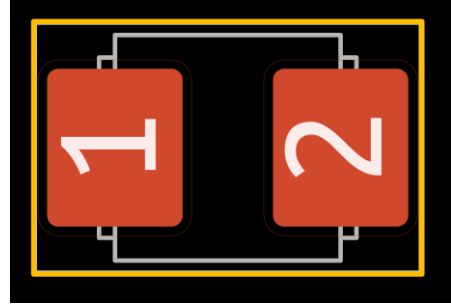


LQH2MCNxxxx02 inductor footprint.

Murata LQH55DN inductor footprint

Footprint name:

L_Murata_LQH55DN_5.7x5.0mm

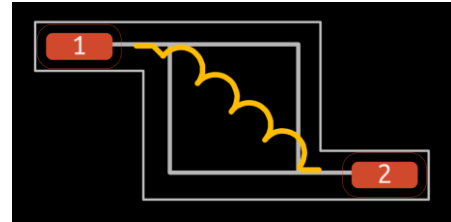


LQH55DN inductor footprint.

Neosid HDM0131A inductor footprint

Footprint name:

L_Neosid_Air-Coil_SML_1turn_HDM0131A

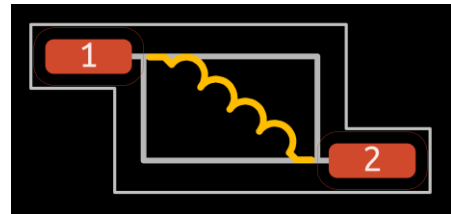


HDM0131A inductor footprint.

Neosid HAM0231A inductor footprint

Footprint name:

L_Neosid_Air-Coil_SML_2turn_HAM0231A

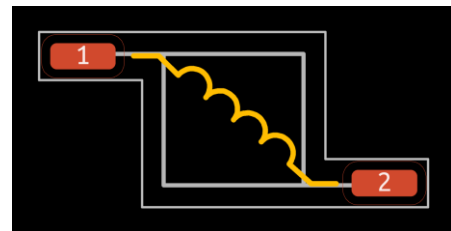


HAM0231A inductor footprint.

Neosid HDM0231A inductor footprint

Footprint name:

L_Neosid_Air-Coil_SML_2turn_HDM0231A

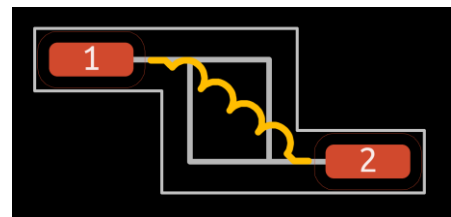


HDM0231A inductor footprint.

Neosid HAM0331A inductor footprint

Footprint name:

L_Neosid_Air-Coil_SML_3turn_HAM0331A

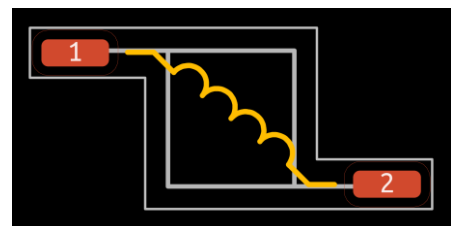


HAM0331A inductor footprint.

Neosid HDM0331A inductor footprint

Footprint name:

L_Neosid_Air-Coil_SML_3turn_HDM0331A

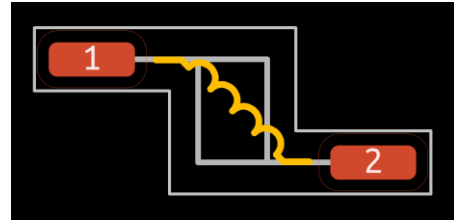


HDM0331A inductor footprint.

Neosid HAM0431A inductor footprint

Footprint name:

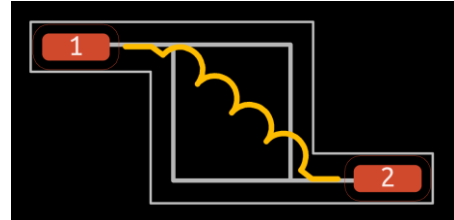
L_Neosid_Air-Coil_SML_4turn_HAM0431A

*HAM0431A inductor footprint.*

Neosid HDM0431A inductor footprint

Footprint name:

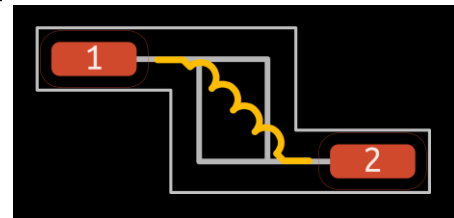
L_Neosid_Air-Coil_SML_4turn_HDM0431A

*HDM0431A inductor footprint.*

Neosid HAM0531A inductor footprint

Footprint name:

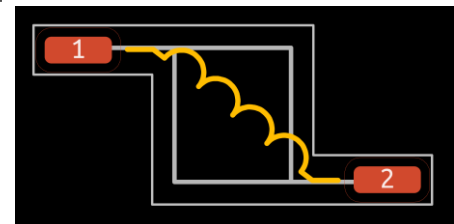
L_Neosid_Air-Coil_SML_5turn_HAM0531A

*HAM0531A inductor footprint.*

Neosid HDM0531A inductor footprint

Footprint name:

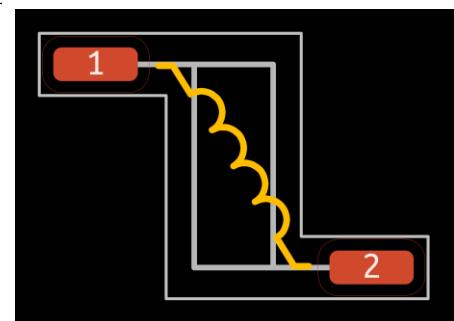
L_Neosid_Air-Coil_SML_5turn_HDM0531A

*HDM0531A inductor footprint.*

Neosid HAM0631A inductor footprint

Footprint name:

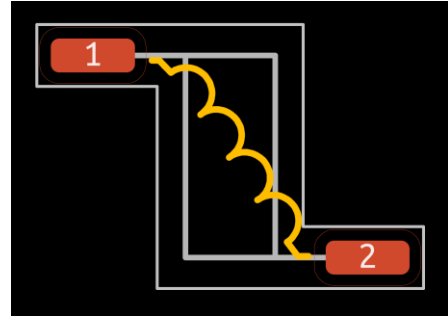
L_Neosid_Air-Coil_SML_6turn_HAM0631A

*HAM0631A inductor footprint.*

Neosid HAM0631A-HAM1031A compatible inductor footprint

Footprint name:

L_Neosid_Air-Coil_SML_6-10turn_HAM0631A-HAM1031A

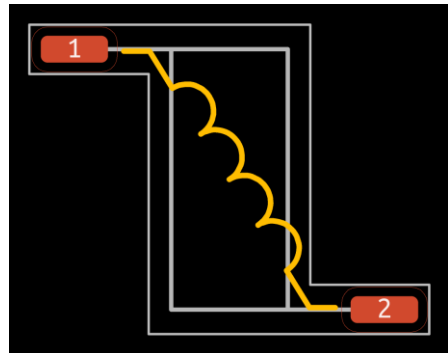


HAM0631A-HAM1031A compatible inductor footprint.

Neosid HDM0431A-HDM1031A compatible inductor footprint

Footprint name:

L_Neosid_Air-Coil_SML_6-10turn_HDM0431A-HDM1031A



HDM0431A-HDM1031A compatible inductor footprint.

Neosid Ms36-L inductor footprint

Footprint name:

L_Neosid_MicroCoil_Ms36-L

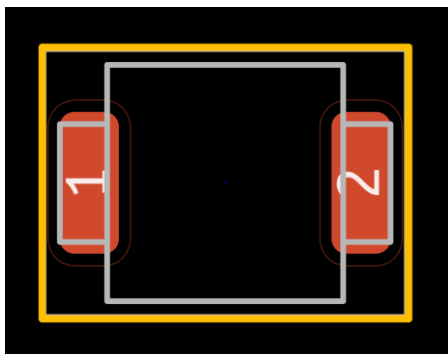


Ms36-L inductor footprint.

Neosid Ms42 inductor footprint

Footprint name:

L_Neosid_Ms42

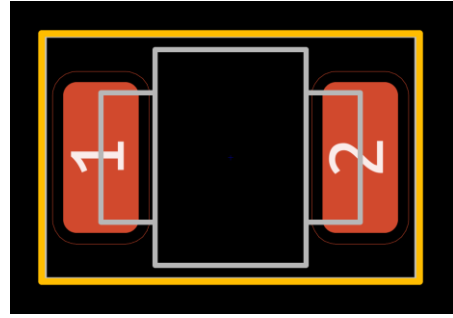


Ms42 inductor footprint.

Neosid Ms50 inductor footprint

Footprint name:

L_Neosid_Ms50

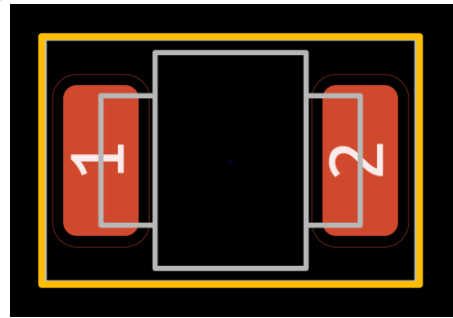


Ms50 inductor footprint.

Neosid Ms50T inductor footprint

Footprint name:

L_Neosid_Ms50T

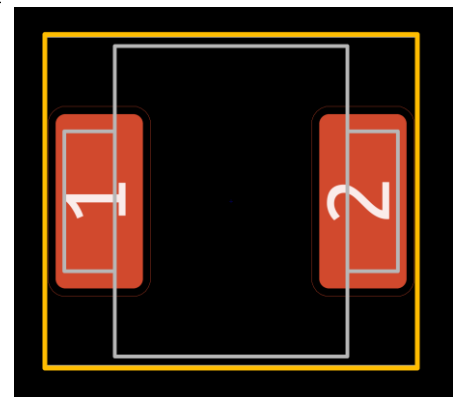


Ms50T inductor footprint.

Neosid Ms85 inductor footprint

Footprint name:

L_Neosid_Ms85

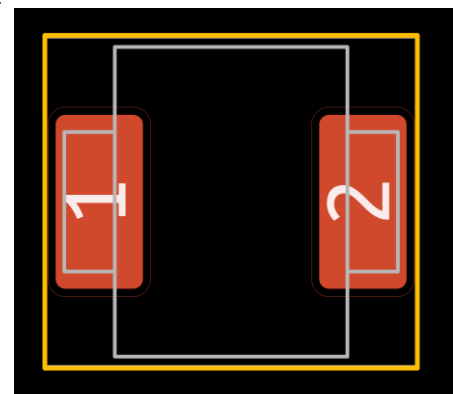


Ms85 inductor footprint.

Neosid Ms85T inductor footprint

Footprint name:

L_Neosid_Ms85T

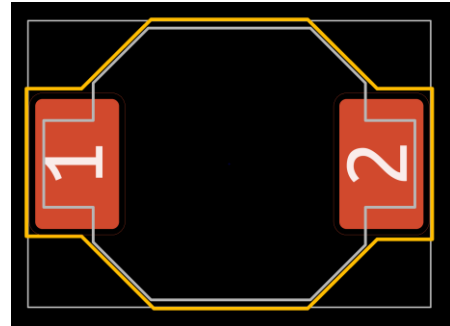


Ms85T inductor footprint.

Neosid Ms95 inductor footprint

Footprint name:

L_Neosid_Ms95

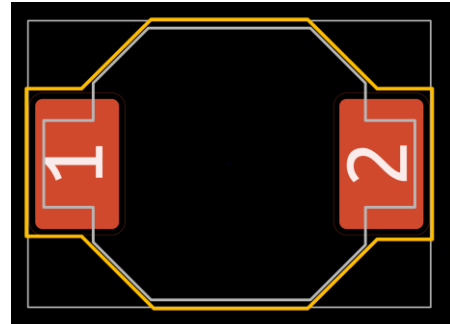


Ms95 inductor footprint.

Neosid Ms95T inductor footprint

Footprint name:

L_Neosid_Ms95T

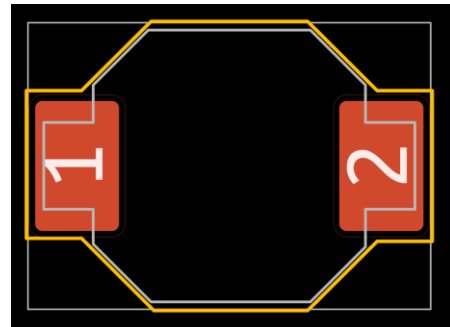


Ms95T inductor footprint.

Neosid Ms95a inductor footprint

Footprint name:

L_Neosid_Ms95a

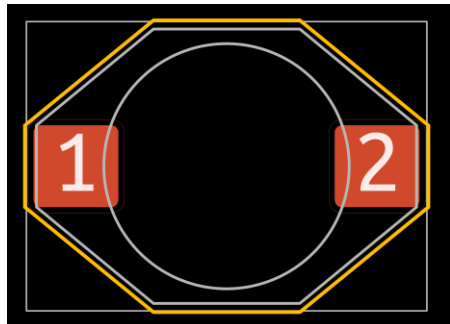


Ms95a inductor footprint.

Neosid SM-NE95H inductor footprint

Footprint name:

L_Neosid_SM-NE95H



SM-NE95H inductor footprint.

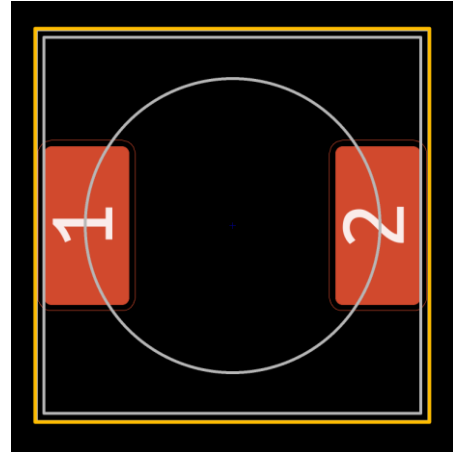
Neosid SM-NE127 inductor footprints

Footprint names:

Neosid_SM-NE127

Neosid_SM-NE127_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

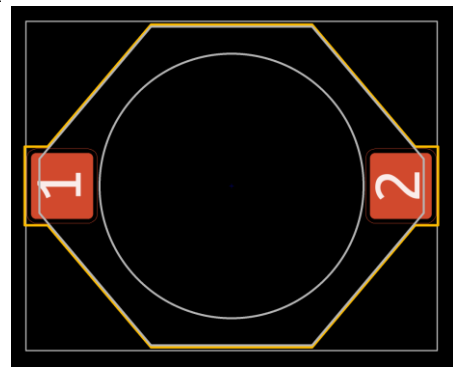


SM-NE127 inductor footprint.

Neosid SM-NE150 inductor footprint

Footprint name:

L_Neosid_SM-NE150

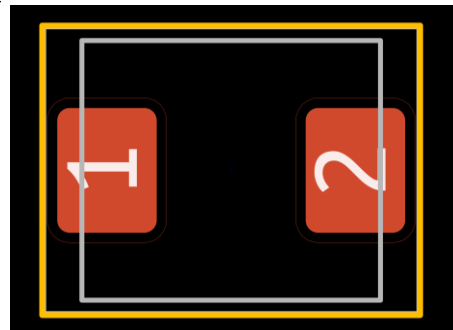


SM-NE150 inductor footprint.

Neosid SM-PIC0512H inductor footprint

Footprint name:

L_Neosid_SM-PIC0512H

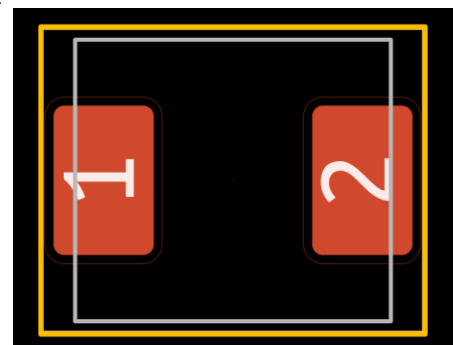


SM-PIC0512H inductor footprint.

Neosid SM-PIC0602H inductor footprint

Footprint name:

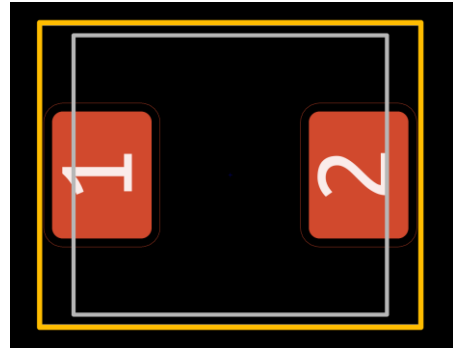
L_Neosid_SM-PIC0602H



SM-PIC0602H inductor footprint.

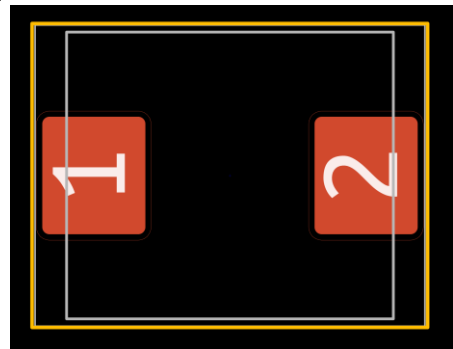
Neosid SM-PIC0612H inductor footprint**Footprint name:**

L_Neosid_SM-PIC0612H

*SM-PIC0612H inductor footprint.*

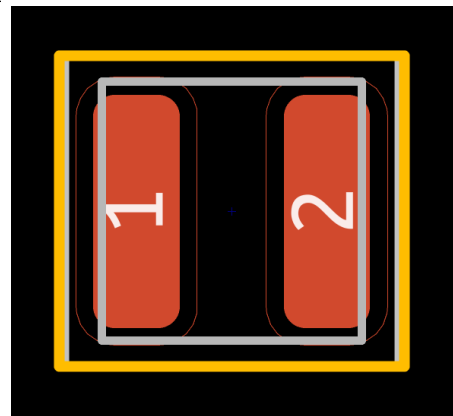
Neosid SM-PIC1004H inductor footprint**Footprint name:**

L_Neosid_SM-PIC1004H

*SM-PIC1004H inductor footprint.*

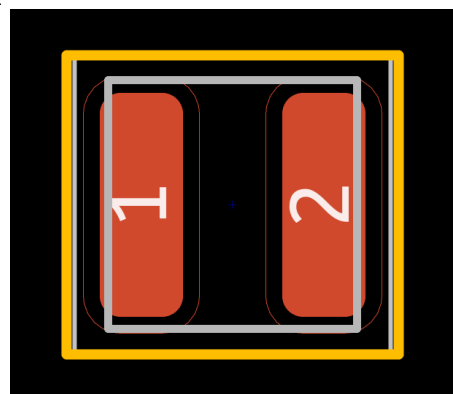
Neosid SMS-ME3010 inductor footprint**Footprint name:**

L_Neosid_SMS-ME3010

*SMS-ME3010 inductor footprint.*

Neosid SMS-ME3015 inductor footprint**Footprint name:**

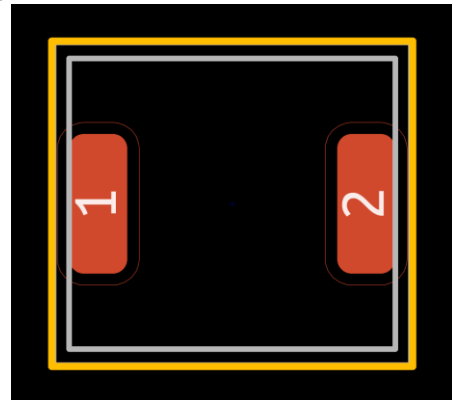
L_Neosid_SMS-ME3015

*SMS-ME3015 inductor footprint.*

Neosid SMs42 inductor footprint

Footprint name:

L_Neosid_SMs42

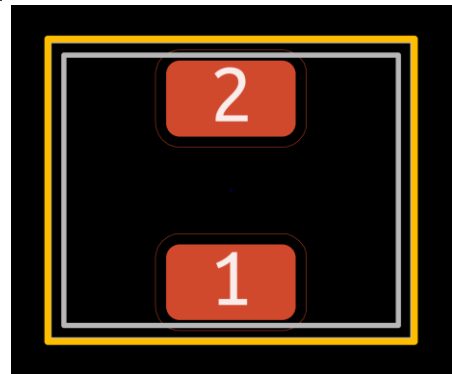


SMs42 inductor footprint.

Neosid SMs50 inductor footprint

Footprint name:

L_Neosid_SMs50

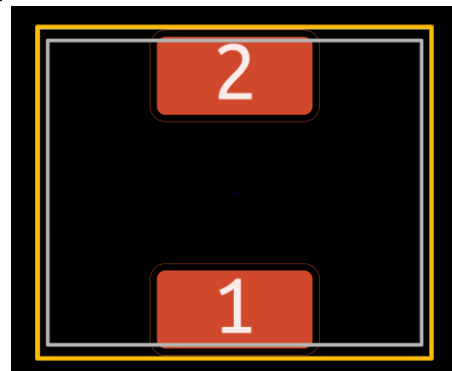


SMs50 inductor footprint.

Neosid SMs85 inductor footprint

Footprint name:

L_Neosid_SMs85

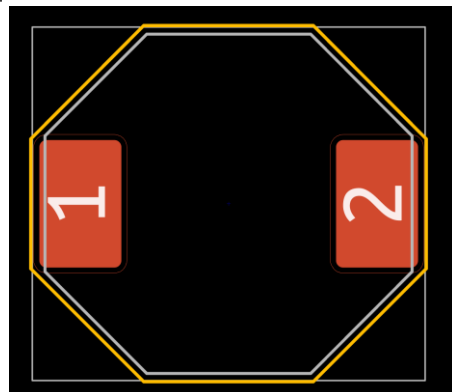


SMs85 inductor footprint.

Neosid SMs95/SMs95p inductor footprint

Footprint name:

L_Neosid_SMs95_SMs95p

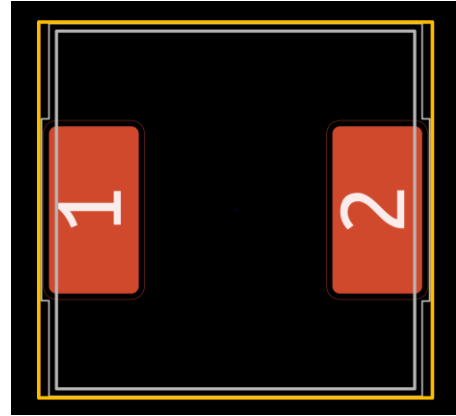


SMs95/SMs95p inductor footprint.

Pulse PA4320 inductor footprint

Footprint name:

L_Pulse_PA4320

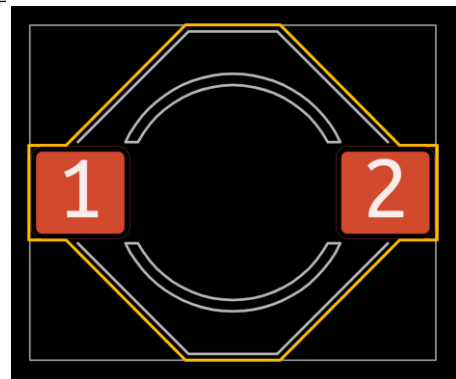


PA4320 inductor footprint.

Sagami CER1242B inductor footprint

Footprint name:

L_Sagami_CER1242B

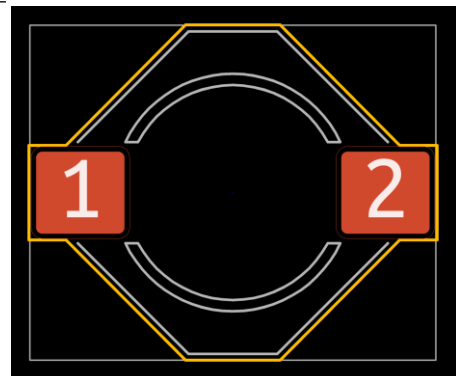


CER1242B inductor footprint.

Sagami CER1257B inductor footprint

Footprint name:

L_Sagami_CER1257B

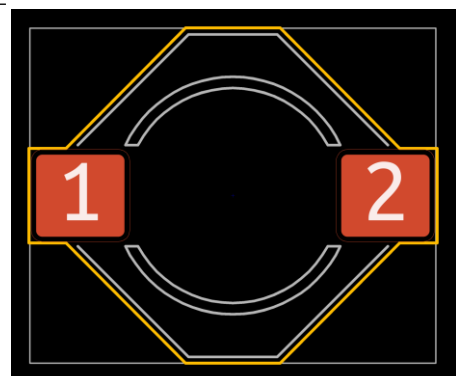


CER1257B inductor footprint.

Sagami CER1277B inductor footprint

Footprint name:

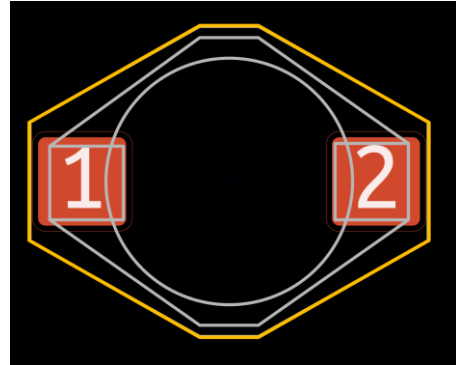
L_Sagami_CER1277B



CER1277B inductor footprint.

SigTra SC3316F inductor footprint

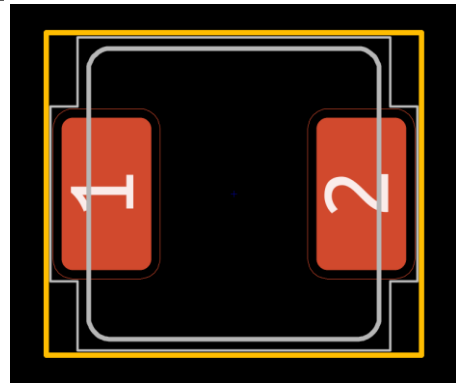
Footprint name:
L_SigTra_SC3316F



SC3316F inductor footprint.

Sumida CDMC6D28 inductor footprint

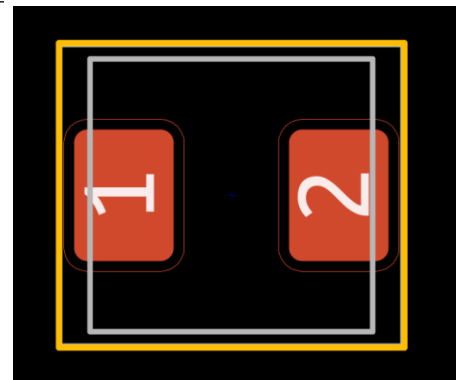
Footprint name:
L_Sumida_CDMC6D28_7.25x6.5mm



CDMC6D28 inductor footprint.

Sunlord MWSA0518 inductor footprint

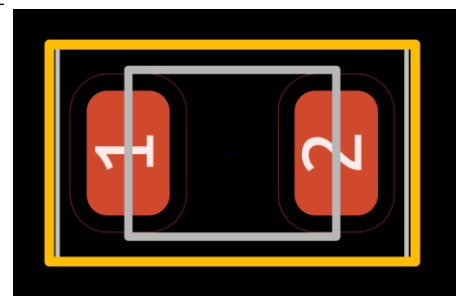
Footprint name:
L_Sunlord_MWSA0518_5.4x5.2mm



MWSA0518 inductor footprint.

TDK NLV25 inductor footprint

Footprint name:
L_TDK_NLV25_2.5x2.0mm

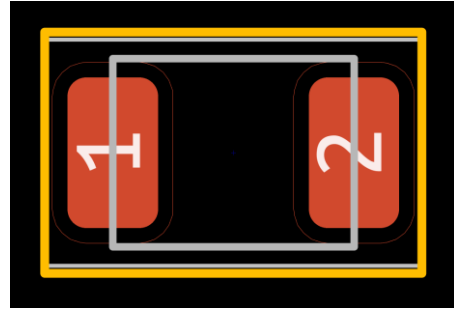


NLV25 inductor footprint.

TDK NLV32 inductor footprint

Footprint name:

L_TDK_NLV32_3.2x2.0mm

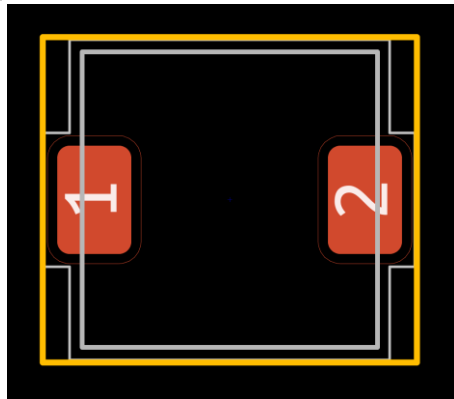


NLV32 inductor footprint.

TDK SLF6025 inductor footprint

Footprint name:

L_TDK_SLF6025

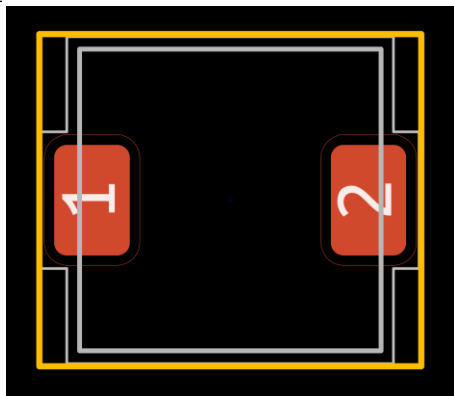


SLF6025 inductor footprint.

TDK SLF6028 inductor footprint

Footprint name:

L_TDK_SLF6028

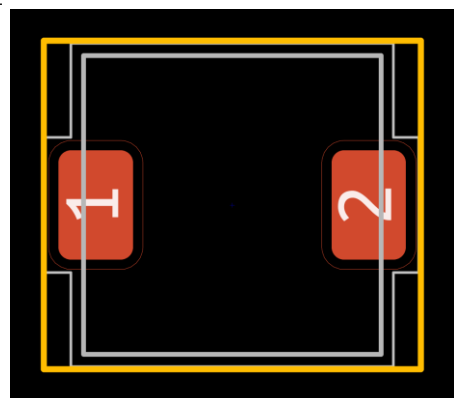


SLF6028 inductor footprint.

TDK SLF6045 inductor footprint

Footprint name:

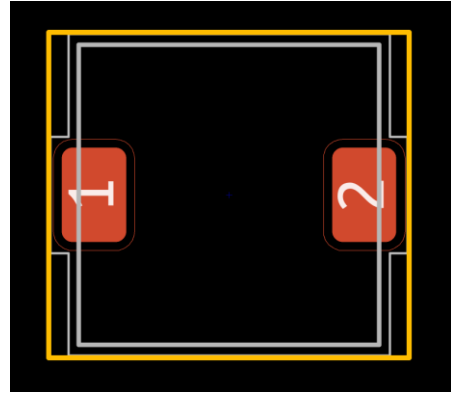
L_TDK_SLF6045



SLF6045 inductor footprint.

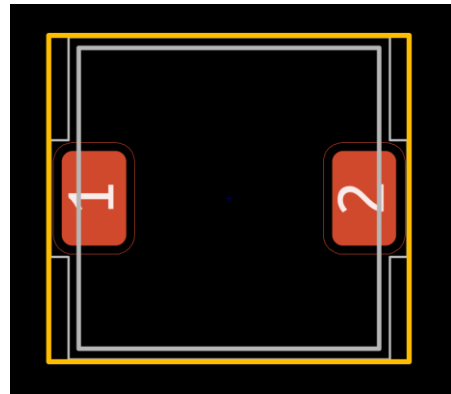
TDK SLF7032 inductor footprint**Footprint name:**

L_TDK_SLF7032

*SLF7032 inductor footprint.*

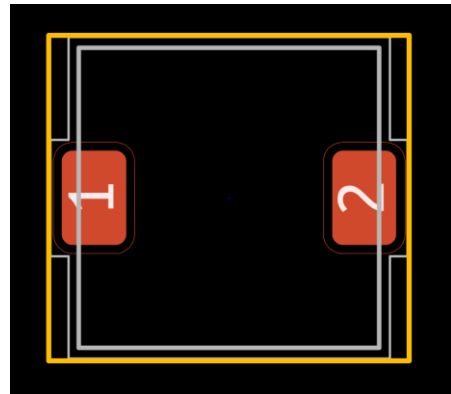
TDK SLF7045 inductor footprint**Footprint name:**

L_TDK_SLF7045

*SLF7045 inductor footprint.*

TDK SLF7055 inductor footprint**Footprint name:**

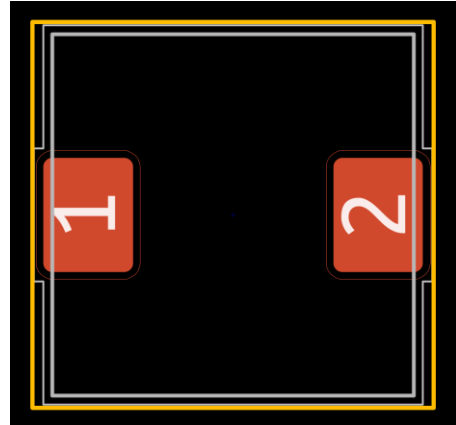
L_TDK_SLF7055

*SLF7055 inductor footprint.*

TDK SLF10145 inductor footprint

Footprint name:

L_TDK_SLF10145

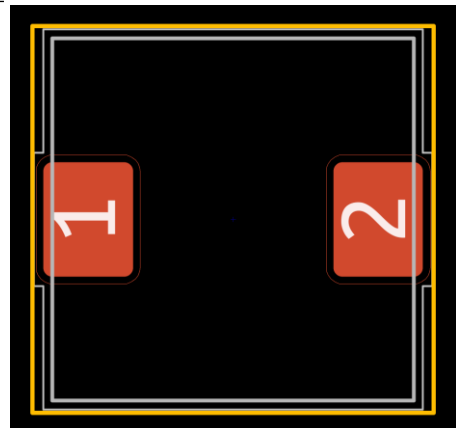


SLF10145 inductor footprint.

TDK SLF10165 inductor footprint

Footprint name:

L_TDK_SLF10165

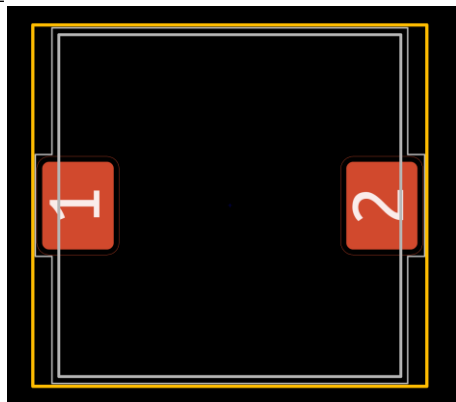


SLF10165 inductor footprint.

TDK SLF12555 inductor footprint

Footprint name:

L_TDK_SLF12555

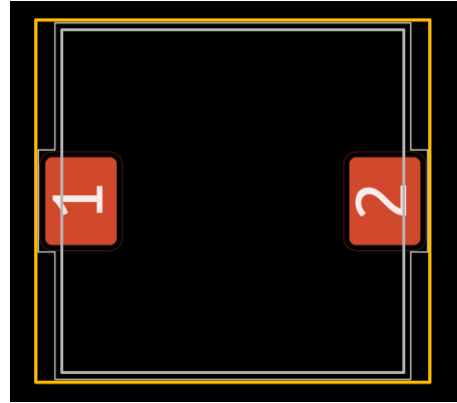


SLF12555 inductor footprint.

TDK SLF12565 inductor footprint

Footprint name:

L_TDK_SLF12565

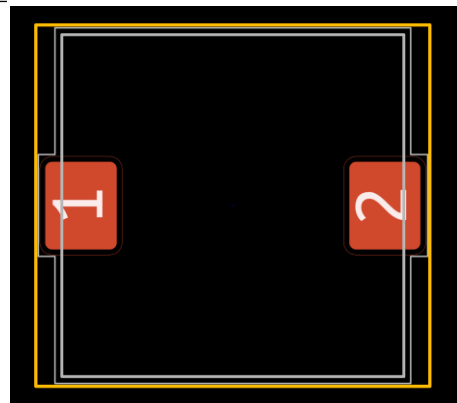


SLF12565 inductor footprint.

TDK SLF12575 inductor footprint

Footprint name:

L_TDK_SLF12575

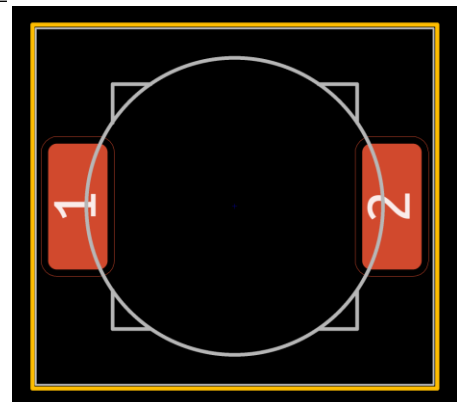


SLF12575 inductor footprint.

TDK VLF10040 inductor footprint

Footprint name:

L_TDK_VLF10040

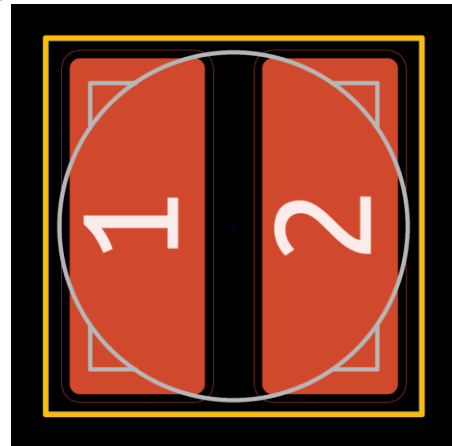


SLF10040 inductor footprint.

TDK VLP8040 inductor footprint

Footprint name:

L_TDK_VLP8040

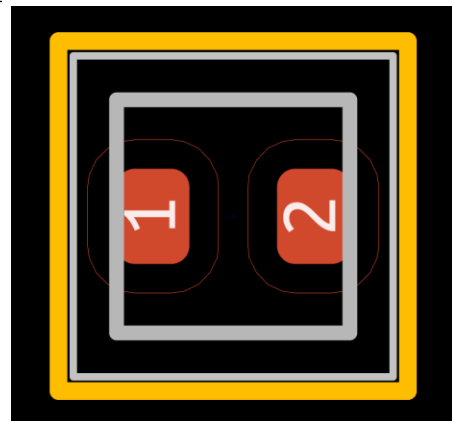


SLP8040 inductor footprint.

Taiyo-Yuden MD-1616 inductor footprint

Footprint name:

L_Taiyo-Yuden_MD-1616

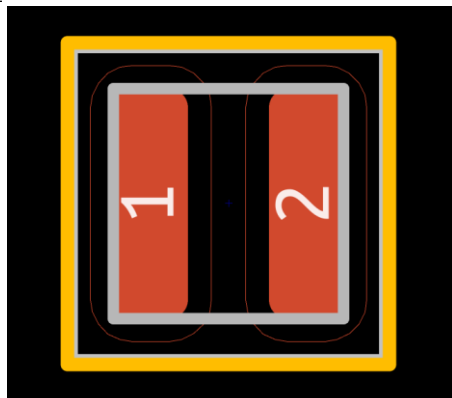


MD-1616 inductor footprint.

Taiyo-Yuden MD-2020 inductor footprint

Footprint name:

L_Taiyo-Yuden_MD-2020

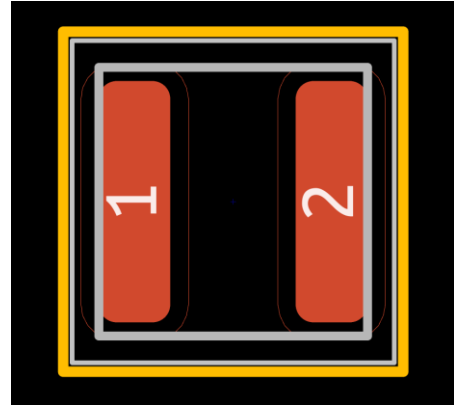


MD-2020 inductor footprint.

Taiyo-Yuden MD-3030 inductor footprint

Footprint name:

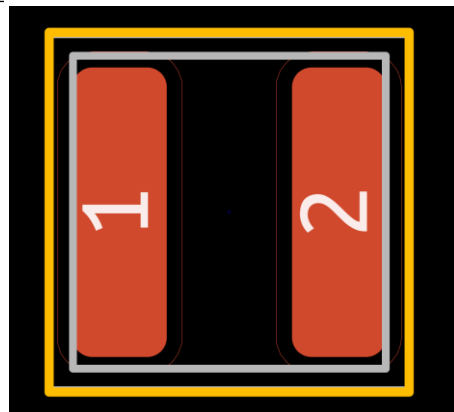
L_Taiyo-Yuden_MD-3030

*MD-3030 inductor footprint.*

Taiyo-Yuden MD-4040 inductor footprint

Footprint name:

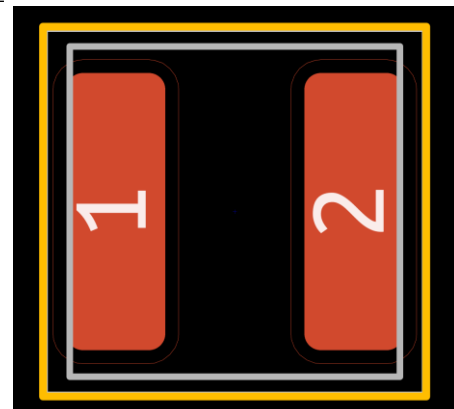
L_Taiyo-Yuden_MD-4040

*MD-4040 inductor footprint.*

Taiyo-Yuden MD-5050 inductor footprint

Footprint name:

L_Taiyo-Yuden_MD-5050

*MD-5050 inductor footprint.*

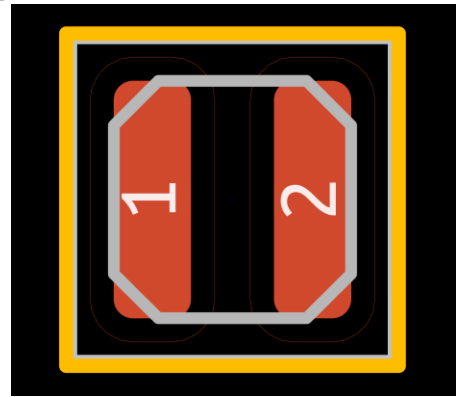
Taiyo-Yuden NR20xx series inductor footprints

Footprint names:

L_Taiyo-Yuden_NR-20xx

L_Taiyo-Yuden_NR-20xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



NR20xx inductor footprint.

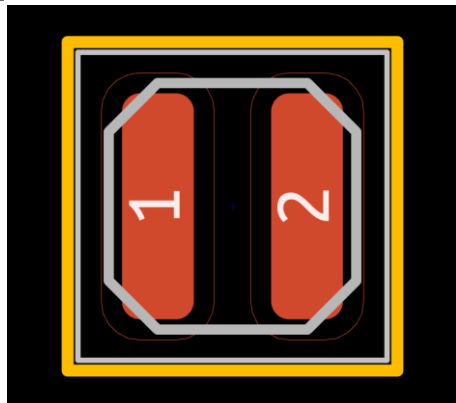
Taiyo-Yuden NR24xx series inductor footprints

Footprint names:

L_Taiyo-Yuden_NR-24xx

L_Taiyo-Yuden_NR-24xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



NR24xx inductor footprint.

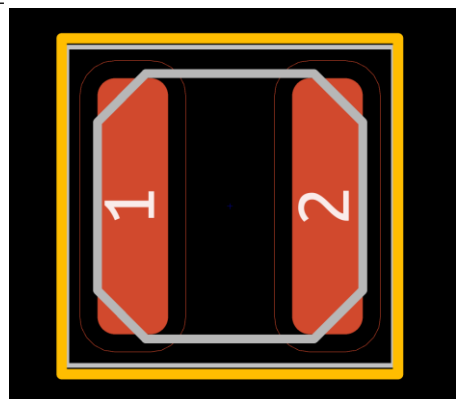
Taiyo-Yuden NR30xx series inductor footprints

Footprint names:

L_Taiyo-Yuden_NR-30xx

L_Taiyo-Yuden_NR-30xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



NR30xx inductor footprint.

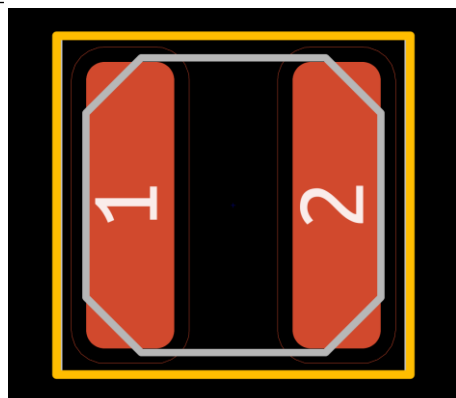
Taiyo-Yuden NR40xx series inductor footprints

Footprint names:

L_Taiyo-Yuden_NR-40xx

L_Taiyo-Yuden_NR-40xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



NR40xx inductor footprint.

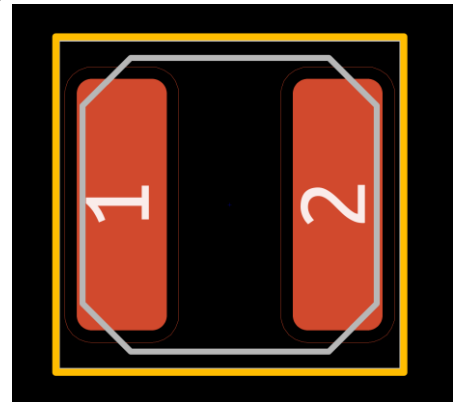
Taiyo-Yuden NR50xx series inductor footprints

Footprint names:

L_Taiyo-Yuden_NR-50xx

L_Taiyo-Yuden_NR-50xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



NR50xx inductor footprint.

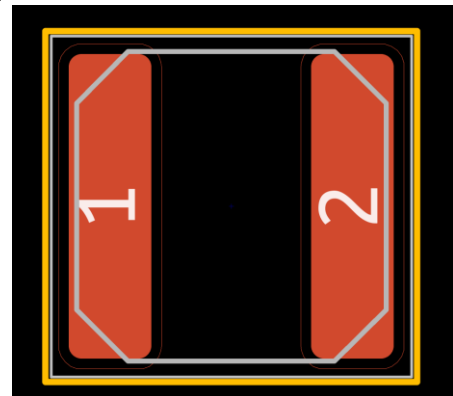
Taiyo-Yuden NR60xx series inductor footprints

Footprint names:

L_Taiyo-Yuden_NR-60xx

L_Taiyo-Yuden_NR-60xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



NR60xx inductor footprint.

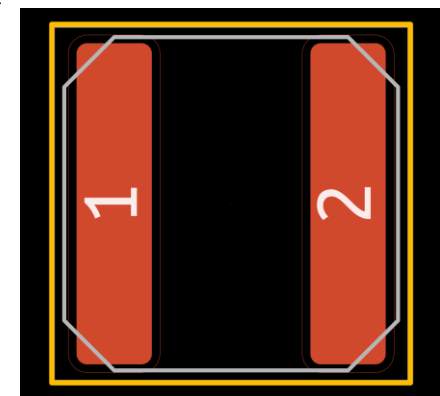
Taiyo-Yuden NR80xx series inductor footprints

Footprint names:

L_Taiyo-Yuden_NR-80xx

L_Taiyo-Yuden_NR-80xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



NR80xx inductor footprint.

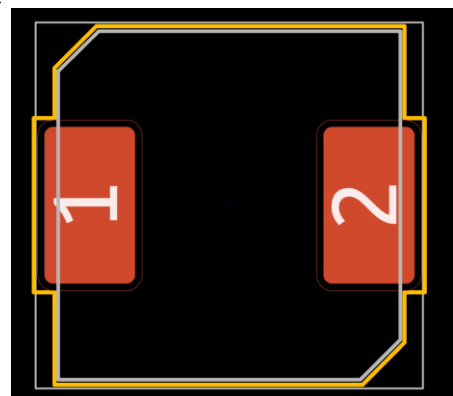
Taiyo-Yuden NR-10050 inductor footprints

Footprint names:

L_Taiyo-Yuden_NR-10050_9.8x10.0mm

L_Taiyo-Yuden_NR-10050_9.8x10.0mm_BigPads

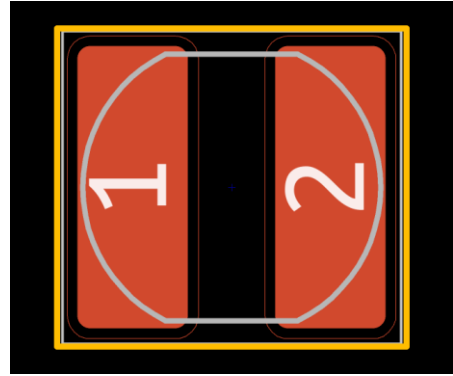
Note: BigPads suffix denotes a footprint with enlarged pads.



NR-10050 inductor footprint.

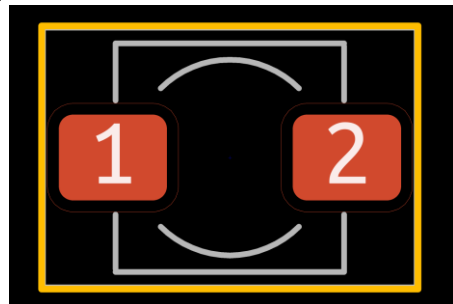
Traco Power TCK-047 inductor footprint**Footprint name:**

L_TracoPower_TCK-047_5.2x5.8mm

*TCK-047 inductor footprint.*

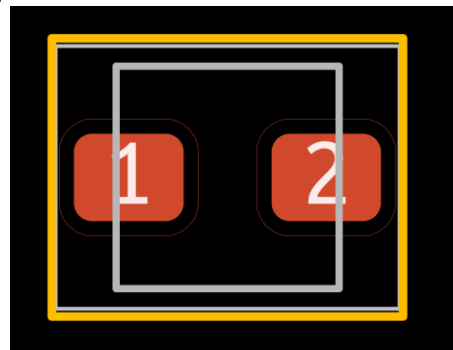
Traco Power TCK-141 inductor footprint**Footprint name:**

L_TracoPower_TCK-141

*TCK-141 inductor footprint.*

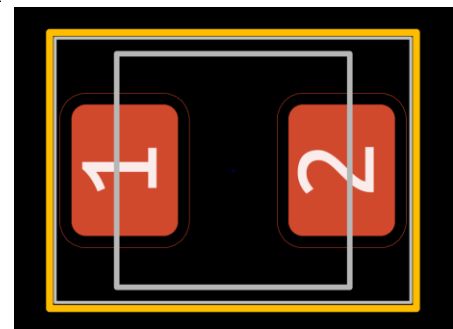
Vishay IHLP-1212 inductor footprint**Footprint name:**

L_Vishay_IHLP-1212

*IHLP-1212 inductor footprint.*

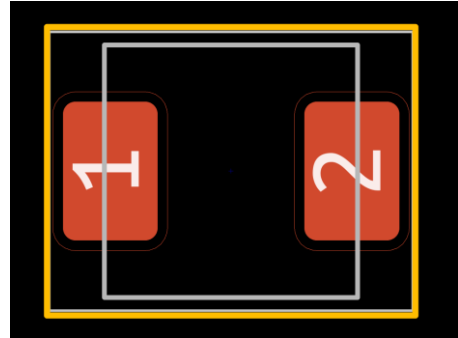
Vishay IHLP-1616 inductor footprint**Footprint name:**

L_Vishay_IHLP-1616

*IHLP-1616 inductor footprint.*

Vishay IHLP-2020 inductor footprint

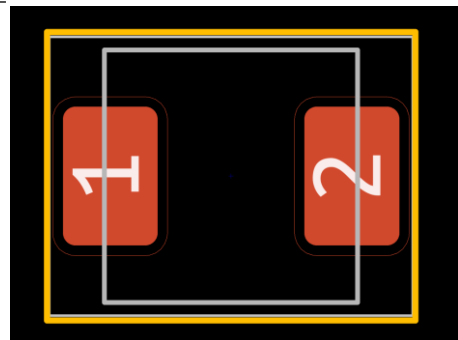
Footprint name:
L_Vishay_IHLP-2020



IHLP-2020 inductor footprint.

Vishay IHLP-2525 inductor footprint

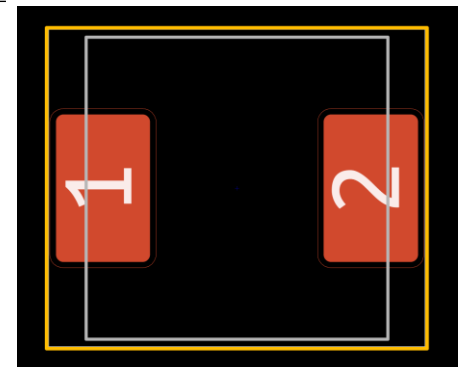
Footprint name:
L_Vishay_IHLP-2525



IHLP-2525 inductor footprint.

Vishay IHLP-4040 inductor footprint

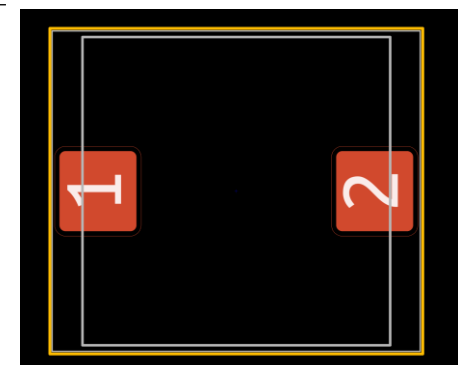
Footprint name:
L_Vishay_IHLP-4040



IHLP-4040 inductor footprint.

Vishay IHLP-5050 inductor footprint

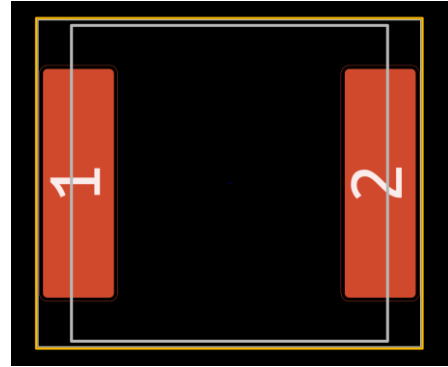
Footprint name:
L_Vishay_IHLP-5050



IHLP-5050 inductor footprint.

Vishay IHLP-6767 inductor footprint

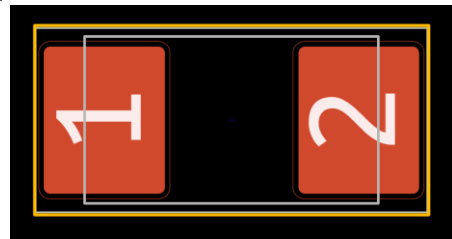
Footprint name:
L_Vishay_IHLP-6767



IHLP-6767 inductor footprint.

Vishay IHSM-3825 inductor footprint

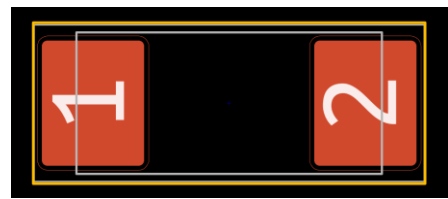
Footprint name:
L_Vishay_IHSM-3825



IHSM-3825 inductor footprint.

Vishay IHSM-4825 inductor footprint

Footprint name:
L_Vishay_IHSM-4825



IHSM-4825 inductor footprint.

Vishay IHSM-5832 inductor footprint

Footprint name:
L_Vishay_IHSM-5832



IHSM-5832 inductor footprint.

Vishay IHSM-7832 inductor footprint

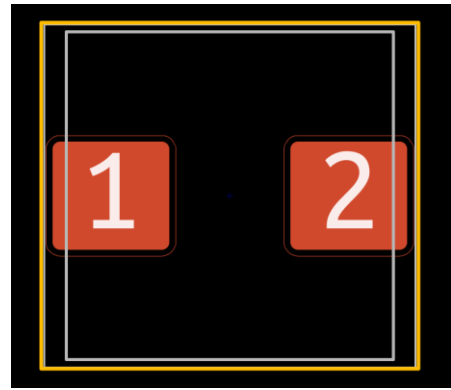
Footprint name:
L_Vishay_IHSM-7832



IHSM-7832 inductor footprint.

Würth HCI-1030 inductor footprint

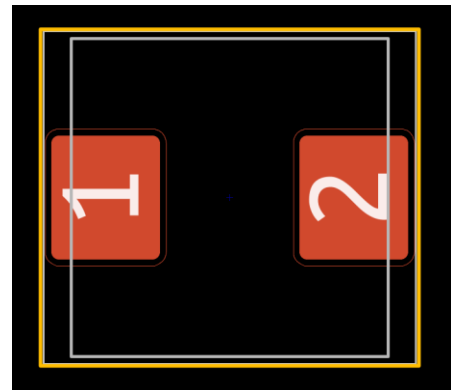
Footprint name:
L_Wuerth_HCI-1030



HCI-1030 inductor footprint.

Würth HCI-1040 inductor footprint

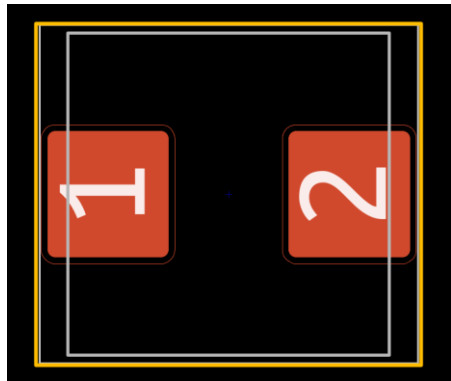
Footprint name:
L_Wuerth_HCI-1040



HCI-1040 inductor footprint.

Würth HCI-1050 inductor footprint

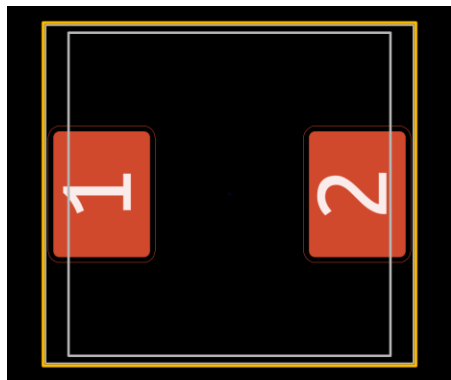
Footprint name:
L_Wuerth_HCI-1050



HCI-1050 inductor footprint.

Würth HCI-1335 inductor footprint

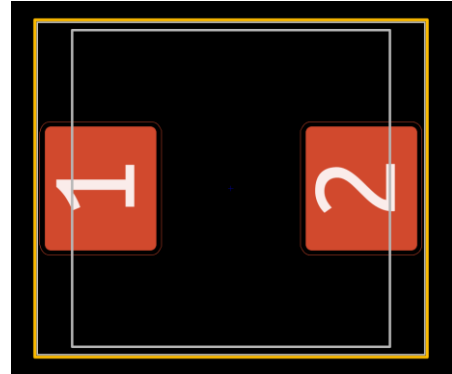
Footprint name:
L_Wuerth_HCI-1335



HCI-1335 inductor footprint.

Würth HCI-1350 inductor footprint

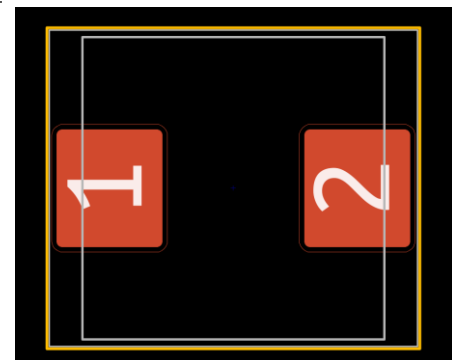
Footprint name:
L_Wuerth_HCI-1350



HCI-1350 inductor footprint.

Würth HCI-1365 inductor footprint

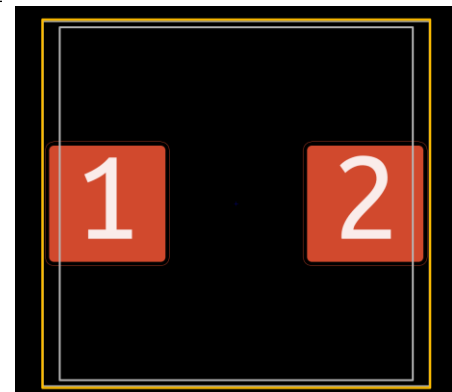
Footprint name:
L_Wuerth_HCI-1365



HCI-1365 inductor footprint.

Würth HCI-1890 inductor footprint

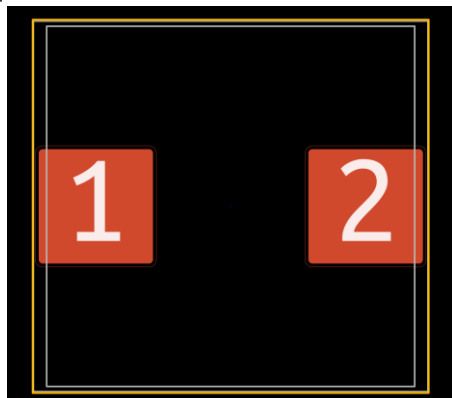
Footprint name:
L_Wuerth_HCI-1890



HCI-1890 inductor footprint.

Würth HCI-2212 inductor footprint

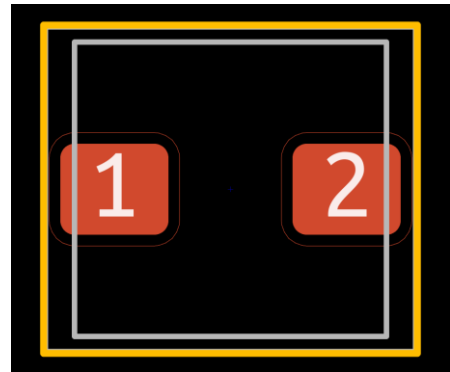
Footprint name:
L_Wuerth_HCI-2212



HCI-2212 inductor footprint.

Würth HCI-5040 inductor footprint

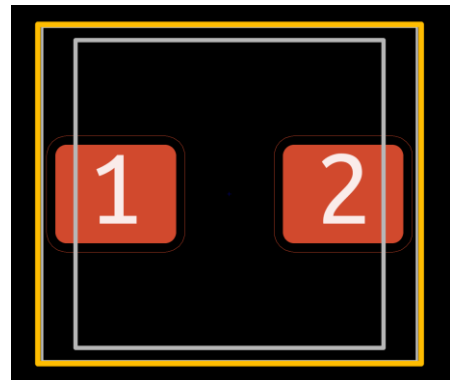
Footprint name:
L_Wuerth_HCI-5040



HCI-5040 inductor footprint.

Würth HCI-7030 inductor footprint

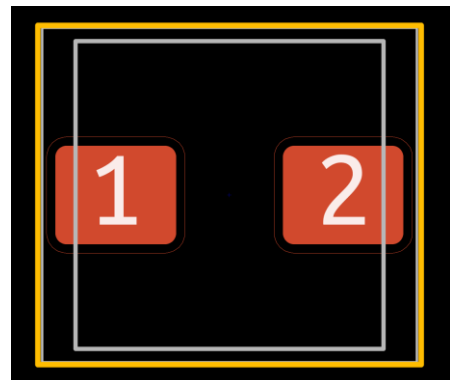
Footprint name:
L_Wuerth_HCI-7030



HCI-7030 inductor footprint.

Würth HCI-7040 inductor footprint

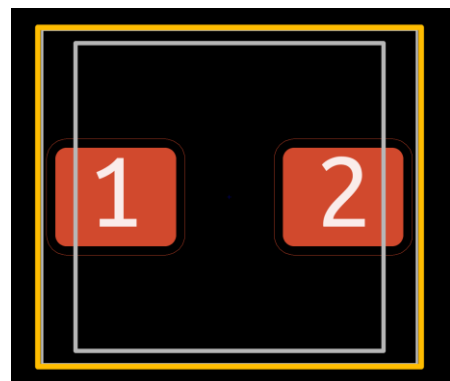
Footprint name:
L_Wuerth_HCI-7040



HCI-7040 inductor footprint.

Würth HCI-7050 inductor footprint

Footprint name:
L_Wuerth_HCI-7050



HCI-7050 inductor footprint.

Würth HCM-1050 inductor footprint

Footprint name:

L_Wuerth_HCM-1050

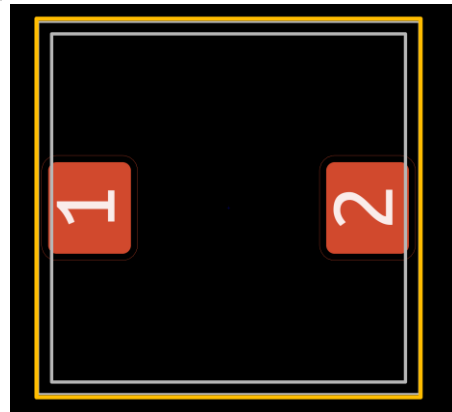


HCM-1050 inductor footprint.

Würth HCM-1052 inductor footprint

Footprint name:

L_Wuerth_HCM-1052



HCM-1052 inductor footprint.

Würth HCM-1070 inductor footprint

Footprint name:

L_Wuerth_HCM-1070



HCM-1070 inductor footprint.

Würth HCM-1078 inductor footprint

Footprint name:

L_Wuerth_HCM-1078

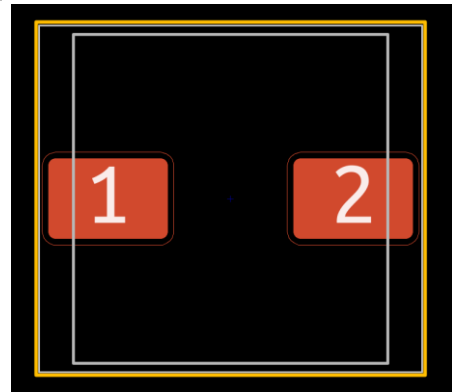


HCM-1078 inductor footprint.

Würth HCM-1190 inductor footprint

Footprint name:

L_Wuerth_HCM-1190

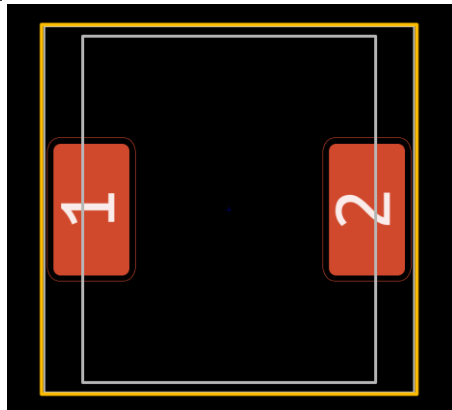


HCM-1190 inductor footprint.

Würth HCM-1240 inductor footprint

Footprint name:

L_Wuerth_HCM-1240

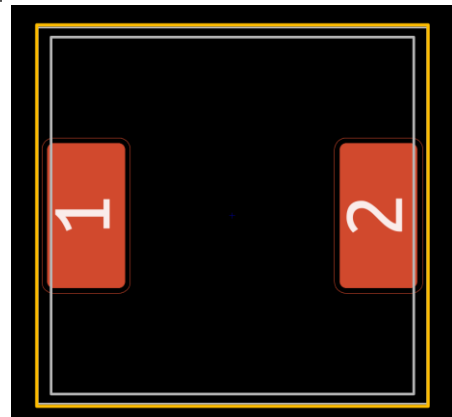


HCM-1240 inductor footprint.

Würth HCM-1350 inductor footprint

Footprint name:

L_Wuerth_HCM-1350

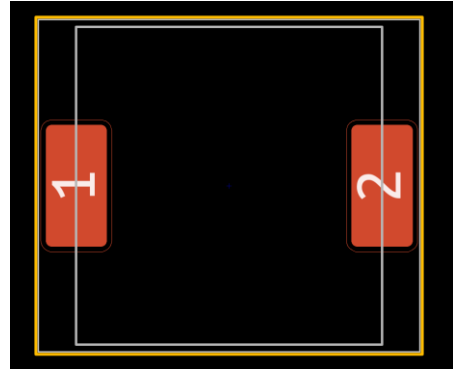


HCM-1350 inductor footprint.

Würth HCM-1390 inductor footprint

Footprint name:

L_Wuerth_HCM-1390

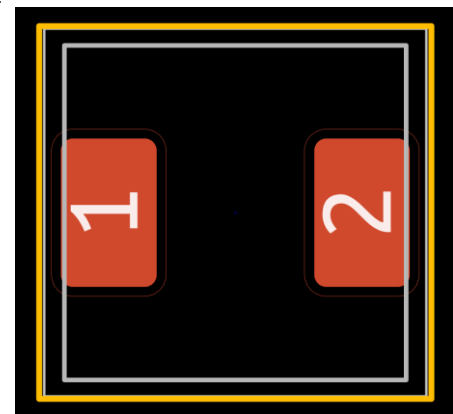


HCM-1390 inductor footprint.

Würth HCM-7050 inductor footprint

Footprint name:

L_Wuerth_HCM-7050

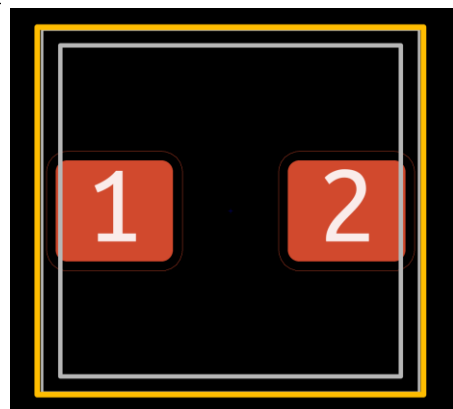


HCM-7050 inductor footprint.

Würth HCM-7070 inductor footprint

Footprint name:

L_Wuerth_HCM-7070

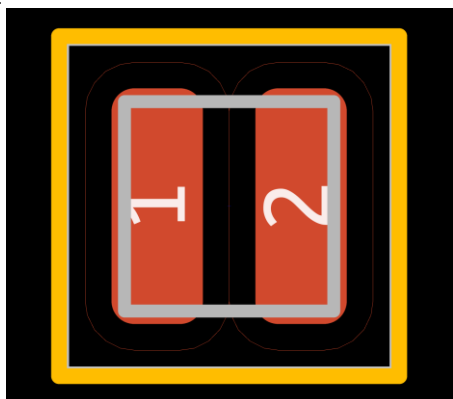


HCM-7070 inductor footprint.

Würth MAPI-1610 inductor footprint

Footprint name:

L_Wuerth_MAPI-1610

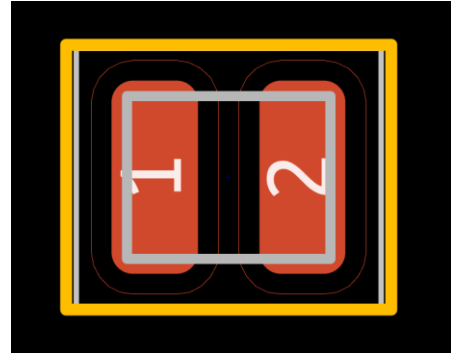


MAPI-1610 inductor footprint.

Würth MAPI-2010 inductor footprint

Footprint name:

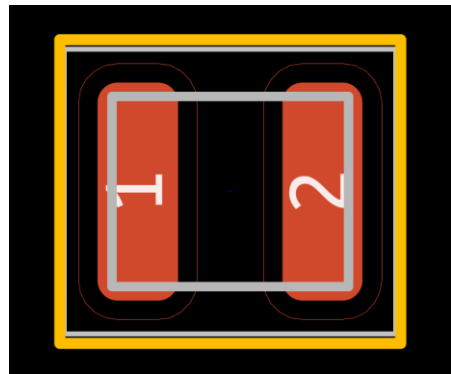
L_Wuerth_MAPI-2010

*MAPI-2010 inductor footprint.*

Würth MAPI-2506 inductor footprint

Footprint name:

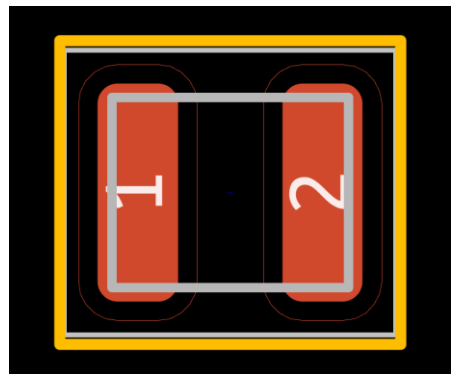
L_Wuerth_MAPI-2506

*MAPI-2506 inductor footprint.*

Würth MAPI-2508 inductor footprint

Footprint name:

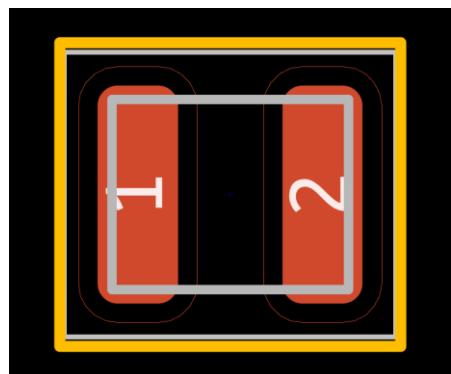
L_Wuerth_MAPI-2508

*MAPI-2508 inductor footprint.*

Würth MAPI-2510 inductor footprint

Footprint name:

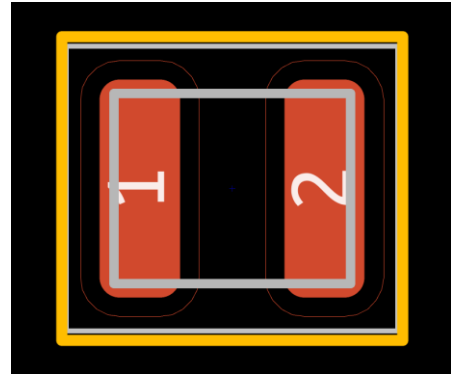
L_Wuerth_MAPI-2510

*MAPI-2510 inductor footprint.*

Würth MAPI-2512 inductor footprint

Footprint name:

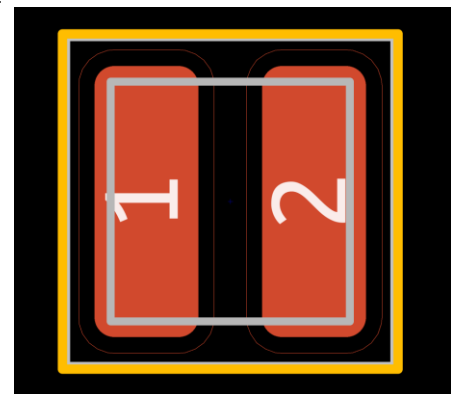
L_Wuerth_MAPI-2512

*MAPI-2512 inductor footprint.*

Würth MAPI-3010 inductor footprint

Footprint name:

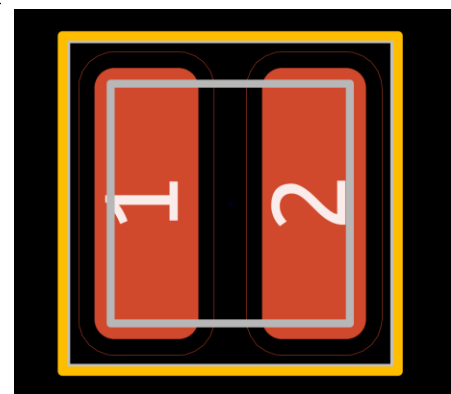
L_Wuerth_MAPI-3010

*MAPI-3010 inductor footprint.*

Würth MAPI-3012 inductor footprint

Footprint name:

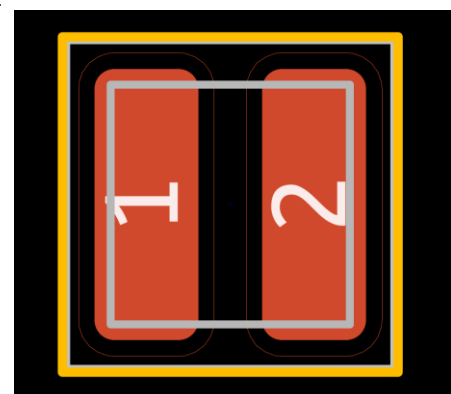
L_Wuerth_MAPI-3012

*MAPI-3012 inductor footprint.*

Würth MAPI-3015 inductor footprint

Footprint name:

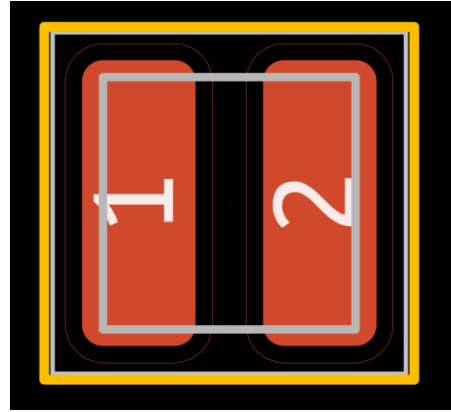
L_Wuerth_MAPI-3015

*MAPI-3015 inductor footprint.*

Würth MAPI-3020 inductor footprint

Footprint name:

L_Wuerth_MAPI-3020

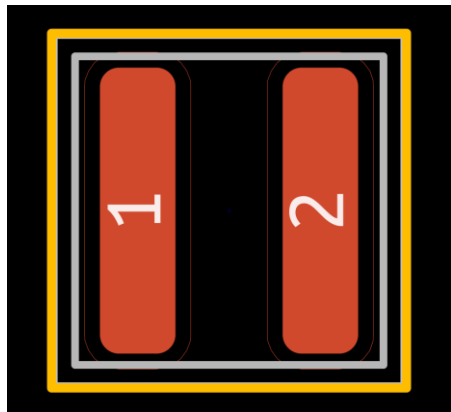


MAPI-3020 inductor footprint.

Würth MAPI-4020 inductor footprint

Footprint name:

L_Wuerth_MAPI-4020

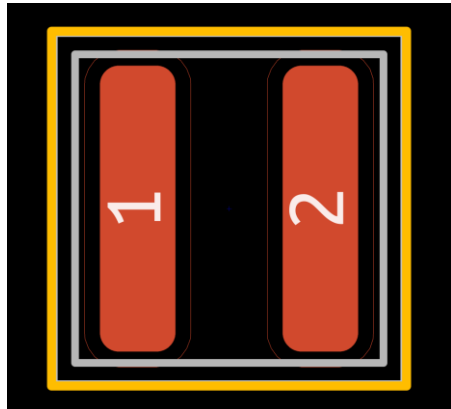


MAPI-4020 inductor footprint.

Würth MAPI-4030 inductor footprint

Footprint name:

L_Wuerth_MAPI-4030

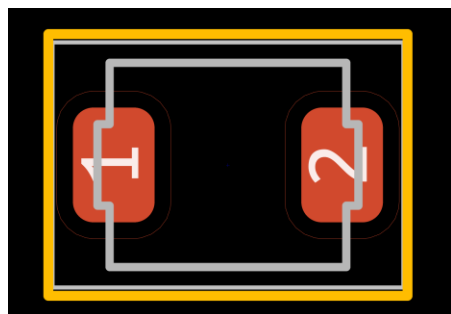


MAPI-4030 inductor footprint.

Würth WE-GF-1210 inductor footprint

Footprint name:

L_Wuerth_WE-GF-1210

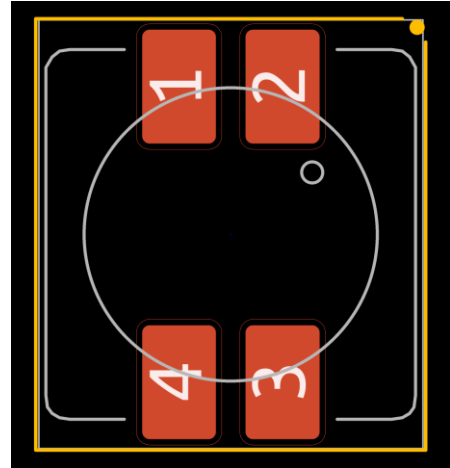


WE-GF-1210 inductor footprint.

Würth WE-DD L/XL/XXL series common-mode choke footprint

Footprint name:

L_Wuerth_WE-DD-Typ-L-Typ-XL-Typ-XXL

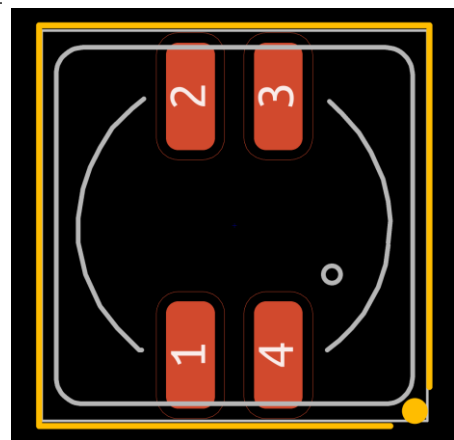


WE-DD L/XL/XXL common-mode choke footprint.

Würth WE-DD M/S series common-mode choke footprint

Footprint name:

L_Wuerth_WE-DD-Typ-M-Typ-S

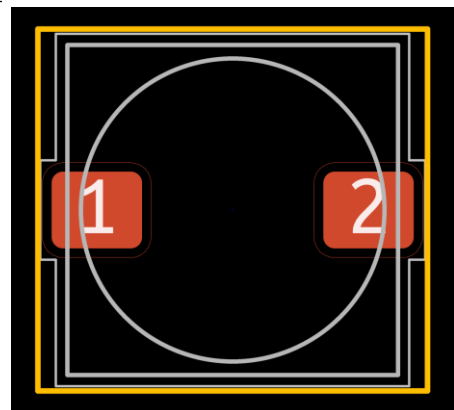


WE-DD M/S common-mode choke footprint.

Würth WE-PD 7345 inductor footprint

Footprint name:

L_Wuerth_WE-PD-Typ-7345



WE-PD 7345 inductor footprint.

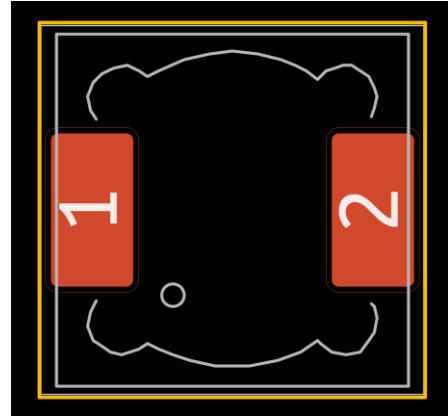
Würth WE-PD LS series inductor footprints

Footprint names:

L_Wuerth_WE-PD-Typ-LS

L_Wuerth_WE-PD-Typ-LS_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



WE-PD LS inductor footprint.

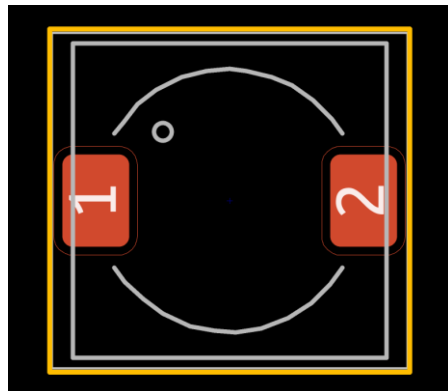
Würth WE-PD M/S series inductor footprints

Footprint names:

L_Wuerth_WE-PD-Typ-M-Typ-S

L_Wuerth_WE-PD-Typ-M-Typ-S_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

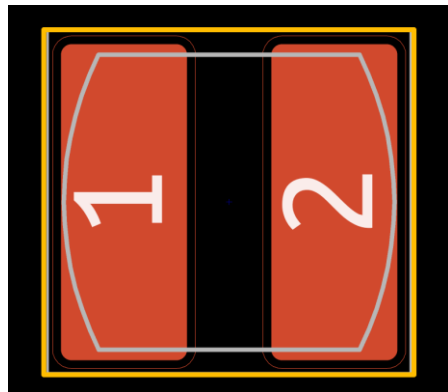


WE-PD M/S inductor footprint.

Würth WE-PD2 L inductor footprint

Footprint name:

L_Wuerth_WE-PD2-Typ-L

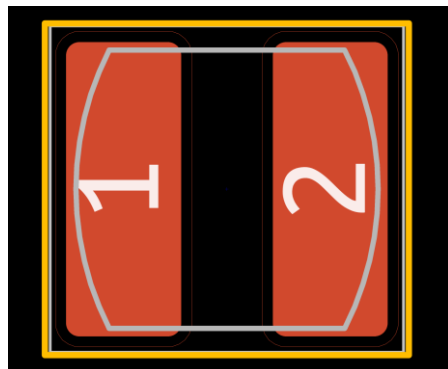


WE-PD2 L inductor footprint.

Würth WE-PD2 MS inductor footprint

Footprint name:

L_Wuerth_WE-PD2-Typ-MS

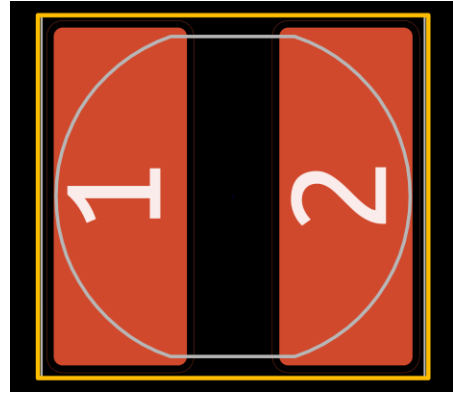


WE-PD2 MS inductor footprint.

Würth WE-PD2 XL inductor footprint

Footprint name:

L_Wuerth_WE-PD2-Typ-XL

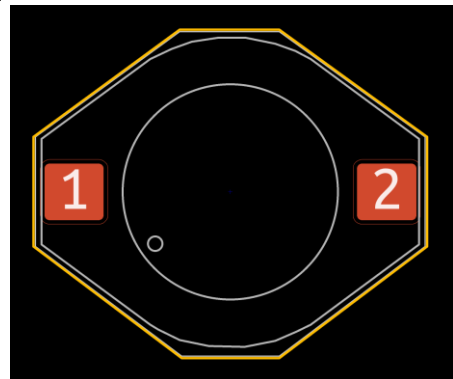


WE-PD2 XL inductor footprint.

Würth WE-PD4 X inductor footprint

Footprint name:

L_Wuerth_WE-PD4-Typ-X



WE-PD4 X inductor footprint.

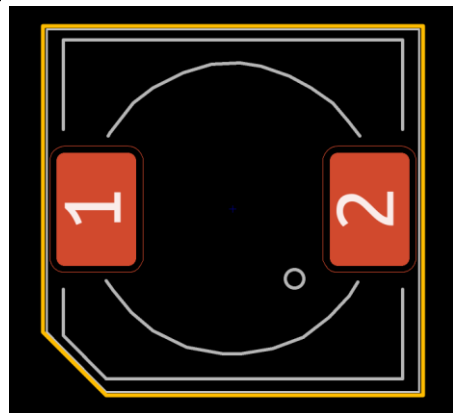
Würth WE-PDF inductor footprints

Footprint names:

L_Wuerth_WE-PDF

L_Wuerth_WE-PDF_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

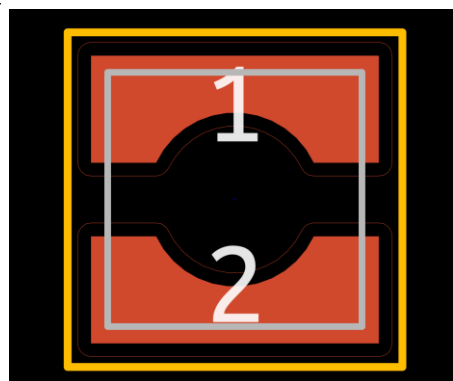


WE-PD M/S inductor footprint.

Würth WE-TPC 3816 inductor footprint

Footprint name:

L_Wuerth_WE-TPC 3816



WE-TPC 3816 inductor footprint.

3.12. THT Inductor Library

These libraries contain footprints for THT inductors and common-mode chokes.

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Standard variant	
Folder name: Inductor_THT_AKL	
Footprint count:	252
Double-sided variant	
Folder name: Inductor_THT_AKL_Double	
Footprint count:	245
Total footprints:	497

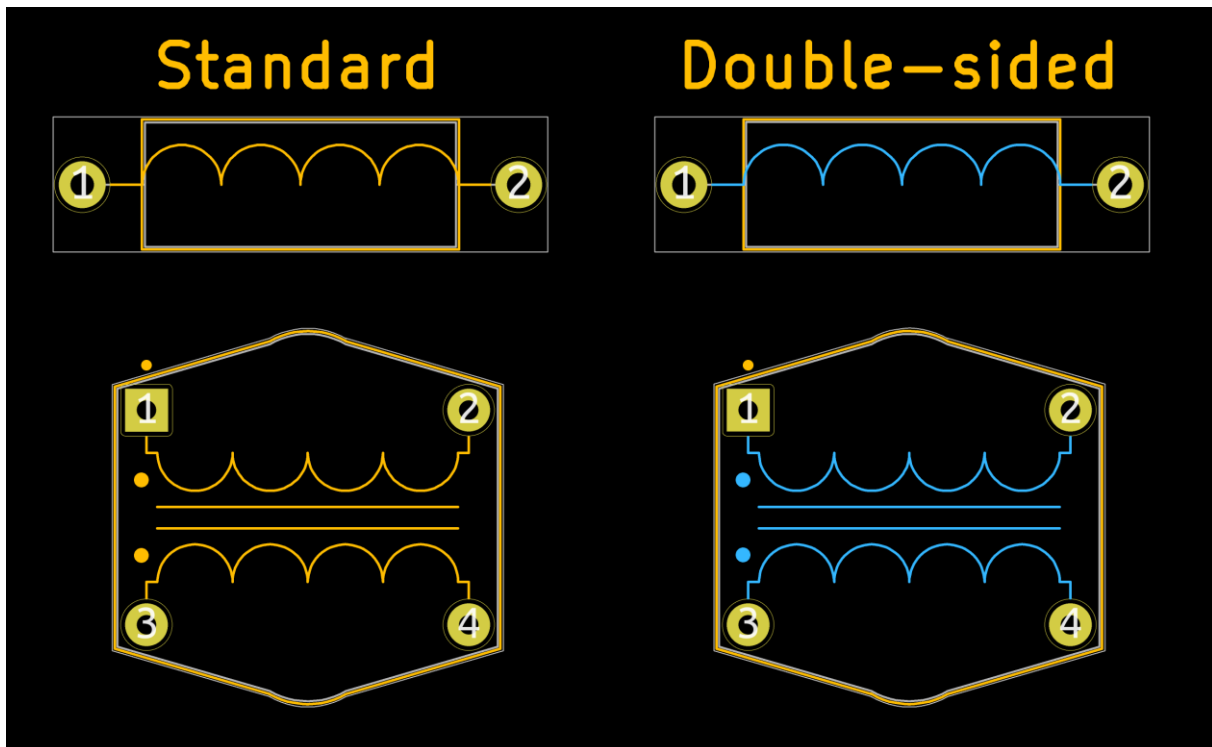
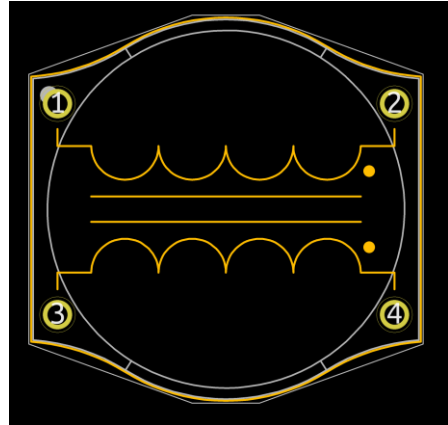


Figure 3.30. Comparison between THT inductor footprints from standard and double-sided libraries.

EPCOS B82722A common-mode choke footprint

Footprint name:

Choke_EPCOS_B82722A

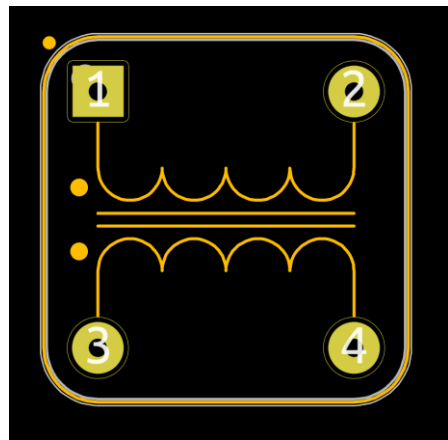


EPCOS B82722A common-mode choke footprint.

Schaffner RN102-04 common-mode choke footprint

Footprint name:

Choke_Schaffner_RN102-04-14.0x14.0mm

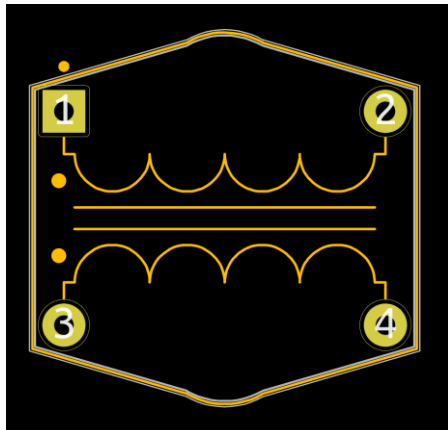


RN102-04 common-mode choke footprint.

Schaffner RN112-04 common-mode choke footprint

Footprint name:

Choke_Schaffner_RN112-04-17.7x17.7mm

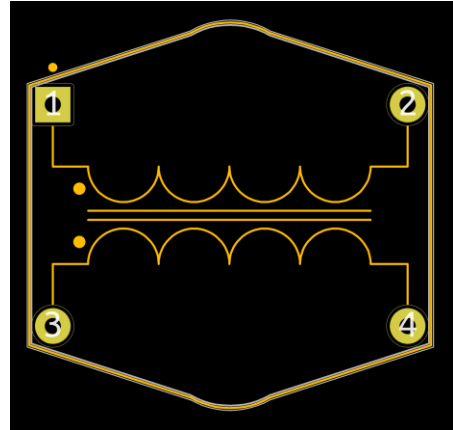


RN112-04 common-mode choke footprint.

Schaffner RN114-04 common-mode choke footprint

Footprint name:

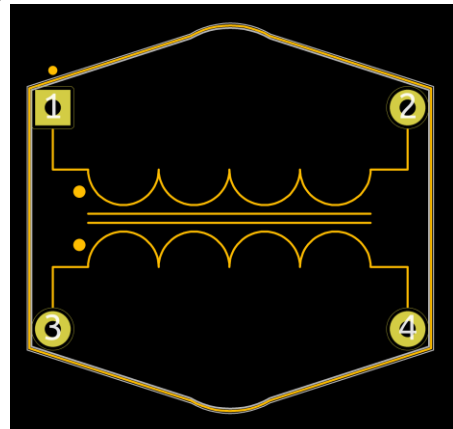
Choke_Schaffner_RN114-04-22.5x21.5mm

*RN114-04 common-mode choke footprint.*

Schaffner RN116-04 common-mode choke footprint

Footprint name:

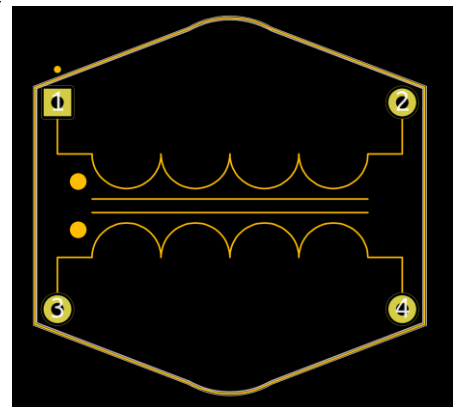
Choke_Schaffner_RN116-04-22.5x21.5mm

*RN116-04 common-mode choke footprint.*

Schaffner RN122-04 common-mode choke footprint

Footprint name:

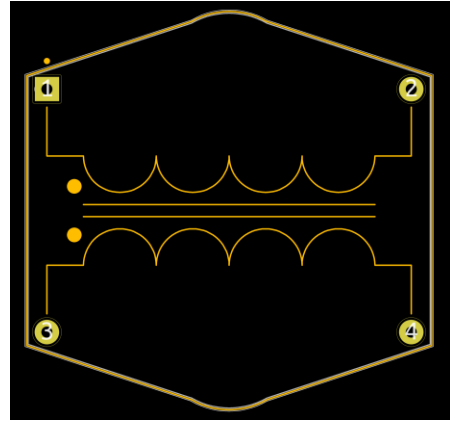
Choke_Schaffner_RN122-04-22.5x21.5mm

*RN122-04 common-mode choke footprint.*

Schaffner RN142-04 common-mode choke footprint

Footprint name:

Choke_Schaffner_RN142-04-33.1x32.5mm

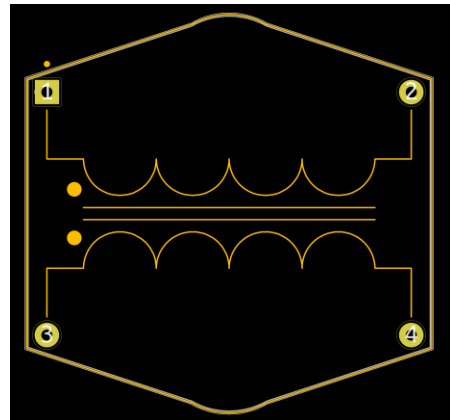


RN142-04 common-mode choke footprint.

Schaffner RN143-04 common-mode choke footprint

Footprint name:

Choke_Schaffner_RN143-04-33.1x32.5mm

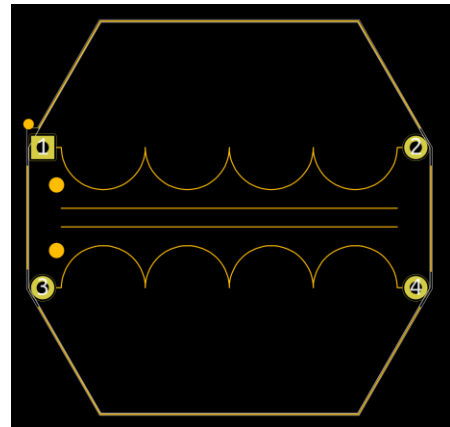


RN143-04 common-mode choke footprint.

Schaffner RN152-04 common-mode choke footprint

Footprint name:

Choke_Schaffner_RN152-04-43.0x41.8mm

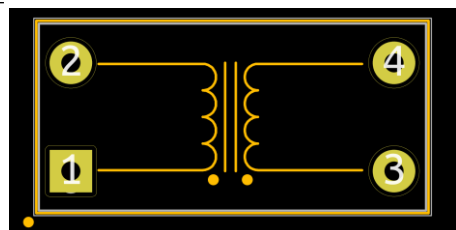


RN152-04 common-mode choke footprint.

Schaffner RN202-04 common-mode choke footprint

Footprint name:

Choke_Schaffner_RN202-04-8.8x18.2mm

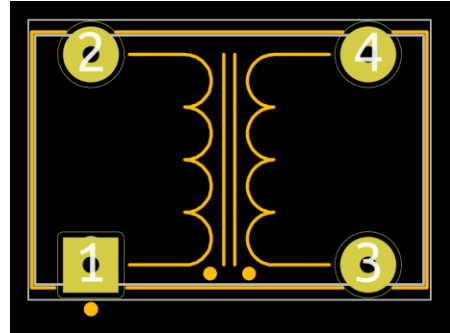


RN202-04 common-mode choke footprint.

Schaffner RN204-04 common-mode choke footprint

Footprint name:

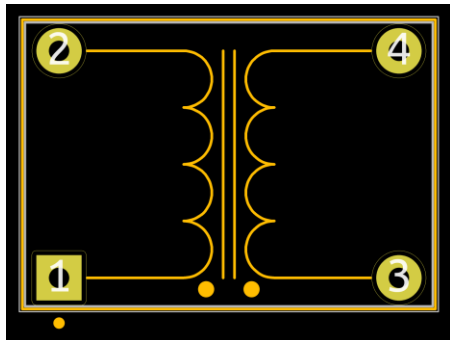
Choke_Schaffner_RN204-04-9.0x14.0mm

*RN204-04 common-mode choke footprint.*

Schaffner RN212-04 common-mode choke footprint

Footprint name:

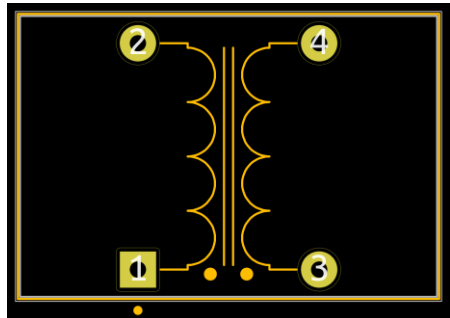
Choke_Schaffner_RN212-04-12.5x18.0mm

*RN212-04 common-mode choke footprint.*

Schaffner RN214-04 common-mode choke footprint

Footprint name:

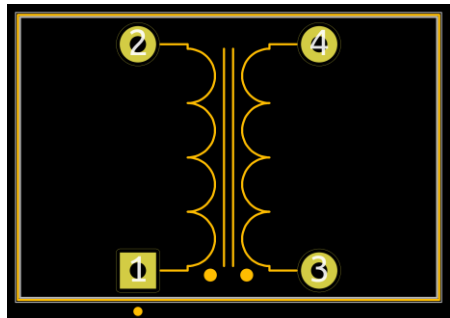
Choke_Schaffner_RN214-04-15.5x23.0mm

*RN214-04 common-mode choke footprint.*

Schaffner RN216-04 common-mode choke footprint

Footprint name:

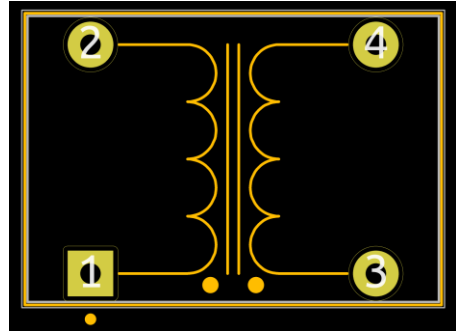
Choke_Schaffner_RN216-04-15.5x123.0mm

*RN216-04 common-mode choke footprint.*

Schaffner RN218-04 common-mode choke footprint

Footprint name:

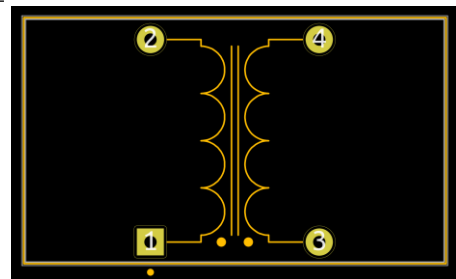
Choke_Schaffner_RN218-04-12.5x18.0mm

*RN218-04 common-mode choke footprint.*

Schaffner RN222-04 common-mode choke footprint

Footprint name:

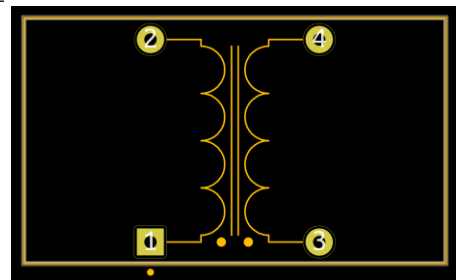
Choke_Schaffner_RN222-04-18.0x31.0mm

*RN222-04 common-mode choke footprint.*

Schaffner RN232-04 common-mode choke footprint

Footprint name:

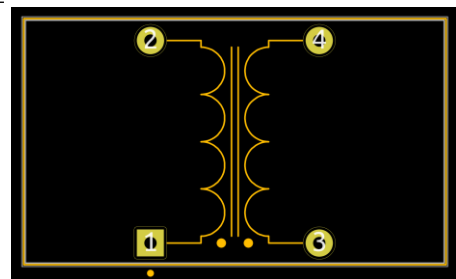
Choke_Schaffner_RN232-04-18.0x31.0mm

*RN232-04 common-mode choke footprint.*

Schaffner RN242-04 common-mode choke footprint

Footprint name:

Choke_Schaffner_RN242-04-18.0x31.0mm

*RN242-04 common-mode choke footprint.*

Axial inductor footprints

Footprint count: 78

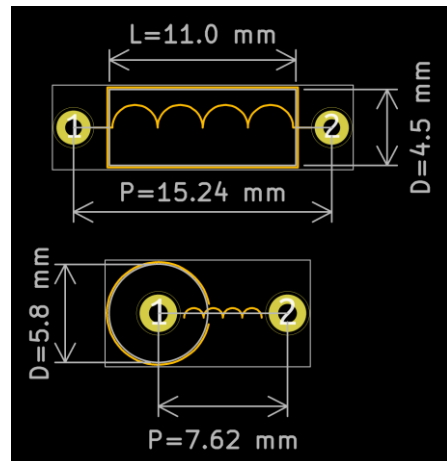
Footprint naming convention:

L_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_**
<orientation>_<optional: manufacturer_series>

Name examples:

L_Axial_L5.3mm_D2.2mm_P2.54mm_Vertical_Vishay_IM-1

L_Axial_L20.0mm_D8.0mm_P25.40mm_Horizontal



Axial horizontal inductor footprint (top) and vertical inductor footprint (bottom) with all relevant dimensions indicated.

Generic air core inductor footprints

Footprint count: 9

Footprint naming convention:

L_Axial_P<pitch>**mm_Air**

Name examples:

L_Axial_P2.5mm_Air

L_Axial_P15mm_Air



Axial air-core inductor footprint with its pin pitch indicated.

Vertical toroidal common-mode choke footprints

Footprint count: 10

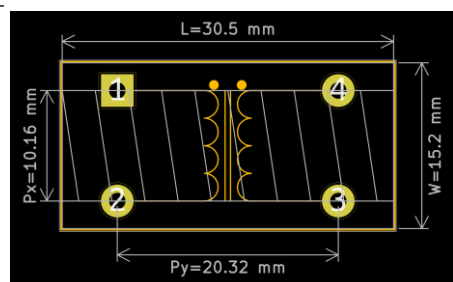
Footprint naming convention:

L_CommonMode_Toroid_Vertical_L<length>**mm_**
W<width>**mm_Px**<pitch in x direction>**mm_Py**<pitch in y direction>**mm_**<optional: manufacturer_series>

Name examples:

L_CommonMode_Toroid_Vertical_L19.3mm_W10.8mm
_Px6.35mm_Py15.24mm_Bourns_8100

L_CommonMode_Toroid_Vertical_24.0mm_W16.3mm
_Px10.16mm_Py20.32mm_muRATA_5200

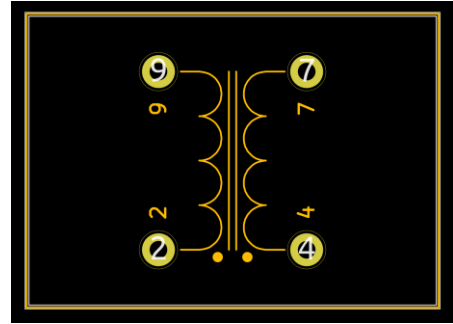


Vertical toroidal common-mode choke footprint with all dimensions indicated.

Würth WE-CMB-L common-mode choke footprint

Footprint name:

L_CommonMode_Wuerth_WE-CMB-L

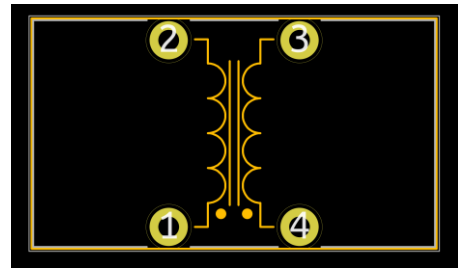


WE-CMB-L common-mode choke footprint.

Würth WE-CMB-M common-mode choke footprint

Footprint name:

L_CommonMode_Wuerth_WE-CMB-M

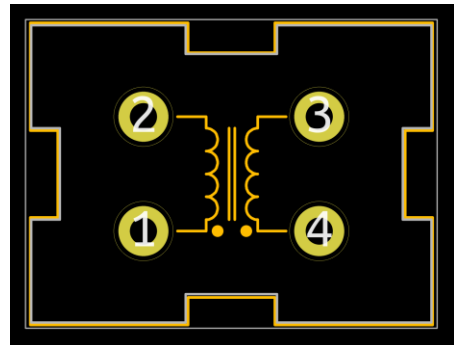


WE-CMB-M common-mode choke footprint.

Würth WE-CMB-S common-mode choke footprint

Footprint name:

L_CommonMode_Wuerth_WE-CMB-S

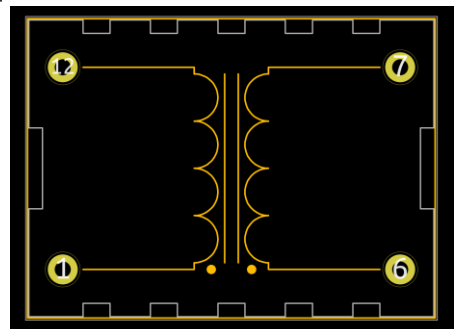


WE-CMB-S common-mode choke footprint.

Würth WE-CMB-XL common-mode choke footprint

Footprint name:

L_CommonMode_Wuerth_WE-CMB-XL

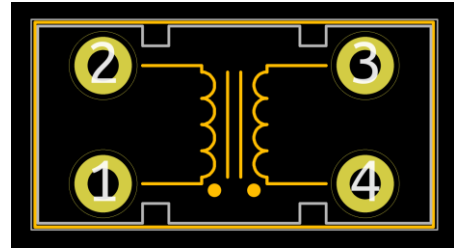


WE-CMB-XL common-mode choke footprint.

Würth WE-CMB-XS common-mode choke footprint

Footprint name:

L_CommonMode_Wuerth_WE-CMB-XS

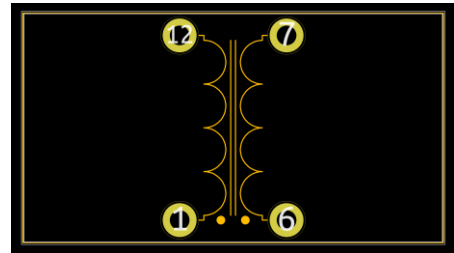


WE-CMB-XS common-mode choke footprint.

Würth WE-CMB-XXL common-mode choke footprint

Footprint name:

L_CommonMode_Wuerth_WE-CMB-XXL



WE-CMB-XXL common-mode choke footprint.

Radial inductor footprints

Footprint count: 69

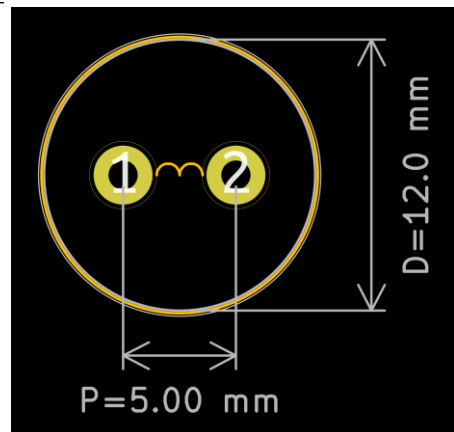
Footprint naming convention:

L_Radial_D<diameater>mm_P<pitch>mm_
<optional: manufacturer_series>

Name examples:

L_Radial_D7.0mm_P3.00mm

L_Radial_D14.2mm_P10.00mm_Neosid_SD14



Radial inductor footprint with its dimensions indicated.

Horizontal toroidal inductor footprints

Footprint count: 28

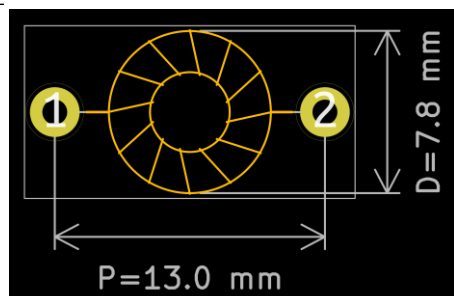
Footprint naming convention:

L_Toroid_Horizontal_D<diameater>mm_P<pitch>mm_
<optional: manufacturer_series>_<optional: BigPads>

Name examples:

L_Toroid_Horizontal_D26.0mm_P5.08mm

L_Toroid_Horizontal_D17.3mm_P15.24mm_Bourns_2000



Horizontal toroidal inductor footprint with its dimensions indicated.

Vertical toroidal inductor footprints

Footprint count: 34

Footprint naming convention:

L_Toroid_Vertical_L<diameter>**mm_W**<diameter>**mm**

P<pitch>**mm**<optional: manufacturer_series>

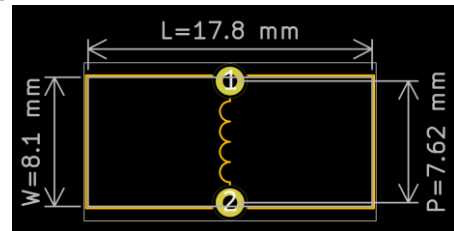
_<optional: BigPads>

Name examples:

L_Toroid_Vertical_L10.0mm_W5.0mm_P5.08mm

L_Toroid_Vertical_L16.3mm_W7.1mm_P7.11mm_Pulse_H

L_Toroid_Vertical_25.4mm_W14.7mm_P12.20mm_Vishay_TJ5_BigPads



Vertical toroidal inductor footprint with its dimensions indicated.

3.13. Jumper Libraries

These libraries contain footprints for wire jumpers.

Double-sided library variant contains both the top and bottom silkscreen layer.

Standard variant	
Folder name: Jumper_THT_AKL	
Footprint count:	20
Double-sided variant	
Folder name: Jumper_THT_AKL_Double	
Footprint count:	20
Total footprints:	40



Figure 3.31. Comparison between jumper footprints from standard and double-sided libraries.

THT jumper footprints

Footprint count: 20

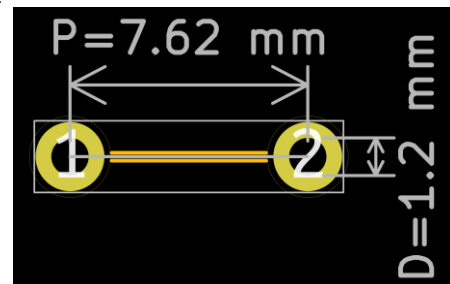
Footprint naming convention:

Jumper_P<pitch>**mm**_D<hole diameter>**mm**

Name examples:

Jumper_P2.54mm_D0.7mm

Jumper_P17.78mm_D1.2mm



Jumper footprint with its dimensions indicated.

3.14. Optocoupler Library

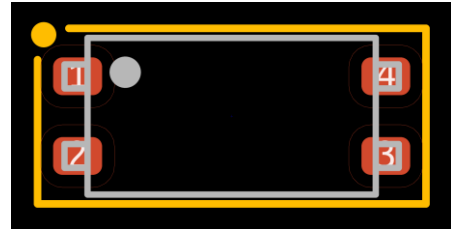
This library contains footprints for optocouplers that otherwise don't belong in any other libraries.

Standard variant	
Folder name:	Optocoupler_THT_AKL
Footprint count:	7
Total footprints:	7

CEL PS2911 footprint

Footprint name:

CEL_PS2911

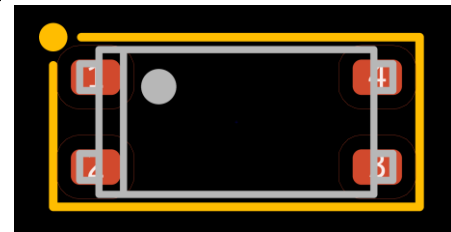


PS2911 optocoupler footprint.

Toshiba TLP3914 footprint

Footprint name:

Toshiba_TLP3914

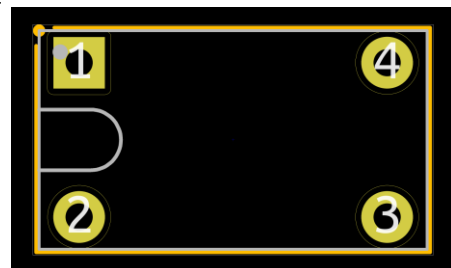


TLP3914 optocoupler footprint.

Vishay CNY64 footprint

Footprint name:

Vishay_CNY64

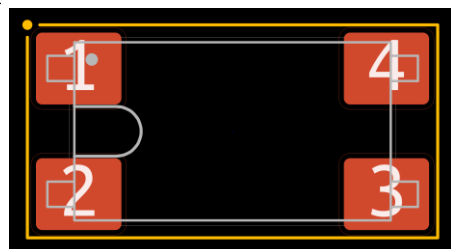


CNY64 optocoupler footprint.

Vishay CNY64ST footprint

Footprint name:

Vishay_CNY64ST



CNY64ST optocoupler footprint.

Vishay CNY65 footprint

Footprint name:

Vishay_CNY65

*CNY65 optocoupler footprint.*

Vishay CNY65ST footprint

Footprint name:

Vishay_CNY65ST

*CNY65ST optocoupler footprint.*

Vishay CNY66 footprint

Footprint name:

Vishay_CNY66

*CNY66 optocoupler footprint.*

3.15. Chip Scale Package (CSP) Library

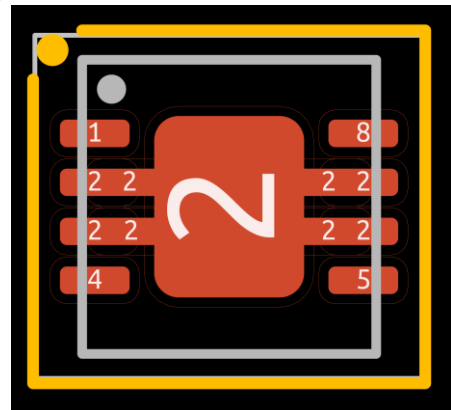
This library contains footprints for chip-scale integrated circuit packages.

Standard variant	
Folder name: Package_CSP_AKL	
Footprint count:	98
Total footprints:	98

Analog Devices CP-8-13 (LFCSP-8) package footprint

Footprint name:

Analog_LFCSP-8-1EP_3x3mm_P0.5mm_EP1.53x1.85mm



CP-8-13 package footprint.

Lead Frame Chip Scale Packaging (LFCSP) footprints

Footprint count: 34

Footprint naming convention:

LFCSP-<pin count>-<optional: no. of exposed pads>**EP**_
<length>**x**<width>**mm** **P**<pin pitch>**mm** <optional:
EP length x width mm>_<optional: ThermalVias>

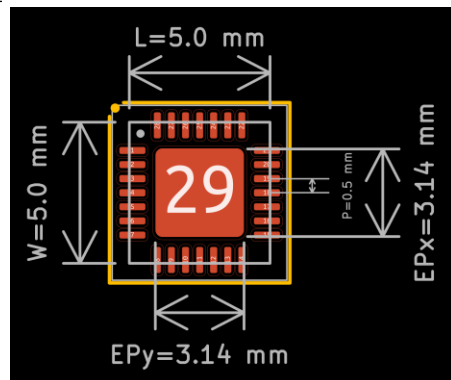
“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

Name examples:

LFCSP-8_2x2mm_P0.5mm

LFCSP-16-1EP_3x3mm_P0.5mm_EP1.6x1.6mm

LFCSP-24-1EP_4x4mm_P0.5mm_EP2.3x2.3mm_ThermalVias



LFCSP footprint with its dimensions indicated.

LFCSP-VD-8 footprint

Footprint name:

LFCSP-VD-8-1EP_3x3mm_P0.5mm_EP1.89x1.6mm



LFCSP-VD-8 package footprint.

LFCSP-VQ footprints

Footprint count: 3

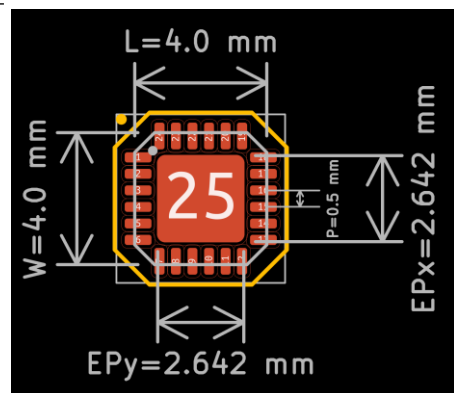
Footprint naming convention:

LFCSP-VQ-<pin count>-<optional: no. of exposed pads>**EP**_
<length>**x**<width>**mm****P**<pin pitch>**mm**_
<optional: EP length x width mm>

Name examples:

LFCSP-VQ-16+4x4mm_P0.65mm

LFCSP-VQ-24-1EP_4x4mm_P0.5mm_EP2.642x2.642mm



LFCSP-VQ footprint with its dimensions indicated.

LFCSP-WD footprints

Footprint count: 4

Footprint naming convention:

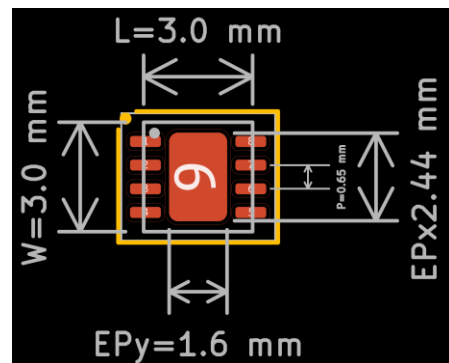
LFCSP-WD-<pin count>-**1EP**_
<length>**x**<width>**mm**
P<pin pitch>**mm****EP**<exposed pad length>**x**<exposed pad width>_
<optional: ThermalVias>

"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.

Name examples:

LFCSP-WD-8-1EP_3x3mm_P0.65mm_EP1.6x2.44mm

LFCSP-WD-10-1EP_3x3mm_P0.5mm_EP1.64x2.38mm_ThermalVias



LFCSP-WD footprint with its dimensions indicated.

ST Microelectronics WLCSP footprints

Footprint count: 40

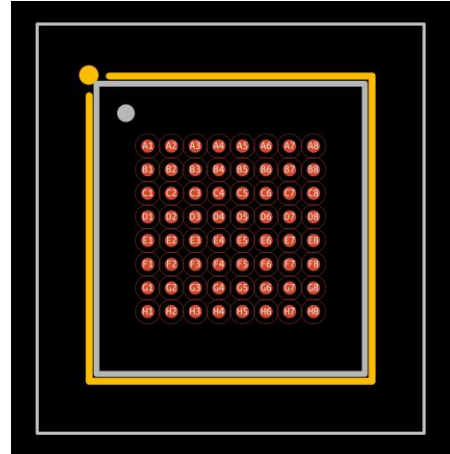
Footprint naming convention:

ST_WLCSP-<pin count>_Die<die number>

Name examples:

ST_WLCSP-25_Die444

ST_WLCSP-64_Die436



WLCSP footprint.

WLCSP footprints

Footprint count: 14

Footprint naming convention:

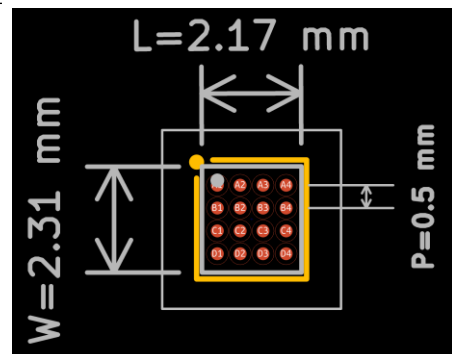
WLCSP-<pin count>_<length>x<width>mm

<optional: no. of rows x no. of columns>_P<pin pitch>

Name examples:

WLCSP-12_1.56x1.56mm_P0.4mm

WLCSP-36_2.82x2.67mm_Layout6x6_P0.4mm



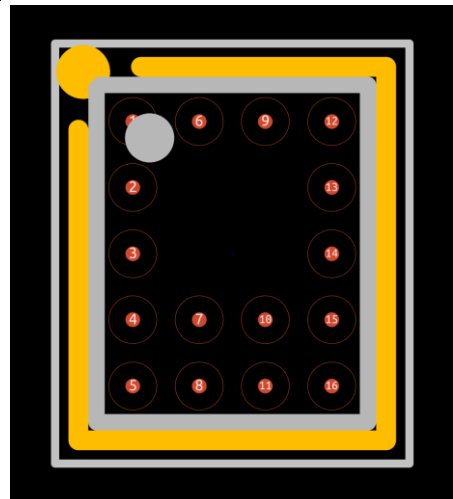
WLCSP footprint with its dimensions indicated.

pSemi CSP-16 footprints

Footprint names:

pSemi_CSP-16_1.64x2.04mm_P0.4mm

pSemi_CSP-16_1.64x2.04mm_P0.4mm_Pad0.18mm



CSP-16 footprint.

3.16. DFN and QFN Package Library

This library contains footprints for Dual Flat No-lead (DFN) and Quad Flat No-lead (QFN) integrated circuit packages.

Silkscreen layer contains marks every 5 pins and corner pin numbers for some footprints.

Standard variant	
Folder name: Package_DFN_QFN_AKL	
Footprint count:	472
Total footprints:	472

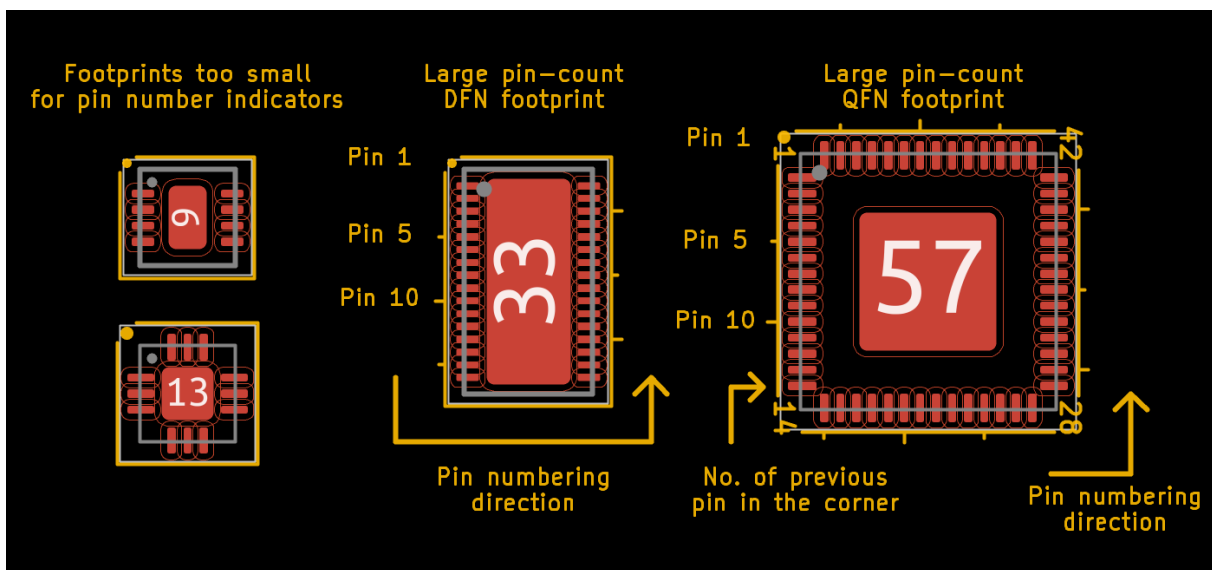
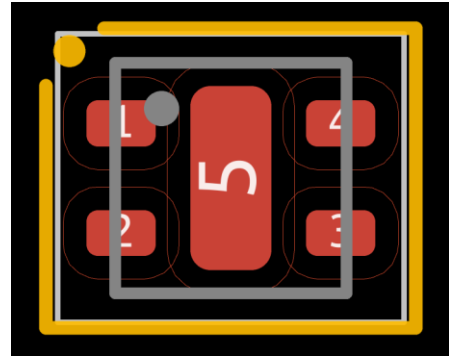


Figure 3.32. Different DFN and QFN footprints and a guide for reading the pin numbering indicators.

AMS UFD footprint

Footprint name:

AMS_QFN-4-1EP_2x2mm_P0.95mm_EP0.7x1.6mm

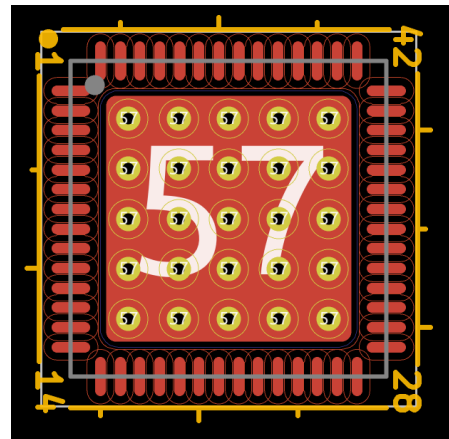


UFD footprint.

Cypress QFN-56 footprint

Footprint name:

Cypress_QFN-56-1EP_8x8mm_P0.5mm_
EP6.22x6.22mm_ThermalVias



Cypress QFN-56 footprint.

Dual Flat No-lead (DFN) package footprints

Footprint count: 69

Footprint naming convention:

DFN-<pin count>-<optional: exposed pad count>
<length>x<width>mm**P**<pin pitch>mm_<optional:
exposed pad size>_<optional: ThermalVias>

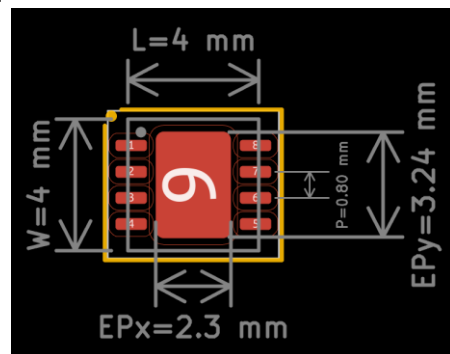
Name examples:

DFN-6_1.6x1.6mm_P0.5mm

DFN-12-1EP_3x4mm_P0.5mm_EP1.7x3.3mm

DFN-14-1EP_3x4.5mm_P0.65mm_EP1.65x4.25mm_ThermalVias

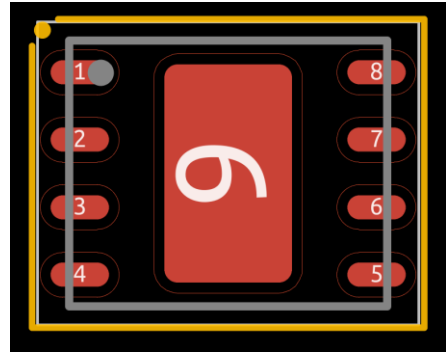
DFN-6-2EP_2x2mm_P0.65mm_EP1.15x0.95mm_EP0.8x0.48mm



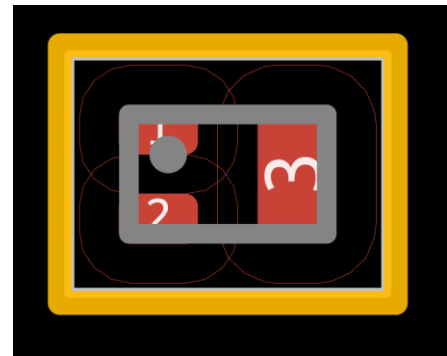
DFN footprint with its dimensions indicated.

DFN-S-8 footprint**Footprint name:**

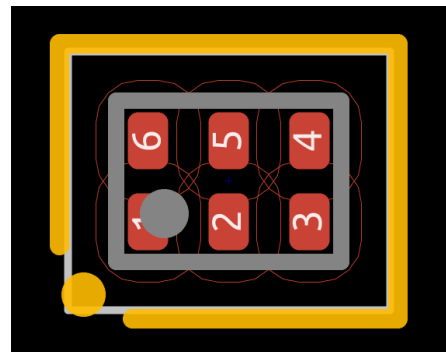
DFN-S-8-1EP_6x5mm_P1.27mm

*DFN-S-8 footprint.***DIODES DFN1006-3 footprint****Footprint name:**

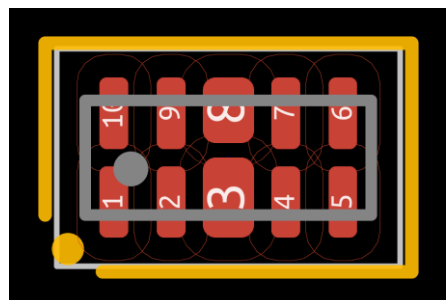
Diodes_DFN1006-3

*DFN1006-3 footprint.***DIODES X2-DFN1410-6 footprint****Footprint name:**

Diodes_UDFN-6_1.4x1.0mm_P0.5mm

*X2-DFN1410-6 footprint.***DIODES U-DFN2510-10 footprint****Footprint name:**

Diodes_UDFN-10_1.0x2.5mm_P0.5mm

*U-DFN2510-10 footprint.*

Heatsink Very thin Quad Flat No-lead (HVQFN) package footprints

Footprint count: 4

Footprint naming convention:

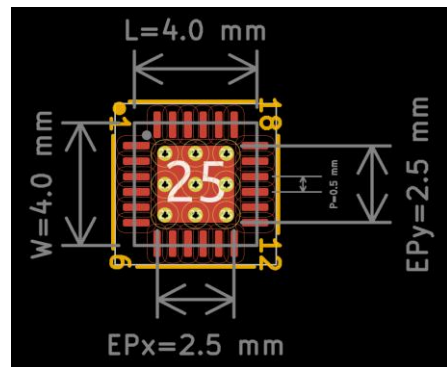
HVQFN-24-1EP_4x4mm_P0.5mm_EP<exposed pad size>_<optional: ThermalVias>

Name examples:

HVQFN-24-1EP_4x4mm_P0.5mm_EP2.5x2.5mm

HVQFN-24-

1EP_4x4mm_P0.5mm_EP2.6x2.6mm_ThermalVias

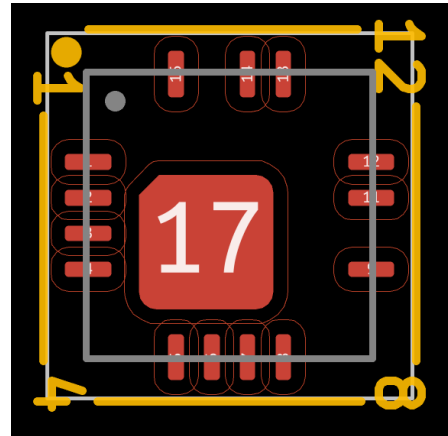


HVQFN "ThermalVias" footprint with its dimensions indicated.

Infineon MPLQ-14 footprint

Footprint name:

Infineon_MPLQ-16-14-1EP_4x4mm_P0.5mm

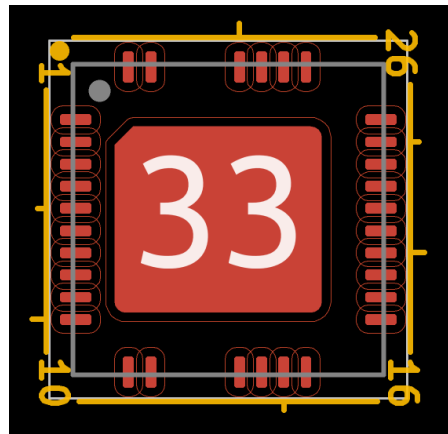


MPLQ-14 footprint.

Infineon MPLQ-32 footprint

Footprint name:

Infineon_MPLQ-40-32-1EP_7x7mm_P0.5mm



MPLQ-32 footprint.

Infineon MLPQ Footprints

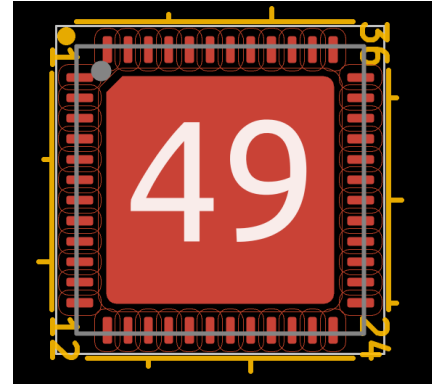
Footprint count: 3

Footprint names:

Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_EP5.55x5.55mm

Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_PAD5.15x5.15mm

Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_PAD5.55x5.55mm

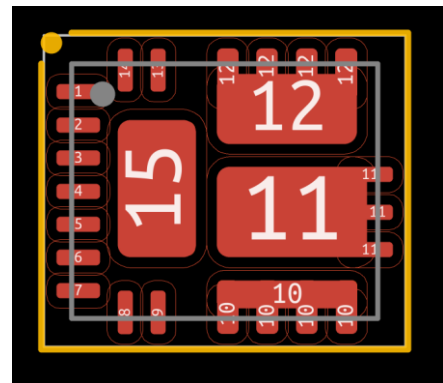


MLPQ-48 footprint.

Infineon PQFN-22 footprint

Footprint name:

Infineon_PQFN-22-15-4EP_6x5mm_P0.65mm

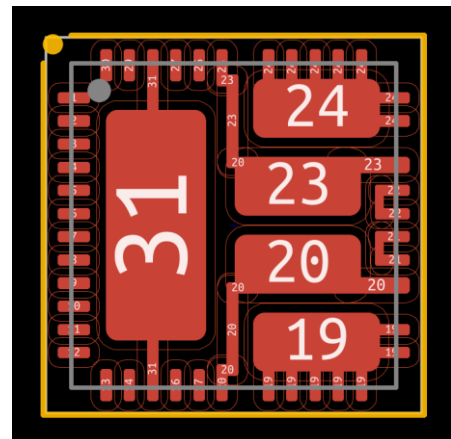


PQFN-22 footprint.

Infineon PQFN-44 footprint

Footprint name:

Infineon_PQFN-44-31-5EP_7x7mm_P0.5mm

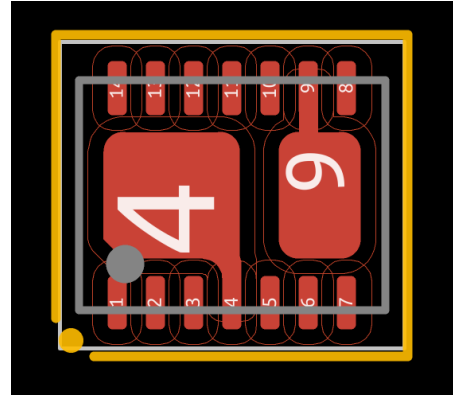


PQFN-44 footprint.

Linear Technology DE14MA footprint

Footprint name:

Linear_DE14MA

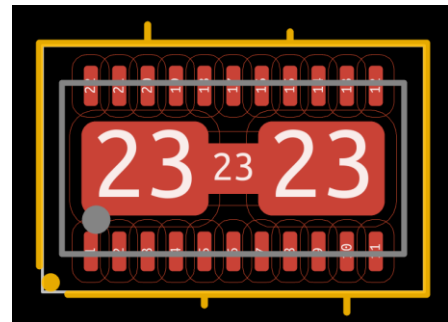


DE14MA footprint.

Linear Technology DJC footprint

Footprint name:

Linear_DJC_DFN22_6x3mm

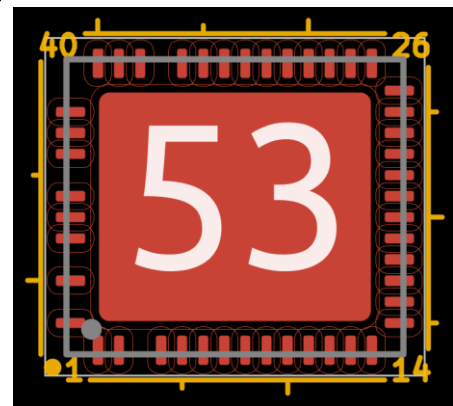


DJC footprint.

Linear Technology UGK52 footprint

Footprint name:

Linear_UGK52_QFN46-52



UGK52 footprint.

Micro Lead Frame (MLF) package footprints

Footprint count: 5

Footprint naming convention:

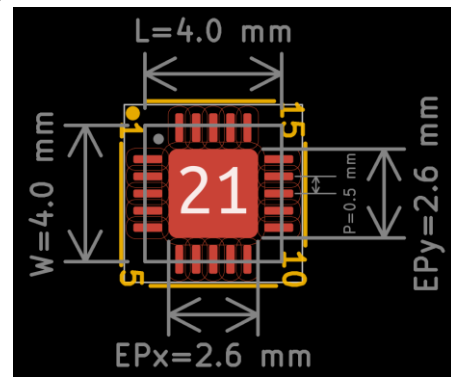
MLF-<pin count>-<exposed pad count>**EP**

<length>**x**<width>**mm**<pin pitch>**P**<pin pitch>**mm**_<exposed pad size>_<optional: ThermalVias>

Name examples:

MLF-6-1EP_1.6x1.6mm_P0.5mm_EP0.5x1.26mm

MLF-20-1EP_4x4mm_P0.5mm_EP2.6x2.6mm_ThermalVias

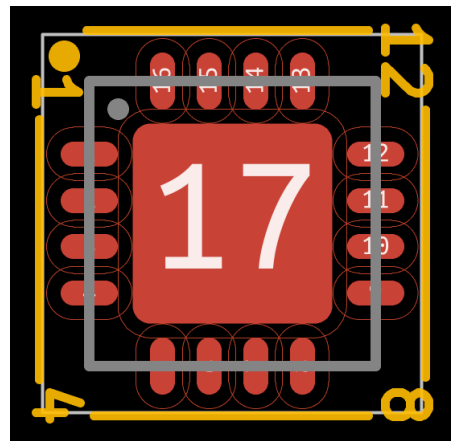


MLF-20 footprint with its dimensions indicated.

MLPQ-16 footprint

Footprint name:

MLPQ-16-1EP_4x4mm_P0.65mm_EP2.8x2.8mm

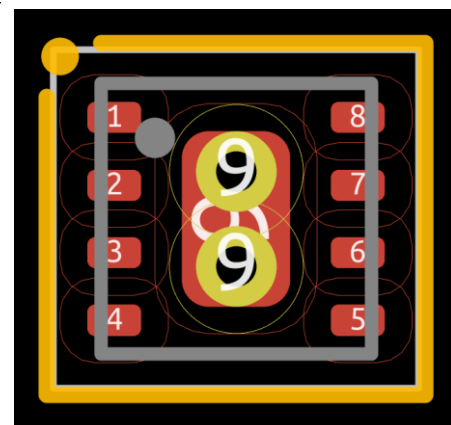


MLPQ-16 footprint.

Micrel MLF-8 footprint

Footprint name:

Micrel_MLF-8-1EP_2x2mm_P0.5mm_EP0.8x1.3mm_ThermalVias

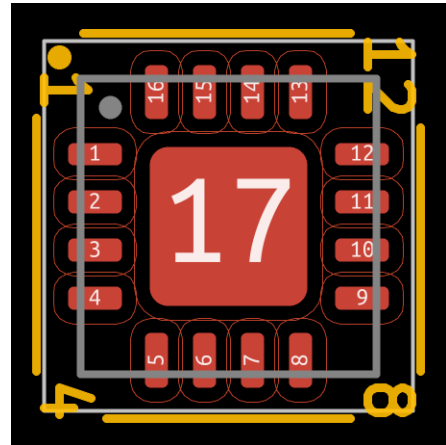


MLF-8 footprint.

Microchip 8E-16 footprint

Footprint name:

Microchip_8E-16



8E-16 footprint.

Microchip Dual Row Quad Flat No-lead (DRQFN) package footprints

Footprint count: 4

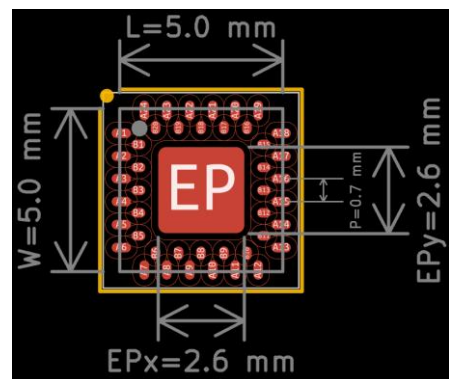
Footprint naming convention:

Microchip_DRQFN-<pin count>-<exposed pad count>**EP**
 _<length>**x**<width>**mm_P**<pin pitch>**mm_**<exposed pad size>
 _<optional: ThermalVias>

Name examples:

Microchip_DRQFN-44-

1EP_5x5mm_P0.7mm_EP2.65x2.65mm_ThermalVias

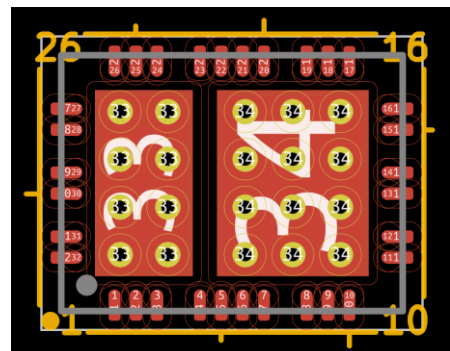


DRQFN-44 footprint with its dimensions indicated.

Microsemi QFN-32 footprint

Footprint name:

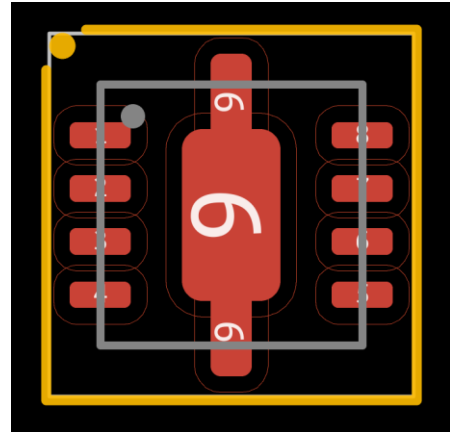
Microsemi_QFN-40-32-2EP_6x8mm_P0.5mm



QFN-32 footprint.

Mini Circuits DL805 footprint

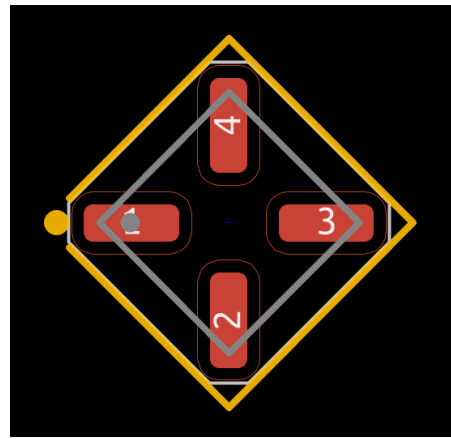
Footprint name:
Mini-Circuits_DL805



DL805 footprint.

Mini Circuits FG873-4 footprint

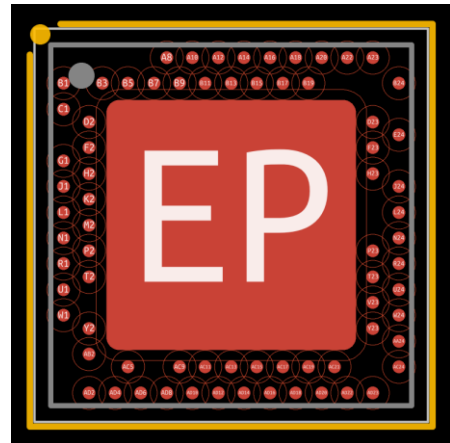
Footprint name:
Mini-Circuits_FG873-4_3x3mm



FG873-4 footprint.

Nordic Semiconductor AQFN-73 footprint

Footprint name:
Nordic_AQFN-73-1EP_7x7mm_P0.5mm

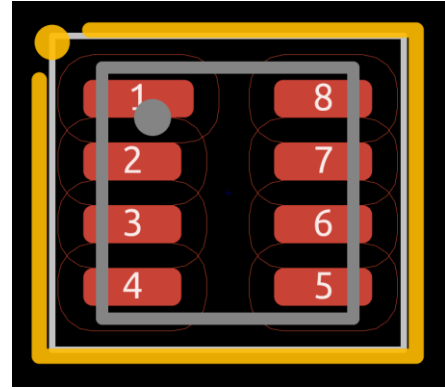


AQFN-73 footprint.

OnSemi WDFN8 footprint

Footprint name:

OnSemi_DFN-8_2x2mm_P0.5mm

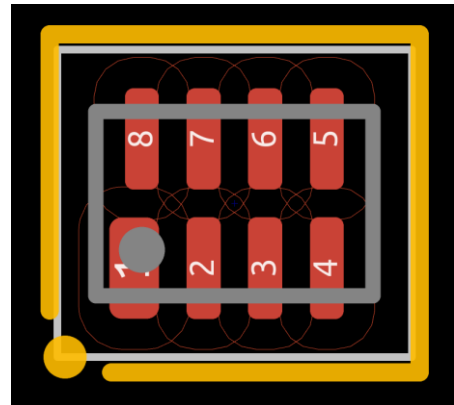


WDFN8 footprint.

OnSemi UDFN8 footprint

Footprint name:

OnSemi_UDFN-8_1.2x1.8mm_P0.4mm

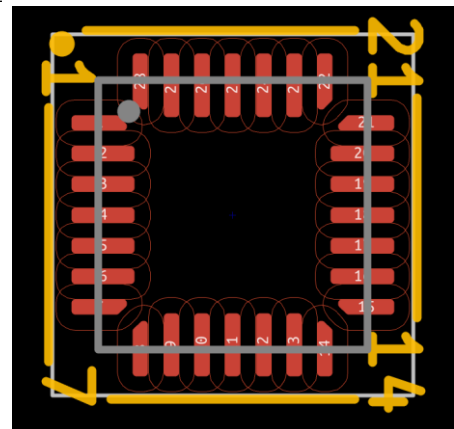


UDFN8 footprint.

OnSemi VCT-28 footprint

Footprint name:

OnSemi_VCT-28_3.5x3.5mm_P0.4mm

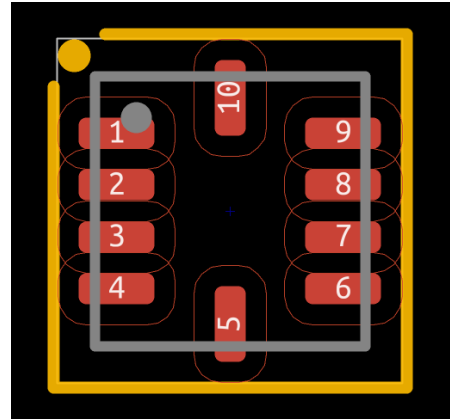


VCT-28 footprint.

OnSemi WQFN-10 footprint

Footprint name:

OnSemi_WQFN-10_2.6x2.6mm_P0.5mm

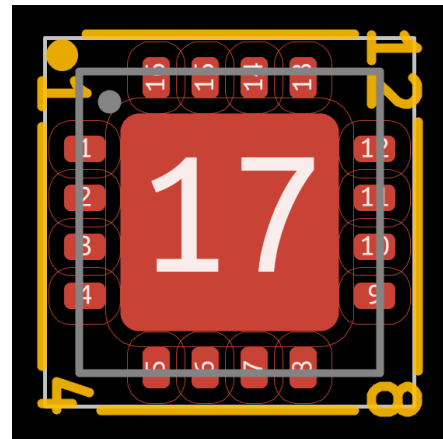


WQFN-10 footprint.

Panasonic HQFN-16 footprint

Footprint name:

Panasonic_HQFN-16-1EP_4x4mm_P0.65mm_EP2.9x2.9mm

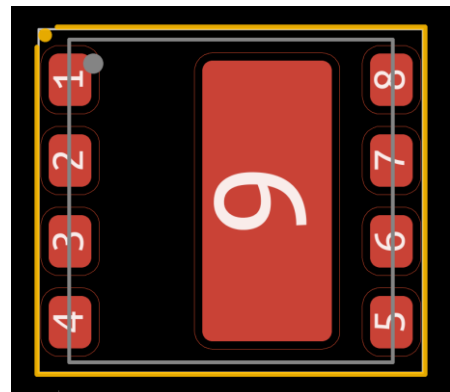


HQFN-16 footprint.

Panasonic HSON-8 footprint

Footprint name:

Panasonic_HSON-8_8x8mm_P2.00mm



HSON-8 footprint.

Quad Flat No-lead (QFN) package footprints

Footprint count: 199

Footprint naming convention:

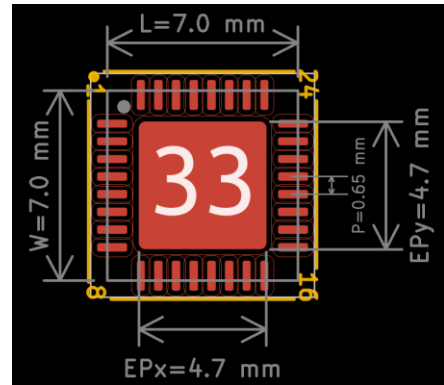
QFN-<pin count>-<optional: exposed pad count>
<length>**x**<width>**mm**<pin pitch>**P**<pin pitch>**mm**_<optional:
exposed pad size>_<optional: ThermalVias>

Name examples:

QFN-28_4x4mm_P0.5mm

QFN-40-1EP_5x5mm_P0.4mm_EP3.8x3.8mm

QFN-64-1EP_9x9mm_P0.5mm_EP4.7x4.7mm_ThermalVias

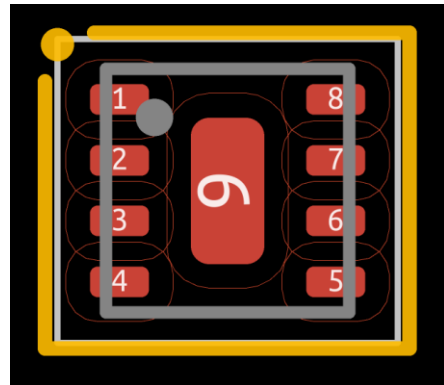


QFN footprint with its dimensions indicated.

Qorvo DFN-8 footprint

Footprint name:

Qorvo_DFN-8-1EP_2x2mm_P0.5mm



DFN-8 footprint.

ROHM Semiconductor DFN0604-3 footprint

Footprint name:

ROHM_DFN0604-3

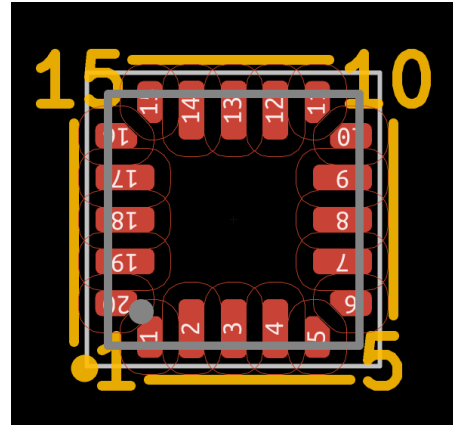


DFN0604-3 footprint.

ST Microelectronics UFQFPN-20 footprint

Footprint name:

ST_UFQFPN-20_3x3mm_P0.5mm

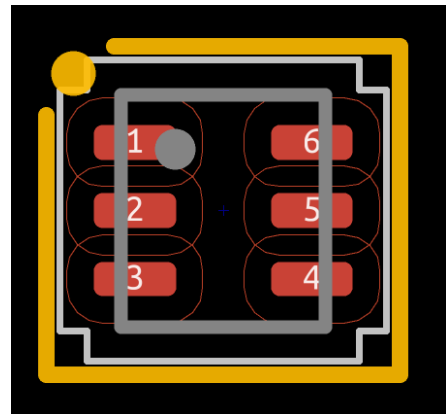


UFQFPN-20 footprint.

ST Microelectronics UQFN-6L footprint

Footprint name:

ST_UQFN-6L_1.5x1.7mm_Pitch0.5mm



UQFN-6L footprint.

Silicon Labs QFN-20 footprints

Footprint names:

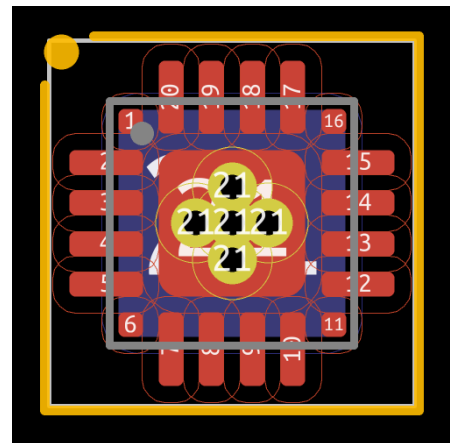
SiliconLabs_QFN-20-1EP_3x3mm_P0.5mm

SiliconLabs_QFN-20-1EP_3x3mm_P0.5mm_EP1.8x1.8mm

SiliconLabs_QFN-20-1EP_3x3mm_P0.5mm_EP1.8x1.8mm_ThermalVias

SiliconLabs_QFN-20-1EP_3x3mm_P0.5mm

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



QFN-20 “ThermalVia” footprint.

Thin Dual Flat No-lead (TDFN) package footprints

Footprint count: 8

Footprint naming convention:

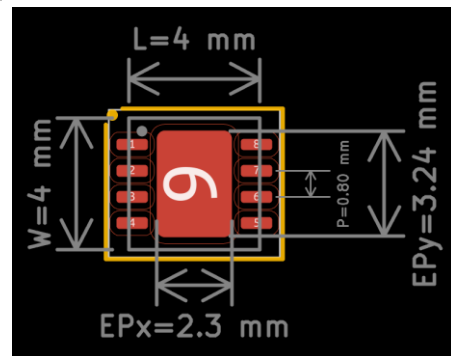
TDFN-<pin count>-<optional: exposed pad count>
_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional:
exposed pad size>_<optional: ThermalVias>

Name examples:

TDFN-12_2x3mm_P0.5mm

TDFN-6-1EP_2.5x2.5mm_P0.65mmEP1.3x2mm

TDFN-8-1EP_3x2mm_P0.5mm_EP0.9x2mm_ThermalVias



TDFN footprint with its dimensions indicated.

Thin Quad Flat No-lead (TQFN) package footprints

Footprint count: 27

Footprint naming convention:

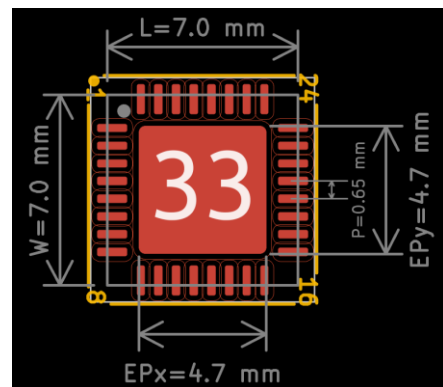
TQFN-<pin count>-<optional: exposed pad count>
_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional:
exposed pad size>_<optional: ThermalVias>

Name examples:

TQFN-16-1EP_3x3mm_P0.5mm_EP1.23x1.23mm

TQFN-32-1EP_5x5mm_P0.5mm_EP3.1x3.1mm

_ThermalVias

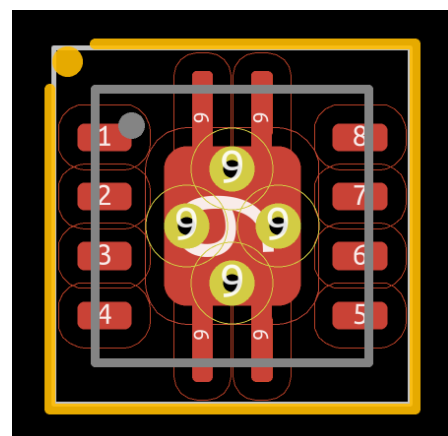


TQFN footprint with its dimensions indicated.

Texas Instruments DRB0008A footprint

Footprint name:

Texas_DRB0008A

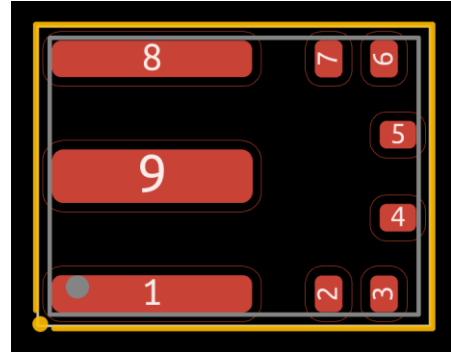


DRB0008A footprint.

Texas Instruments MOF0009A footprint

Footprint name:

Texas_MOF0009A

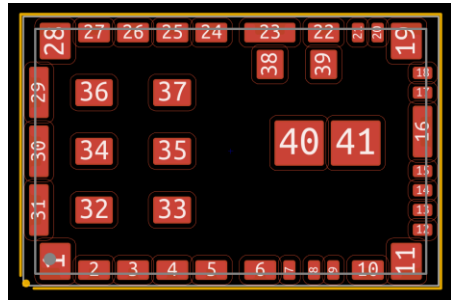


MOF0009A footprint.

Texas Instruments QFN-41 footprint

Footprint name:

Texas_QFN-41_10x16mm

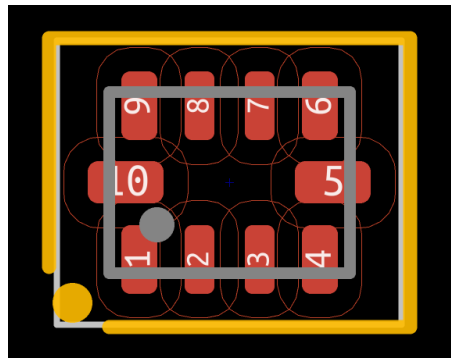


MOF0009A footprint.

Texas Instruments R-PUQFN-N10 footprint

Footprint name:

Texas_R-PUQFN-N10



R-PUQFN-N10 footprint.

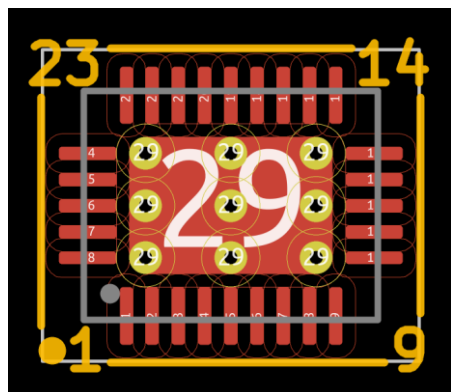
Texas Instruments R-PWQFN-N28 footprints

Footprint names:

Texas_R-PWQFN-N28_EP2.1x3.1mm

Texas_R-PWQFN-N28_EP2.1x3.1mm_ThermalVias

"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.



R-PWQFN-N28 "ThermalVia" footprint.

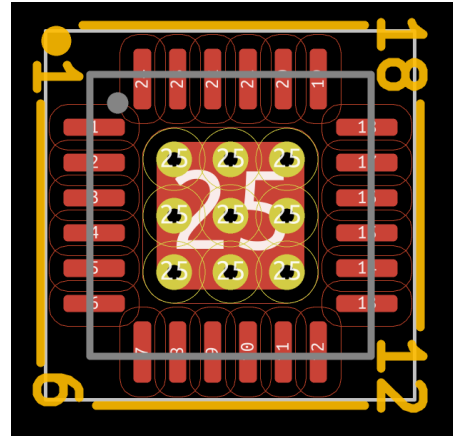
Texas Instruments RGE0024C footprints

Footprint names:

Texas_RGE0024C_EP2.1x2.1mm

Texas_RGE0024C_EP2.1x2.1mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



RGE0024C “ThermalVia” footprint.

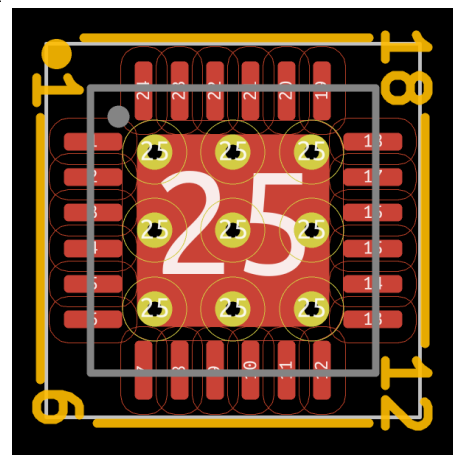
Texas Instruments RGE0024H footprints

Footprint names:

Texas_RGE0024H_EP2.1x2.1mm

Texas_RGE0024H_EP2.1x2.1mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



RGE0024H “ThermalVia” footprint.

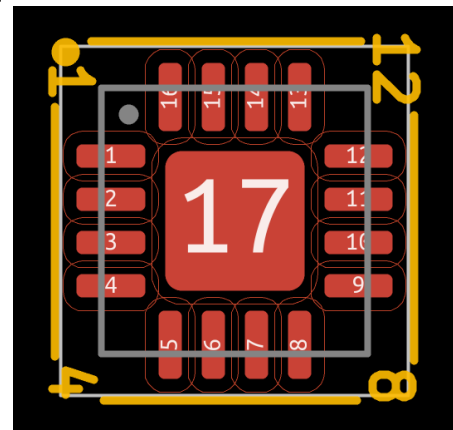
Texas Instruments RGV footprints

Footprint names:

Texas_RGV_S-PVQFN-N16_EP2.1x2.1mm

Texas_RGV_S-PVQFN-N16_EP2.1x2.1mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



RGV footprint.

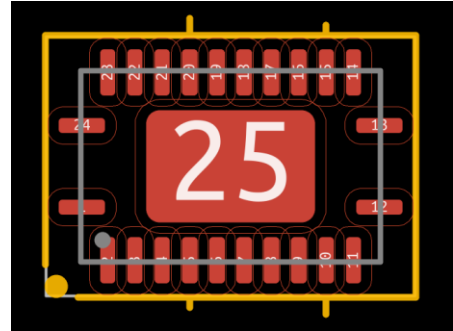
Texas Instruments RGY footprints

Footprint names:

Texas_RGY_R-PVQFN-N16_N24_EP2.05x3.1mm

Texas_RGY_R-PVQFN-N16_N24_EP2.05x3.1mm
_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

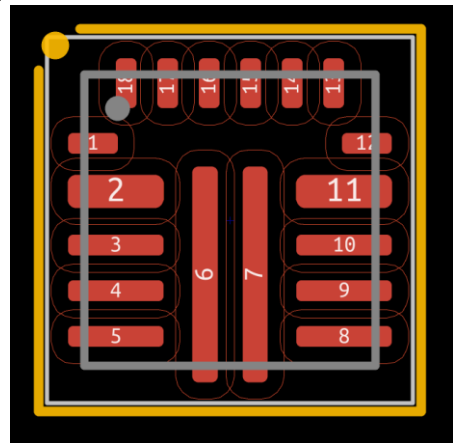


RGY footprint.

Texas Instruments RNN0018A footprint

Footprint name:

Texas_RNN0018A

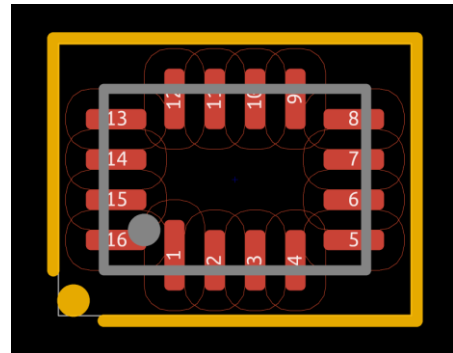


RNN0018A footprint.

Texas Instruments RSV footprint

Footprint name:

Texas_RSV_UQFD16_1.8x2.6mm_P0.4mm



RSV footprint.

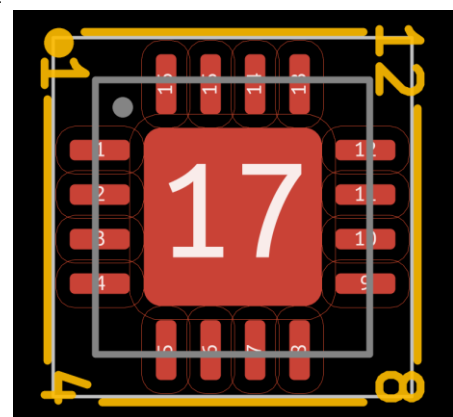
Texas Instruments RUM0016A footprints

Footprint names:

Texas_RUM0016A_EP2.6x2.6mm

Texas_RUM0016A_EP2.6x2.6mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



RUM0016A footprint.

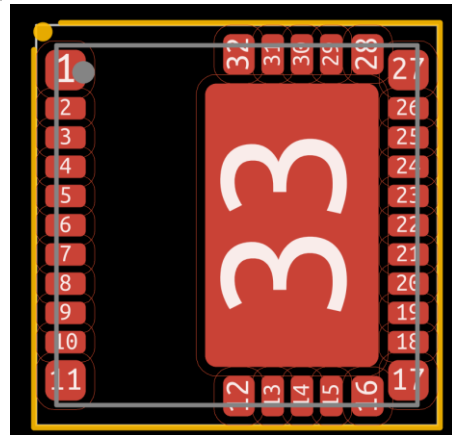
Texas Instruments RWH0032A footprints

Footprint names:

Texas_RWH0032A

Texas_RWH0032A_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

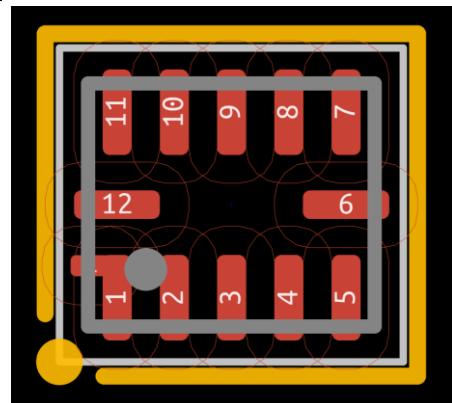


RWH0032A footprint.

Texas Instruments R_PUQFN-N12 footprint

Footprint name:

Texas_R_PUQFN-N12



R_PUQFN-N12 footprint.

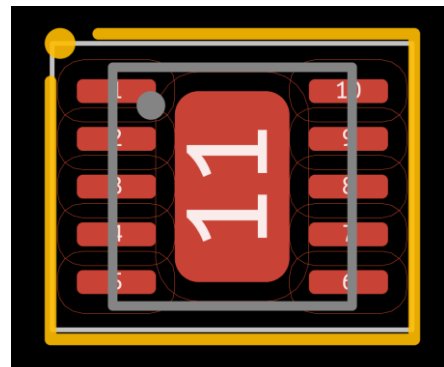
Texas Instruments S-PDSO-N10 footprints

Footprint names:

Texas_S-PDSO-N10_EP1.2x2mm

Texas_S-PDSO-N10_EP1.2x2mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



S-PDSO-N10 footprint.

Texas Instruments S-PVQFN package footprints

Footprint count: 27

Footprint naming convention:

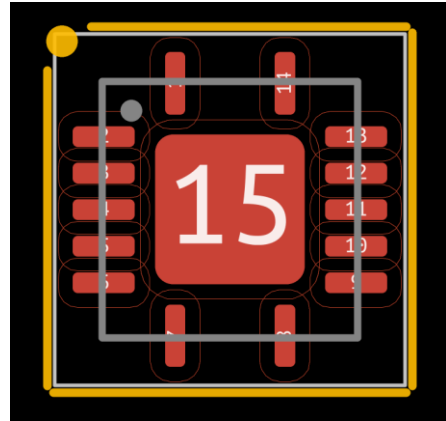
Texas_S-PVQFN-N<pin count>_<optional: exposed pad size>_<optional: ThermalVias>

Name examples:

Texas_S-PVQFN-N14

Texas_S-PVQFN-N32_EP3.45x3.45mm

Texas_S-PVQFN-N64_EP4.25x4.25mm_ThermalVias



S-PVQFN-N14 footprint.

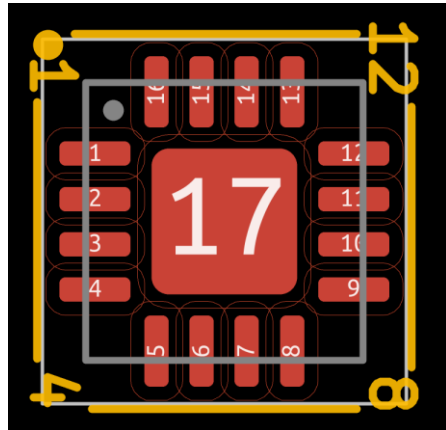
Texas Instruments S-PWQFN-N16 footprints

Footprint names:

Texas_S-PWQFN-N16_EP2.1x2.1mm

Texas_S-PWQFN-N16_EP2.1x2.1mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

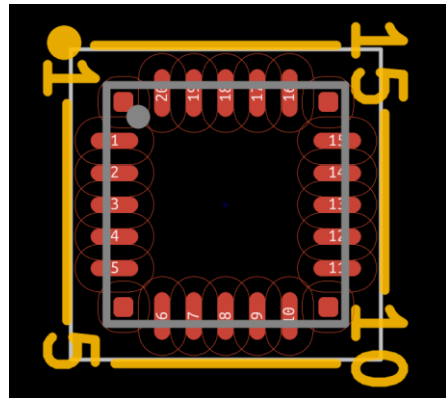


S-PWQFN-N16 footprint.

Texas Instruments S-PWQFN-N20 footprint

Footprint name:

Texas_S-PWQFN-N20



S-PWQFN-N20 footprint.

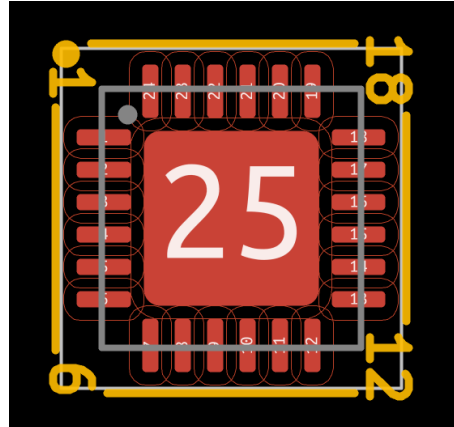
Texas Instruments S-PWQFN-N24 footprints

Footprint names:

Texas_S-PWQFN-N24_EP2.7x2.7mm

Texas_S-PWQFN-N24_EP2.7x2.7mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



S-PWQFN-N24 footprint.

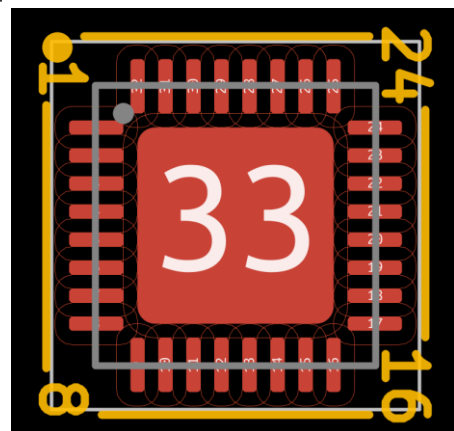
Texas Instruments S-PWQFN-N32 footprints

Footprint names:

Texas_S-PWQFN-N32_EP2.8x2.8mm

Texas_S-PWQFN-N32_EP2.8x2.8mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



S-PWQFN-N32 footprint.

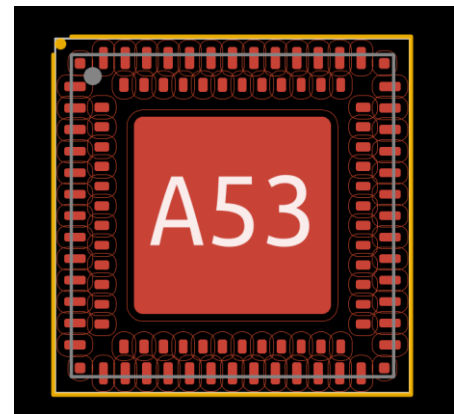
Texas Instruments S-PWQFN-N100 footprints

Footprint names:

Texas_S-PWQFN-N100_EP5.5x5.5mm

Texas_S-PWQFN-N100_EP5.5x5.5mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

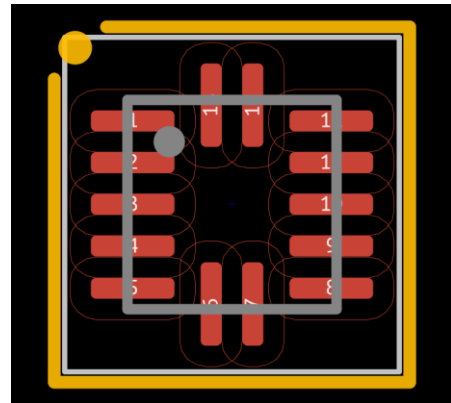


S-PWQFN-N100 footprint.

Texas Instruments S-PX2QFN footprint

Footprint name:

Texas_S-PX2QFN-14



S-PX2QFN footprint.

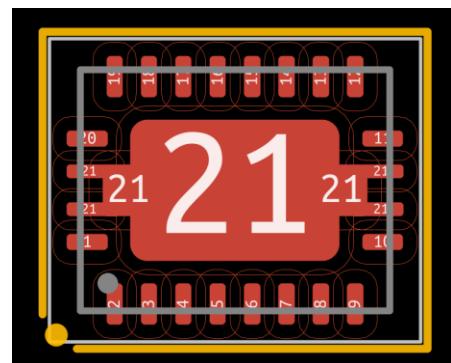
Texas Instruments VQFN-RHL-20 footprints

Footprint names:

Texas_VQFN-RHL-20

Texas_VQFN-RHL-20_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

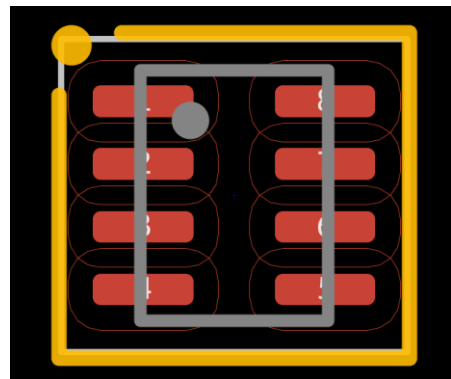


VQFN-RHL-20 footprint.

Texas Instruments VSON-HR-8 footprint

Footprint name:

Texas_VSON-HR-8_1.5x2mm_P0.5mm



VSON-HR-8 footprint.

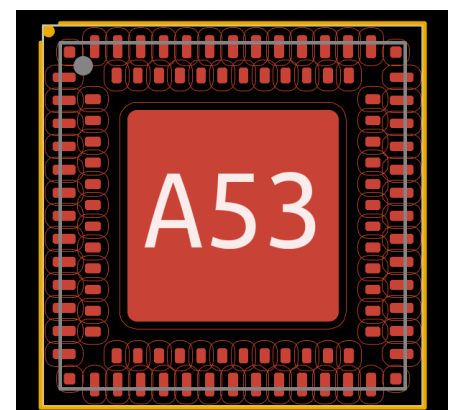
Texas Instruments WQFN-MR-100 footprints

Footprint names:

Texas_WQFN-MR-100_3x3-DapStencil

Texas_WQFN-MR-100_ThermalVias_3x3-DapStencil

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

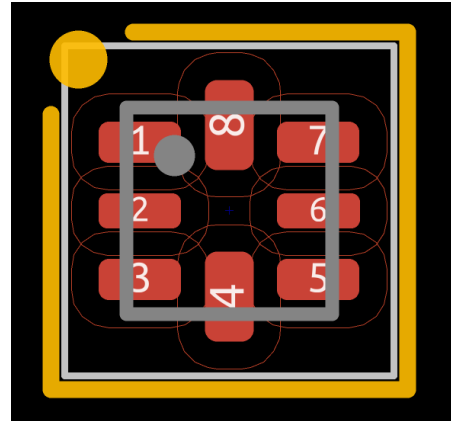


WQFN-MR-100 footprint.

Texas Instruments X2QFN-8 footprint

Footprint name:

Texas_X2QFN-8_1.5x1.5mm

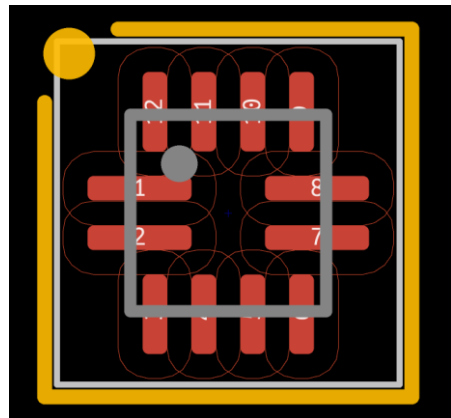


X2QFN-8 footprint.

Texas Instruments X2QFN-12 footprint

Footprint name:

Texas_X2QFN-12_1.6x1.6mm_P0.4mm

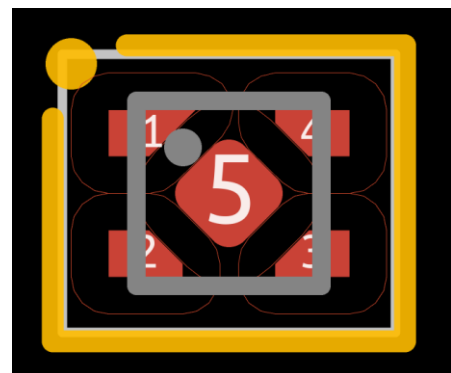


X2QFN-12 footprint.

UDFN-4 footprint

Footprint name:

UDFN-4-1EP_1x1_P0.65mm_EP0.48x0.48mm

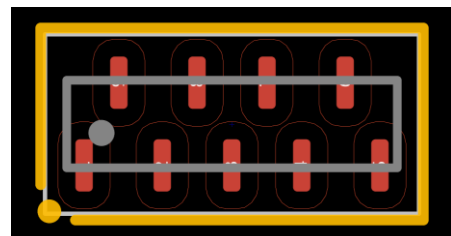


UDFN-4 footprint.

UDFN-9 footprint

Footprint name:

UDFN-9_1.0x3.8mm_P0.5mm

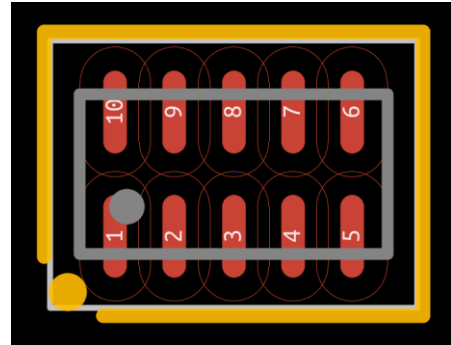


UDFN-9 footprint.

UDFN-10 footprint

Footprint name:

UDFN-10_1.35x2.6mm_P0.5mm



UDFN-10 footprint.

Micro Quad Flat No-lead (UQFN) package footprints

Footprint count: 19

Footprint naming convention:

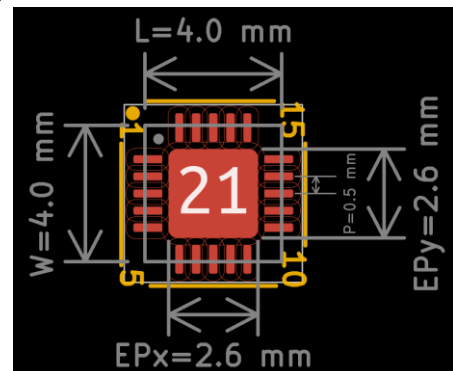
UQFN-<pin count>-<optional: exposed pad count>
 _<length>**x**<width>**mm_P**<pin pitch>**mm_**<exposed pad size>
 <optional: ThermalVias>

Name examples:

UQFN-10_1.3x1.8mm_P0.4mm

UQFN-16-1EP_3x3mm_P0.5mm_EP1.75x1.75mm

UQFN-20-1EP_3x3mm_P0.4mm_EP1.85x1.85mm_ThermalVias

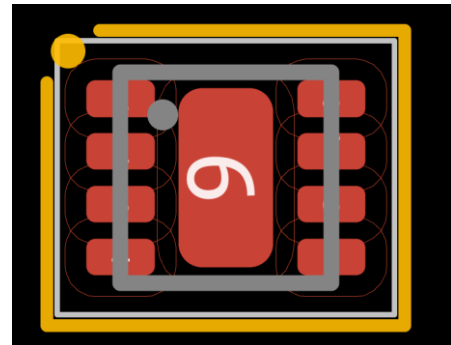


UQFN-20 footprint with its dimensions indicated.

VDFN-8 footprint

Footprint name:

VDFN-8-1EP_2x2mm_P0.5mm_EP0.9x1.7mm



VDFN-8 footprint.

Very fine Quad Flat No-lead (VQFN) package footprints

Footprint count: 26

Footprint naming convention:

VQFN-<pin count>-<exposed pad count>**EP**

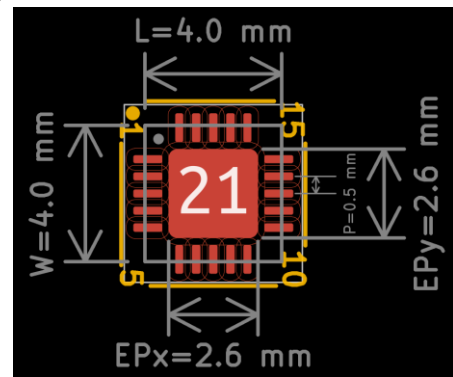
<length>**x**<width>**mm**<pin pitch>**mm**_<exposed pad size>_<optional: ThermalVias>

Name examples:

VQFN-16-1EP_3x3mm_P0.5mm_EP1.45x1.45mm

VQFN-32-1EP_5x5mm_P0.5mm_EP3.1x3.1mm

_ThermalVias



VQFN-20 footprint with its dimensions indicated.

WDFN package footprints

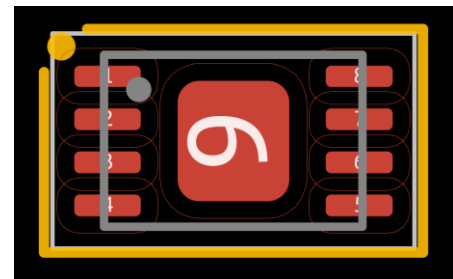
Footprint count: 3

Footprint names:

WDFN-8-1EP_2x2.2mm_P0.5mm_EP0.80x0.54

WDFN-8-1EP_3x2mm_P0.5mm_EP1.3x1.4mm

WDFN-12-1EP_3x3mm_P0.45mm_EP1.7x2.5mm



WDFN-8 footprint.

3.17. DIP Package Library

This library contains footprints for Through-Hole and Surface Mount Dual In-line Packages (DIP) and sockets.

Some DIP packages are longer than it would seem from their pin count (DIP-14 is typically the same length as DIP-16) and AKL footprints were adjusted accordingly.

Standard variant	
Folder name: Package_DIP_AKL	
Footprint count:	241
Total footprints:	241

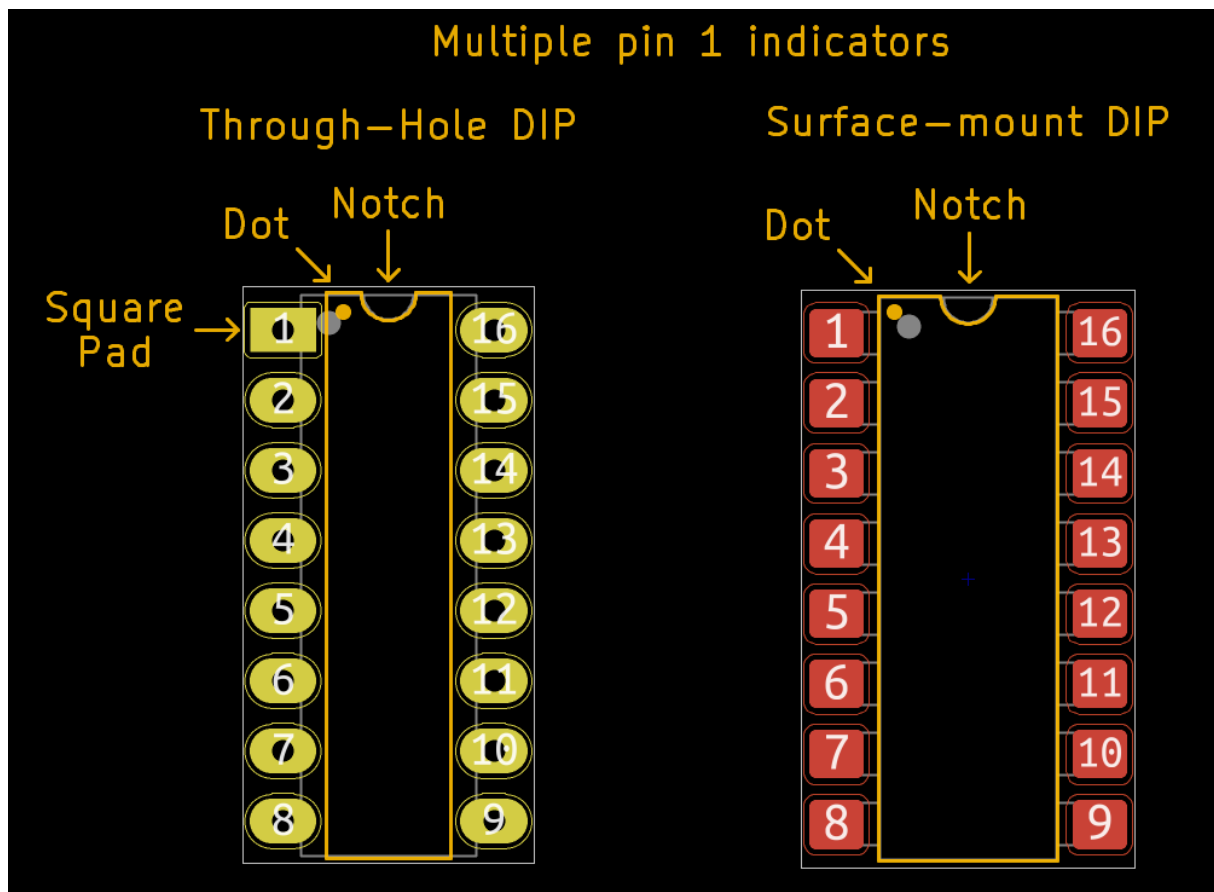


Figure 3.33. DIP and SMDIP footprint showcase.

Dual In-line Package (DIP) footprints

Footprint count: 73

Footprint naming convention:

DIP-<pin count>_**W**<distance between pin rows>**mm**
<optional: _LongPads>

Some footprints have missing pins, for example:
5-pin DIP package footprint is named DIP-5-6
(DIP-6 body size with 5 pins)

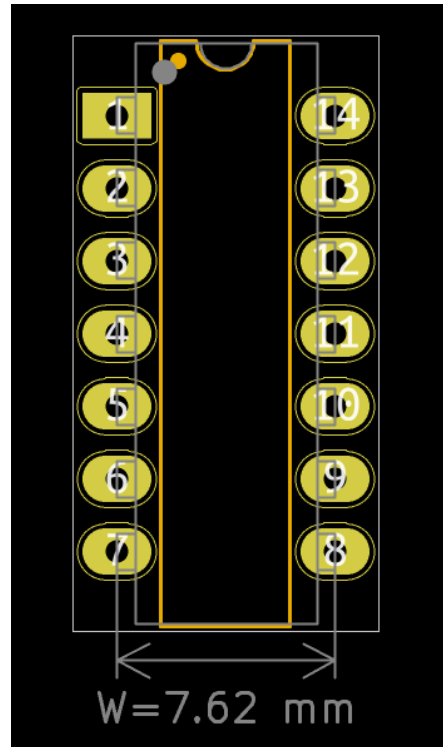
LongPads suffix denotes a footprint with enlarged pads suitable for single-sided PCBs without plated holes and/or help with hand-soldering. All AKL symbols of devices in DIP packages use this variant by default.

Name examples:

DIP-4_W7.62mm

DIP-22_W10.16mm_LongPads

DIP-8-16_W7.62mm (DIP-16 body size, 8 pins)



DIP-14 "LongPads" footprint with its "width" indicated.

Dual In-line Package (DIP) THT socket footprints

Footprint count: 52

Footprint naming convention:

DIP-<pin count>_**W**<distance between pin rows>**mm**
_**Socket**<optional: _LongPads>

Some footprints have missing pins, for example:
5-pin DIP package footprint is named DIP-5-6
(DIP-6 body size with 5 pins)

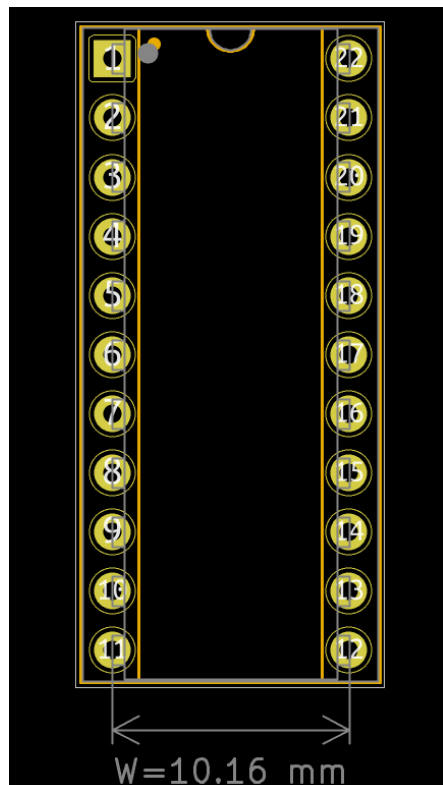
LongPads suffix denotes a footprint with enlarged pads suitable for single-sided PCBs without plated holes and/or help with hand-soldering.

Name examples:

DIP-14_W7.62mm_Socket

DIP-40_W25.4mm_Socket_LongPads

DIP-5-6_W7.62mm_Socket_LongPads



DIP-22 Socket footprint with its "width" indicated.

Dual In-line Package (DIP) SMD socket footprints

Footprint count: 50

Footprint naming convention:

DIP-<pin count>_**W**<distance between pin rows>**mm**
SMDSocket<pad size>

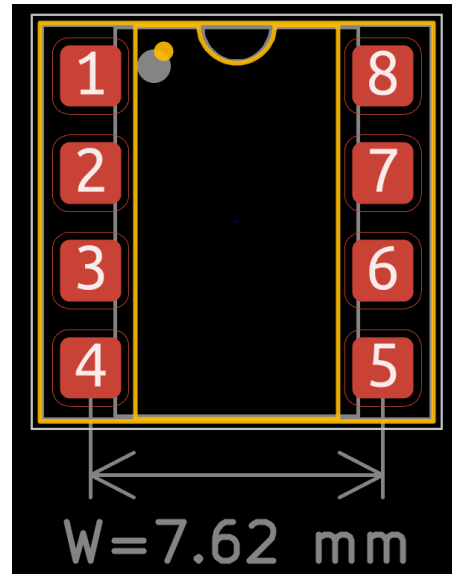
Some footprints have missing pins, for example:
 5-pin DIP package footprint is named DIP-5-6
 (DIP-6 body size with 5 pins)

Pad size can either be small (SmallPads) or big (LongPads).

Name examples:

DIP-28_W7.62mm_SMDSocket_SmallPads

DIP-12_W8.89mm_SMDSocket_LongPads

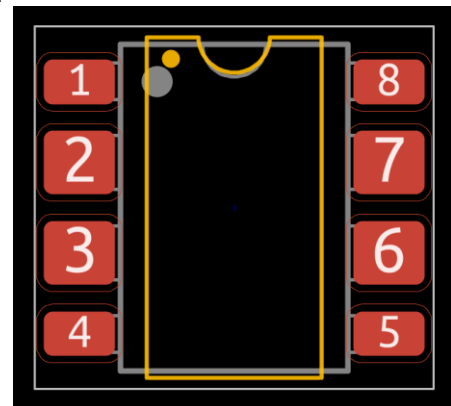


DIP-8 SMD Socket "SmallPads" footprint with its "width" indicated.

Fairchild LSOP-8 footprint

Footprint name:

Fairchild_LSOP-8

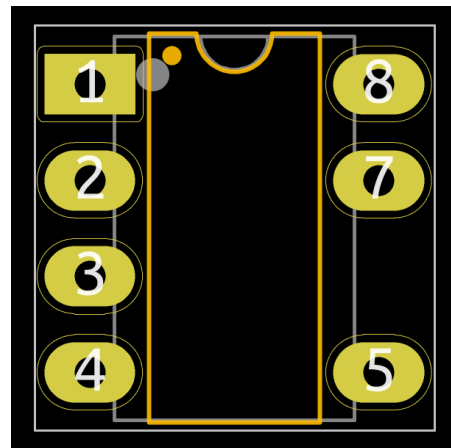


LSOP-8 footprint.

Power Integrations PDIP-8B footprint

Footprint name:

PowerIntegrations_PDIP-8B

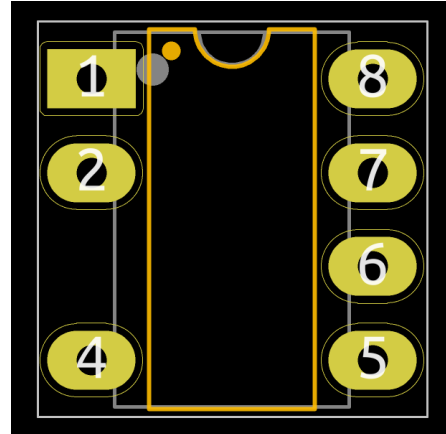


PDIP-8B footprint.

Power Integrations PDIP-8C footprint

Footprint name:

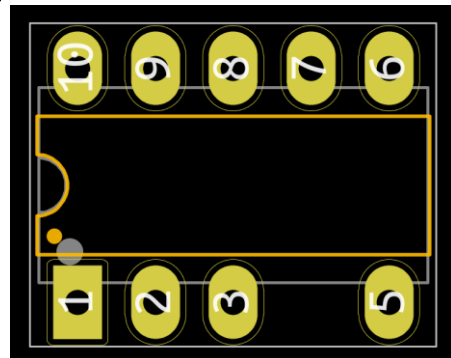
PowerIntegrations_PDIP-8C

*PDIP-8C footprint.*

Power Integrations SDIP-10C footprint

Footprint name:

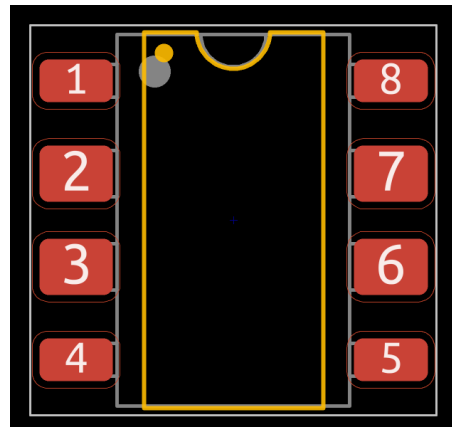
PowerIntegrations_SDIP-10C

*SDIP-10C footprint.*

Power Integrations SMD-8 footprint

Footprint name:

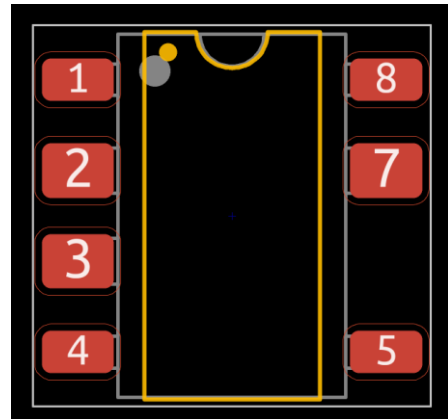
PowerIntegrations_SMD-8

*SMD-8 footprint.*

Power Integrations SMD-8B footprint

Footprint name:

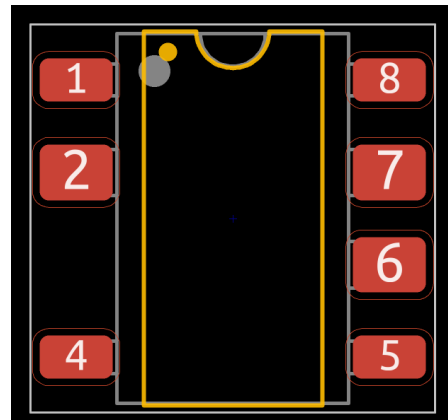
PowerIntegrations_SMD-8B

*SMD-8B footprint.*

Power Integrations SMD-8C footprint

Footprint name:

PowerIntegrations_SMD-8C

*SMD-8C footprint.*

Power Integrations eDIP-12B footprint

Footprint name:

PowerIntegrations_eDIP-12B

*eDIP-12B footprint.*

Surface Mount Dual In-line Package (SMDIP) footprints

Footprint count: 56

Footprint naming convention:

SMDIP-<pin count>_W<distance between pad rows>mm
<optional: _Clearance8mm>

Some footprints have missing pins, for example:

5-pin SMDIP package footprint is named SMDIP-5-6 (SMDIP-6 body size with 5 pins)

Clearance8mm is a variant of 9.53mm width footprint that has 8mm of clearance between the pad rows.

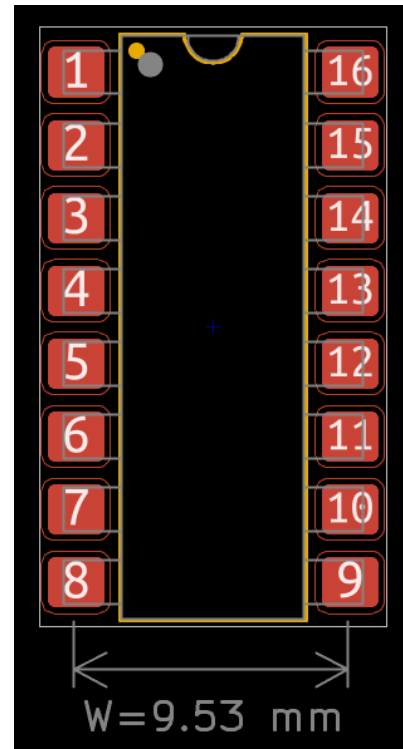
Name examples:

SMDIP-4_W7.62mm

SMDIP-8_W9.53mm

SMDIP-14_W9.53mm_Clearance8mm

SMDIP-18_W11.48mm

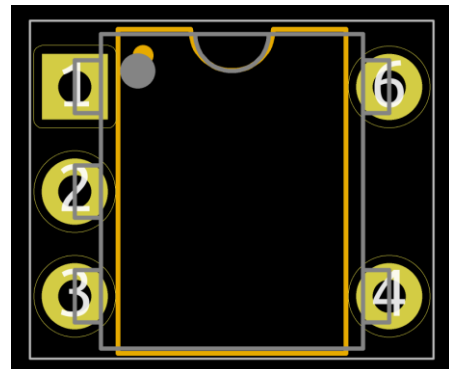


SMDIP-16 footprint with its "width" indicated.

Toshiba 11-7A9 footprint

Footprint name:

Toshiba_11-7A9

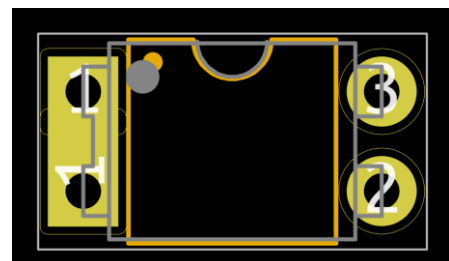


11-7A9 footprint.

Vishay HVM (DIP-3) footprint

Footprint name:

Vishay_HVM-DIP-3_W7.62mm



HVM DIP-3 footprint.

3.18. PLCC Package Library

This library contains footprints for Plastic Leaded Chip Carrier (PLCC) packages and sockets. SMD PLCC socket footprint can be used to either solder a package or a socket to the PCB.

Standard variant	
Folder name: Package_LCC_AKL	
Footprint count:	21
Total footprints:	21

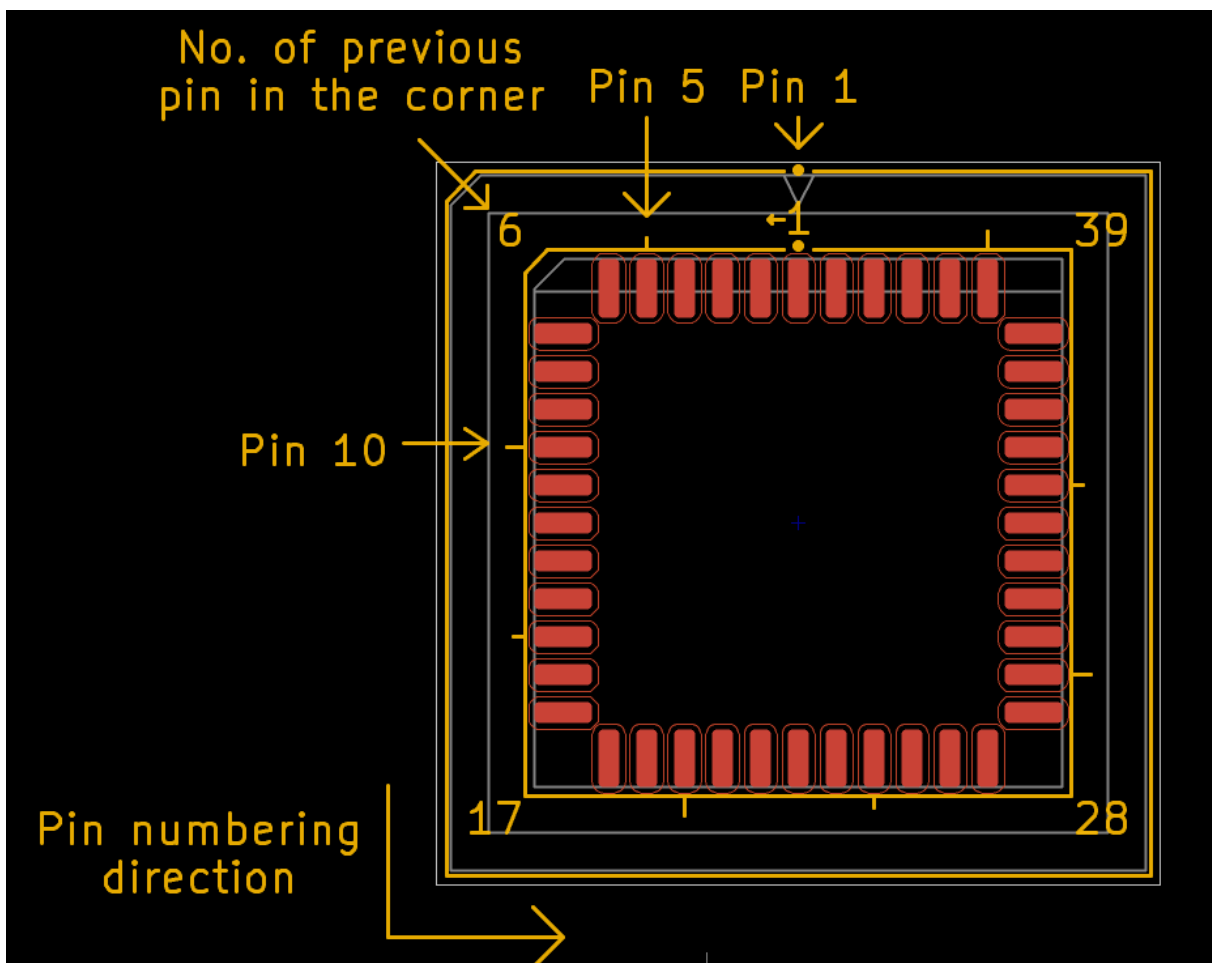


Figure 3.34. PLCC socket footprint as an example of pin number indicators

Plastic Leaded Chip Carrier package footprints

Footprint count: 7

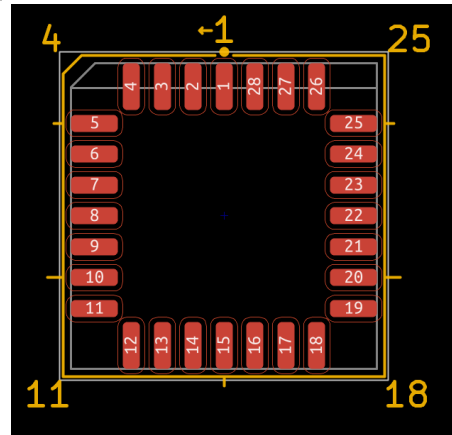
Footprint naming convention:

PLCC-<pin count>

Name examples:

PLCC-20

PLCC-68



PLCC-28 footprint.

Plastic Leaded Chip Carrier SMD socket footprints

Footprint count: 7

Footprint naming convention:

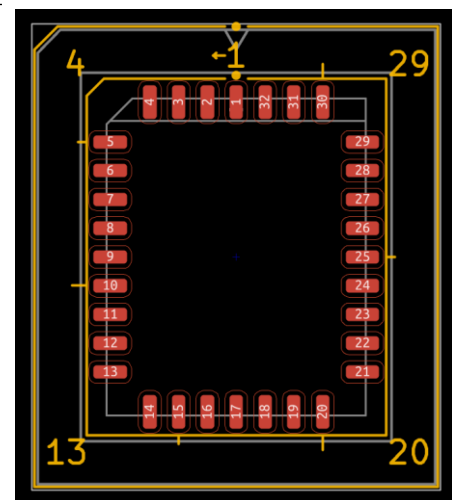
PLCC-<pin count>_SMD-Socket

SMD PLCC socket footprints can be used both for sockets and the packages themselves. AKL symbols use PLCC SMD sockets for all PLCC parts by default.

Name examples:

PLCC-32_SMD-Socket

PLCC-44_SMD-Socket



PLCC-32 SMD socket footprint.

Plastic Leaded Chip Carrier THT socket footprints

Footprint count: 7

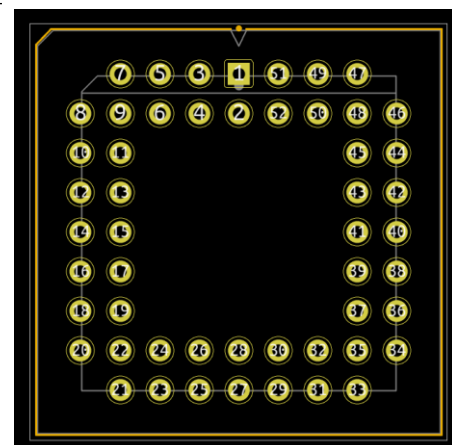
Footprint naming convention:

PLCC-<pin count>_THT-Socket

Name examples:

PLCC-20_THT-Socket

PLCC-84_THT-Socket



PLCC-52 THT socket footprint.

3.19. QFP Package Library

This library contains footprints for Quad Flat Pack packages.

Large pin-count packages have additional indicators on the silkscreen layer intended to help locate a specific pin during troubleshooting.

Standard variant	
Folder name: Package_QFP_AKL	
Footprint count:	83
Total footprints:	83

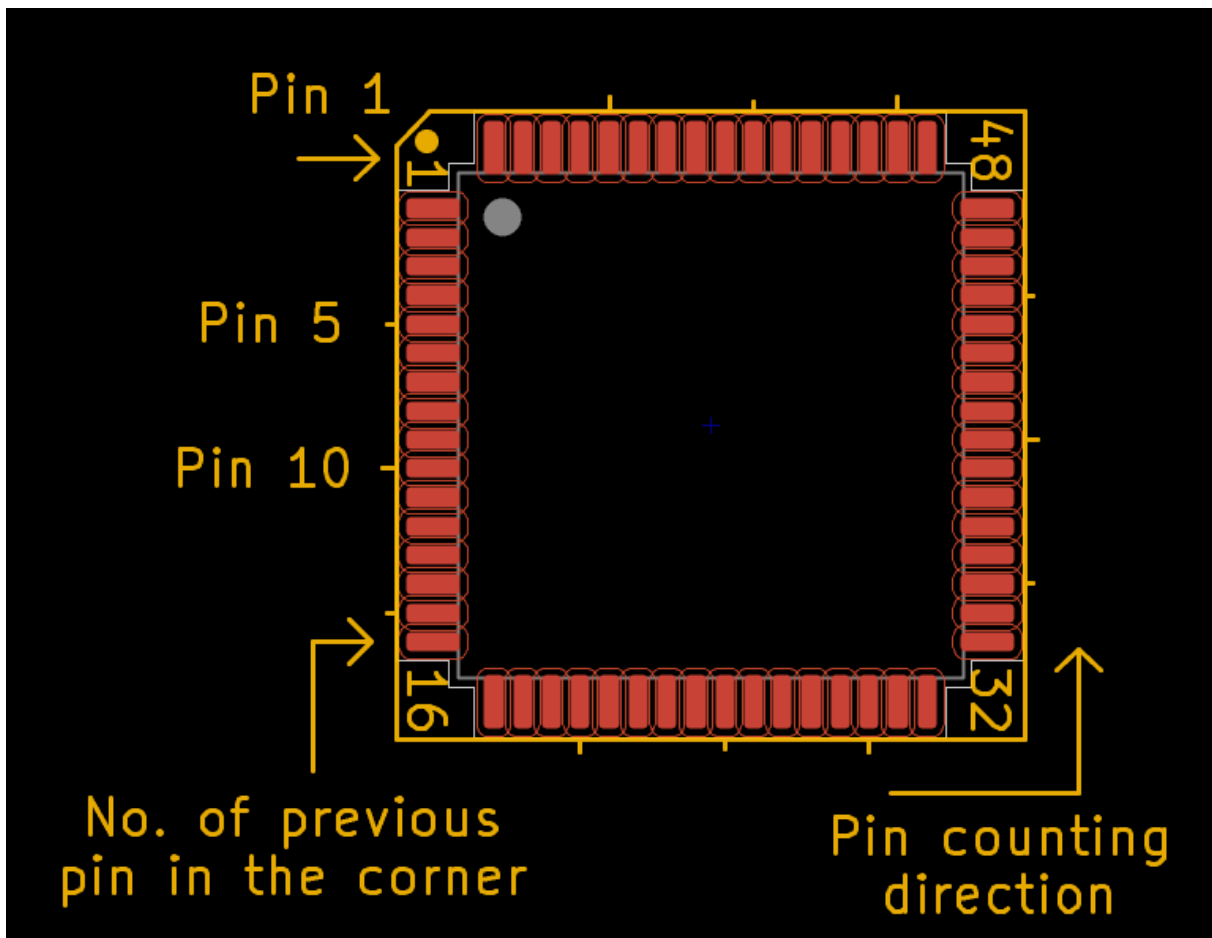


Figure 3.35. QFP package footprint showcasing the pin number indicators.

Exposed-pad Quad Flat Pack (EQFP) footprints

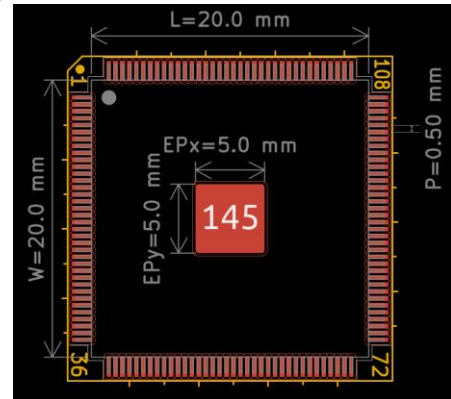
Footprint count: 10

Footprint naming convention:

EQFP-<pin count>-**EP**<exposed pad count>_<length>
x<width>**mm****P**<pin pitch>**mm****EP**<exposed pad
 size>**mm**<optional: **_ThermalVias**>

Name examples:

EQFP-144-1EP_20x20mm_P0.5mm_EP6.61x5.615mm
 EQFP-144-1EP_20x20mm_P0.5mm_EP4x4mm
 _ThermalVias



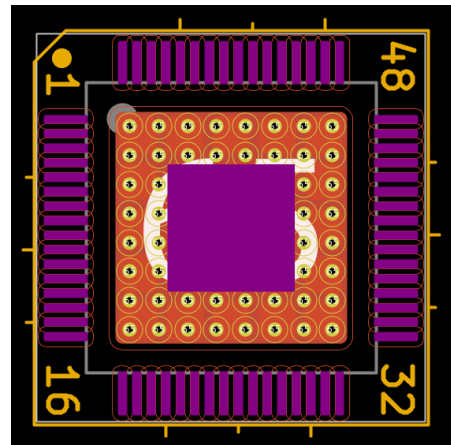
EQFP-144 footprint with its dimensions indicated.

HTQFP-64 footprints

Footprint names:

HTQFP-64-1EP_10x10mm_P0.5mm_EP8x8mm
 HTQFP-64-1EP_10x10mm_P0.5mm_EP8x8mm
 _Mask4.4x4.4mm_ThermalVias

"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.



HTQFP-64 "ThermalVias" footprint with soldermask cutouts visible.

Low-profile Quad Flat Pack (LQFP) footprints

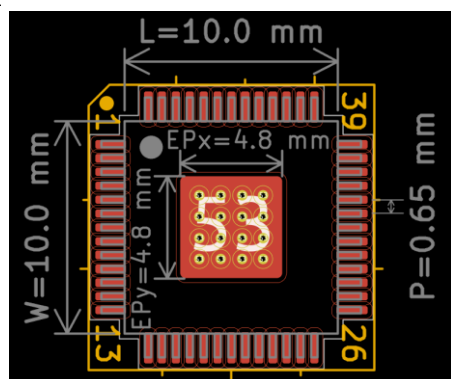
Footprint count: 30

Footprint naming convention:

LQFP-<pin count>-<optional: exposed pad count>_<length>
x<width>**mm****P**<pin pitch>**mm**_<optional: exposed pad
 size>_<optional: **ThermalVias**>

Name examples:

LQFP-80_14x14mm_P0.65mm
 LQFP-64-1EP_10x10mm_P0.5mm_EP5x5mm
 LQFP-52-1EP_10x10mm_P0.65mm_EP4.8x4.8mm_ThermalVias

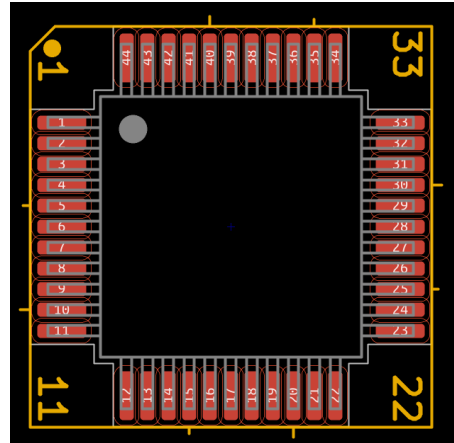


LQFP-64-1EP "ThermalVias" footprint with its dimensions indicated.

MQFP-44 footprint

Footprint name:

MQFP-44_10x10mm_P0.8mm



MQFP-44 footprint.

Plastic Quad Flat Pack (PQFP) footprints

Footprint count: 10

Footprint naming convention:

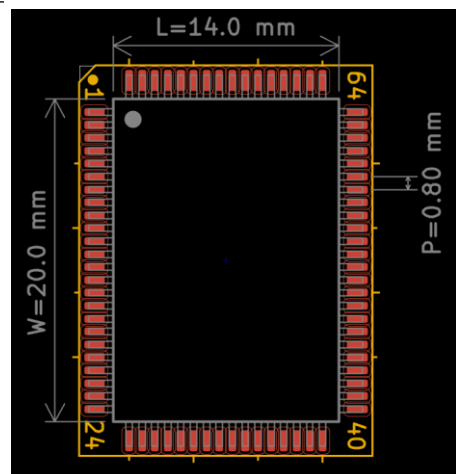
PQFP-<pin count>_<length>x<width>mm

_P<pin pitch>mm

Name examples:

PQFP-100_14x20mm_P0.65mm

PQFP-256_28x28m_P0.4mm

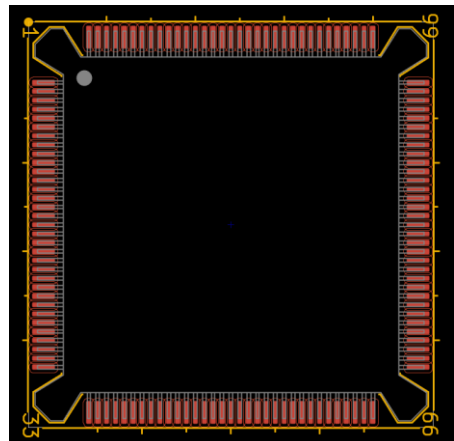


PQFP-80 footprint with its dimensions indicated.

PQFP-132 Alternate style footprint

Footprint name:

PQFP-132_24x24mm_P0.635mm_i386



PQFP-132 footprint.

Thin Quad Flat Pack (TQFP) footprints

Footprint count: 25

Footprint naming convention:

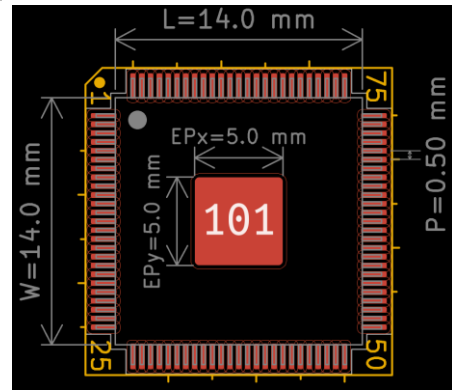
TQFP-<pin count>-<optional: exposed pad count>_<length>**x**<width>**mm**_<optional: exposed pad size>**P**<pin pitch>**mm**
_<optional: ThermalVias>

Name examples:

TQFP-32_7x7mm_P0.8mm

TQFP-48-1EP_7x7mm_P0.5mm_EP5x5mm

TQFP-100-1EP-14x14mm_P0.5mm_EP5x5mm
_ThermalVias



TQFP-100-1EP "ThermalVias" footprint with its dimensions indicated.

Very thin Quad Flat Pack (VQFP) footprints

Footprint count: 4

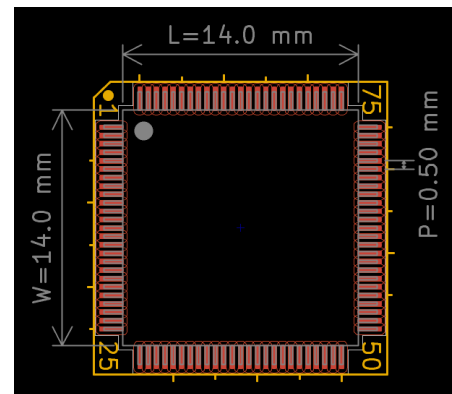
Footprint naming convention:

VQFP-<pin count>_<length>**x**<width>**mm**
_<pin pitch>**mm**

Name examples:

VQFP-80_14x14mm_P0.65mm

VQFP-128_14x14mm_P0.4mm



VQFP-100 footprint with its dimensions indicated.

3.20. SIP Package Library

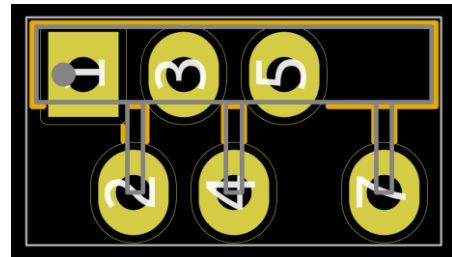
This library contains Single In-line Package (SIP) Integrated Circuit footprints

Standard variant	
Folder name:	Package_SIP_AKL
Footprint count:	17
Total footprints:	17

Power Integrations eSIP-7C footprint

Footprint name:

PowerIntegrations_eSIP-7C

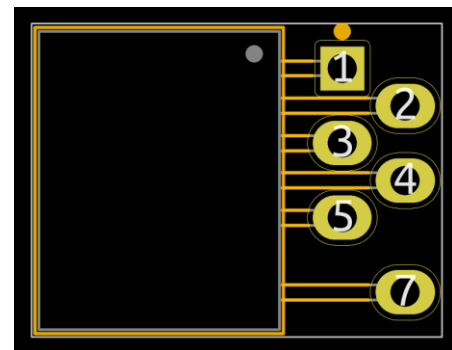


eSIP-7C footprint.

Power Integrations eSIP-7F footprint

Footprint name:

PowerIntegrations_eSIP-7F



eSIP-7F footprint.

SIP-8 footprints

Footprint names:

SIP-8

SIP-8_BigPads



SIP-8 footprint.

“BigPads” suffix denotes footprint with enlarged pads suitable for use with single-sided PCBs and helping with hand-soldering. This variant is the default footprint variant for all eligible AKL symbols.

SIP-9 footprints

Footprint names:

SIP-9

SIP-9_BigPads

"BigPads" suffix denotes footprint with enlarged pads suitable for use with single-sided PCBs and helping with hand-soldering. This variant is the default footprint variant for all eligible AKL symbols.



SIP-9 "BigPads" footprint.

SIP-10 footprints

Footprint names:

SIP-10

SIP-10_BigPads

"BigPads" suffix denotes footprint with enlarged pads suitable for use with single-sided PCBs and helping with hand-soldering. This variant is the default footprint variant for all eligible AKL symbols.



SIP-10 footprint.

RECOM R78Exx Series DC-DC converter footprint

Footprint name:

SIP3_11.6x8.5mm

"BigPads" suffix denotes footprint with enlarged pads suitable for use with single-sided PCBs and helping with hand-soldering. This variant is the default footprint variant for all eligible AKL symbols.



R78Exx series footprint.

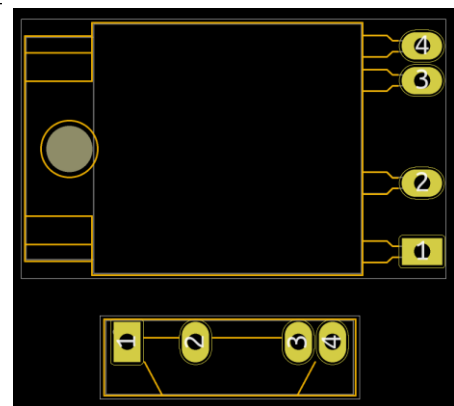
Sharp SIP-4 solid state relay footprints

Footprint names:

SIP4_Sharp-SSR_P7.62mm_Angled

SIP4_Sharp-SSR_P7.62mm_Angled_NoHole

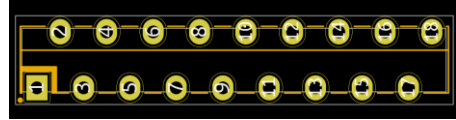
SIP4_Sharp-SSR_P7.62mm_Straight



SIP-4 SSR Angled footprint (top) and a straight footprint (bottom).

SLA704XM footprint**Footprint name:**

SLA704XM

*SLA704XM footprint.***STK672-040-E footprint****Footprint name:**

STK672-040-E

*STK672-040-E footprint.***STK672-080-E footprint****Footprint name:**

STK672-080-E

*STK672-080-E footprint.***Sanyo STK-433E/STK-435E/STK-436E footprint****Footprint name:**

Sanyo_STK4xx-15_59.2x8.0mm_P2.54mm

*STK-433E/STK-435E/STK-436E footprint.***Sanyo STK-437E/STK-439E/STK-441E /STK-443E footprint****Footprint name:**

Sanyo_STK4xx-15_78.0x8.0mm_P2.54mm

*STK-437E/STK-439E/STK-441E/STK-443E footprint.*

3.21. SON Package Library

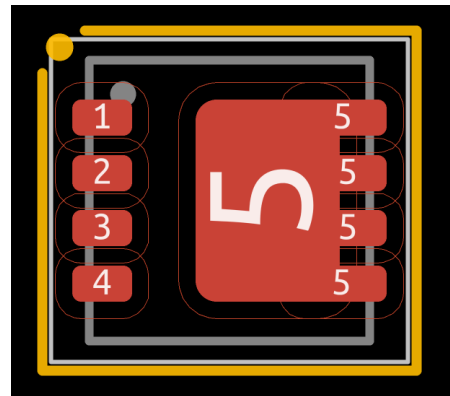
This library contains footprints for Small Outline No-Lead (SON) transistor and IC packages.

Standard variant	
Folder name: Package_SON_AKL	
Footprint count:	73
Total footprints:	73

Diodes PowerDI3333-8 footprint

Footprint name:

Diodes_PowerDI3333-8

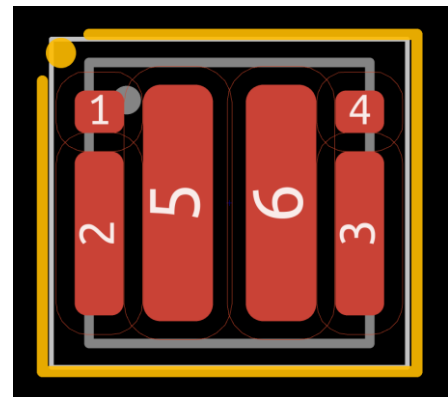


PowerDI3333-8 footprint.

Fairchild DualPower33-6 footprint

Footprint name:

Fairchild_DualPower33-6_3x3mm

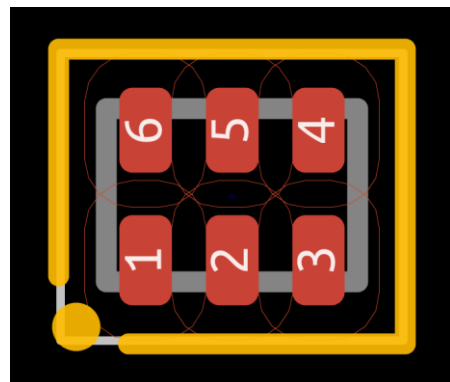


DualPower33-6 footprint.

Fairchild MicroPak-6 footprint

Footprint name:

Fairchild_MicroPak-6_1.0x1.45mm_P0.5mm

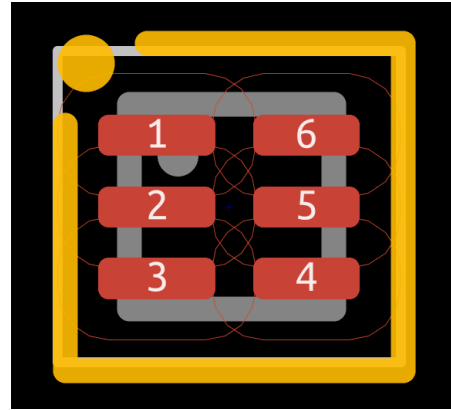


DualPower33-6 footprint.

Fairchild MicroPak2-6 footprint

Footprint name:

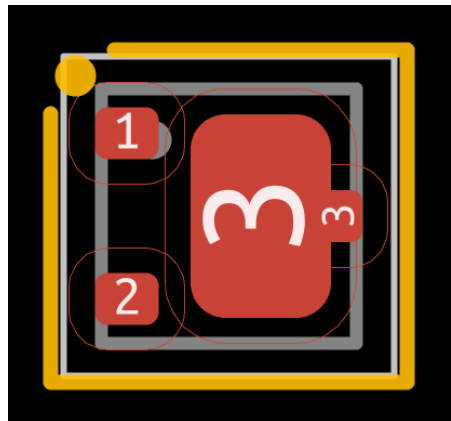
Fairchild_MicroPak2-6_1.0x1.0mm_P0.35mm

*DualPower33-6 footprint.*

HUSON-3 footprint

Footprint name:

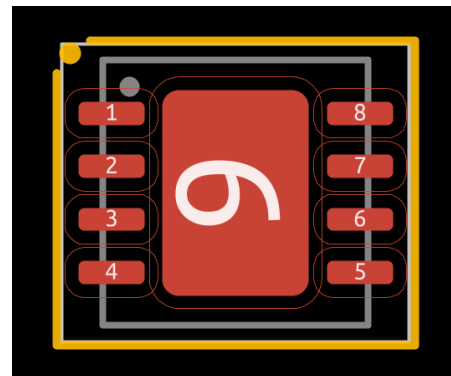
HUSON-3-1EP_2x2mm_P1.3mm_EP1.1x1.6mm

*HUSON-3 footprint.*

HVSON-8 footprint

Footprint name:

HVSON-8-1EP_4x4mm_P0.8mm_EP2.2x3.1mm

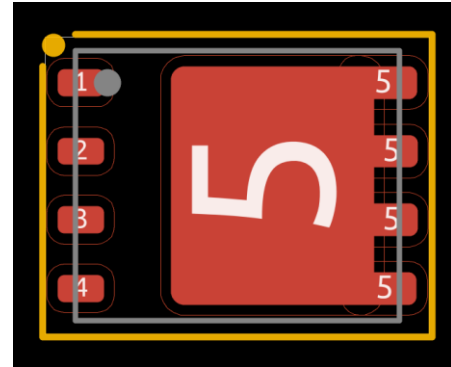
*HVSON-8 footprint.*

Infineon TDSO-8 footprint

Footprint name:

Infineon_PG-TDSO-8

Industry standard 5x6mm SMD power transistor package.



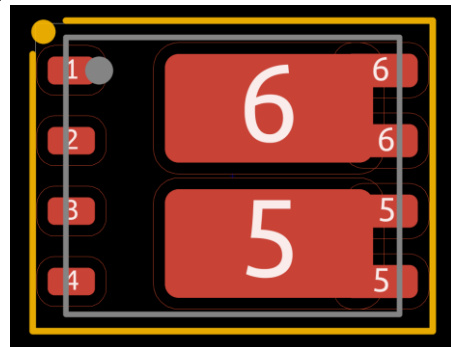
TDSO-8 footprint.

Infineon TDSO-8 "Dual" footprint

Footprint name:

Infineon_PG-TDSO-8_Dual

This TDSO-8 footprint variant contains a split exposed pad for devices with two transistors in one package.



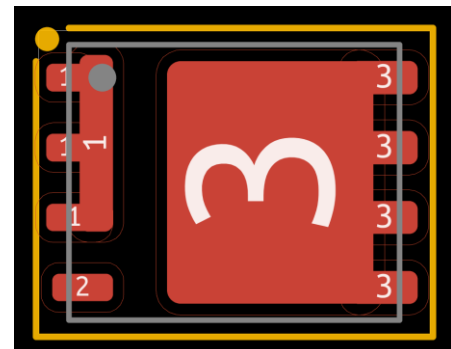
TDSO-8 "Dual" footprint.

Infineon TDSO-8 "Fused Leads" footprint

Footprint name:

Infineon_PG-TDSO-8_FL

This TDSO-8 footprint variant has former pins 2 to 4 (normally used as a source terminal for a MOSFET) fused together to reduce series inductance and resistance.



TDSO-8 "Fused Leads" footprint.

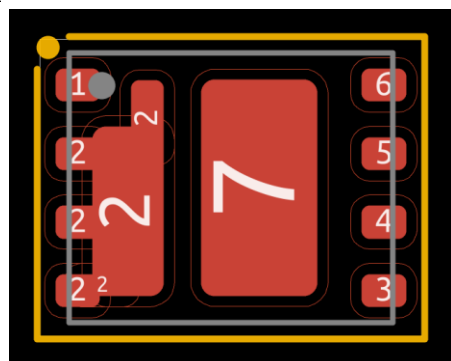
Infineon TISON-8-2/TISON-8-3 footprints

Footprint names:

Infineon_PG-TISON-8-2

Infineon_PG-TISON-8-3

TISON-8-2 and TISON-8-3 have identical pad and solderpaste layout.

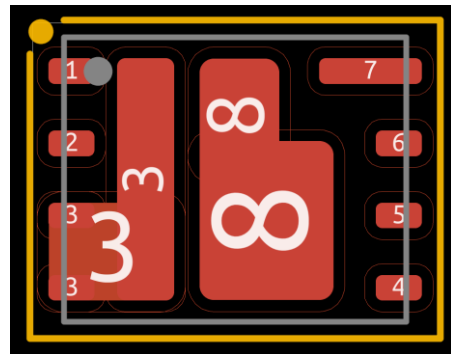


TISON-8-2 footprint.

Infineon TISON-8-4 footprint

Footprint name:

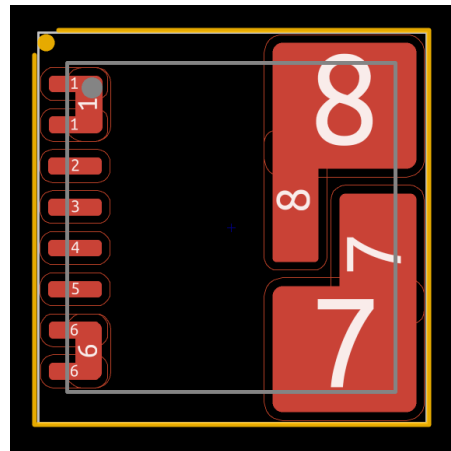
Infineon_PG-TISON-8-4

*TISON-8-4 footprint.*

Infineon TISON-8-5 footprint

Footprint name:

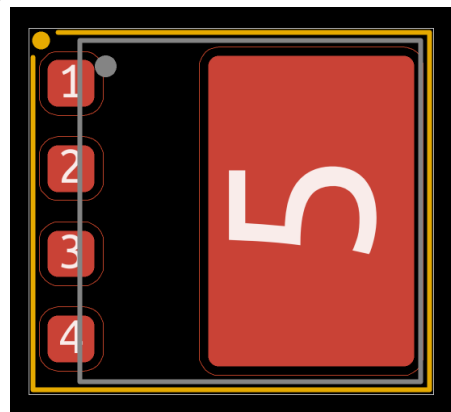
Infineon_PG-TISON-8-5

*TISON-8-5 footprint.*

Infineon ThinPAK 8x8 (VDSON-4) footprint

Footprint name:

Infineon_PG-VDSON-4_ThinPAK_8x8

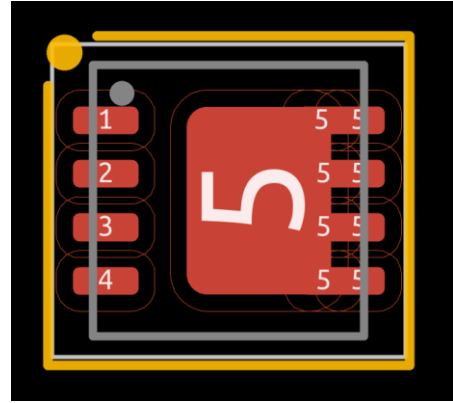
*ThinPAK 8x8 footprint.*

Infineon TSDSON-8 footprint

Footprint name:

Infineon_PG-TSDSON-8

Industry standard 3.3x3.3mm SMD power transistor package.



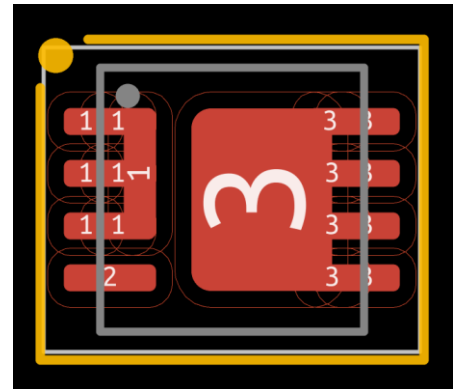
TSDSON-8 footprint.

Infineon TSDSON-8 “Fused Leads” footprint

Footprint name:

Infineon_PG-TSDSON-8_FL

This TSDSON-8 footprint variant has former pins 1 to 3 (normally used as a source terminal for a MOSFET) fused together to reduce series inductance and resistance.

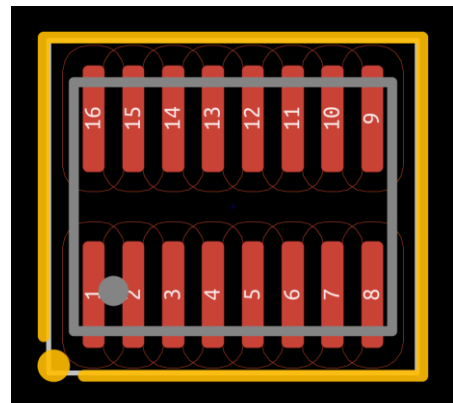


TSDSON-8 “Fused Leads” footprint.

NXP XSON-16 footprint

Footprint name:

NXP_XSON-16

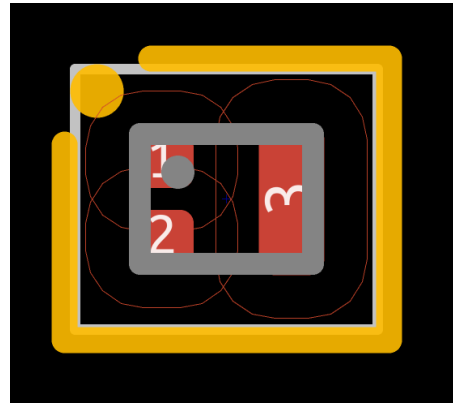


XSON-16 footprint.

ROHM Semiconductor VML0806 footprint

Footprint name:

ROHM_VML0806

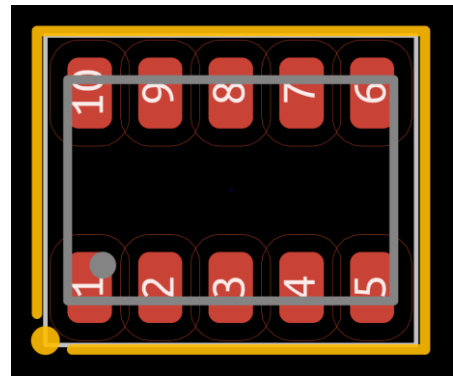


VML0806 footprint.

Micro Crystal RV-1805-C3 RTC module footprint

Footprint name:

RTC_SMD_MicroCrystal_C3_2.5x3.7mm

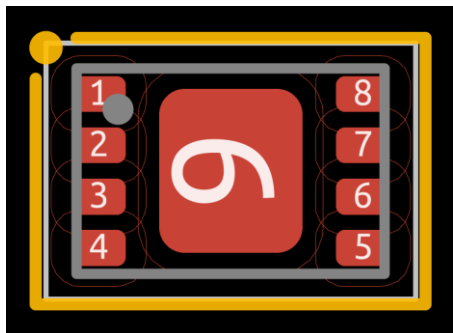


RV-1805-C3 footprint.

SON-8 3x2mm package footprint

Footprint name:

SON-8-1EP_3x2mm_P0.5mm_EP1.4x1.6mm



RV-1805-C3 footprint.

Texas Instruments DQK footprint

Footprint name:

Texas_DQK



DQK footprint.

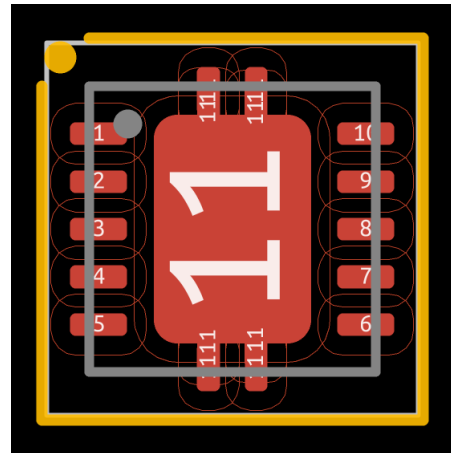
Texas Instruments DRC0010J footprints

Footprint names:

Texas_DRC0010J

Texas_DRC0010J_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



DRC0010J footprint.

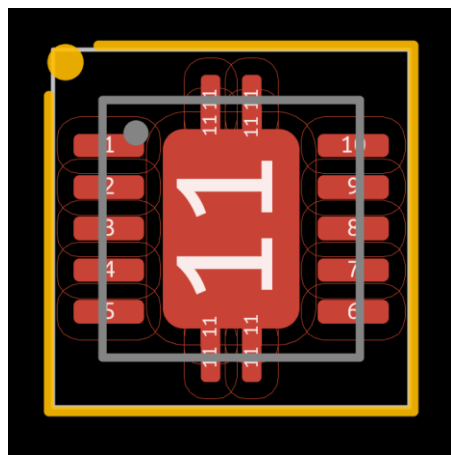
Texas Instruments DSC0010J footprints

Footprint names:

Texas_DSC0010J

Texas_DSC0010J_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

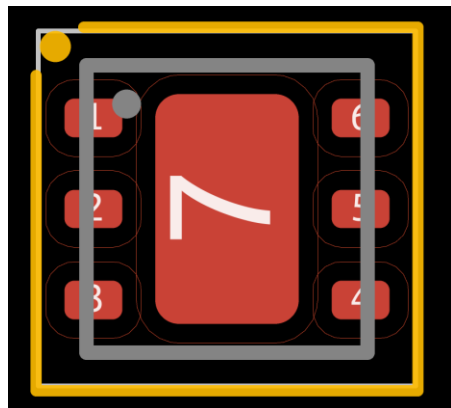


DSC0010J footprint.

Texas Instruments PWSN-N6 footprint

Footprint name:

Texas_PWSN-N6

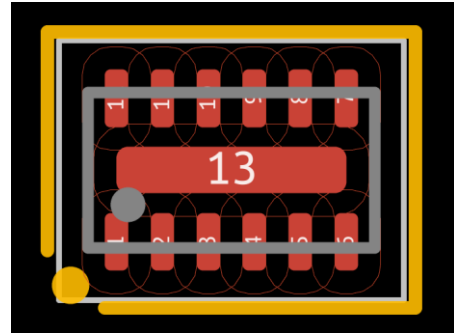


PWSN-N6 footprint.

Texas Instruments PWSO-N12 footprint

Footprint name:

Texas_R-PWSO-N12_EP0.4x2mm

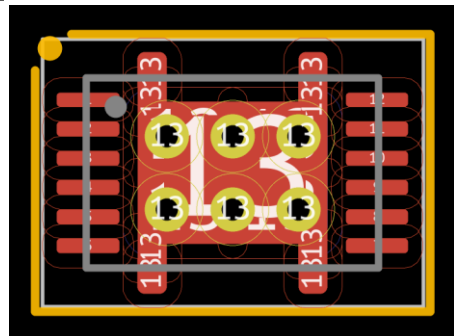


PWSO-N12 footprint.

Texas Instruments PDSO-N12 footprint

Footprint name:

Texas_S-PDSO-N12



PDSO-N12 footprint.

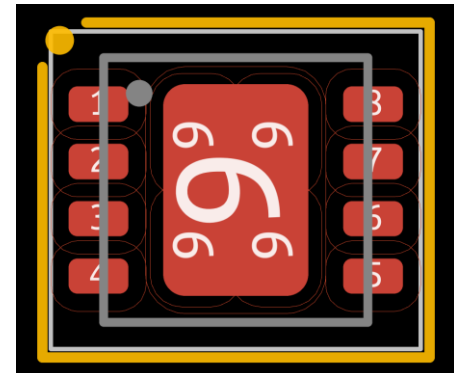
Texas Instruments PVSON-N8 footprints

Footprint names:

Texas_S-PVSON-N8

Texas_S-PVSON-N8_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



PVSON-N8 footprint.

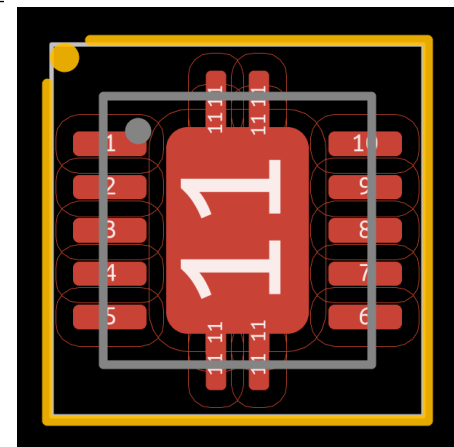
Texas Instruments PVSON-N10 footprints

Footprint names:

Texas_S-PVSON-N10

Texas_S-PVSON-N10_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



PVSON-N10 footprint.

Texas Instruments PWSO-N8 footprints

Footprint names:

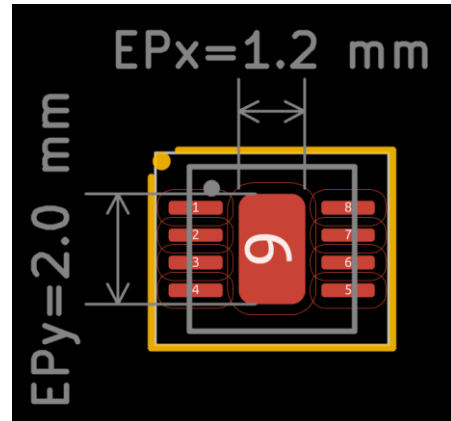
Texas_S-PWSO-N8_EP1.2x2mm

Texas_S-PWSO-N8_EP1.2x2mm_ThermalVias

Texas_S-PWSO-N8_EP2.2x3mm

Texas_S-PWSO-N8_EP2.2x3mm_ThermalVias

"ThermalVias" option denotes footprints with pre-placed heat-sinking vias.



PWSO-N8 footprint with exposed pad size indicated.

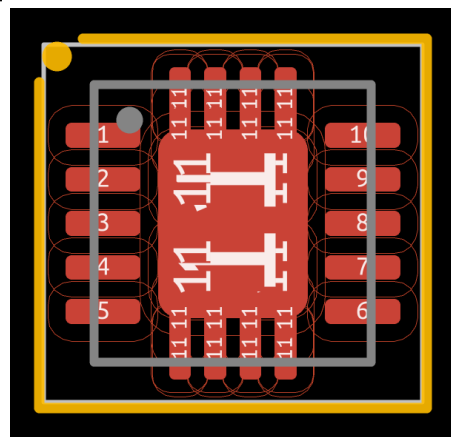
Texas Instruments PWSO-N10 footprints

Footprint names:

Texas_S-PWSO-N10

Texas_S-PWSO-N10_ThermalVias

"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.

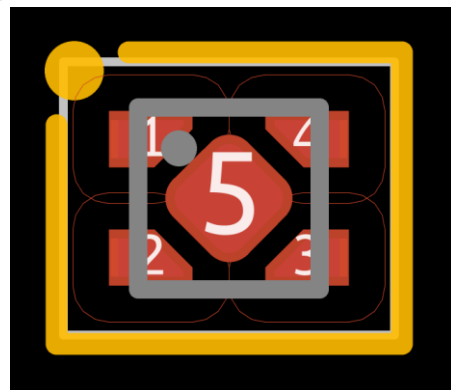


PWSO-N10 footprint.

Texas Instruments X2SON-4 footprint

Footprint name:

Texas_X2SON-4_1x1mm_P0.65mm

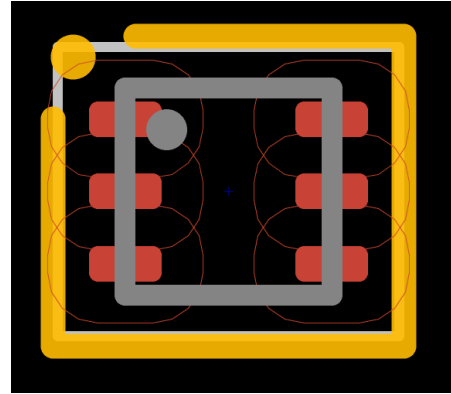


X2SON-4 footprint.

Texas Instruments X2SON-6 footprint

Footprint name:

Texas_X2SON-6_1x1mm_P0.35mm

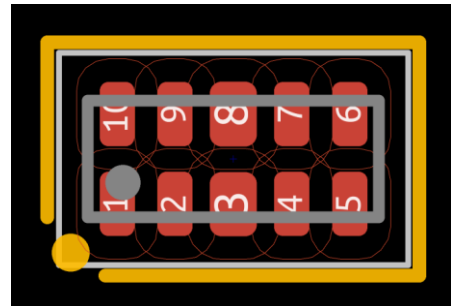


X2SON-6 footprint.

USON-10 package footprint

Footprint name:

USON-10_2.5x1.0mm_P0.5mm

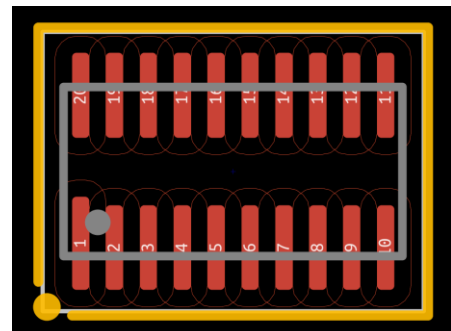


USON-10 footprint.

USON-20 package footprint

Footprint name:

USON-20_2x4mm_P0.4mm

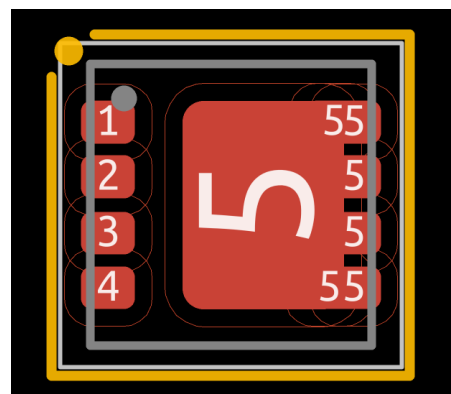


USON-20 footprint.

VSON-8 package footprint

Footprint name:

VSON-8_3.3x3.3mm_P0.65mm_NexFET



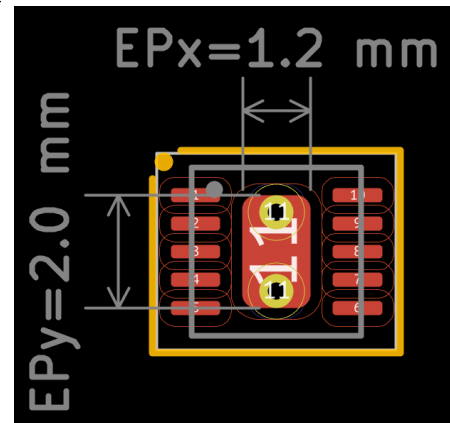
VSON-8 footprint.

VSON-10 footprints

Footprint names:

VSON-10-1EP_3x3mm_P0.5mm_EP1.2x2mm
 VSON-10-1EP_3x3mm_P0.5mm_EP1.2x2mm_ThermalVias
 VSON-10-1EP_3x3mm_P0.5mm_EP1.65x2.4mm
 VSON-10-1EP_3x3mm_P0.5mm_EP1.65x2.4mm_ThermalVias

“ThermalVias” option denotes footprints with pre-placed heat-sinking vias.

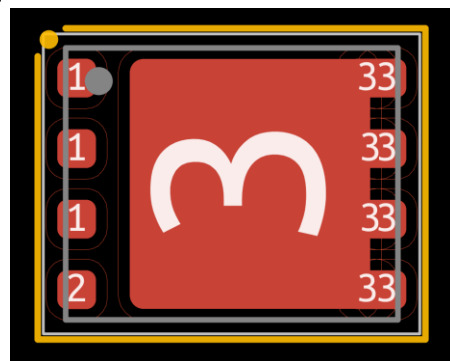


VSON-10 “ThermalVias” footprint with exposed pad size indicated.

VSONP-8 package footprint

Footprint name:

VSONP-8-1EP_5x6_P1.27mm



VSONP-8 footprint.

WSON package footprints

Footprint count: 24

Footprint naming convention:

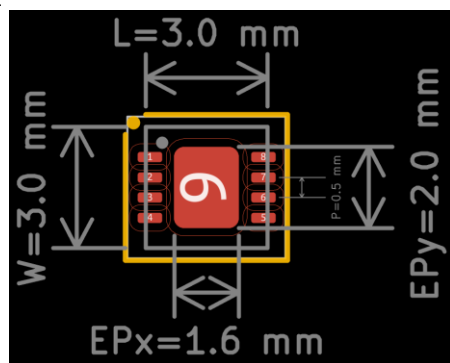
WSON-<pin count>-<optional: exposed pad count>
 _<length>x<width>mm_P<pin pitch>mm_<optional:
 exposed pad size>-<optional: PullBack>-<optional:
 ThermalVias>

“ThermalVias” option denotes footprints with pre-placed heat-sinking vias.

“PullBack” option denotes footprints with shorter pads.

Name examples:

WSON-6_1.5x1.5mm_P0.5mm
 WSON-8-1EP_2x2mm_P0.5mm_EP0.9x1.6mm
 WSON-10-1EP_2x3mm_P0.5mm_EP0.84x2.4mm_ThermalVias
 WSON-8-1EP_3x2.5mm_P0.5mm_EP1.2x1.5mm_PullBack
 WSON-8-1EP_3x2.5mm_P0.5mm_EP1.2x1.5mm_PullBack_ThermalVias

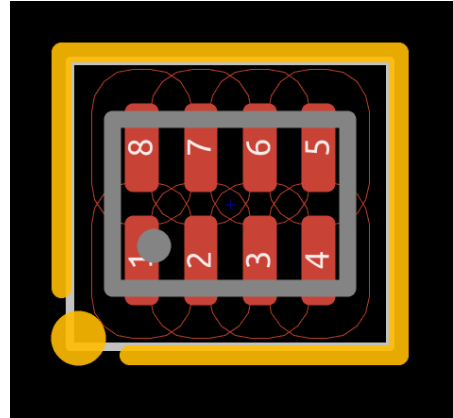


WSON footprint with its dimensions indicated.

X2SON-8 package footprint

Footprint name:

X2SON-8_1.4x1mm_P0.35mm



X2SON-8 footprint.

3.22. SO Package Library

This library contains footprints for Small Outline IC packages (SO, SOIC, SOP, SSOP, TSSOP, MSOP etc.).

Silkscreen layer contains marks every 5 pins for some of the larger footprints.

Standard variant	
Folder name: Package_SO_AKL	
Footprint count:	298
Total footprints:	298

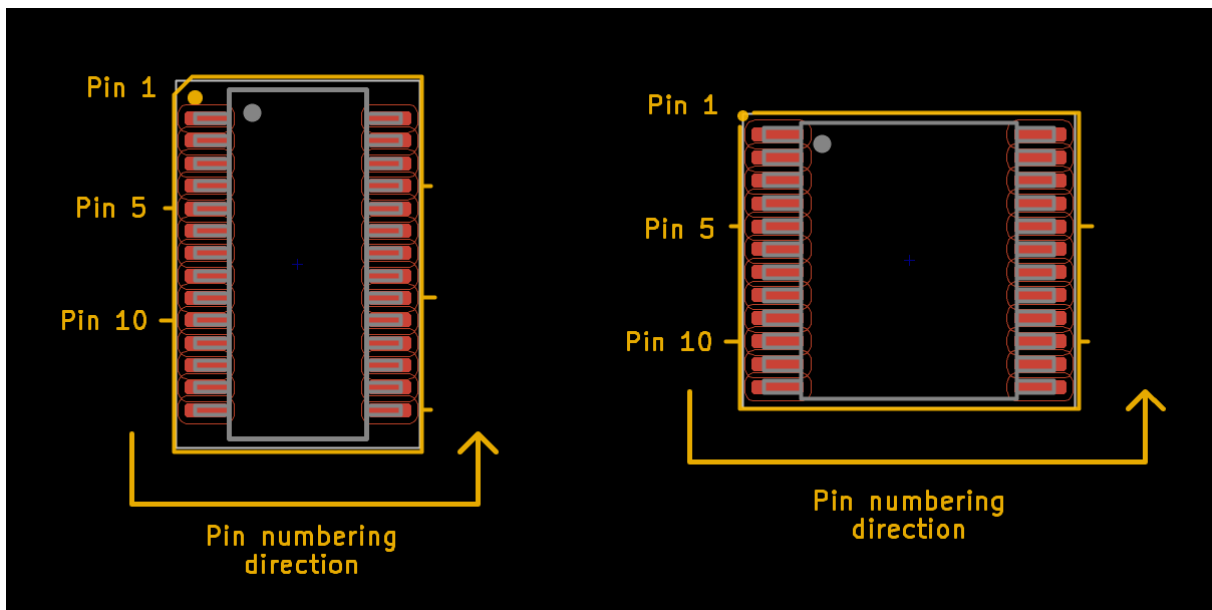
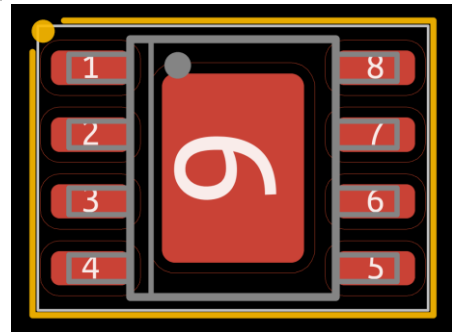


Figure 3.36. Two SO-style package footprints showcasing the pin number indicators.

Diodes PSOP-8 footprint

Footprint name:

Diodes_PSOP-8



PSOP-8 footprint.

Diodes SO-8EP footprint

Footprint name:

Diodes_SO-8EP

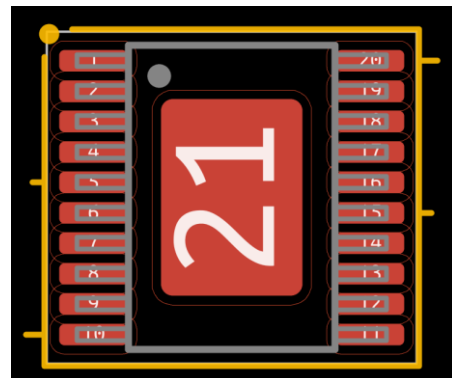


SO-8EP footprint.

ETSSOP-20 footprint

Footprint name:

ETSSOP-20-1EP_4.4x6.5mm_P0.65mm_EP3x4.2mm



ETSSOP-20 footprint.

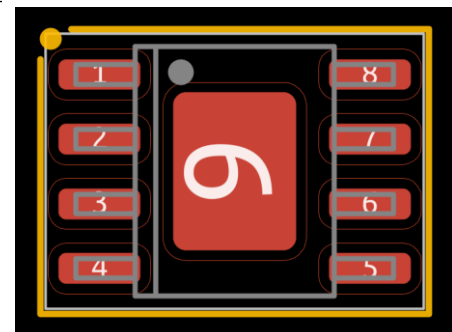
HSOP-8 footprints

Footprint names:

HSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.41x3.1mm

HSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.41x3.1mm
_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



HSOP-8 footprint.

HSOP-20 footprints

Footprint names:

HSOP-20-1EP_11.0x15.9mm_P1.27mm_SlugDown

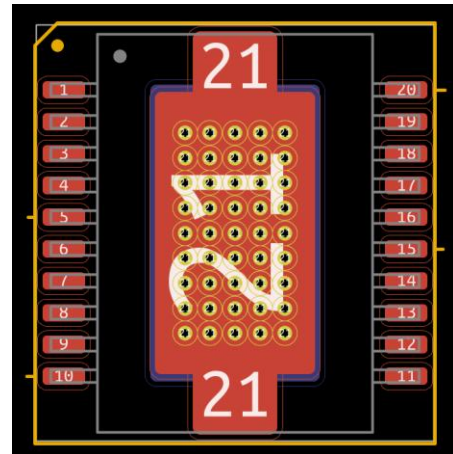
HSOP-20-1EP_11.0x15.9mm_P1.27mm_SlugDown_ThermalVias

HSOP-20-1EP_11.0x15.9mm_P1.27mm_SlugUp

“SlugDown” option denotes footprints with the thermal slug on the bottom, contacting the PCB.

“SlugUp” option denotes footprint for package variant with the thermal slug on the top side, facing away from the PCB.

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



HSOP-20 “ThermalVias” “SlugDown” footprint.

HSOP-36 footprints

Footprint names:

HSOP-36-1EP_11.0x15.9mm_P0.65mm_SlugDown

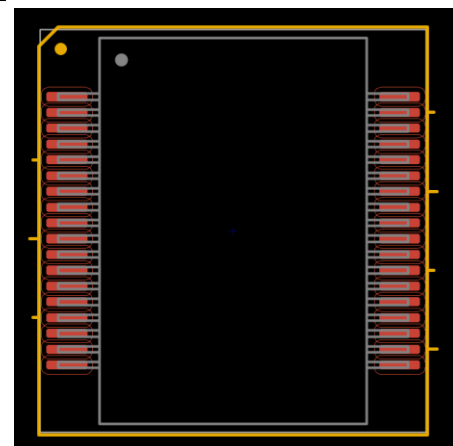
HSOP-36-1EP_11.0x15.9mm_P0.65mm_SlugDown_ThermalVias

HSOP-36-1EP_11.0x15.9mm_P0.65mm_SlugUp

“SlugDown” option denotes footprints with the thermal slug on the bottom, contacting the PCB.

“SlugUp” option denotes footprint for package variant with the thermal slug on the top side, facing away from the PCB.

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



HSOP-36 “SlugUp” footprint.

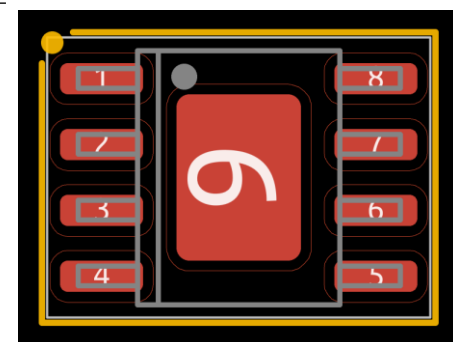
HTSOP-8 footprints

Footprint names:

HTSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.4x3.2mm

HTSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.4x3.2mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



HTSOP-8 footprint.

Heatsink Thin Shrink Small Outline Package (HTSSOP) footprints

Footprint count: 31

Footprint naming convention:

HTSSOP-<pin count>-<exposed pad count>**EP**
 <length>**x**<width>**mm****P**<pin pitch>**mm**<exposed pad size>
 <optional: soldermask opening size><optional: ThermalVias>

"ThermalVias" option denotes footprints with pre-placed heat-sinking vias.

Footprints with "Mask" have a smaller soldermask opening than EP copper.

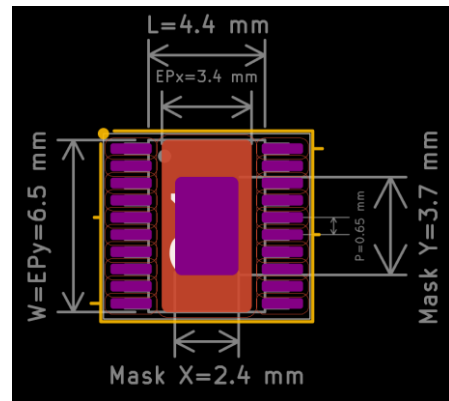
Name examples:

HTSSOP-16-1EP_4.4x5mm_P0.65mm_EP3.4x5mm

HTSSOP-28-1EP_4.4x9.7mm_P0.65mm_EP2.85x5.4mm_ThermalVias

HTSSOP-20-1EP_4.4x6.5mm_P0.65mm_EP3.4x6.5mm_Mask2.75x3.43mm

HTSSOP-24-1EP_4.4x7.8mm_P0.65mm_EP3.4x7.8mm_Mask2.4x4.68mm_ThermalVias



HTSSOP-20 "Mask" footprint with its dimensions indicated.

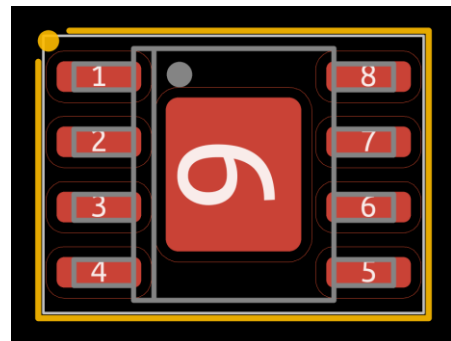
Infineon PG-DSO-8-27 footprints

Footprint names:

Infineon_PG-DSO-8-27_3.9x4.9mm_EP2.65x3mm

Infineon_PG-DSO-8-27_3.9x4.9mm_EP2.65x3mm
 _ThermalVias

"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.

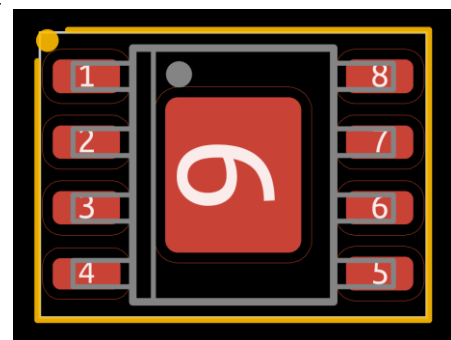


PG-DSO-8-27 footprint.

Infineon PG-DSO-8-43 footprint

Footprint name:

Infineon_PG-DSO-8-43



PG-DSO-8-43 footprint.

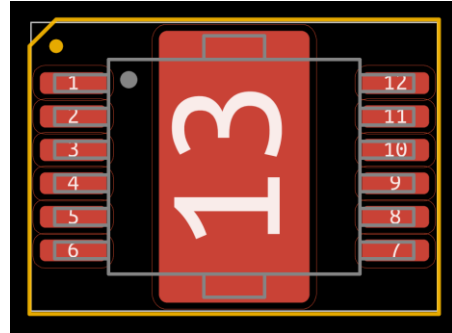
Infineon PG-DSO-12-9 footprints

Footprint names:

Infineon_PG-DSO-12-9

Infineon_PG-DSO-12-9_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



PG-DSO-12-9 footprint.

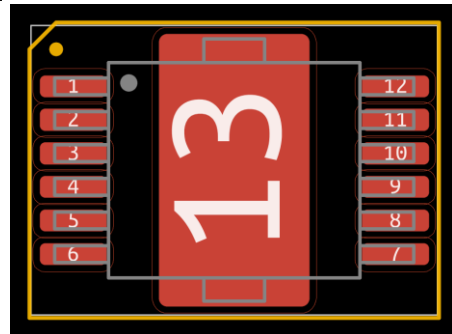
Infineon PG-DSO-12-11 footprints

Footprint names:

Infineon_PG-DSO-12-11

Infineon_PG-DSO-12-11_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



PG-DSO-12-11 footprint.

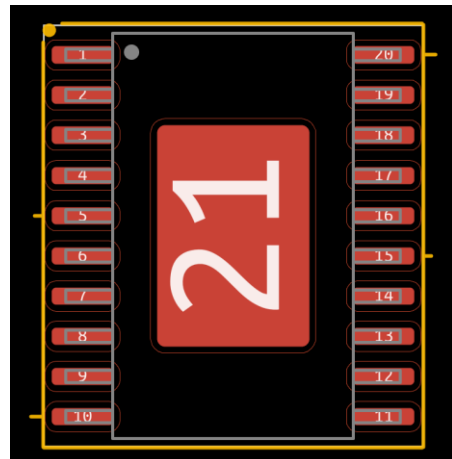
Infineon PG-DSO-20-30 footprints

Footprint names:

Infineon_PG-DSO-20-30

Infineon_PG-DSO-20-30_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

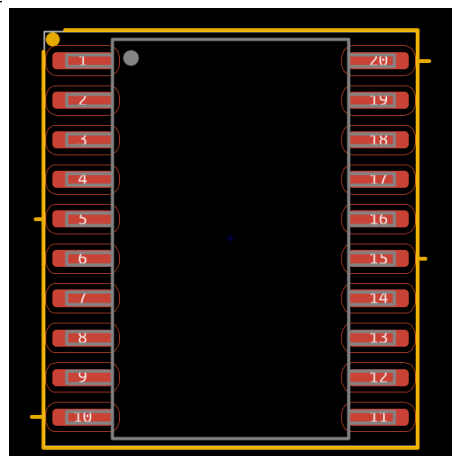


PG-DSO-20-30 footprint.

Infineon PG-DSO-20-32 footprint

Footprint name:

Infineon_PG-DSO-20-32

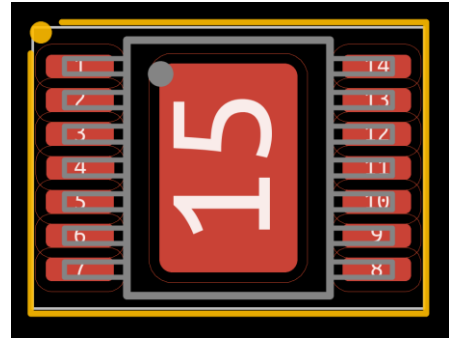


PG-DSO-20-32 footprint.

Infineon PG-TSDSO-14-22 footprint

Footprint name:

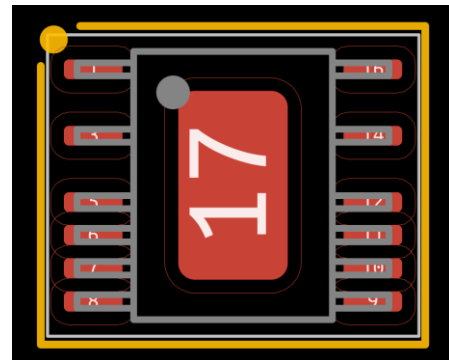
Infineon_PG-TSDSO-14-22

*PG-TSDSO-14-22 footprint.*

Linear Technology MSE16 (12) footprint

Footprint name:

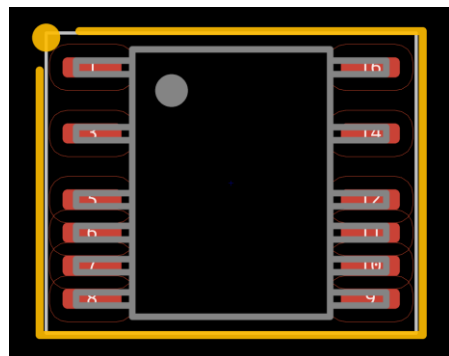
Linear_MSOP-12-16-1EP_3x4mm_P0.5mm

*MSE16 (12) footprint.*

Linear Technology MS16 (12) footprint

Footprint name:

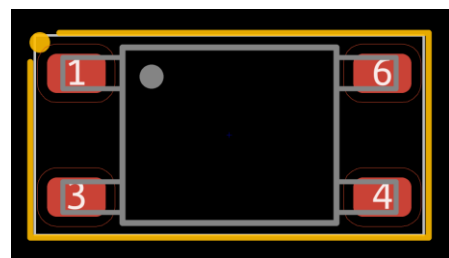
Linear_MSOP-12-16_3x4mm_P0.5mm

*MS16 (12) footprint.*

MFSOP-4 footprint

Footprint name:

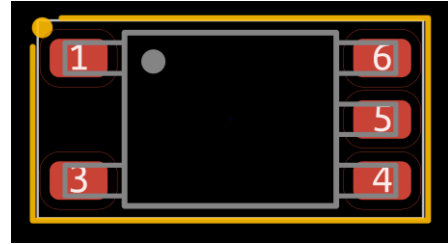
MFSOP6-4_4.4x3.6mm_P1.27mm

*MFSOP-4 footprint.*

MFSOP-5 footprint

Footprint name:

MFSOP6-5_4.4x3.6mm_P1.27mm



MFSOP-5 footprint.

Micro Small Outline Package (MSOP) footprints

Footprint count: 26

Footprint naming convention:

MSOP-<pin count>-<optional: exposed pad count>
 _<length>**x**<width>**mm**_P<pin pitch>**mm**_<optional:
 exposed pad size>_<optional: soldermask opening
 size>_<optional: ThermalVias>

“ThermalVias” option denotes footprints with pre-placed heat-sinking vias.

Footprints with “Mask” have a smaller soldermask opening than EP copper.

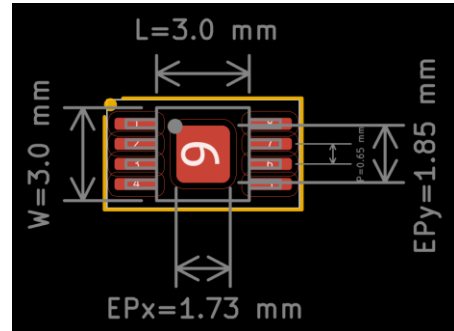
Name examples:

MSOP-8_3x3mm_P0.65mm

MSOP-10-1EP_3x3mm_P0.5mm_EP1.68x1.88mm

MSOP-12-1EP_3x4mm_P0.65mm_EP1.65x2.85mm_ThermalVias

MSOP-8-1EP_3x3_P0.65mm_EP2.5x3mm_Mask1.73x2.63mm

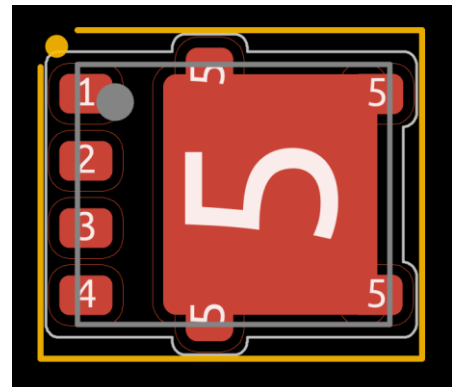


MSOP-8 footprint with its dimensions indicated.

OnSemi SO-8FL footprint

Footprint name:

ONsemi_SO-8FL_488AA

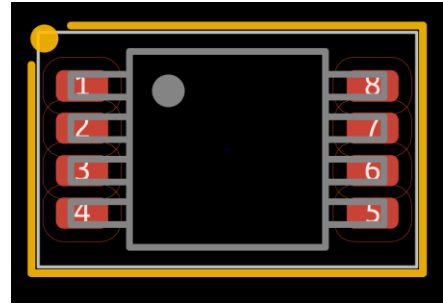


SO-8FL footprint.

OnSemi Micro8 footprint

Footprint name:

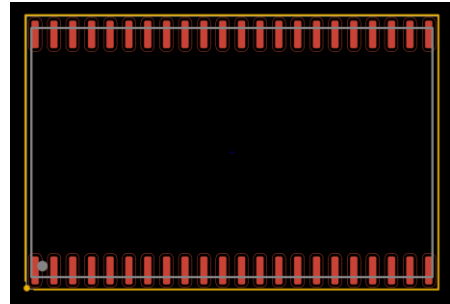
OnSemi_Micro8

*Micro8 footprint.*

PSOP-44 footprint

Footprint name:

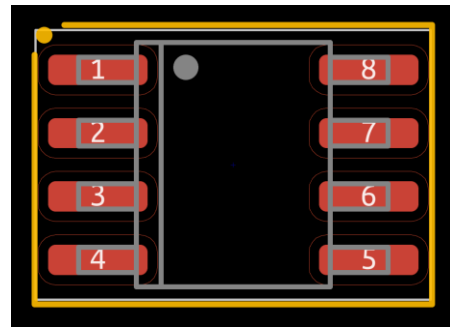
PSOP-44_16.9x27.17mm_P1.27mm

*PSOP-44 footprint.*

Power Integrations SO-8 footprint

Footprint name:

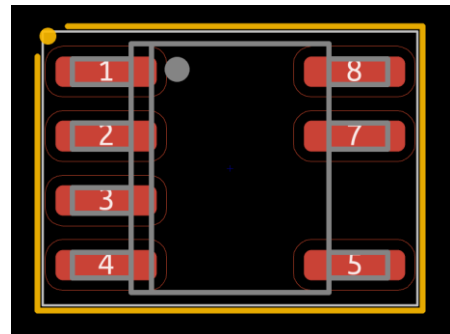
PowerIntegrations_SO-8

*SO-8 footprint.*

Power Integrations SO-8B footprint

Footprint name:

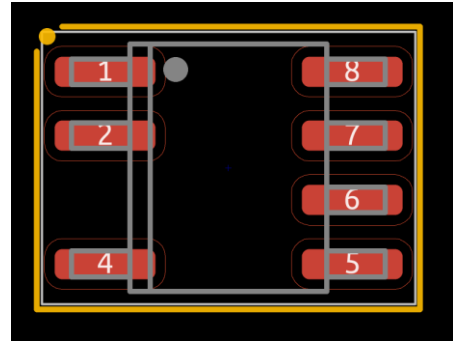
PowerIntegrations_SO-8B

*SO-8B footprint.*

Power Integrations SO-8C footprint

Footprint name:

PowerIntegrations_SO-8C

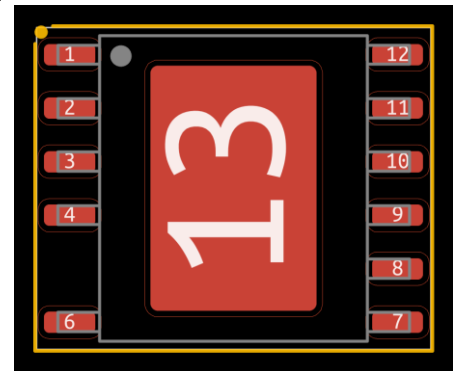


SO-8C footprint.

Power Integrations eSOP-12B footprint

Footprint name:

PowerIntegrations_eSOP-12B

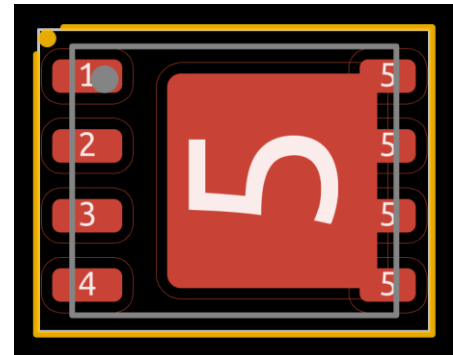


eSOP-12B footprint.

PowerPAK SO-8 footprint

Footprint name:

PowerPAK_SO-8_Single

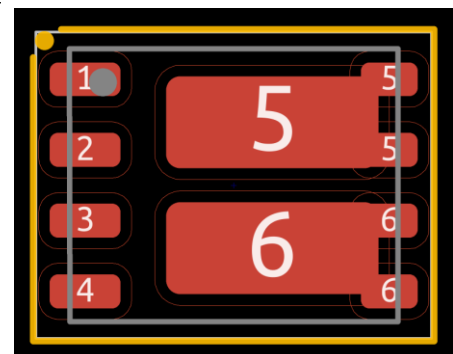


PowerPAK SO-8 footprint.

PowerPAK SO-8 Dual footprint

Footprint name:

PowerPAK_SO-8_Dual



PowerPAK SO-8 Dual footprint.

Quarter Size Outline Package (QSOP) footprints

Footprint count: 3

Footprint naming convention:

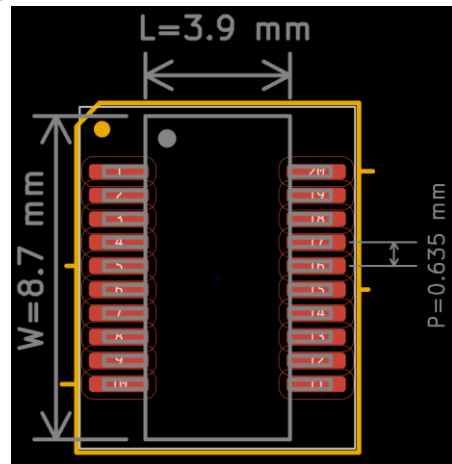
QSOP-<pin count>_<length>x<width>mm
_P<pin pitch>mm

Footprint names:

QSOP-16_3.9x4.9mm_P0.635mm

QSOP-20_3.9x8.7mm_P0.635mm

QSOP-24_3.9x8.7mm_P0.635mm

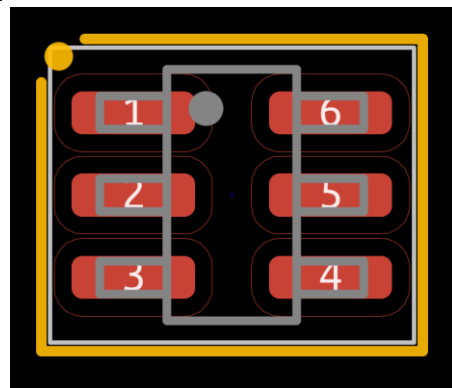


QSOP-20 footprint with its dimensions indicated.

SC-74-6 footprint

Footprint name:

SC-74-6_1.5x2.9mm_P0.95mm



SC-74-6 footprint.

Small Outline (SO) footprints

Footprint count: 28

Footprint naming convention:

SO-<pin count>_<length>x<width>mm
P<pin pitch>mm<optional: _Wide>

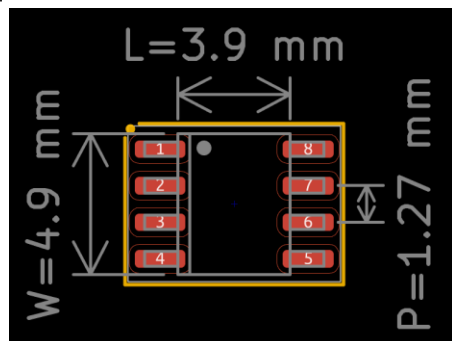
“Wide” option denotes footprints with longer pins for better high voltage clearance.

Name examples:

SO-5_4.4x3.6mm_P1.27mm

SO-6_6.8x4.6mm_P1.27mm_Wide

SO-14_5.3x10.2mm_P1.27mm



SO-8 footprint with its dimensions indicated.

Small Outline Integrated Circuit (SOIC) footprints

Footprint count: 32

Footprint naming convention:

SOIC-<pin count> <optional: W for wide package> -
 <optional: N – pin count for packages with reduced pins>
 <length>**x**<width>**mm** **P**<pin pitch>**mm**_<optional:
 exposed pad size>_<optional: soldermask opening
 size>_<optional: ThermalVias>

“ThermalVias” option denotes footprints with pre-placed heat-sinking vias.

Footprints with “Mask” have a smaller soldermask opening than EP copper.

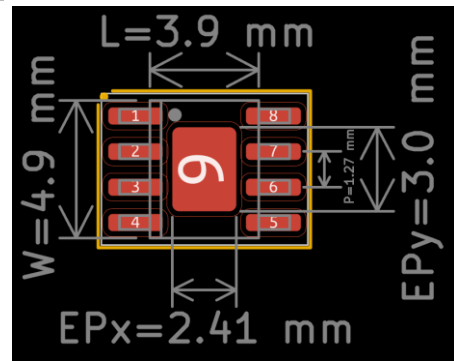
Name examples:

SOIC-4_4.55x2.6mm_P1.27mm

SOIC-N7_3.9x4.9mm_P1.27mm

SOIC-14W_7.5x9mm_P1.27mm

SOIC-8-1EP_3.9x4.9mm_P1.27mm_EP2.29x3mm_ThermalVias

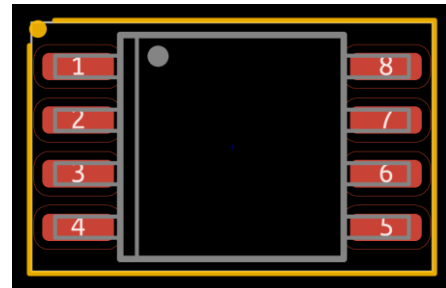


SOIC-8 footprint with its dimensions indicated.

Microchip SOJJ-8 footprint

Footprint name:

SOJJ-8_5.3x5.3mm_P1.27mm

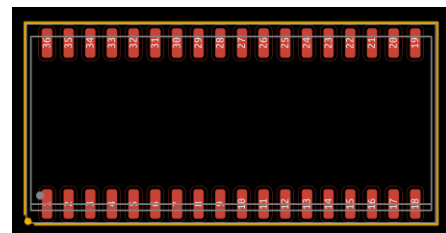


SOJJ-8 footprint.

SOJ-36 footprint

Footprint name:

SOJ-36_10.16x23.49_P1.27mm



SOJ-36 footprint.

Small Outline Package (SOP) footprints

Footprint count: 12

Footprint naming convention:

SOP-<pin count>_<optional: exposed pad count>_<length>**x**<width>**mm**_<optional: exposed pad size>_<optional: ThermalVias>**P**<pin pitch>**mm**

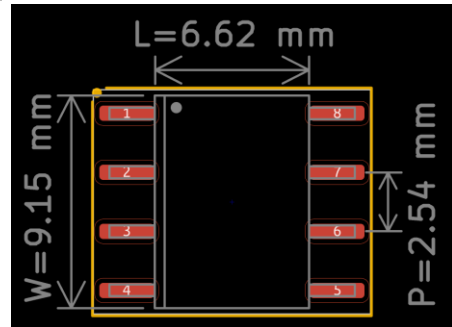
“ThermalVias” option denotes footprints with pre-placed heat-sinking vias.

Name examples:

SOP-8_3.76x4.96mm_P1.27mm

SOP-24_7.5x15.4mm_P1.27mm

SOP-8-1EP_4.57x4.57mm_P1.27mm_EP4.57x4.45mm_ThermalVias



SOP-8 footprint with its dimensions indicated.

Stretched Small Outline (SSO) footprints

Footprint count: 8

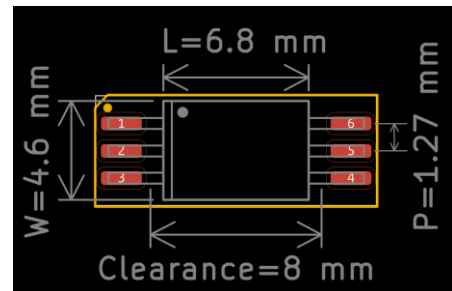
Footprint naming convention:

SSO-<pin count>_<length>**x**<width>**mm**_<optional: exposed pad size>_<optional: ThermalVias>**P**<pin pitch>**mm**
<optional: exposed pad size><optional: ThermalVias>**Clearance**<pad-to-pad clearance>**mm**

Name examples:

SSO-4_6.7x5.1mm_P2.54mm_Clearance8mm

SSO-8_9.6x6.3mm_P1.27mm_Clearance10.5mm



SSO-6 footprint with its dimensions indicated.

Shrink Small Outline Package (SSOP) footprints

Footprint count: 22

Footprint naming convention:

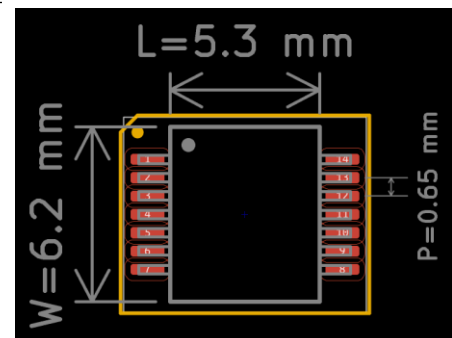
SSOP-<pin count>_<length>**x**<width>**mm**
<optional: exposed pad size><optional: ThermalVias>**P**<pin pitch>**mm**

Name examples:

SSOP-8_2.95x2.8mm_P0.65mm

SSOP-20_3.9x8.7mm_P0.635mm

SSOP-44_5.3x12.8mm_P0.5mm

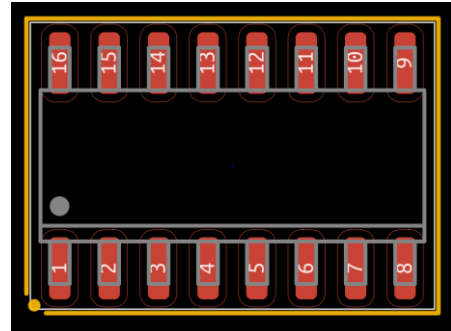


SSOP-14 footprint with its dimensions indicated.

STC SOP-16 footprint

Footprint name:

STC_SOP-16_3.9x9.9mm_P1.27mm

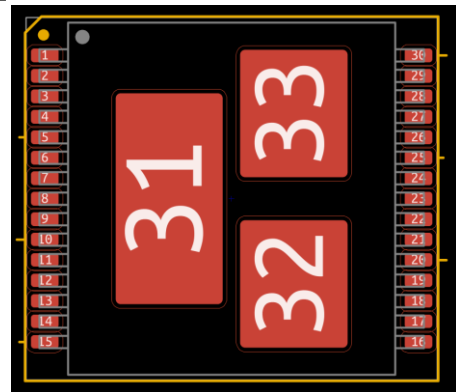


SOP-16 footprint.

ST Microelectronics MultiPowerSO-30 footprint

Footprint name:

ST_MultiPowerSO-30



MultiPowerSO-30 footprint.

ST Microelectronics PowerSSO-24 footprints

Footprint names:

ST_PowerSSO-24_SlugDown

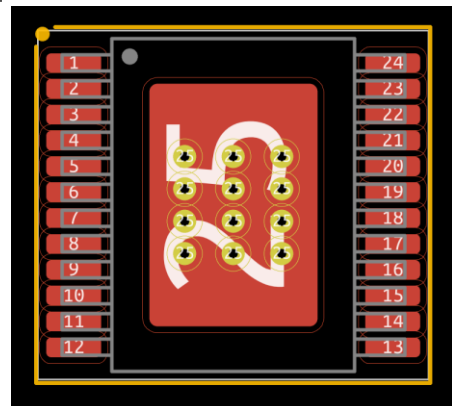
ST_PowerSSO-24_SlugDown_ThermalVias

ST_PowerSSO-24_SlugUp

“SlugDown” option denotes footprints with the thermal slug on the bottom, contacting the PCB.

“SlugUp” option denotes footprint for package variant with the thermal slug on the top side, facing away from the PCB.

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



PowerSSO-24 “ThermalVias” “SlugDown” footprint.

ST Microelectronics PowerSSO-36 footprints

Footprint names:

ST_PowerSSO-36_SlugDown

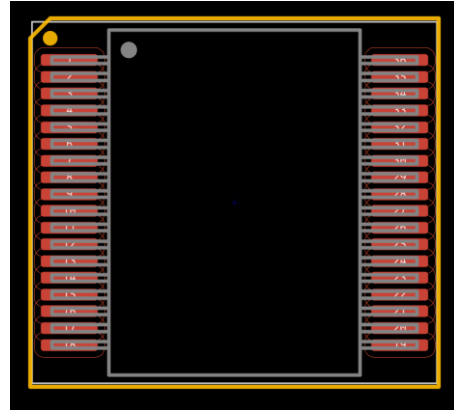
ST_PowerSSO-36_SlugDown_ThermalVias

ST_PowerSSO-36_SlugUp

“SlugDown” option denotes footprints with the thermal slug on the bottom, contacting the PCB.

“SlugUp” option denotes footprint for package variant with the thermal slug on the top side, facing away from the PCB.

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



PowerSSO-36 “SlugUp” footprint.

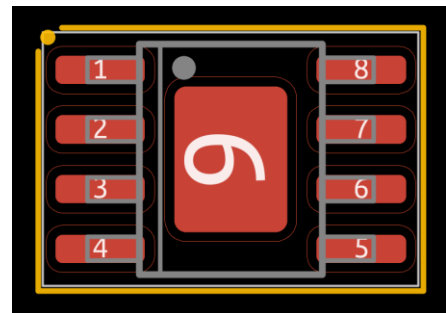
Texas Instruments SO-PowerPAD-8 footprints

Footprint names:

TI_SO-PowerPAD-8

TI_SO-PowerPAD-8_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.

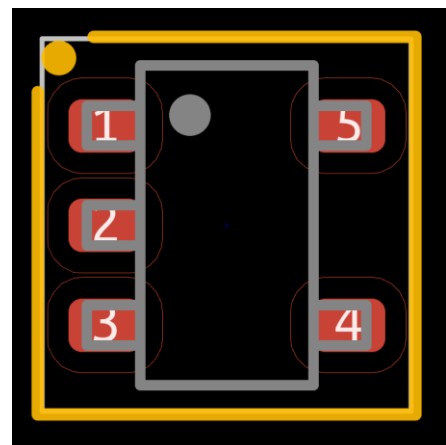


PowerPAD-8 footprint.

TSOP-5 footprint

Footprint name:

TSOP-5_1.65x3.05mm_P0.95mm

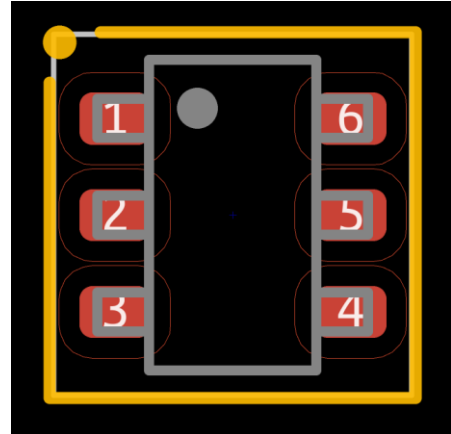


TSOP-5 footprint.

TSOP-6 footprint

Footprint name:

TSOP-6_1.65x3.05mm_P0.95mm



TSOP-6 footprint.

Thin Small Outline Package Type 1 (TSOP-I) footprints

Footprint count: 6

Footprint naming convention:

TSOP-I-<pin count>_<length>x<width>mm

P<pin pitch>mm<optional: Reverse>

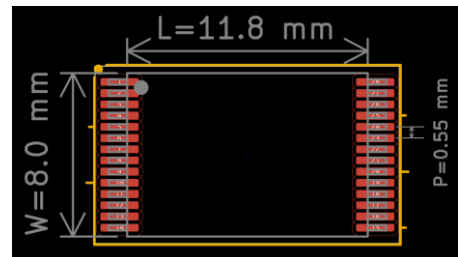
"Reverse" option refers to footprints for parts with leads bent backwards. Pin counting is reversed, as indicated by an arrow on silkscreen layer.

Name examples:

TSOP-I-28_11.8x8mm_P0.55mm

TSOP-I-32_18.4x8mm_P0.5mm_Reverse

TSOP-I-56_18.4x14mm_P0.5mm



TSOP-I-28 footprint with its dimensions indicated.

Thin Small Outline Package Type 2 (TSOP-II) footprints

Footprint count: 3

Footprint naming convention:

TSOP-II-<pin count>_<length>x<width>mm

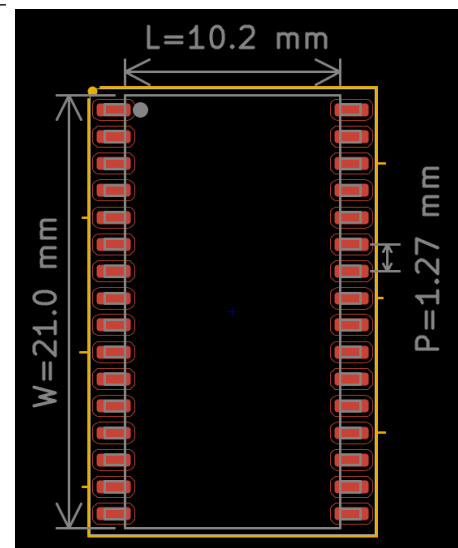
_P<pin pitch>mm

Footprint names:

TSOP-II-32_21.0x10.2mm_P1.27mm

TSOP-II-44_10.16x18.41mm_P0.8mm

TSOP-II-54_22.2x10.16mm_P0.8mm



TSOP-II-32 footprint with its dimensions indicated.

Thin Shrink Small Outline Package (TSSOP) footprints

Footprint count: 60

Footprint naming convention:

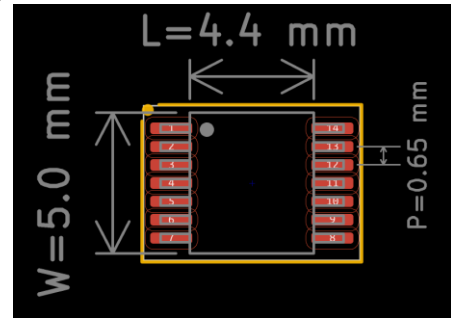
TSSOP-<pin count> <optional: exposed pad count>
<length>**x**<width>**mm**<pin pitch>**mm**_<optional:
exposed pad size>

Name examples:

TSSOP-8_4.4x3mm_P0.65mm

TSSOP-14-1EP_4.4x5mm_P0.65mm_EP2.31x2.46mm

TSSOP-80_6.1x17mm_P0.4mm



TSSOP-14 footprint with its dimensions indicated.

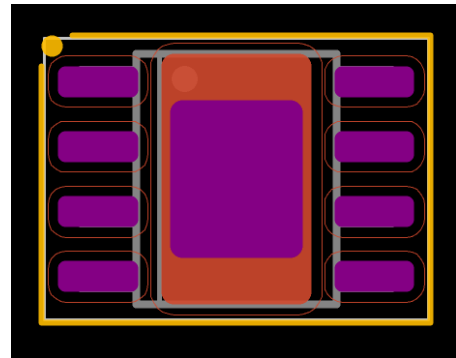
Texas Instruments HSOP-8 footprints

Footprint names:

Texas_HSOP-8-1EP_3.9x4.9mm_P1.27mm

Texas_HSOP-8-1EP_3.9x4.9mm_P1.27mm_ThermalVias

“ThermalVias” option denotes footprint with pre-placed heat-sinking vias.



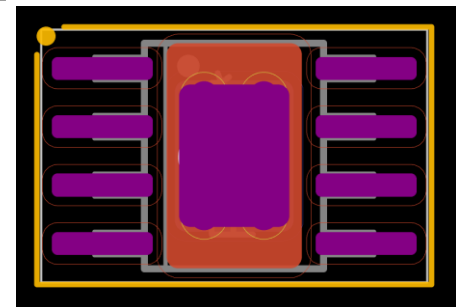
HSOP-8 footprint with visible soldermask layer.

Texas Instruments HTSOP-8 footprint

Footprint names:

Texas HTSOP-8-1EP_3.9x4.9mm_P1.27mm

_EP2.95x4.9mm_Mask2.4x3.1mm_ThermalVias

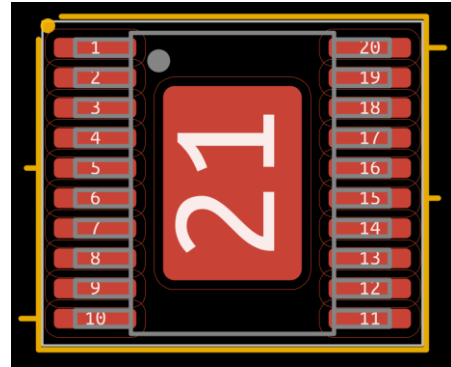


HTSOP-8 footprint with visible soldermask layer.

Texas Instruments PWP0020A footprint

Footprint name:

Texas_PWP0020A



PWP0020A footprint.

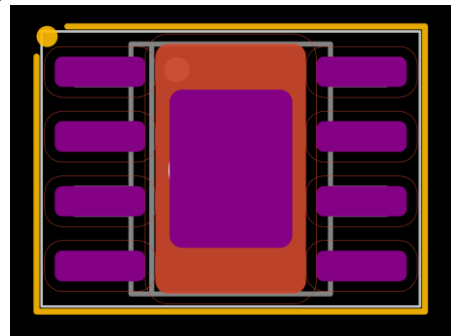
Texas Instruments R-PDSO-G8 footprints

Footprint names:

Texas_R-PDSO-G8_EP2.95x4.9mm_Mask2.4x3.1mm

Texas_R-PDSO-G8_EP2.95x4.9mm_Mask2.4x3.1mm
_ThermalVias

"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.

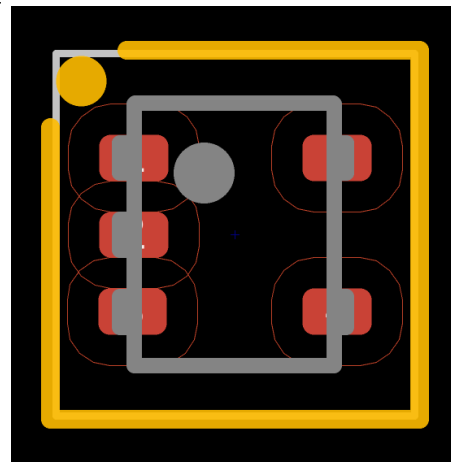


R-PDSO-G8 footprint with visible soldermask layer.

Texas Instruments R-PDSO-N5 footprint

Footprint name:

Texas_R-PDSO-N5



R-PDSO-N5 footprint.

Very Small Outline (VSO) footprints

Footprint count: 2

Footprint naming convention:

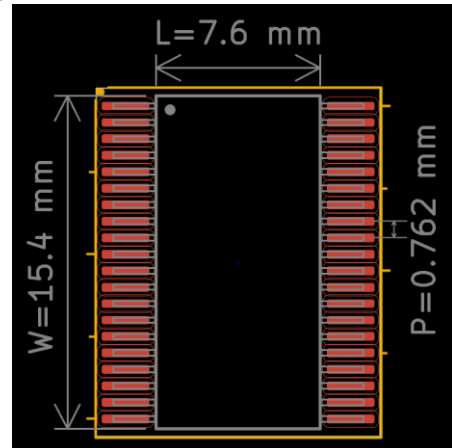
VSO-<pin count>_<length>x<width>**mm**

_P<pin pitch>**mm**

Footprint names:

VSO-40_7.6x15.4mm_P0.762mm

VSO-56_11.1x21.5mm_P0.75mm



VSO-40 footprint with its dimensions indicated.

Very thin Shrink Small Outline Package (VSSOP) footprints

Footprint count: 4

Footprint naming convention:

VSSOP-<pin count>_<length>x<width>**mm**

_P<pin pitch>**mm**

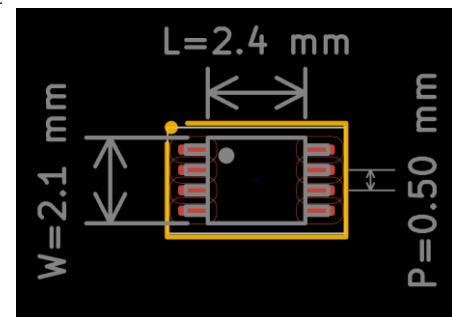
Footprint names:

VSSOP-8_2.3x2mm_P0.5mm

VSSOP-8_2.4x2.1mm_P0.5mm

VSSOP-8_3.0x3.0mm_P0.65mm

VSSOP-10_3x3mm_P0.5mm

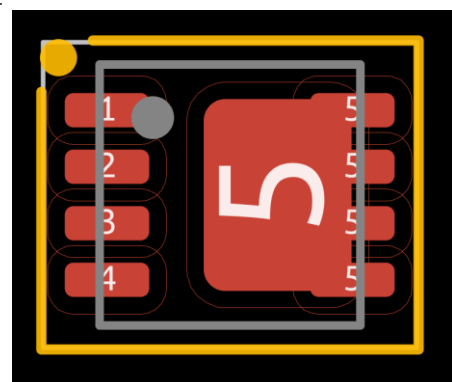


VSSOP-8 footprint with its dimensions indicated.

Vishay PowerPAK 1212-8 footprint

Footprint name:

Vishay_PowerPAK_1212-8_Single

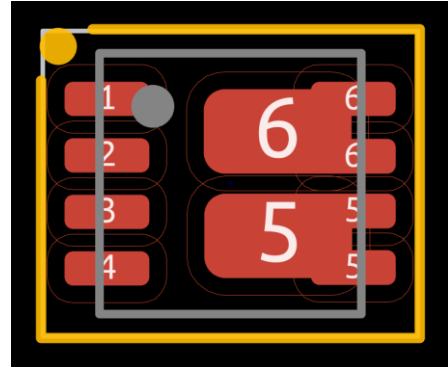


PowerPAK 1212-8 footprint.

Vishay PowerPAK 1212-8 "Dual" footprint

Footprint name:

Vishay_PowerPAK_1212-8_Dual

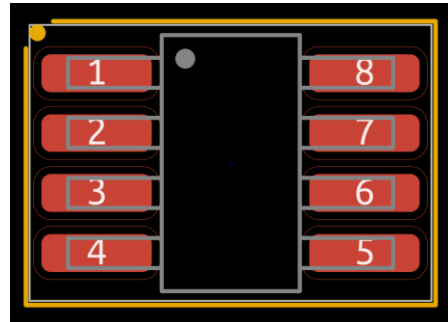


PowerPAK 1212-8 "Dual" footprint.

Zetex SM8 footprint

Footprint name:

Zetex_SM8



SM8 footprint.

3.23. SMD TO/SOT Package Library

This library contains footprints Surface Mount Transistor Outline (TO) and Small Outline Transistor (SOT) packages.

Standard variant	
Folder name: Package_TO_SOT_SMD_AKL	
Footprint count:	139
Total footprints:	139

ATPAK-2 footprint

Footprint name:

ATPAK-2

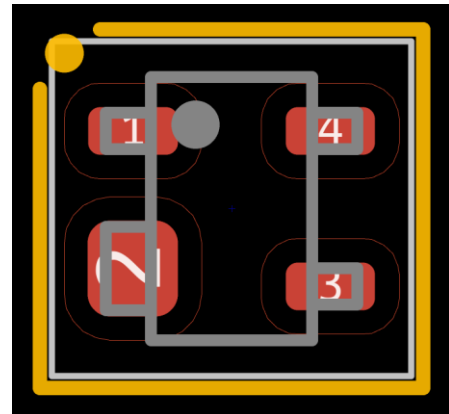


ATPAK-2 footprint.

Analog Devices KS-4 footprint

Footprint name:

Analog_KS-4

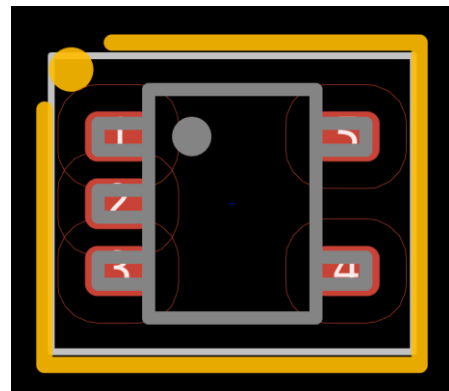


KS-4 footprint.

Diodes SOT-553 footprint

Footprint name:

Diodes_SOT-553

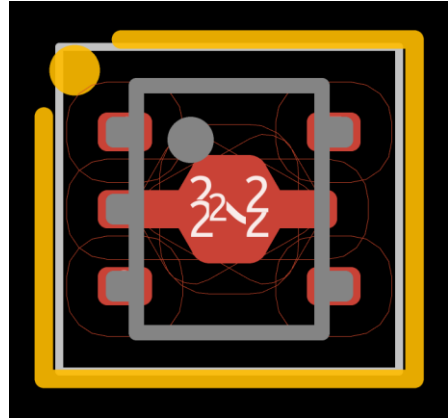


SOT-553 footprint.

ROHM Semiconductor HVSO5 footprint

Footprint name:

HVSO5



HVSO5 footprint.

ROHM Semiconductor HVSO6 footprint

Footprint name:

HVSO6



HVSO6 footprint.

Infineon HDSOP-10-1 footprint

Footprint name:

Infineon_PG-HDSOP-10-1



HDSOP-10-1 footprint.

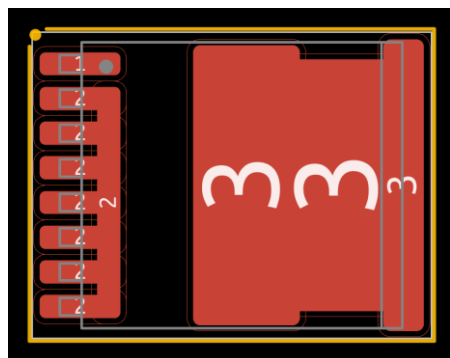
Infineon HSOF-8-1 footprints

Footprint names:

Infineon_PG-HSOF-8-1

Infineon_PG-HSOF-8-1_ThermalVias

“ThermalVias” option denotes a footprint with pre-placed heat-sinking vias.



HSOF-8-1 footprint.

Infineon HSOF-8-2 footprints

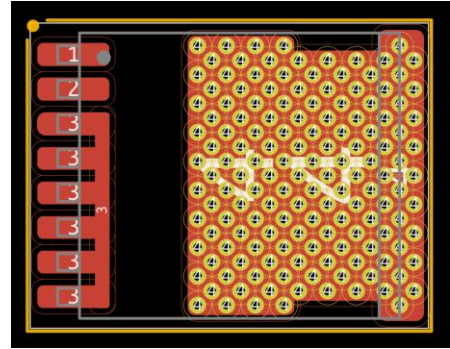
Footprint names:

Infineon_PG-HSOF-8-2

Infineon_PG-HSOF-8-2_ThermalVias

Infineon_PG-HSOF-8-2_ThermalVias2

“ThermalVias” and “ThermalVias2” option denotes a footprint with pre-placed heat-sinking vias.

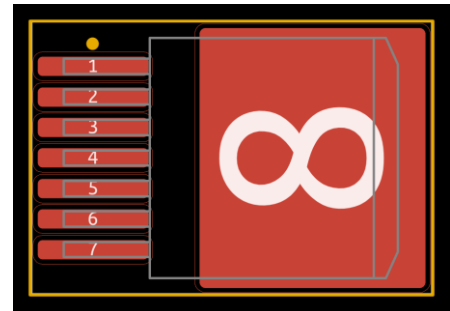


HSOF-8-2 “ThermalVias2” footprint.

Infineon PG-TO-220-7-4 footprint

Footprint name:

Infineon_PG-TO-220-7Lead_TabPin8

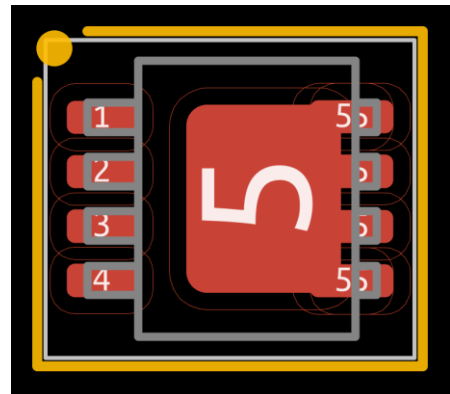


PG-TO-220-7-4 footprint.

SOT-1210 (LFPAK33) footprint

Footprint name:

LFPAK33



LFPAK33 footprint.

SOT-669 (LFPAK56) footprint

Footprint name:

LFPAK56

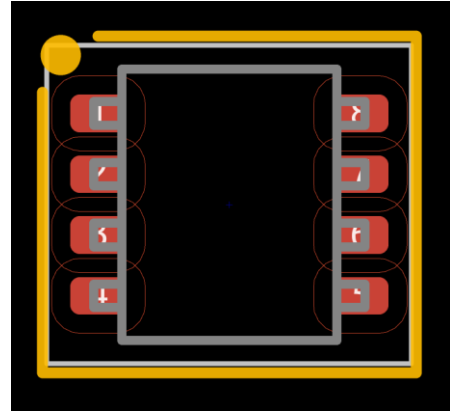


LFPAK56 footprint.

OnSemi ECH8 footprint

Footprint name:

OnSemi_ECH8

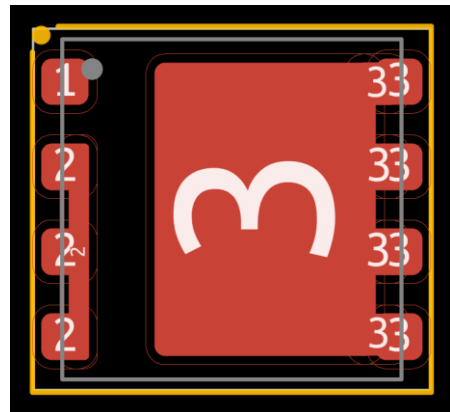


ECH-8 footprint.

PQFN 8x8mm footprint

Footprint name:

PQFN_8x8



PQFN footprint.

PowerMacro (M234) footprints

Footprint names:

PowerMacro_M234_BECE_NoHole

PowerMacro_M234_BECE_WithHole

PowerMacro_M234_NoHole

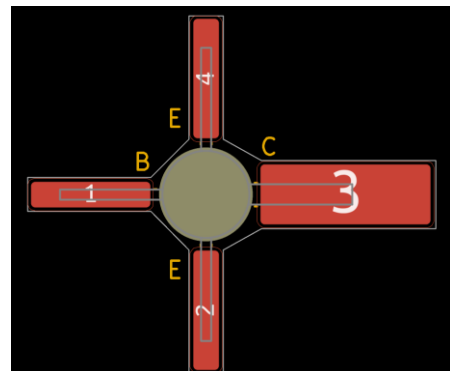
PowerMacro_M234_WithHole

"NoHole" option denotes footprints with no holes in the PCB.

"WithHole" option denotes footprints with a hole in the PCB that allow to achieve lower profile as part of the package sits recessed into the board.

String of letters (i. e. "BECE") denotes a footprint with pin designation marks on the silkscreen layer according to the order of the string (if B is first then letter B is printed next to the pin 1).

PowerMacro (M234) package is physically and functionally similar to the TO-50, although having a much thicker pin 3 allowing for higher power dissipation.

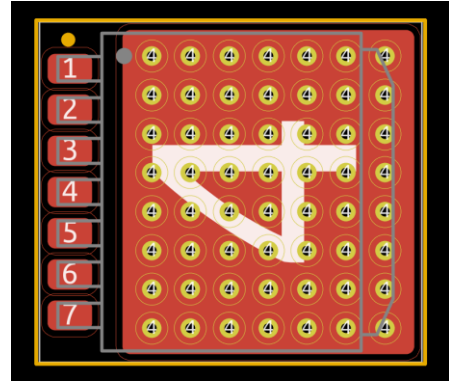


PowerMacro "BECE" "WithHole" footprint.

ROHM Semiconductor HRP7 footprint

Footprint name:

ROHM_HRP7



HRP7 footprint.

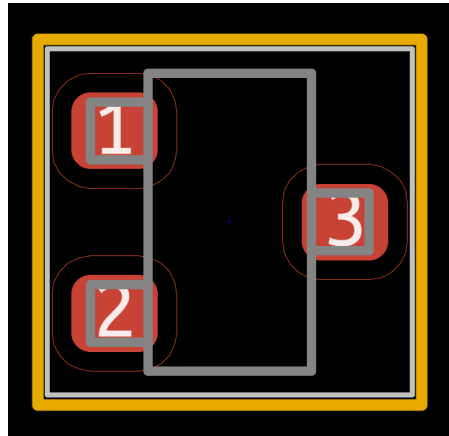
SC-59 footprints

Footprint names:

SC-59

SC-59_BigPads

"BigPads" option denotes a footprint enlarged pads.



SC-59 footprint.

SC-70-8 footprints

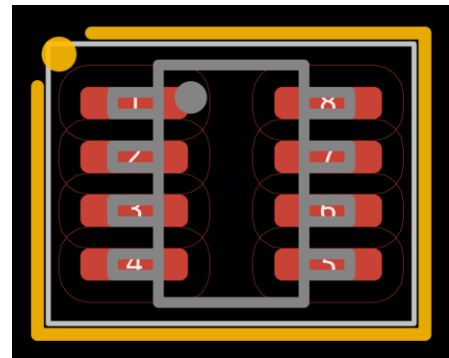
Footprint names:

SC-70-8

SC-70-8_BigPads

"BigPads" option denotes a footprint enlarged pads.

SC-70-8 is an 8-pin variant of the SC-70 package (also known as SOT-323)



SC-70-8 footprint.

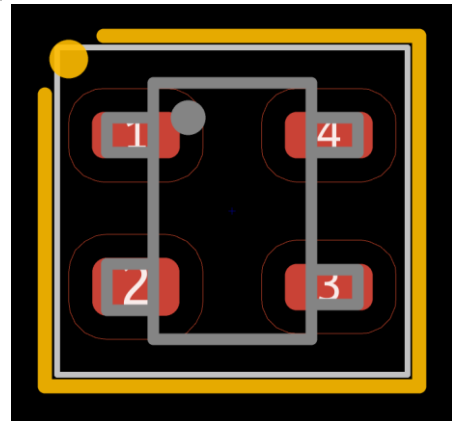
SC-82AA footprints

Footprint names:

SC-82AA

SC-82AA_BigPads

"BigPads" option denotes a footprint enlarged pads.



SC-82AA footprint.

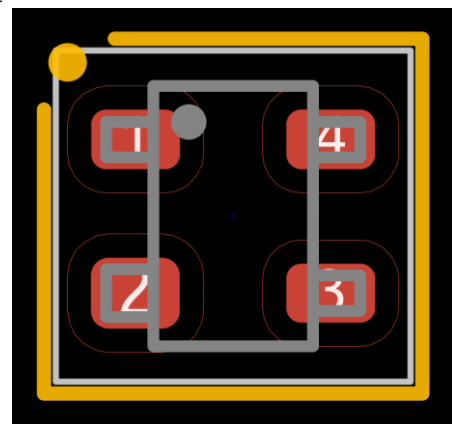
SC-82AB footprints

Footprint names:

SC-82AB

SC-82AB_BigPads

"BigPads" option denotes a footprint enlarged pads.



SC-82AB footprint.

SOT-23 footprints

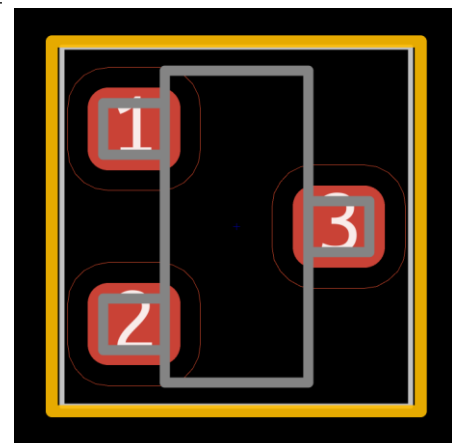
Footprint names:

SOT-23

SOT-23_BigPads

"BigPads" option denotes a footprint enlarged pads.

Industry standard SMD transistor package.



SOT-23 footprint.

SOT-23-5 footprints

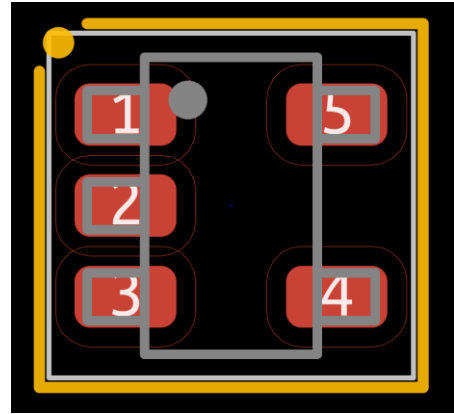
Footprint names:

SOT-23-5

SOT-23-5_BigPads

"BigPads" option denotes a footprint enlarged pads.

Variant of the SOT-23 package with 5 pins.



SOT-23-5 footprint.

SOT-23-6 footprints

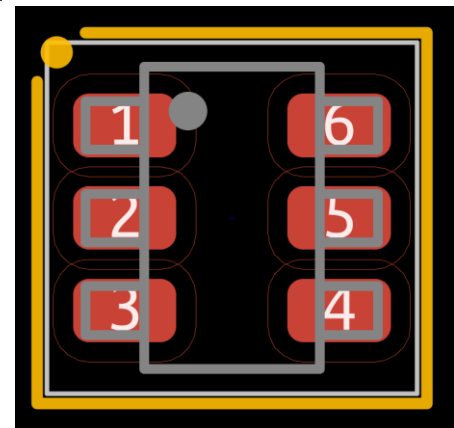
Footprint names:

SOT-23-6

SOT-23-6_BigPads

"BigPads" option denotes a footprint enlarged pads.

Variant of the SOT-23 package with 6 pins.



SOT-23-6 footprint.

SOT-23-8 footprints

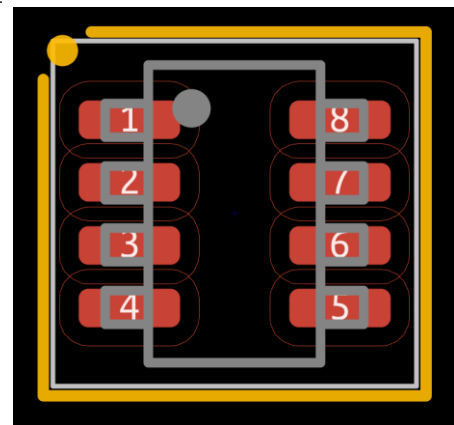
Footprint names:

SOT-23-8

SOT-23-8_BigPads

"BigPads" option denotes a footprint enlarged pads.

Variant of the SOT-23 package with 8 pins.



SOT-23-8 footprint.

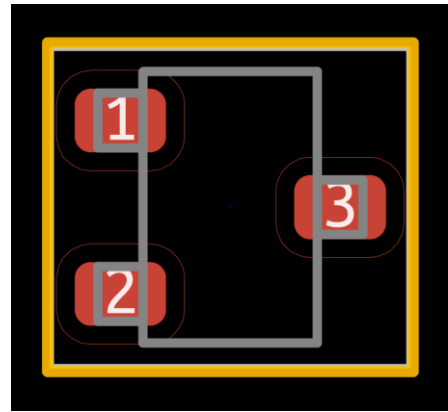
SOT-23W footprints

Footprint names:

SOT-23W
SOT-23W_BigPads

"BigPads" option denotes a footprint enlarged pads.

Wide variant of the SOT-23 package.



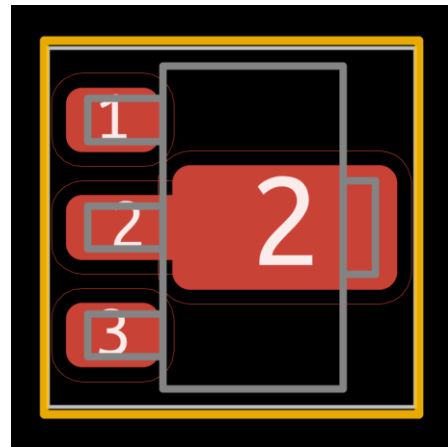
SOT-23W footprint.

SOT-89 footprints

Footprint names:

SOT-89-3
SOT-89-3_BigPads

"BigPads" option denotes a footprint enlarged pads.



SOT-89 footprint.

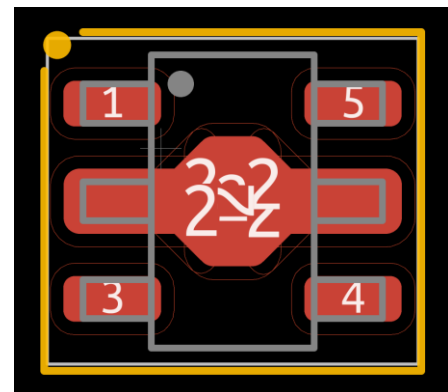
SOT-89-5 footprints

Footprint names:

SOT-89-5
SOT-89-5_BigPads

"BigPads" option denotes a footprint enlarged pads.

5-pin variant of the SOT-89 package.



SOT-89-5 footprint.

SOT-143 footprints

Footprint names:

SOT-143

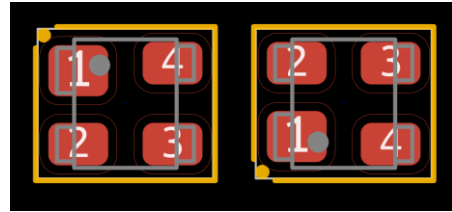
SOT-143_BigPads

SOT-143R_Reverse

SOT-143R_Reverse_BigPads

“BigPads” option denotes a footprint enlarged pads.

“Reverse” option denotes a footprint for a package with leads bent backwards (pin order is reversed)



Standard SOT-143 footprint (left) and a reversed SOT-143R (right).

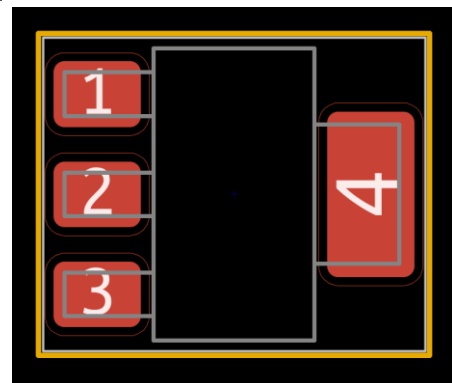
SOT-223 footprints

Footprint names:

SOT-223

SOT-223-3_TabPin2

“TabPin2” option means that the heatsink tab has the same number (and is electrically connected to) pad 2.



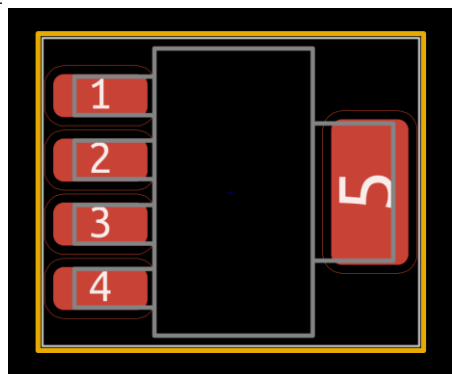
SOT-223 footprint.

SOT-223-5 footprint

Footprint name:

SOT-223-5

5-pin variant of the SOT-223 package.



SOT-223-5 footprint.

SOT-223-6 footprints

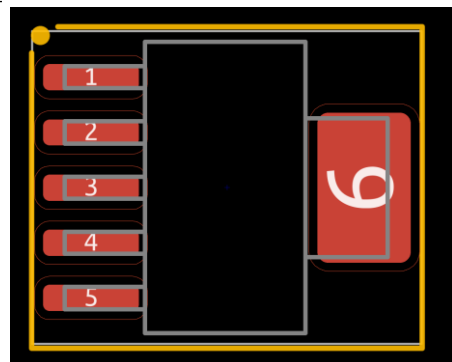
Footprint names:

SOT-223-6

SOT-223-6_TabPin3

“TabPin3” option means that the heatsink tab has the same number (and is electrically connected to) pad 3.

6-pin variant of the SOT-223 package.



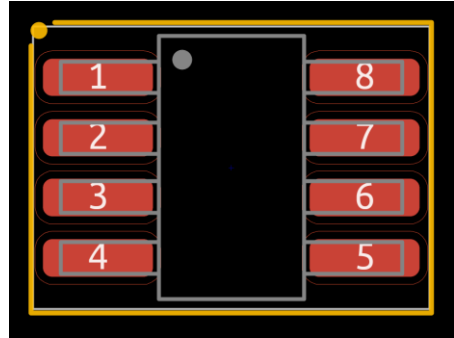
SOT-223-6 footprint.

SOT-223-8 footprint

Footprint name:

SOT-223-8

8-pin variant of the SOT-223 package.



SOT-223-8 footprint.

SOT-323 (SC-70) footprints

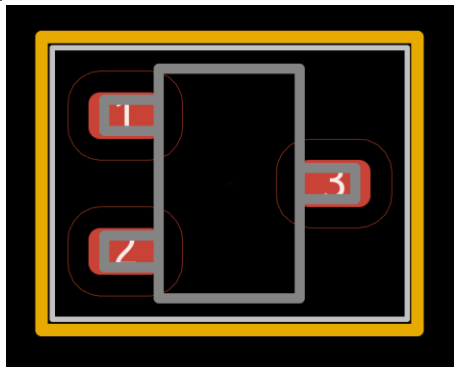
Footprint names:

SOT-323_SC-70

SOT-323_SC-70_BigPads

"BigPads" option denotes a footprint enlarged pads.

SMD transistor package that's smaller than standard SOT-23.



SOT-323 footprint.

SOT-343 (SC-70-4) footprints

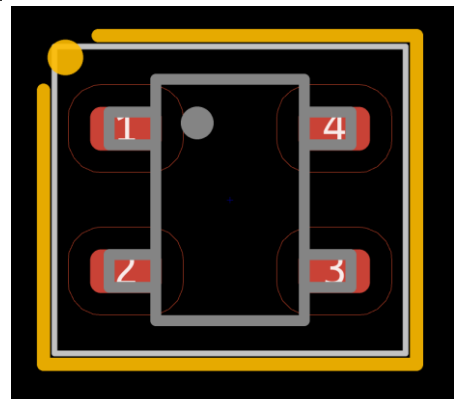
Footprint names:

SOT-343_SC-70-4

SOT-343_SC-70-4_BigPads

"BigPads" option denotes a footprint enlarged pads.

4-pin variant of the SOT-323 package and a similar pin layout to SOT-143.



SOT-343 footprint.

SOT-353 (SC-70-5) footprints

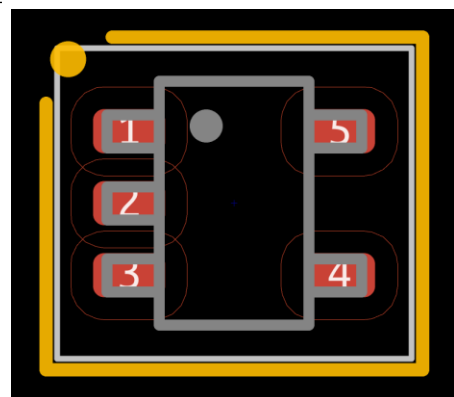
Footprint names:

SOT-353_SC-70-5

SOT-353_SC-70-5_BigPads

"BigPads" option denotes a footprint enlarged pads.

5-pin variant of the SOT-323 package.



SOT-353 footprint.

SOT-363 (SC-70-6) footprints

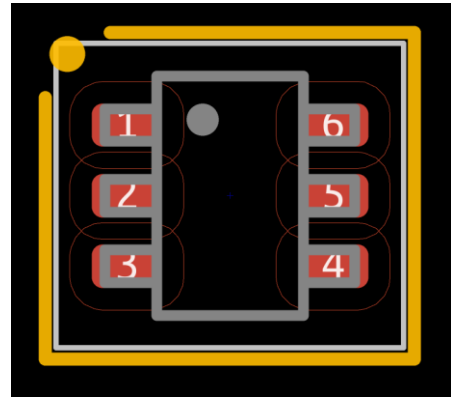
Footprint names:

SOT-363_SC-70-6

SOT-363_SC-70-6_BigPads

"BigPads" option denotes a footprint enlarged pads.

6-pin variant of the SOT-323 package.

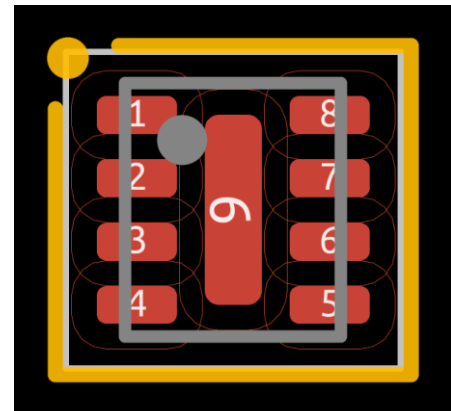


SOT-363 footprint.

SOT-383F footprint

Footprint name:

SOT-383F

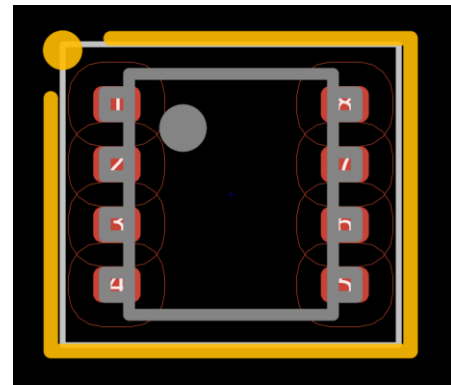


SOT-383F footprint.

SOT-383FL footprint

Footprint name:

SOT-383FL

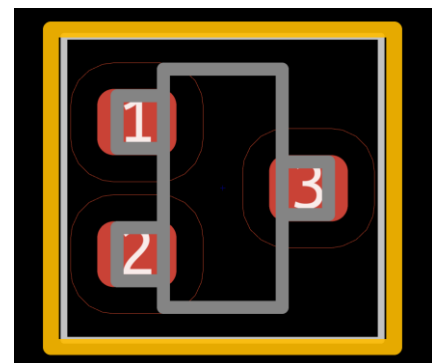


SOT-383FL footprint.

SOT-416 footprint

Footprint name:

SOT-416

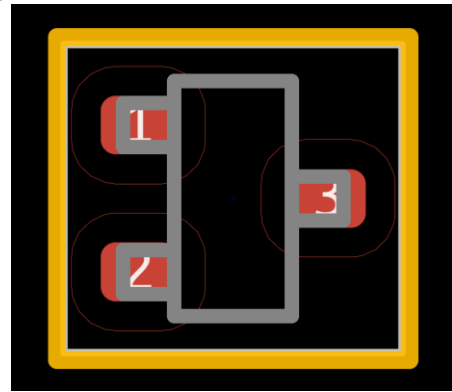


SOT-416 footprint.

SOT-523 footprint

Footprint name:

SOT-523



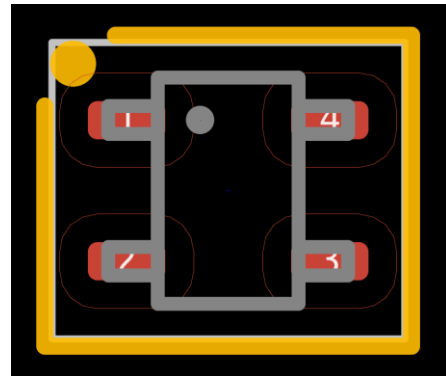
SOT-523 footprint.

SOT-543 footprint

Footprint name:

SOT-543

4-pin variant of the SOT-523 package.



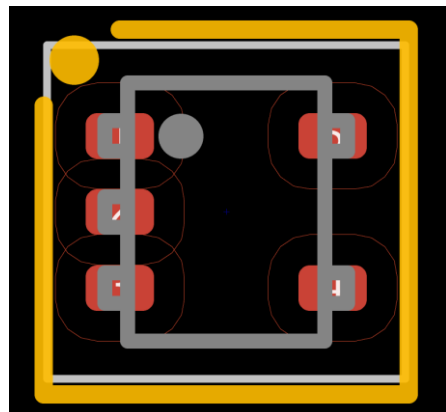
SOT-543 footprint.

SOT-553 footprint

Footprint name:

SOT-553

5-pin variant of the SOT-523 package.



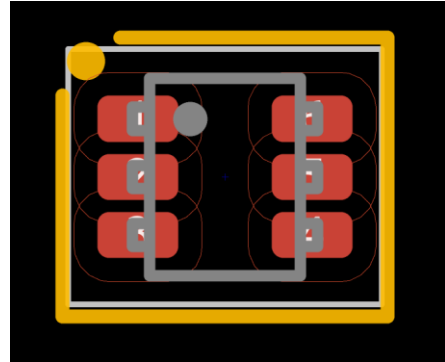
SOT-553 footprint.

SOT-563 footprint

Footprint name:

SOT-563

6-pin variant of the SOT-523 package.

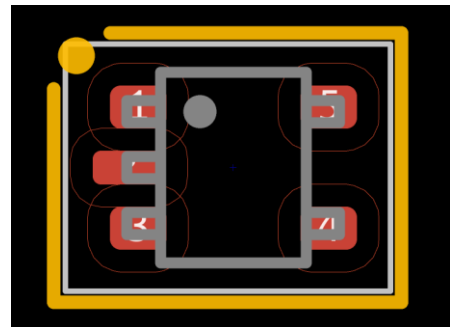


SOT-563 footprint.

SOT-665 footprint

Footprint name:

SOT-665

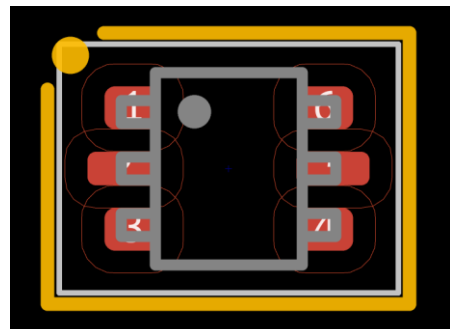


SOT-665 footprint.

SOT-666 footprint

Footprint name:

SOT-666

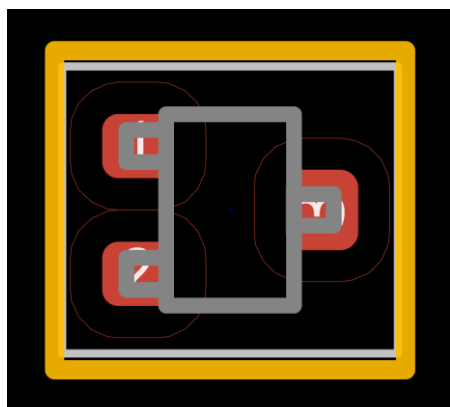


SOT-666 footprint.

SOT-723 footprint

Footprint name:

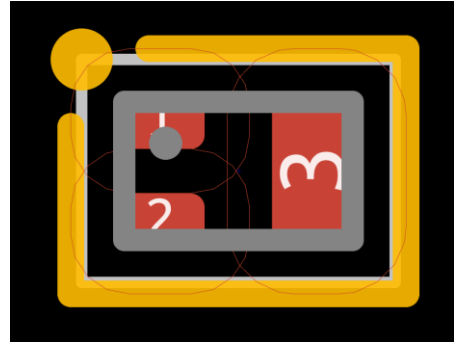
SOT-723



SOT-723 footprint.

SOT-883 footprint

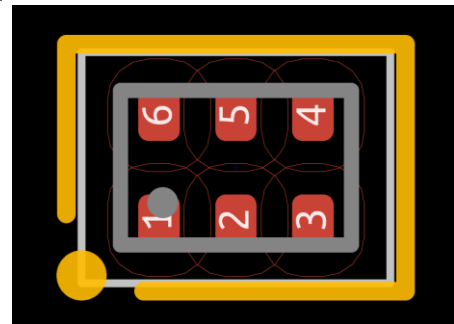
Footprint name:
SOT-883



SOT-883 footprint.

SOT-886 footprint

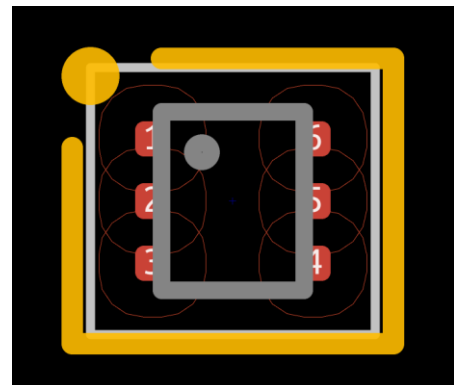
Footprint name:
SOT-886



SOT-886 footprint.

SOT-963 footprint

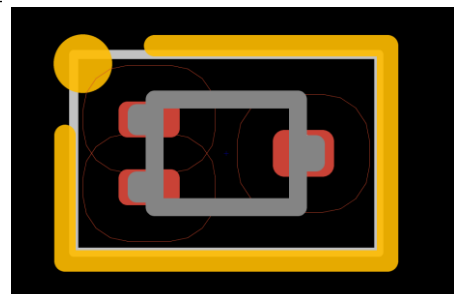
Footprint name:
SOT-963



SOT-963 footprint.

SOT-1123 footprint

Footprint name:
SOT-1123

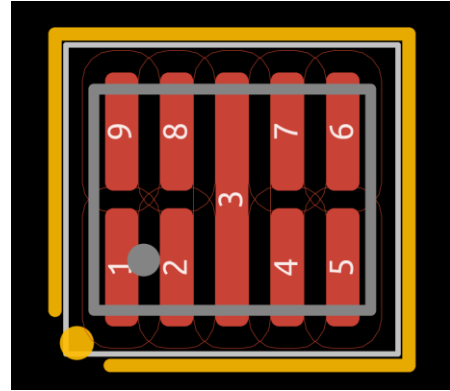


SOT-1123 footprint.

SOT-1333-1 footprint

Footprint name:

SOT-1333-1

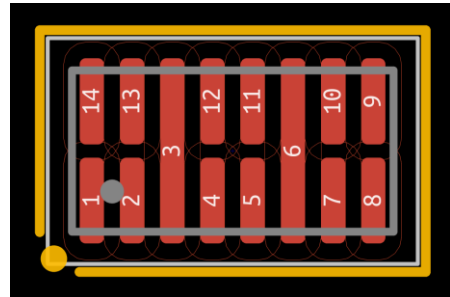


SOT-1333 footprint.

SOT-1334-1 footprint

Footprint name:

SOT-1334-1



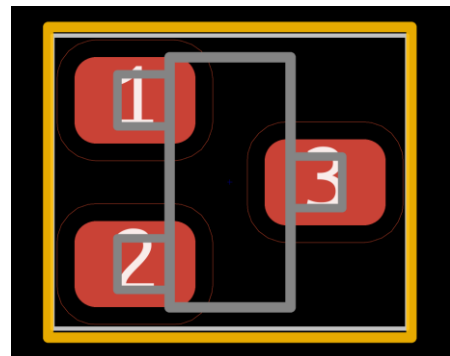
SOT-1334 footprint.

SuperSOT-3 footprint

Footprint name:

SuperSOT-3

Variant of the standard SOT-23 package optimized for power dissipation.



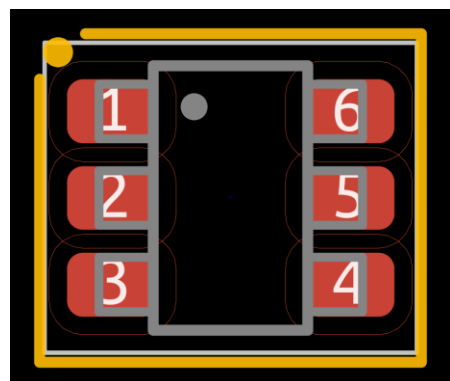
SuperSOT-3 footprint.

SuperSOT-6 footprint

Footprint name:

SuperSOT-6

6-pin variant of SuperSOT-3 package.

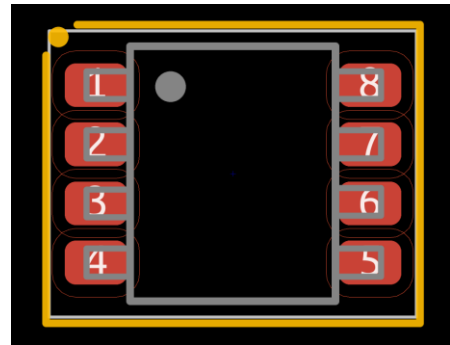


SuperSOT-6 footprint.

SuperSOT-8 footprint

Footprint name:

SuperSOT-8

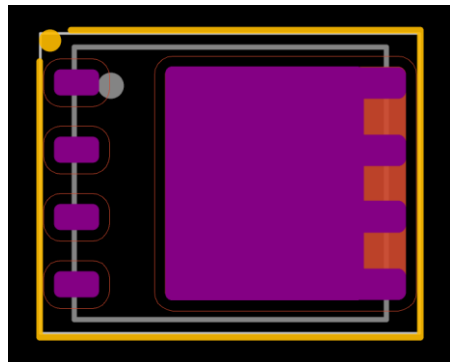


SuperSOT-8 footprint.

TDSON-8-1 footprint

Footprint name:

TDSON-8-1



TDSON-8-1 footprint with the soldermask layer visible.

TO-50 footprints

Footprint count: 20

Footprint naming convention:

TO-50-*<pin count>*-*<pad length>*-*<hole type>*-*<optional: pin configuration>*-Housing****

Name examples:

TO-50-3_ShortPad_NoHole_Housing

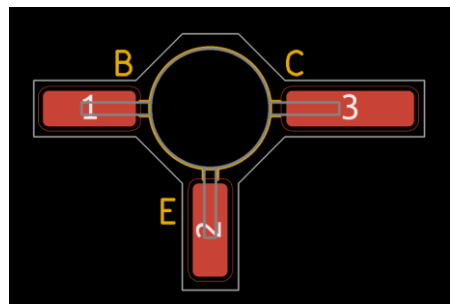
TO-50-3_LongPad_WithHole_BEC_Housing

TO-50-4_LongPad_NoHole_BECE_Housing

"NoHole" option denotes footprints with no holes in the PCB.

"WithHole" option denotes footprints with a hole in the PCB that allow to achieve lower profile as part of the package sits recessed into the board.

String of letters (i. e. "BECE") denotes a footprint with pin designation marks on the silkscreen layer according to the order of the string (if B is first then letter B is printed next to the pin 1)



TO-50-3 "BEC" "ShortPad" "NoHole" footprint.

TO-252 (DPAK) footprints

Footprint count: 7

Footprint naming convention:

TO-252-<pin count>_<optional: TabPin – thermal tab pad number>

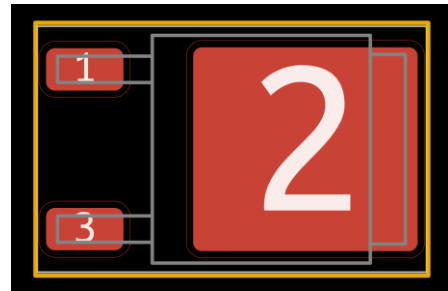
Name examples:

TO-252-2

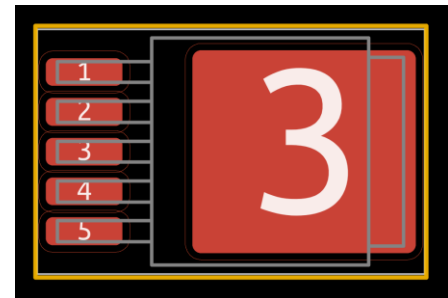
TO-252-2_TabPin1

TO-252-3_TabPin4

TO-252-5_TabPin3



TO-252-2 (DPAK) footprint.



TO-252-5_TabPin3 footprint.

TO-263 (DDPAK/D²PAK) footprints

Footprint count: 12

Footprint naming convention:

TO-263-<pin count>_<optional: TabPin – thermal tab pad number>

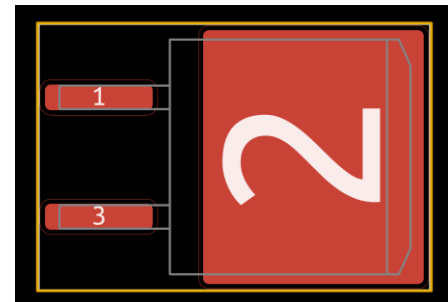
Name examples:

TO-263-2

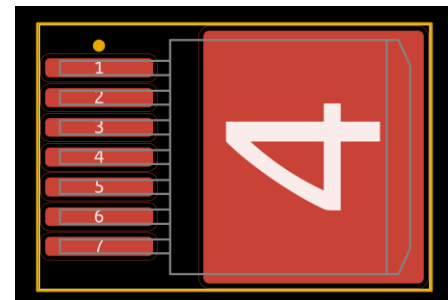
TO-263-5_TabPin3

TO-263-6

TO-263-9_TabPin5



TO-263-2 (DDPAK) footprint.

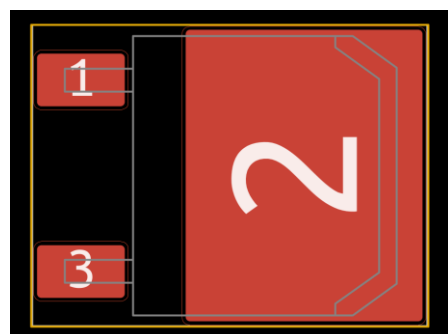


TO-263-7_TabPin4 footprint.

TO-268 (D³PAK) footprint

Footprint name:

TO-268-2

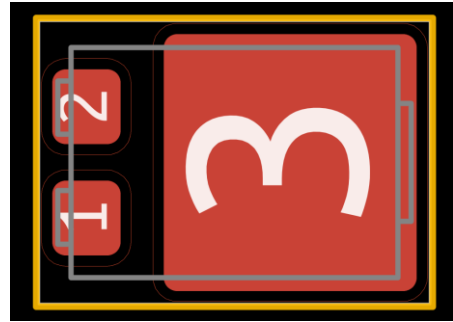


TO-268 footprint.

TO-277A footprint

Footprint name:

TO-277A



TO-277A footprint.

TO-277B footprint

Footprint name:

TO-277B



TO-277B footprint.

Thin SOT-23 (TSOT-23) footprints

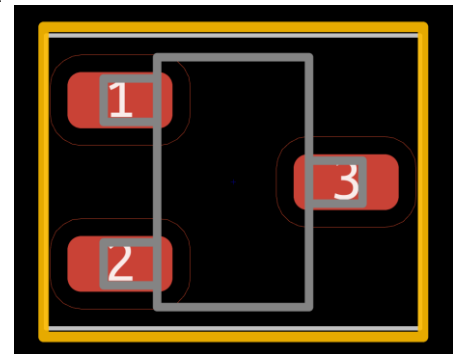
Footprint names:

TSOT-23

TSOT-23_BigPads

"BigPads" option denotes a footprint enlarged pads.

TSOT-23 has a lower package height than standard SOT-23.



TSOT-23 footprint.

TSOT-23-5 footprints

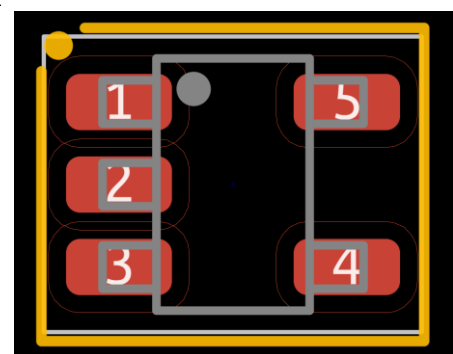
Footprint names:

TSOT-23-5

TSOT-23-5_BigPads

"BigPads" option denotes a footprint enlarged pads.

5-pin variant of the TSOT-23 package



TSOT-23-5 footprint.

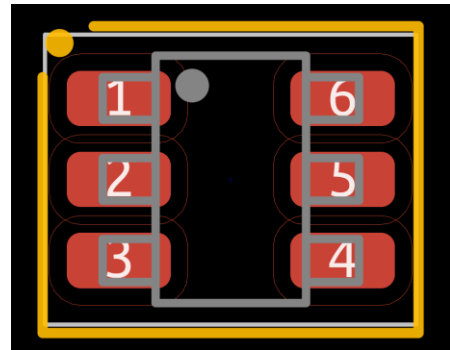
TSOT-23-6 footprints

Footprint names:

TSOT-23-6
TSOT-23-6_BigPads

"BigPads" option denotes a footprint enlarged pads.

6-pin variant of the TSOT-23 package



TSOT-23-6 footprint.

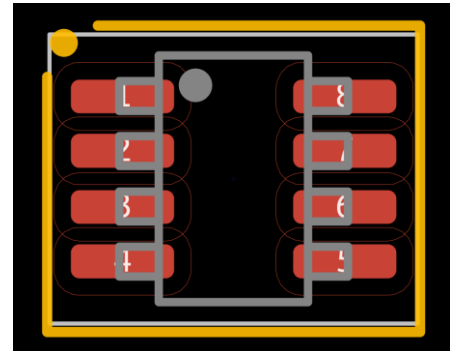
TSOT-23-8 footprints

Footprint names:

TSOT-23-8
TSOT-23-8_BigPads

"BigPads" option denotes a footprint enlarged pads.

8-pin variant of the TSOT-23 package

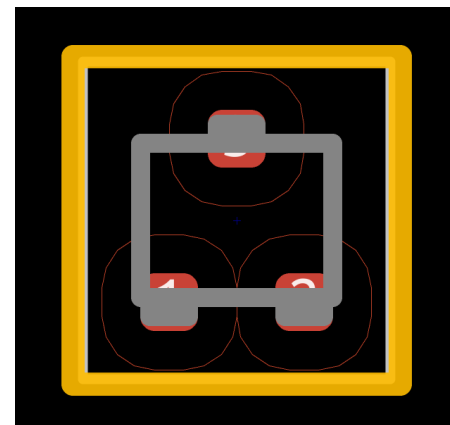


TSOT-23-8 footprint.

Texas Instruments DRT-3 footprint

Footprint name:

Texas_DRT-3

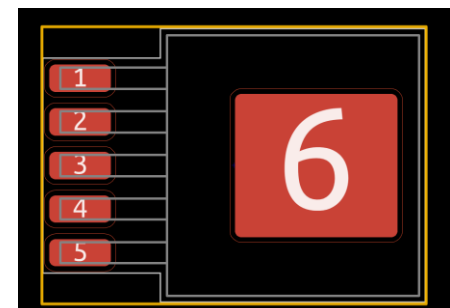


DRT-3 footprint.

Texas Instruments NDQ footprint

Footprint name:

Texas_NDQ

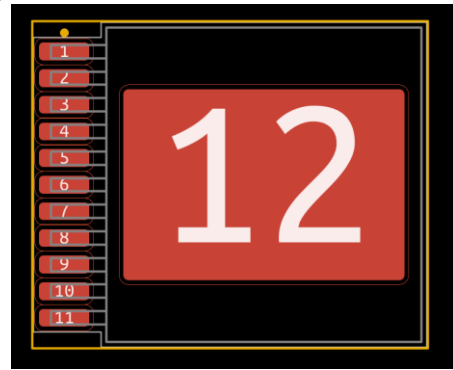


NDQ footprint.

Texas Instruments NDY0011A footprint

Footprint name:

Texas_NDY0011A

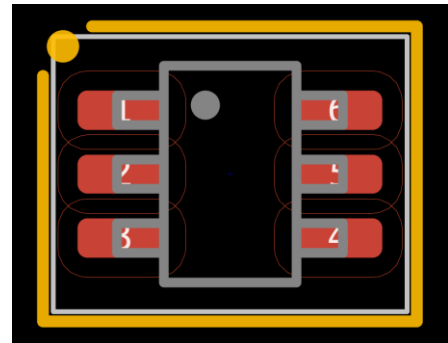


NDY0011A footprint.

Texas Instruments PDSO-G6 footprint

Footprint name:

Texas_R-PDSO-G6

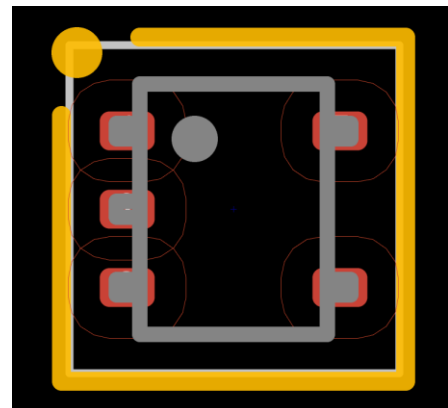


PDSO-G6 footprint.

VSO5 footprint

Footprint name:

VSO5

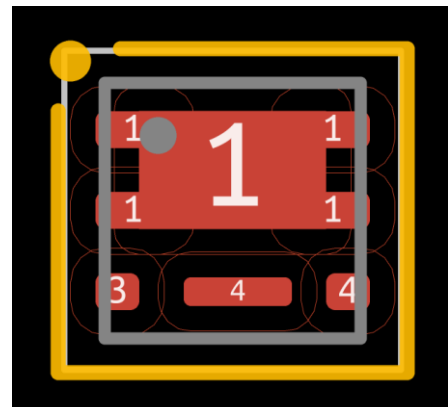


VSO5 footprint.

Vishay PowerPAK SC-70-6L footprint

Footprint name:

Vishay_PowerPAK_SC70-6L_Single

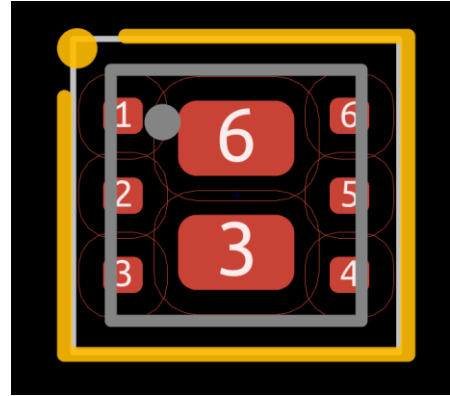


SC70-6L footprint.

Vishay PowerPAK SC-70-6L "Dual" footprint

Footprint name:

Vishay_PowerPAK_SC70-6L_Dual



SC70-6L "Dual" footprint.

3.24. THT TO/SOT Package Libraries

These libraries contain footprints for through-hole Transistor Outline (TO) and Small Outline Transistor (SOT) packages.

Double-sided library variant contains footprints with silkscreen pin markings (E B C etc.) on both sides of the PCB. Only footprints with pin markings have a double-sided variant.

Standard variant	
Folder name: Package_TO_SOT_THT_AKL	
Footprint count:	493
Double-sided variant	
Folder name: Package_TO_SOT_THT_AKL_Double	
Footprint count:	242
Total footprints:	735

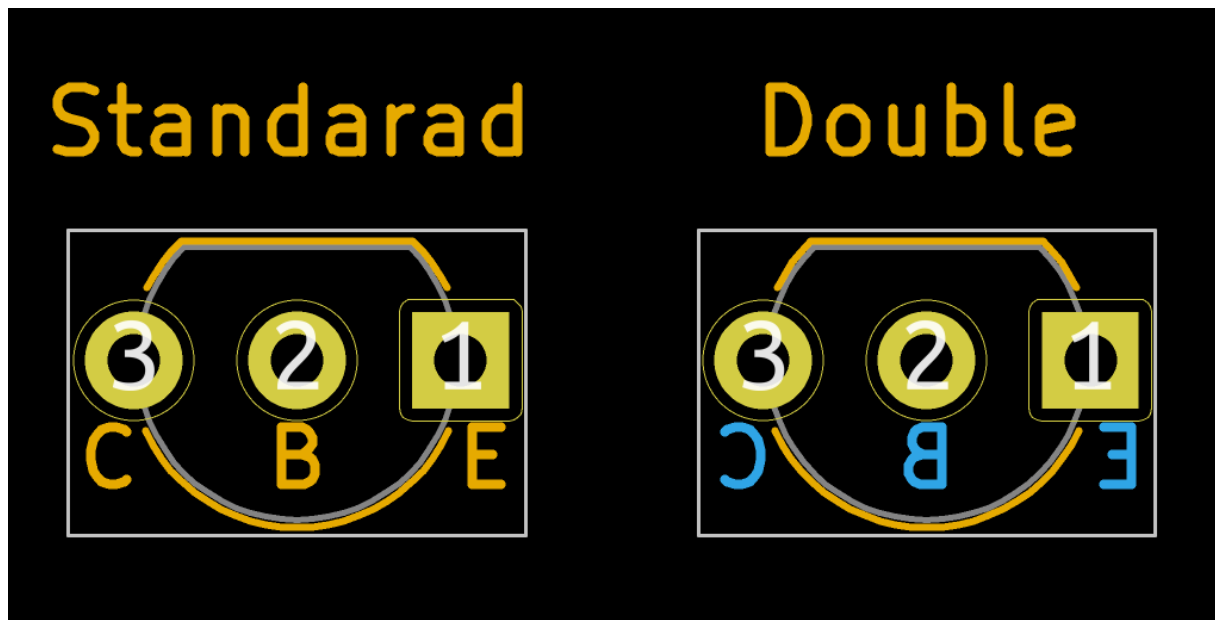


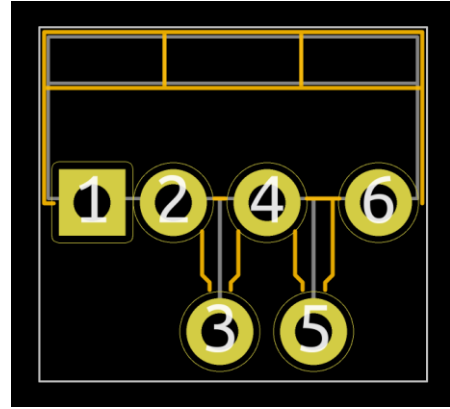
Figure 3.37. TO-92 footprints from standard and double-sided libraries with emitter, base and collector pin markings.

Fairchild TO-220F-6L footprint

Footprint name:

Fairchild_TO-220F-6L

6-lead TO-220F with special lead forming.



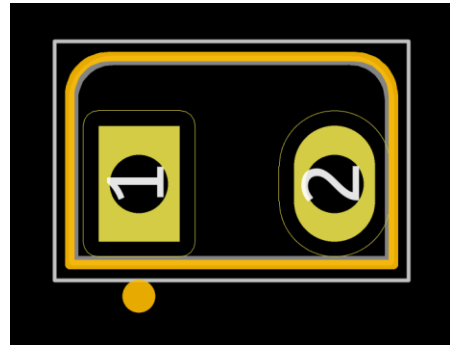
TO-220F-6L footprint.

Heraeus TO-92-style temperature sensor footprint

Footprint name:

Heraeus_TO-92-2

2-terminal temperature sensor.



TO-92-2 footprint.

2SB734 transistor specific footprint

Footprint name:

NEC_Molded_7x4x9mm



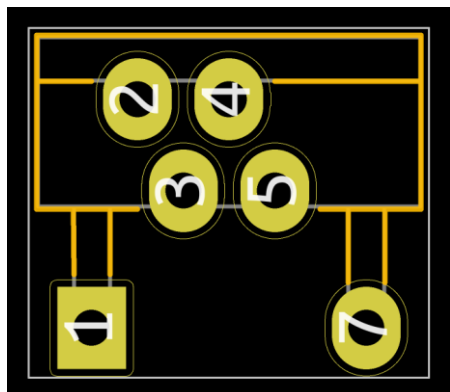
2SB734 footprint.

Power Integrations TO-220-7C footprint

Footprint name:

PowerIntegrations_TO-220-7C

6-lead TO-220 with special lead forming.



TO-220-7C footprint.

SIPAK footprints

Footprint names:

SIPAK-1EP_Horizontal_TabDown

SIPAK_Vertical



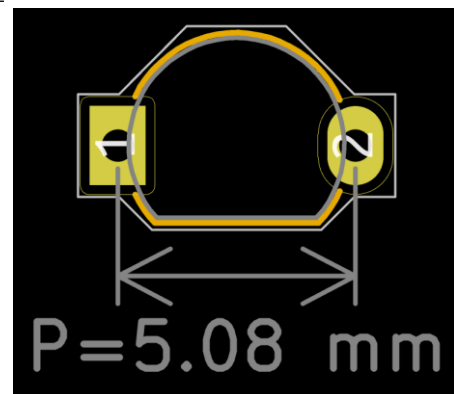
SIPAK vertical footprint (top) and horizontal footprint (bottom).

SOD-70 temperature sensor footprints

Footprint names:

SOD-70_P2.54mm

SOD-70_P5.08mm



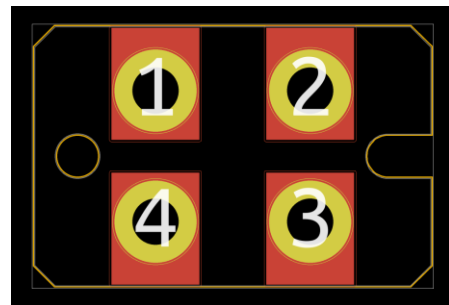
SOD-70 footprint with its pin pitch indicated.

SOT-227 (ISOTOP) power transistor module footprint

Footprint name:

SOT-227

Module connects to the PCB using M4 screws, with the module itself mounted on a heat sink.



SOT-227 footprint

TO-3 power transistor footprints

Footprint count: 3

Footprint naming convention:

TO-3-<optional: pin marking order>

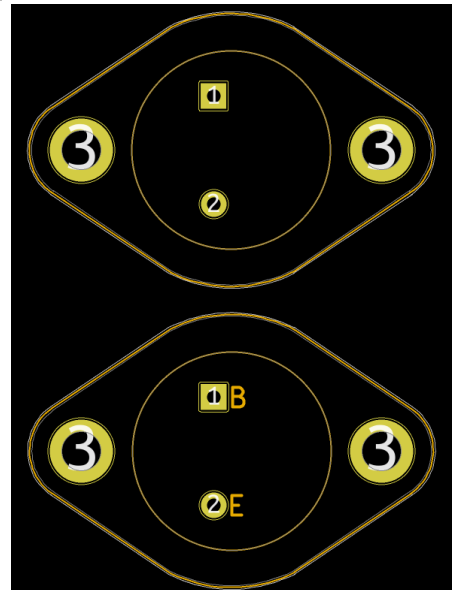
Footprint names:

TO-3

TO-3_BEC

TO-3_GSD

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GSD suffix denotes a footprint for a FET transistor with Gate on pin 1, Source on pin 2 and Drain on pin 3).



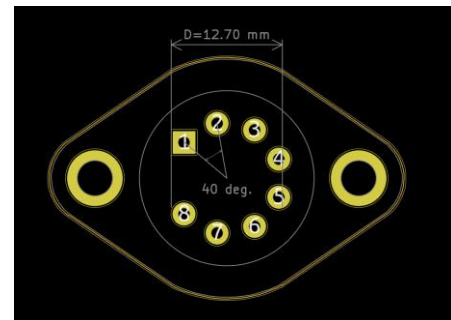
TO-3 standard footprint (top) and TO-3 bipolar transistor footprint with pin markings (bottom).

8-pin TO-3 footprint

Footprint name:

TO-3-8_Isolated

8-pin variant of the TO-3 package with pins situated along a 12.7mm circle spaced out every 40 degrees. Outer metal case is isolated from internal circuitry.



TO-3-8_Isolated footprint

TO-3 – Plastic (TO-3P) vertical power transistor footprints

Footprint count: 5

Footprint naming convention:

TO-3P-3_Vertical<optional: pin marking order>

Footprint names:

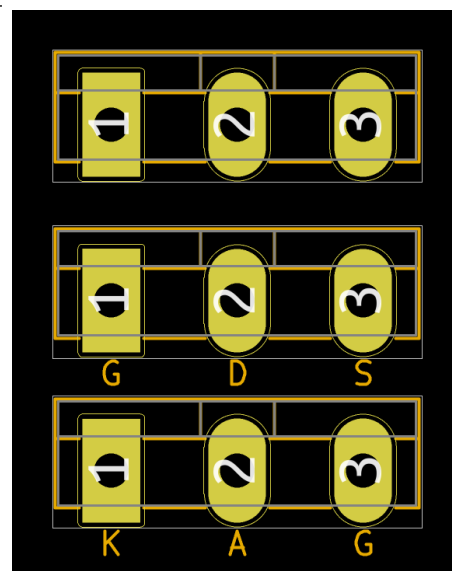
TO-3P-3_Vertical

TO-3P-3_Vertical_BCE

TO-3P-3_Vertical_GCE

TO-3P-3_Vertical_GDS

TO-3P-3_Vertical_KAG



TO-3P standard footprint (top), FET transistor footprint with GDS pin markings (middle) and a Thyristor footprint with KAG pin markings (bottom).

Available pin markings:

Bipolar transistors:	BCE
IGBT transistors:	GCE
FET transistors:	GDS
Thyristors:	KAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

TO-3 – Plastic (TO-3P) horizontal power transistor footprints

Footprint count: 10

Footprint naming convention:

TO-3P-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:

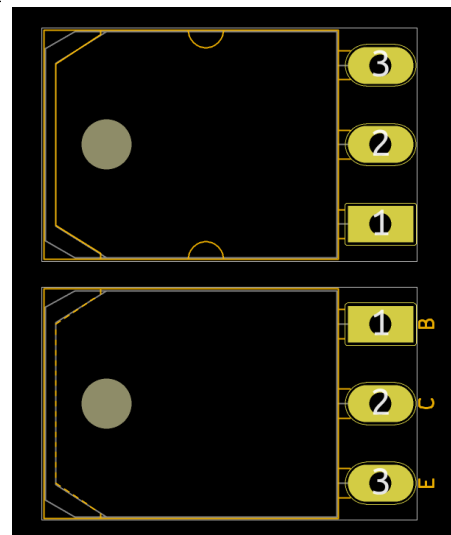
TO-3P-3_Horizontal_TabDown
 TO-3P-3_Horizontal_TabUp
 TO-3P-3_Horizontal_TabDown_GCE
 TO-3P-3_Horizontal_TabUp_KAG

Available pin markings:

Bipolar transistors:	BCE
IGBT transistors:	GCE
FET transistors:	GDS
Thyristors:	KAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-3P horizontal "TabDown" standard footprint (top) and bipolar transistor "TabUp" footprint (bottom).

TO-3PB vertical power transistor footprints

Footprint count: 3

Footprint naming convention:

TO-3PB-3_Vertical_<optional: pin marking order>

Footprint names:

TO-3PB-3_Vertical

TO-3PB-3_Vertical_BCE

TO-3PB-3_Vertical_GDS

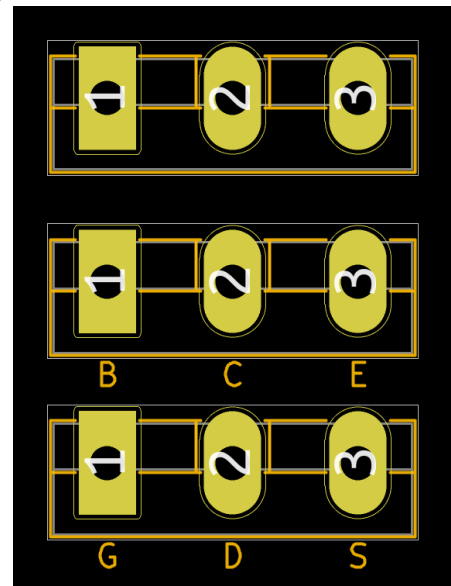
Available pin markings:

Bipolar transistors: BCE

FET transistors: GDS

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

TO-3PB package is almost identical to TO-3P.



TO-3PB standard footprint (top), bipolar transistor BCE footprint (middle) and a FET transistor GDS footprint (bottom).

TO-3PB horizontal power transistor footprints

Footprint count: 6

Footprint naming convention:

TO-3PB-3_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:

TO-3PB-3_Horizontal_TabDown

TO-3PB-3_Horizontal_TabDown_BCE

TO-3PB-3_Horizontal_TabDown_GDS

TO-3PB-3_Horizontal_TabUp

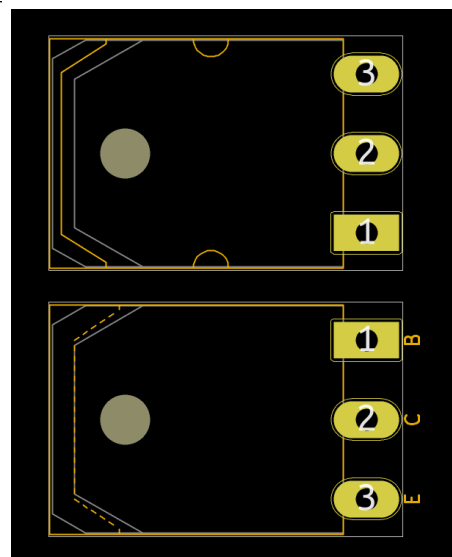
TO-3PB-3_Horizontal_TabUp_BCE

TO-3PB-3_Horizontal_TabUp_GDS

Available pin markings:

Bipolar transistors: BCE

FET transistors: GDS



TO-3PB horizontal "TabDown" standard footprint (top) and bipolar transistor "TabUp" footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

TO-3 Plastic Fully Molded (TO-3PF) vertical power transistor footprints

Footprint count: 4

Footprint naming convention:

TO-3PF-3_Veritical_<optional: pin marking order>

Footprint names:

TO-3PF-3_Veritical

TO-3PF-3_Veritical_BCE

TO-3PF-3_Veritical_GCE

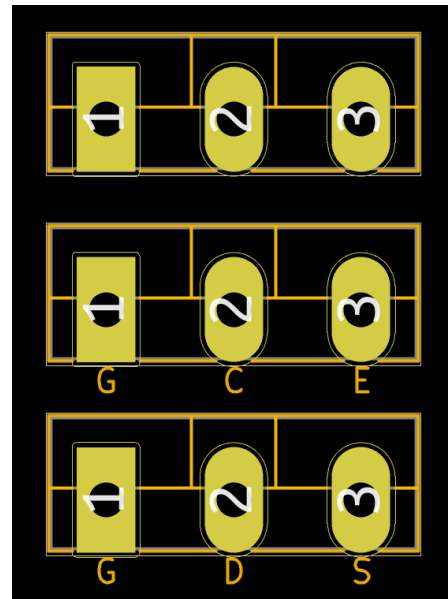
TO-3PF-3_Veritical_GDS

Available pin markings:

Bipolar transistors: BCE

IGBT transistors: GCE

FET transistors: GDS



TO-3PF standard footprint (top), IGBT transistor GCE footprint (middle) and a FET transistor GDS footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

TO-3PF package is a fully insulated version of TO-3P.

TO-3 Plastic Fully Molded (TO-3PF) horizontal power transistor footprints

Footprint count: 8

Footprint naming convention:

TO-3PF-3_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:

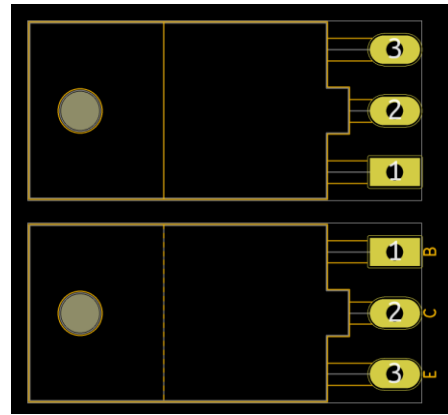
TO-3PF-3_Horizontal_TabDown
 TO-3PF-3_Horizontal_TabDown_BCE
 TO-3PF-3_Horizontal_TabDown_GCE
 TO-3PF-3_Horizontal_TabDown_GDS
 TO-3PF-3_Horizontal_TabUp
 TO-3PF-3_Horizontal_TabUp_BCE
 TO-3PF-3_Horizontal_TabUp_GCE
 TO-3PF-3_Horizontal_TabUp_GDS

Available pin markings:

Bipolar transistors: BCE
 IGBT transistors: GCE
 FET transistors: GDS

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.



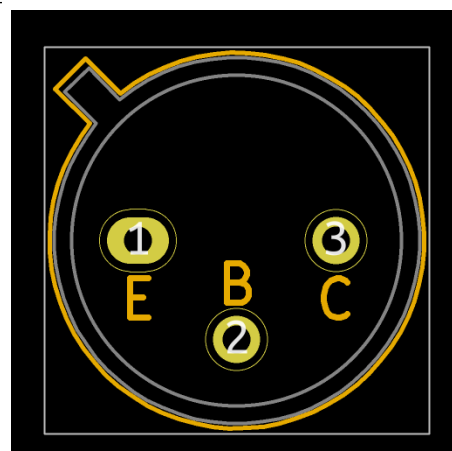
TO-3PF horizontal "TabDown" standard footprint (top) and bipolar transistor "TabUp" footprint (bottom).

TO-5 metal can package footprints

Footprint count: 22

Footprint naming convention:

TO-5-<pin count>_<optional: pin pitch diameter>_<optional: window>_<optional: pin marking order>



TO-5-3 "EBC" bipolar transistor footprint.

Name examples:

TO-5-3
 TO-5-4_Window
 TO-5-8_PD5.08
 TO-5-6_CBE-EBC
 TO-5-2_AK
 TO-5-10

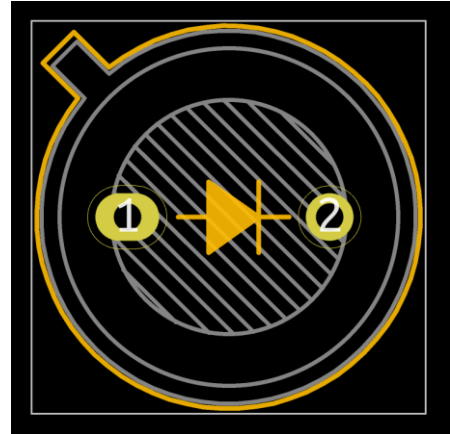
Available pin markings:

Diodes: AK, KA
 Bipolar transistors: EBC, CBE-EBC

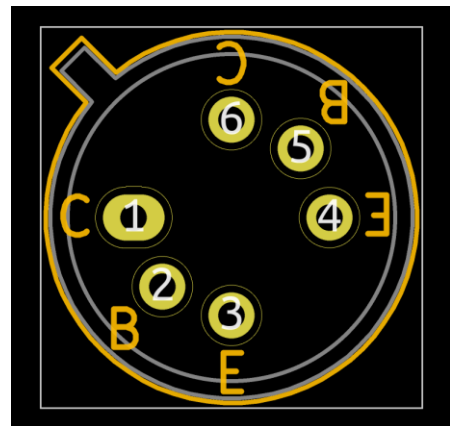
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode terminal of a diode). Order of the letters corresponds to the device's pinout (example: EBC suffix denotes a footprint for a bipolar transistor with Emitter on pin 1, Base on pin 2 and Collector on pin 3).

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

Some footprints have multiple pin pitch variants. Pins are laid out along a circle of specified diameter.



TO-5-2 "AK" "Window" footprint.



TO-5-6 "CBE-EBC" dual transistor footprint.

TO-8 metal can package footprints

Footprint count: 4

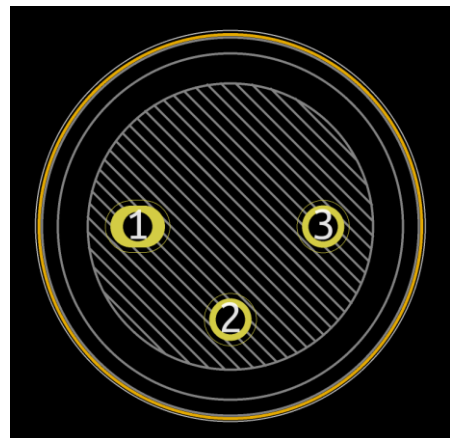
Footprint naming convention:

TO-8-*<pin count>*_*<optional: window>*

Footprint names:

TO-8-2
 TO-8-2_Window
 TO-8-3
 TO-8-3_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-8-3 "Window" footprint.

TO-11 metal can package footprints

Footprint count: 4

Footprint naming convention:

TO-11-<pin count>_<optional: window>

Footprint names:

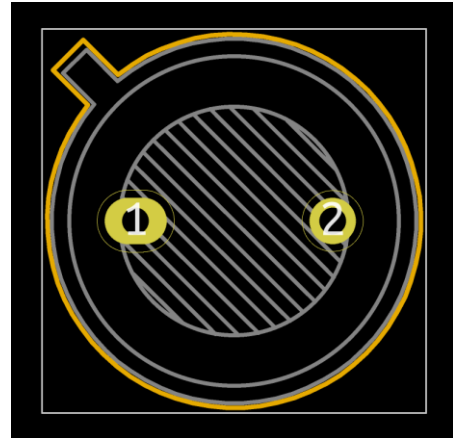
TO-11-2

TO-11-2_Window

TO-11-3

TO-11-3_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-11-2 "Window" footprint.

TO-12 metal can package footprints

Footprint count: 2

Footprint naming convention:

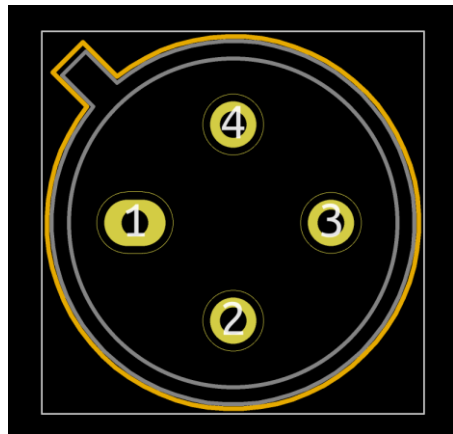
TO-12-4_<optional: window>

Footprint names:

TO-12-4

TO-12-4_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-12-4 footprint.

TO-17 metal can package footprints

Footprint count: 2

Footprint naming convention:

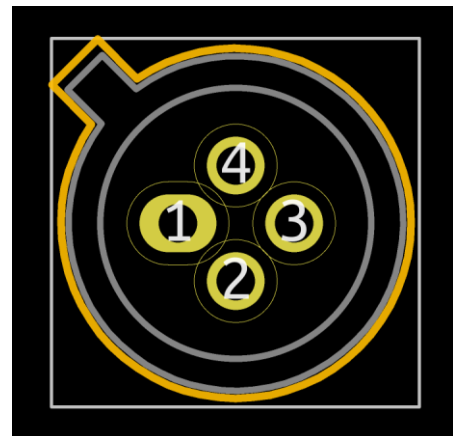
TO-17-4_<optional: window>

Footprint names:

TO-17-4

TO-17-4_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-17-4 footprint.

TO-18 metal can package footprints

Footprint count: 23

Footprint naming convention:

TO-18-<pin count>_<optional: window/lens>_<optional: in-board mounting>_<optional: pin marking order>

Name examples:

TO-18-2

TO-18-2_Lens_AK

TO-18-2_Zener

TO-18-3_Board_EBC

TO-18-3_SDG

TO-18-4_Window

Available pin markings:

Diodes: AK, KA

Bipolar transistors: EBC

FET transistors: SGD, SDG

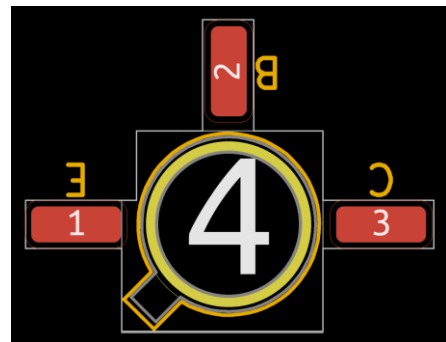
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode terminal of a diode). Order of the letters corresponds to the device's pinout (example: EBC suffix denotes a footprint for a bipolar transistor with Emitter on pin 1, Base on pin 2 and Collector on pin 3).

Lens or Window options denote packages with embedded windows used by optoelectronic devices (phototransistors, photodiodes etc.).

Board option denotes an alternate mounting method for metal can packages, where the can is put through a plated hole in the PCB and leads are soldered to the surface of the board.



TO-18-2 "Zener" footprint.



TO-18-3 "Board" transistor footprint.



TO-18-4 "Lens" footprint.

TO-33 metal can package footprints

Footprint count: 2

Footprint naming convention:

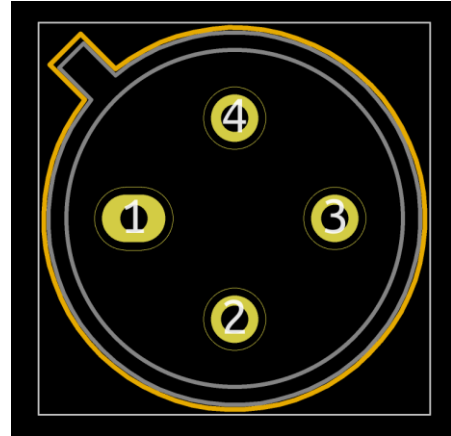
TO-33-4<optional: window>

Footprint names:

TO-33-4

TO-33-4_Window

“Window” option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-33-4 footprint.

TO-38 metal can package footprints

Footprint count: 4

Footprint naming convention:

TO-38-<pin count>_<optional: window>

Footprint names:

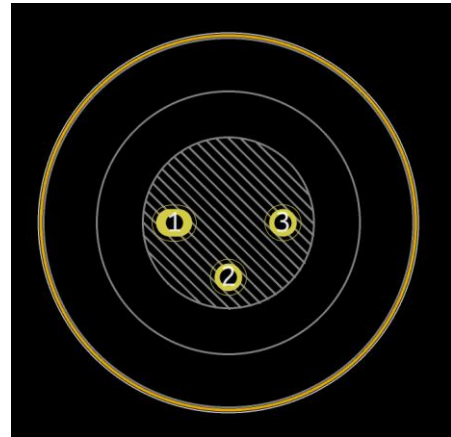
TO-38-2

TO-38-2_Window

TO-38-3

TO-38-3_Window

“Window” option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-38-3 "Window" footprint.

TO-39 metal can package footprints

Footprint count: 17

Footprint naming convention:

TO-39-<pin count>_<optional: window>_<optional: in-board mounting>_<optional: pin marking order>

Name examples:

TO-39-2_Window

TO-39-3_SGD

TO-39-3_Board_EBC

TO-39-6

TO-39-10

Available pin markings:

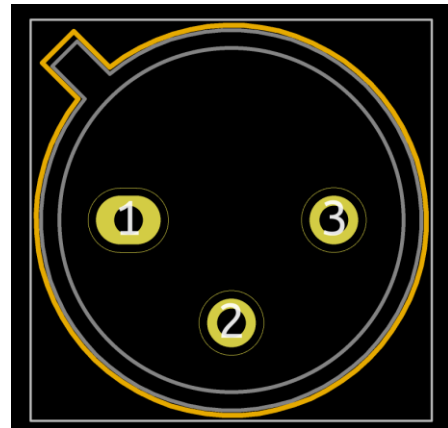
Bipolar transistors: EBC

FET transistors: SGD

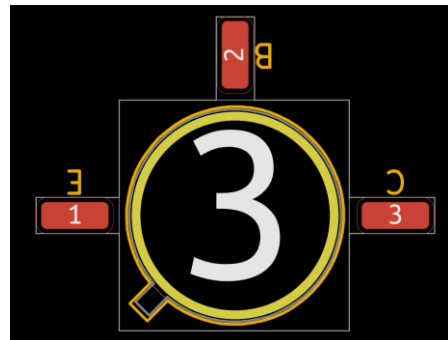
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode terminal of a diode). Order of the letters corresponds to the device's pinout (example: EBC suffix denotes a footprint for a bipolar transistor with Emitter on pin 1, Base on pin 2 and Collector on pin 3).

Window option denotes package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

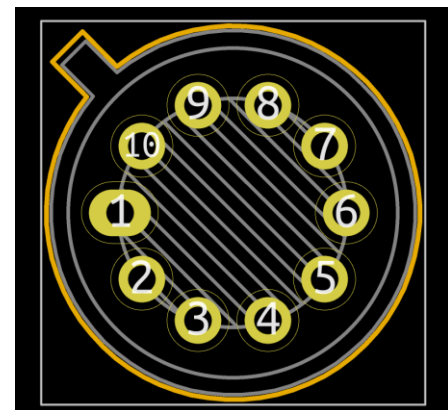
Board option denotes an alternate mounting method for metal can packages, where the can is put through a plated hole in the PCB and leads are soldered to the surface of the board.



TO-39-3 footprint.



TO-39-3 "Board" bipolar transistor footprint.



TO-39-10 "Window" footprint.

TO-46 metal can package footprints

Footprint count: 11

Footprint naming convention:

TO-46-<pin count>_<optional: Pin2Center>_<optional: window>_<optional: ThermalShield>

Name examples:

TO-46-2

TO-46-2_Pin2Center_Window

TO-46-3_Window

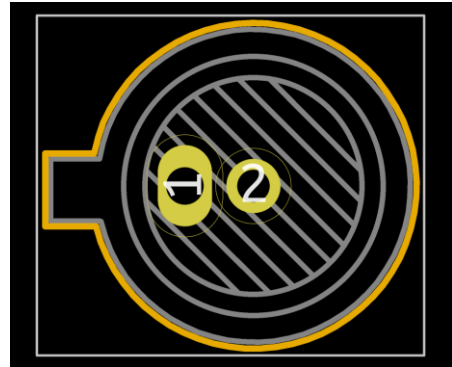
TO-46-4_ThermalShield

TO-46-4

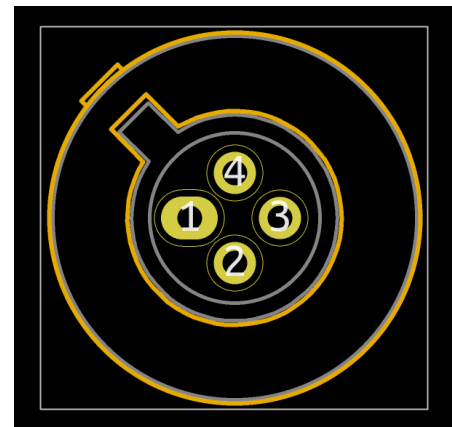
“Window” option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

“Pin2Center” option means that a particular footprint has pad number 2 in the center of the can.

“ThermalShield” option refers to a TO-46 package with a thermal shield as used by the LM399 reference voltage sources.



TO-46-2 “Window” footprint with pin 2 on the center.



TO-46-4 “ThermalShield” footprint.

TO-52 metal can package footprints

Footprint count: 4

Footprint naming convention:

TO-52-<pin count>_<optional: window>

Footprint names:

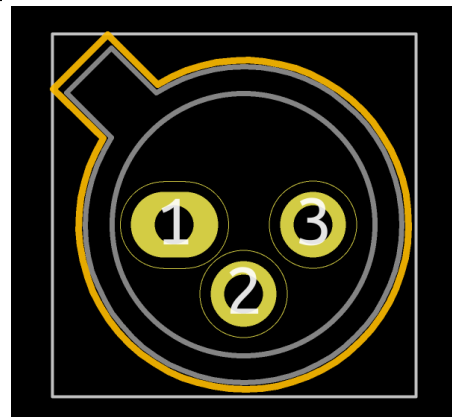
TO-52-2

TO-52-2_Window

TO-52-3

TO-52-3_Window

“Window” option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-52-3 footprint.

TO-66 power transistor footprints

Footprint count: 2

Footprint naming convention:

TO-66-<optional: pin marking order>

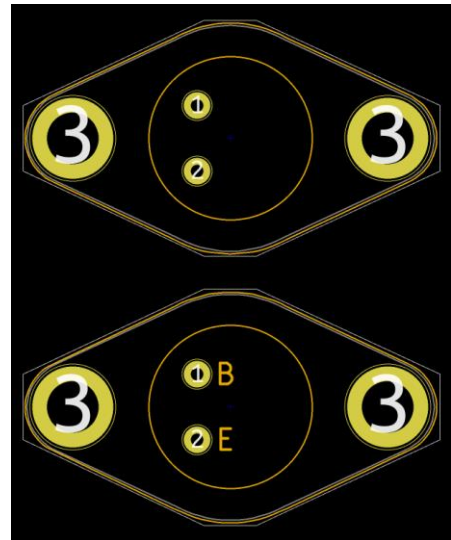
Footprint names:

TO-66

TO-66_BEC

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

TO-66 package is a smaller version of the standard TO-3 metal can.



TO-66 standard footprint (top) and TO-66 bipolar transistor footprint with pin markings (bottom).

TO-72 metal can package footprints

Footprint count: 7

Footprint naming convention:

TO-72-4_<optional: Pin2Center>_<optional: window>_<optional: pin marking order>

Name examples:

TO-72-4

TO-72-4_Board_DGGS

TO-72-4_EBC

TO-72-4_Window

Available pin markings:

Bipolar transistors: EBC

FET transistors: SDG

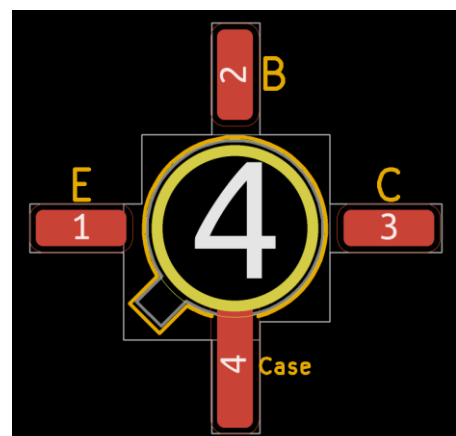
Dual-Gate FETs: DGGS

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the



TO-72 FET transistor footprint.



TO-72 "Board" bipolar transistor footprint.

device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

Board option denotes an alternate mounting method for metal can packages, where the can is put through a plated hole in the PCB and leads are soldered to the surface of the board.

TO-75 metal can package footprints

Footprint count: 2

Footprint naming convention:

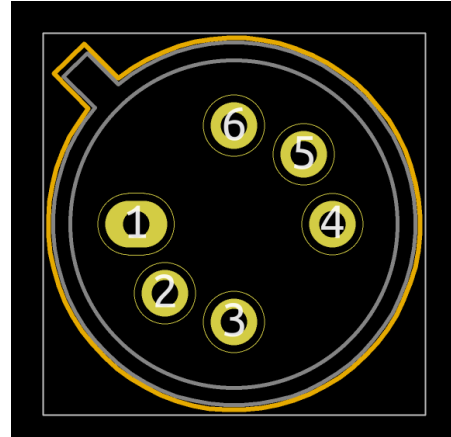
TO-75-6 <optional: window>

Footprint names:

TO-75-6

TO-75-6_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-75-6 footprint.

TO-78 metal can package footprints

Footprint count: 7

Footprint naming convention:

TO-78-6 <pin count> <optional: window> <optional: pin marking order>

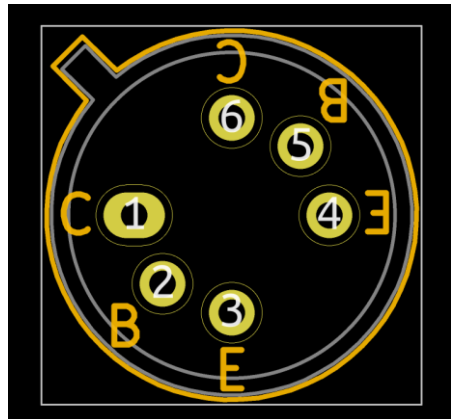
Name examples:

TO-78-8

TO-78-6_CBE-EBC

TO-78-10_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-78-6 dual transistor footprint.

TO-99 metal can package footprints

Footprint count: 4

Footprint naming convention:

TO-99-<pin count>_<optional: window>

Footprint names:

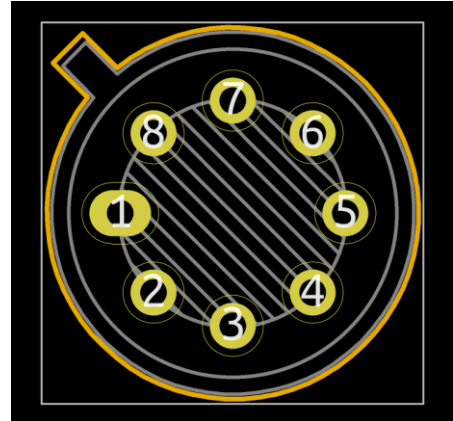
TO-99-6

TO-99-6_Window

TO-99-8

TO-99-8_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-99-8 "Window" footprint.

TO-100 metal can package footprints

Footprint count: 2

Footprint naming convention:

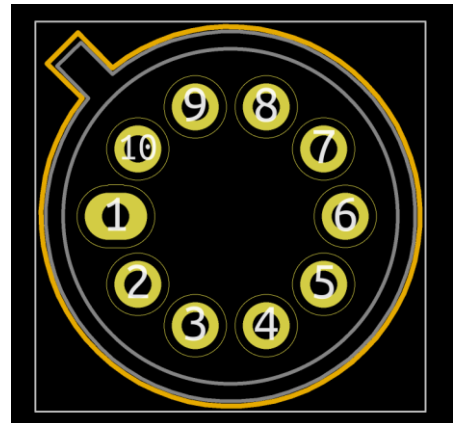
TO-100-10_<optional: window>

Footprint names:

TO-100-10

TO-100-10_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



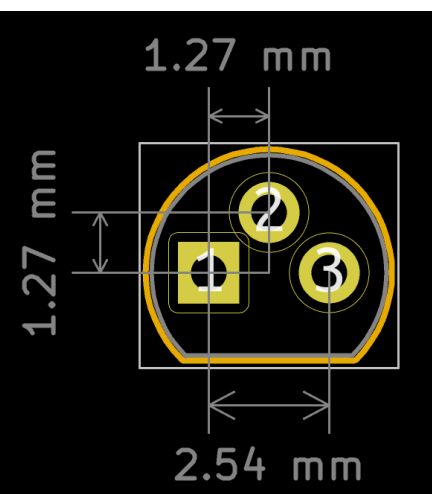
TO-100 footprint.

TO-92 (SOT-54) vertical molded plastic package footprints

Footprint count: 45

Footprint naming convention:

TO-92_<optional: pin spacing variant>_<optional: HandSolder>_<optional: pin marking order>



TO-92 footprint with standard lead spacing.

Name examples:

TO-92

TO-92_Inline_CBE

TO-92_Wide_DGS

TO-92_Inline_Wide_EBC

TO-92_HandSolder

Available pin markings:

Bipolar transistors: CBE, CEB, EBC, ECB,

FET transistors: DGS, DSG, GDS, GSD, SDG, SGD

Available pin spacing variants:

Standard – pins are spaced 1.27mm apart with the center pin also being placed 1.27mm forward. This lead spacing used to be commonplace as it was compatible with TO-18 package used by older transistors.

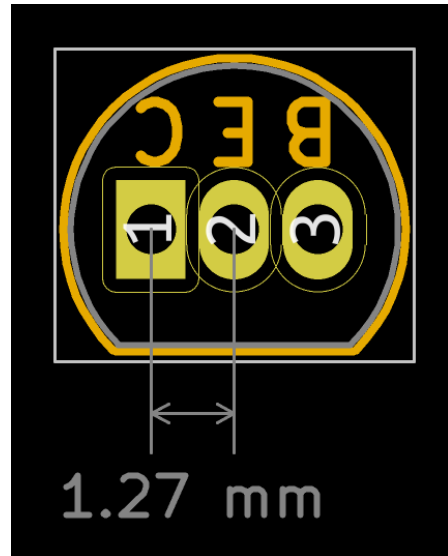
Inline – pins are arranged along a single line, spaced 1.27mm apart. This lead spacing is very common for transistors sold in bulk.

Inline Wide – pins are arranged along a single line, spaced 2.54mm apart. This lead spacing is very common for transistors packaged on tape or ammo packs. This is a default TO-92 type for AKL transistor symbols.

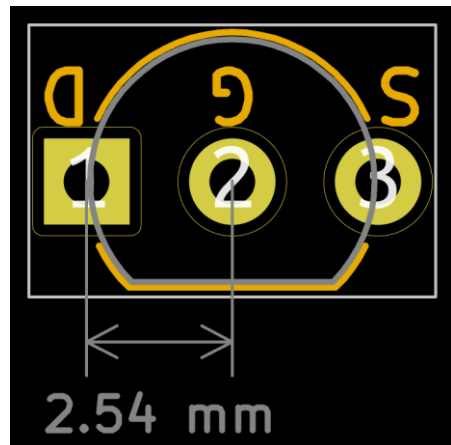
Wide – pins are spaced 2.54mm apart with the center pin additionally being placed 2.54mm forward. This lead spacing provides the most routing space and ease of access for hand soldering.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

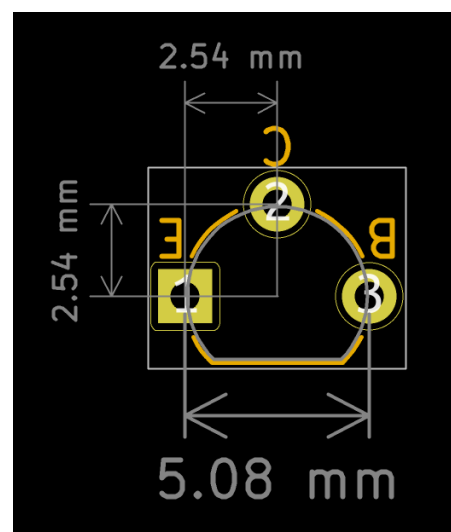
"HandSolder" option denotes a footprint with enlarged pads for easier soldering.



TO-92 bipolar transistor footprint with "Inline" lead spacing.



TO-92 FET transistor footprint with "Inline Wide" lead spacing.



TO-92 bipolar transistor footprint with "Wide" lead spacing.

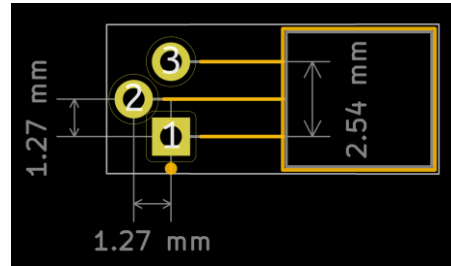
TO-92 (SOT-54) horizontal molded plastic package footprints

Footprint count: 8

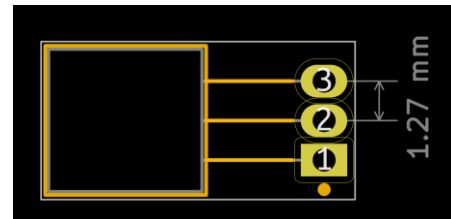
Footprint names:

TO-92_Horizontal1
 TO-92_Horizontal2
 TO-92_Inline_Horizontal1
 TO-92_Inline_Horizontal2
 TO-92_Inline_W4.0mm_Horizontal_FlatSideDown
 TO-92_Inline_W4.0mm_Horizontal_FlatSideUp
 TO-92_W4.0mm_StaggerEven_Horizontal_FlatSideDown
 TO-92_W4.0mm_StaggerEven_Horizontal_FlatSideUp

"Horizontal 1" footprints are identical to "Flat side down" footprints. "StaggerEven" footprints are identical to the standard horizontal footprints. Duplicate footprints with different names are inherited from the original KiCad library and have been left here for backwards compatibility with existing projects.



TO-92 "Horizontal1" or "W4.0mm_StaggerEven_Horizontal_FlatSideDown" footprint.



TO-92 "Inline_Horizontal2" or "Inline_W4.0mm_Horizontal_FlatSideUp" footprint.

Two-pin TO-92 vertical molded plastic package footprints

Footprint count: 6

Footprint naming convention:

TO-92_<optional: pin spacing variant>_<optional: pin marking order>

Footprint names:

TO-92-2
 TO-92-2_AK
 TO-92-2_KA
 TO-92-2_Wide
 TO-92-2_Wide_AK
 TO-92-2_Wide_KA

Available pin markings:

Diodes: AK, KA

Available pin spacing variants:

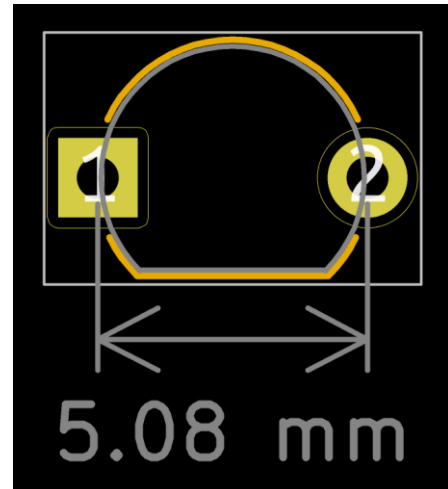
Standard – the two pins are spaced 2.54mm apart just as they come out of the package.

Wide – pins are formed to be spaced 5.08mm apart.



TO-92 diode footprint with standard lead spacing.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: K means cathode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with cathode on pin 1 and anode on pin 2).



TO-92-2 footprint with "Wide" lead spacing.

Two-pin TO-92 horizontal molded plastic package footprints

Footprint count: 6

Footprint names:

TO-92-2_Horizontal1

TO-92-2_Horizontal1_KA

TO-92-2_Horizontal2

TO-92-2_Horizontal2_KA

TO-92-2_W4.0mm_Horizontal_FlatSideDown

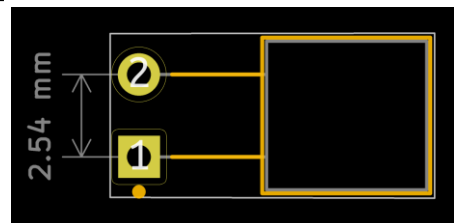
TO-92-2_W4.0mm_Horizontal_FlatSideUp

Available pin markings:

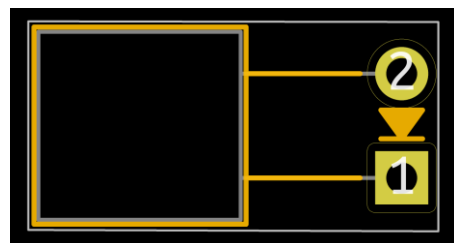
Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: K means cathode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with cathode on pin 1 and anode on pin 2).

"Horizontal 1" footprints are identical to "Flat side down" footprints. "StaggerEven" footprints are identical to the standard horizontal footprints. Duplicate footprints with different names are inherited from the original KiCad library and have been left here for backwards compatibility with existing projects.



TO-92 "Horizontal1" or "W4.0mm_Horizontal_FlatSideDown" footprint



TO-92 "Horizontal2" diode footprint.

TO-92 Flat footprint

Footprint name:

TO-92Flat

Slimmer version of the standard TO-92 package, often used by Hall Effect sensors.



To-92 Flat footprint.

TO-92L vertical molded plastic package footprints

Footprint count: 9

Footprint naming convention:

TO-92L_*<optional: pin spacing variant>*_*<optional: HandSolder>*_*<optional: pin marking order>*

Name examples:

TO-92L

TO-92L_Inline_ECB

TO-92L_HandSolder

TO-92L_Wide

Available pin markings:

Bipolar transistors: ECB

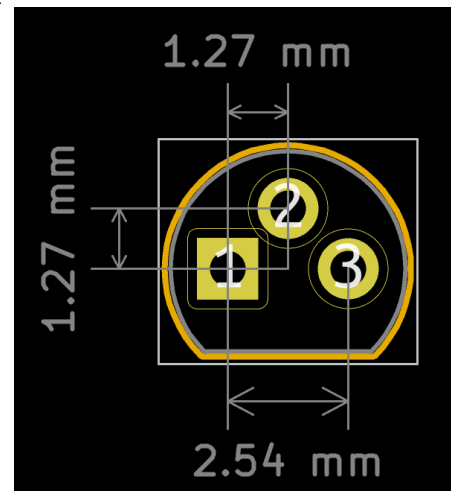
Available pin spacing variants:

Standard – pins are spaced 1.27mm apart with the center pin also being placed 1.27mm forward. This lead spacing used to be commonplace as it was compatible with TO-18 package used by older transistors.

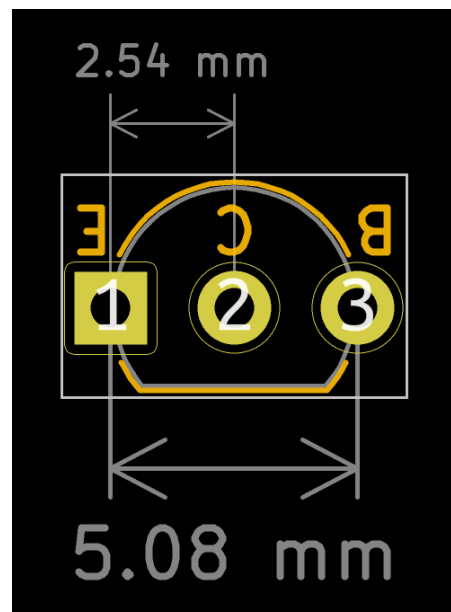
Inline – pins are arranged along a single line, spaced 1.27mm apart. This lead spacing is very common for transistors sold in bulk.

Inline Wide – pins are arranged along a single line, spaced 2.54mm apart. This lead spacing is very common for transistors packaged on tape or ammo packs. This is a default TO-92 type for AKL transistor symbols.

Wide – pins are spaced 2.54mm apart with the center pin additionally being placed 2.54mm forward. This lead spacing provides the most routing space and ease of access for hand soldering.



TO-92L footprint with standard lead spacing.



TO-92L bipolar transistor footprint with "Inline Wide" lead spacing.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order

of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

"HandSolder" option denotes a footprint with enlarged pads for easier soldering.

TO-92L is a taller version of the standard TO-92 package, permitting a higher power dissipation.

Two pin Mini TO-92 footprint

Footprint name:

TO-92Mini-2

Miniature temperature sensor package with similar shape to a TO-92 package.



To-92 Mini-2 footprint.

TO-92S vertical molded plastic package footprints

Footprint count: 5

Footprint naming convention:

TO-92S <optional: pin count if other than 3> <optional: pin spacing variant> <optional: pin marking order>

Footprint names:

TO-92S

TO-92S-2

TO-92S_ECB

TO-92S_Wide

TO-92S_Wide_ECB

Available pin markings:

Bipolar transistors: ECB

Available pin spacing variants:

Standard – pins are spaced 1.27mm apart.

Wide – pins are spaced 2.54mm apart.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order

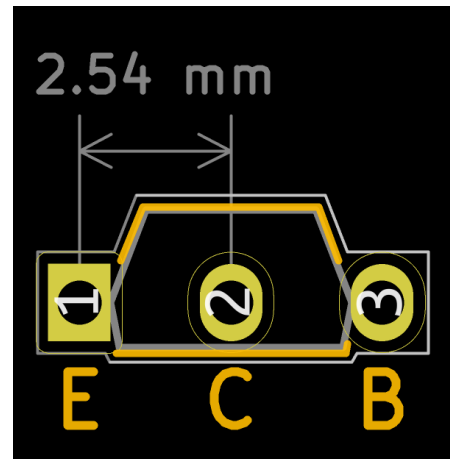


TO-92S footprint with standard lead spacing.

of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

"HandSolder" option denotes a footprint with enlarged pads for easier soldering.

TO-92S is a slim version of the standard TO-92 package.



TO-92S footprint with standard lead spacing.

TO-126 vertical medium power transistor footprints

Footprint count: 5

Footprint naming convention:

TO-126-3_Vertical_<optional: pin marking order>

Footprint names:

TO-126-3_Vertical

TO-126-3_Vertical_AAG

TO-126-3_Vertical_BCE

TO-126-3_Vertical_ECB

TO-126-3_Vertical_KAG

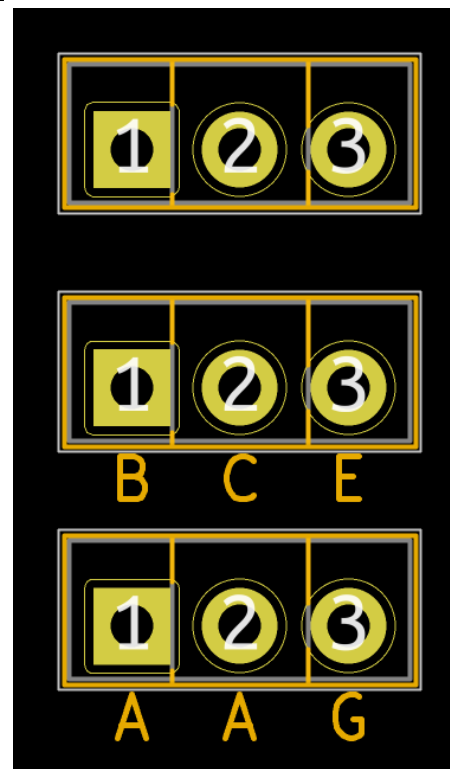
Available pin markings:

Bipolar transistors: BCE, ECB

Thyristors: KAG

Triacs: AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).



TO-126 standard footprint (top), bipolar transistor footprint (middle) and a Triac footprint (bottom).

TO-126 horizontal medium power transistor footprints

Footprint count: 10

Footprint naming convention:

TO-126-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:

TO-126-3_Horizontal_TabUp

TO-126-3_Horizontal_TabDown_AAG

TO-126-3_Horizontal_TabUp_ECB

TO-126-3_Horizontal_TabDown

Available pin markings:

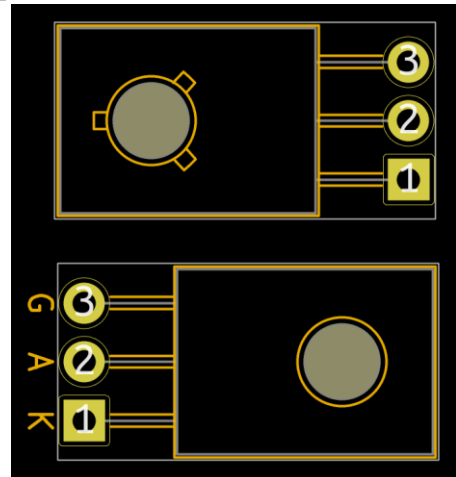
Bipolar transistors: BCE, ECB

Thyristors: KAG

Triacs: AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

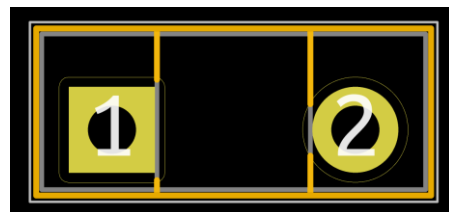


TO-126 horizontal "TabDown" standard footprint (top) and thyristor "TabUp" footprint (bottom).

Two pin TO-126 vertical footprint

Footprint name:

TO-126-2_Vertical



TO-126-2 vertical footprint.

Two pin TO-126 horizontal medium power transistor footprints

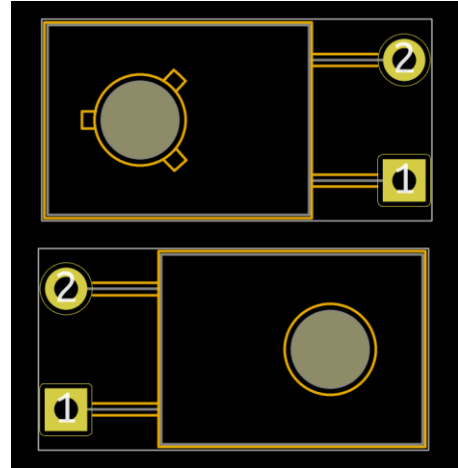
Footprint count: 2

Footprint names:

TO-126-2_Horizontal_TabDown

TO-126-2_Horizontal_TabUp

“TabUp” footprints have the heat-sink tab facing away from the PCB, and “TabDown” footprints have the metal tab contacting the PCB.



TO-126 horizontal “TabDown” footprint (top) and a “TabUp” footprint (bottom).

TO-202 vertical medium power transistor footprints

Footprint count: 4

Footprint naming convention:

TO-202-3_Vertical_<optional: tabless>_<optional: pin marking order>

Footprint names:

TO-202-3_Vertical

TO-202-3_Vertical_BCE

TO-202-3_Vertical_Tabless

TO-202-3_Vertical_Tabless_KAG

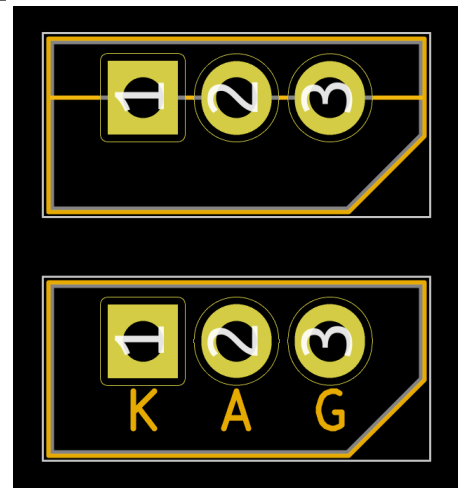
Available pin markings:

Bipolar transistors: BCE

Thyristors: KAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device’s pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

“Tabless” option denotes a TO-202 package without the metal tab.



TO-202 standard footprint (top) and a Thyristor footprint (bottom).

TO-202 horizontal medium power transistor footprints

Footprint count: 8

Footprint naming convention:

TO-202-3_Horizontal_<optional: tabless>_<optional: pin marking order>

Name examples:

TO-202-3_Horizontal_Up
 TO-202-3_Horizontal_Tabless_Down_KAG
 TO-202-3_Horizontal_Tabless_Up
 TO-202-3_Horizontal_Down_BCE

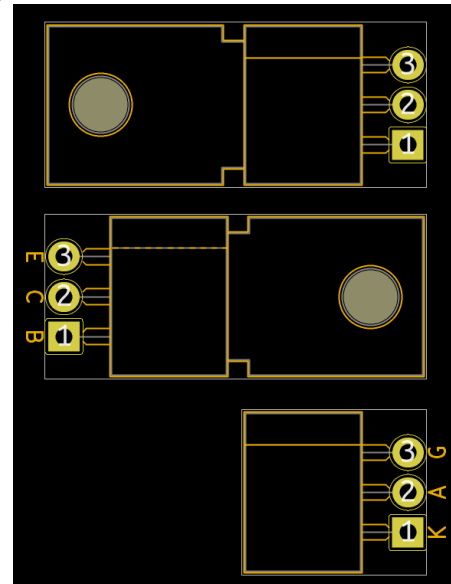
Available pin markings:

Bipolar transistors: BCE
 Thyristors: KAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"Tabless" option denotes a TO-202 package without the metal tab.

"Down" and "Up" options refer to the direction the part is bent. "Up" means that the front of the package is facing up and "Down" means that front of the package is facing down and contacting the PCB.



TO-202 standard horizontal footprint (top), bipolar transistor footprint (middle) and a tabless Thyristor footprint (bottom).

TO-218 vertical power transistor footprints

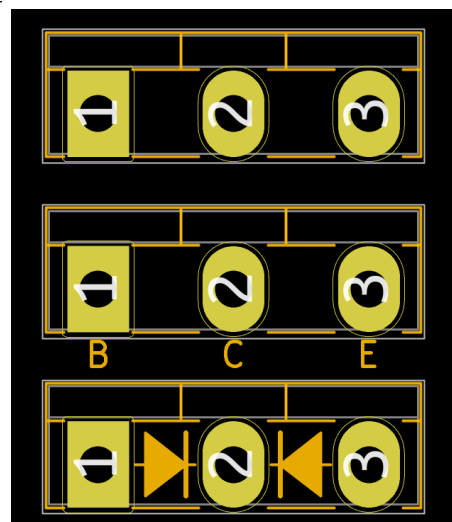
Footprint count: 6

Footprint naming convention:

TO-218-3_Vertical_<optional: pin marking order>

Footprint names:

TO-218-3_Vertical
 TO-218-3_Vertical_AAG
 TO-218-3_Vertical_AKA
 TO-218-3_Vertical_BCE
 TO-218-3_Vertical_GDS
 TO-218-3_Vertical_KAG



TO-218 standard footprint (top), bipolar transistor footprint (middle) and a dual diode footprint (bottom).

Available pin markings:

Diodes:	AKA
Bipolar transistors:	BCE
FET transistors:	GDS
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-218 horizontal power transistor footprints

Footprint count: 12

Footprint naming convention:

TO-218-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:

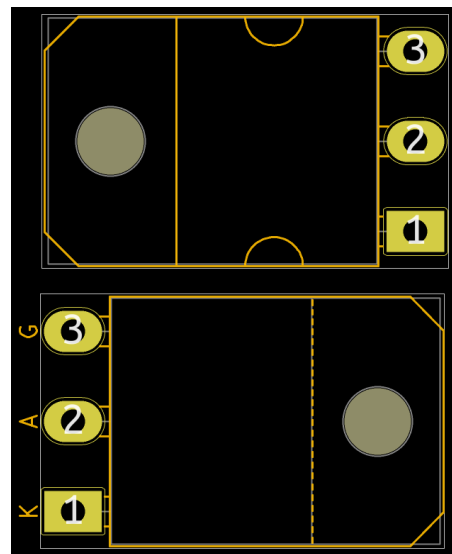
TO-218-3_Horizontal_TabDown
 TO-218-3_Horizontal_TabUp_GDS
 TO-218-3_Horizontal_TabDown_AKA
 TO-218-3_Horizontal_TabUp

Available pin markings:

Diodes:	AKA
Bipolar transistors:	BCE
FET transistors:	GDS
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-218 standard footprint "TabDown" (top) and a thyristor "TabUp" footprint (bottom).

Two pin TO-218 vertical power transistor footprints

Footprint count: 2

Footprint naming convention:

TO-218-2_Vertical_<optional: pin marking order>

Footprint names:

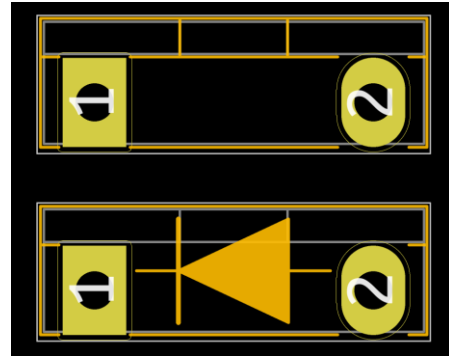
TO-218-2_Vertical

TO-218-2_Vertical_KA

Available pin markings:

Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).



TO-218-2 standard footprint (top) and a diode footprint (bottom).

Two pin TO-218 horizontal power transistor footprints

Footprint count: 4

Footprint naming convention:

TO-218-2_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:

TO-218-2_Horizontal_TabDown

TO-218-2_Horizontal_TabDown_KA

TO-218-2_Horizontal_TabUp

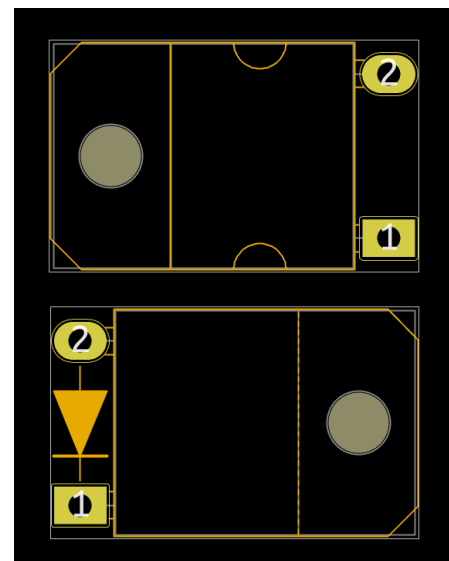
TO-218-2_Horizontal_TabUp_KA

Available pin markings:

Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-218 "TabDown" footprint (top) and a diode "TabUp" footprint (bottom).

TO-220 vertical power transistor footprints

Footprint count: 9

Footprint naming convention:

TO-220-3_Vertical_<optional: pin marking order>

Name examples:

TO-220-3_Vertical

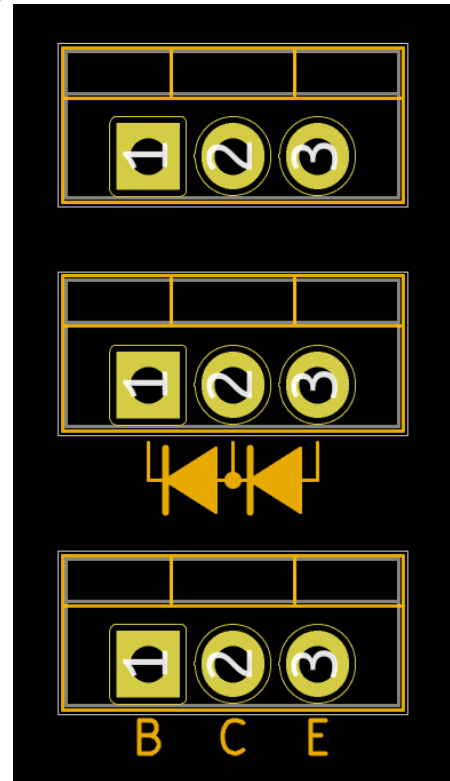
TO-220-3_Vertical_GCE

TO-220-3_Vertical_Series

Available pin markings:

Diodes:	AKA, KAK, Series
Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).



TO-220 standard footprint (top), dual diode series footprint (middle) and a bipolar transistor footprint (bottom).

TO-220 horizontal power transistor footprints

Footprint count: 18

Footprint naming convention:

TO-220-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:

TO-220-3_Horizontal_TabUp

TO-220-3_Horizontal_TabDown_KAK

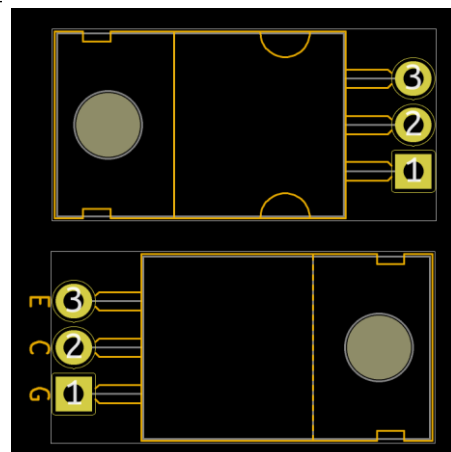
TO-220-3_Horizontal_TabUp_GCE

TO-220-3_Horizontal_TabDown

TO-220-3_Horizontal_TabDown_GDS

TO-220-3_Horizontal_TabUp_Series

TO-220-3_Horizontal_TabDown_KAG



TO-220 standard "TabDown" footprint (top) and an IGBT "TabUp" footprint (bottom).

Available pin markings:

Diodes:	AKA, KAK, Series
Bipolar transistors:	BCE
FET transistors:	GDS
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

TO-220 vertical power transistor footprints with staggered pin layout

Footprint count: 6

Footprint naming convention:

TO-220-3_Staggered_Vertical_<optional: pin marking order>

Name examples:

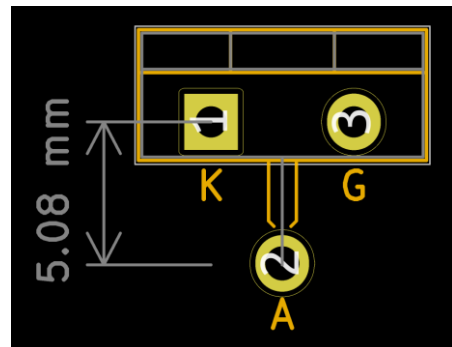
TO-220-3_Staggered_Vertical
 TO-220-3_Staggered_Vertical_BCE
 TO-220-3_Staggered_Vertical_GDS

Available pin markings:

Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

Staggered pin spacing allows for greater clearance, important in high voltage applications.



TO-220 Thyristor footprint with staggered pin layout.

Two pin TO-220 vertical footprints

Footprint count: 2

Footprint naming convention:

TO-220-2_Vertical_<optional: pin marking order>

Footprint names:

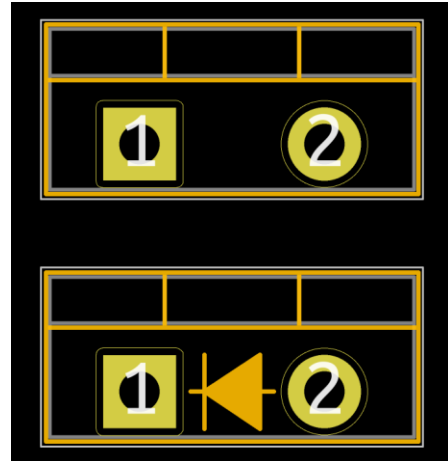
TO-220-2_Vertical

TO-220-2_Vertical_KA

Available pin markings:

Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).



TO-220 standard footprint (top) and a diode footprint (bottom).

Two pin TO-220 horizontal footprints

Footprint count: 4

Footprint naming convention:

TO-220-2_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:

TO-220-2_Horizontal_TabDown

TO-220-2_Horizontal_TabDown_KA

TO-220-2_Horizontal_TabUp

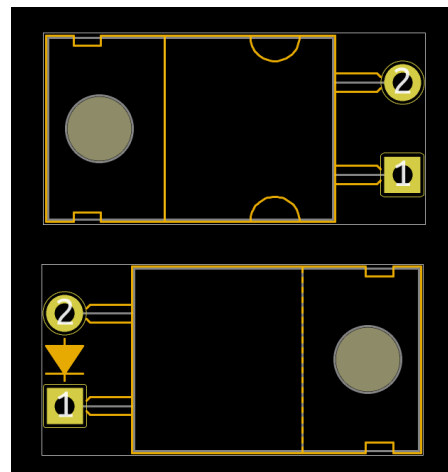
TO-220-2_Horizontal_TabUp_KA

Available pin markings:

Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

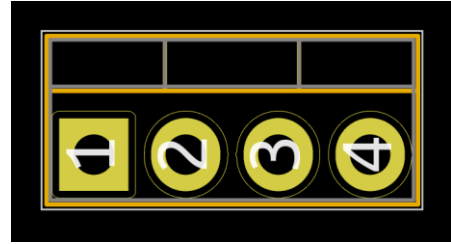
"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-220 "TabDown" footprint (top) and a diode "TabUp" footprint (bottom).

Four pin TO-220 vertical footprint

Footprint name:
TO-220-4_Vertical



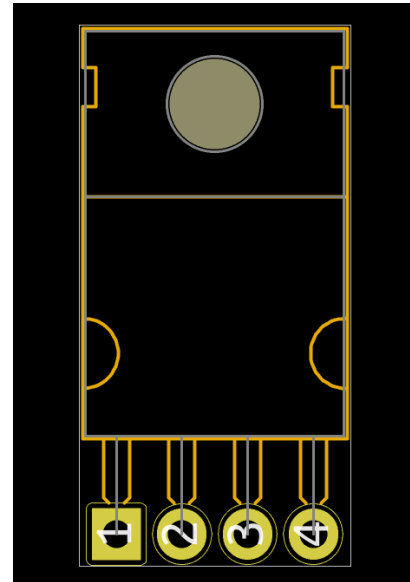
TO-220-4 vertical footprint.

Four pin TO-220 horizontal footprints

Footprint count: 2

Footprint names:
TO-220-4_Horizontal_TabDown
TO-220-4_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-220-4 "TabDown" footprint.

Four pin TO-220 horizontal footprints with staggered pins

Footprint count: 2

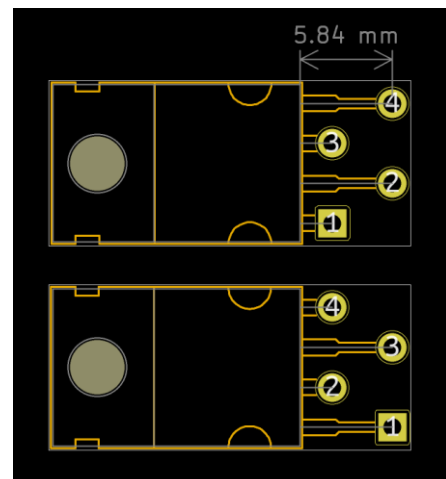
Footprint naming convention:
TO-220-4_P5.08x2.54mm<Pin stagger option> **_Lead**<Distance to furthest hole> **_TabDown**

Footprint names:
TO-220-4_P5.08x2.54mm_StaggerEven_Lead5.84mm_TabDown
TO-220-4_P5.08x2.54mm_StaggerOdd_Lead5.84mm_TabDown

"StaggerEven" option denotes footprints with even-numbered pads (2, 4...) extended outward.

"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3...) extended outward.

"TabDown" means the footprints have the metal tab contacting the PCB.



TO-220-4 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole shown.

Four pin TO-220 vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220-4_P5.08x2.54mm_<Pin stagger option>_Lead<Distance to furthest hole>_Vertical

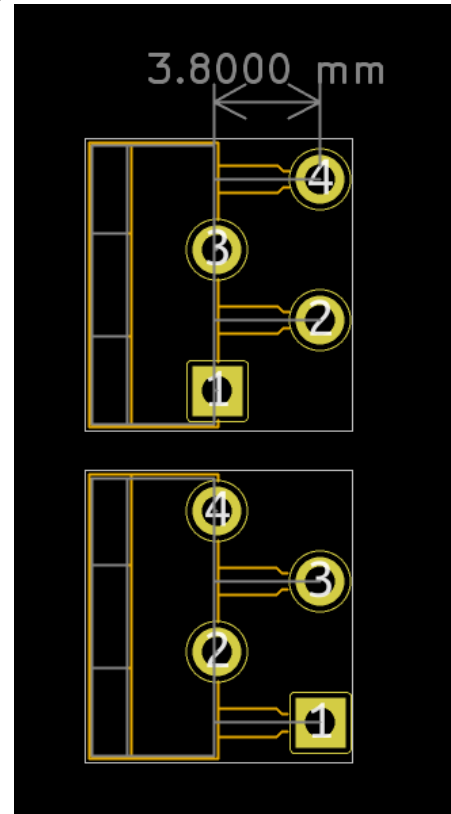
Footprint names:

TO-220-4_P5.08x2.54mm_StaggerEven_Lead3.8mm_Verical

TO-220-4_P5.08x2.54mm_StaggerOdd_Lead3.8mm_Verical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



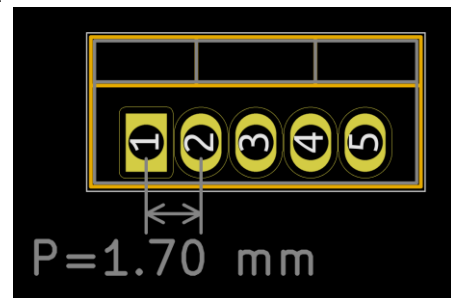
TO-220-4 “StaggerEven” footprint (top) and a “StaggerOdd” footprint (bottom) with distance to furthest hole shown.

Five pin TO-220 (Pentawatt) vertical footprint

Footprint name:

TO-220-5_Verical

5-pin version of the standard TO-220 package. Due to size constraints pin pitch is reduced to 1.7mm



TO-220-5 vertical footprint.

Five pin TO-220 (Pentawatt) horizontal footprints

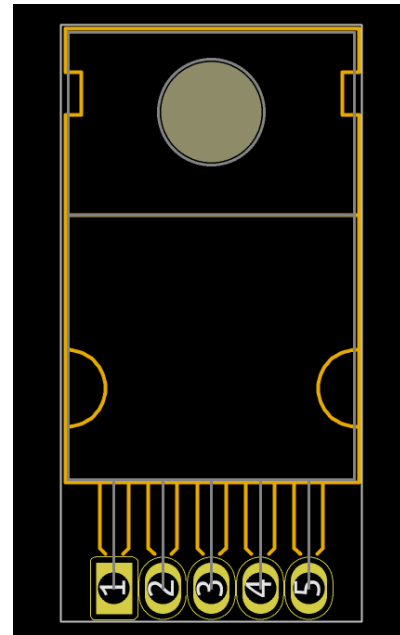
Footprint count: 2

Footprint names:

TO-220-5_Horizontal_TabDown

TO-220-5_Horizontal_TabUp

“TabUp” footprints have the heat-sink tab facing away from the PCB, and “TabDown” footprints have the metal tab contacting the PCB.



TO-220-5 “TabDown” footprint.

Five pin TO-220 (Pentawatt) horizontal footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220-5_P3.4x3.8mm_<Pin stagger option>

_Lead<Distance to furthest hole>_TabDown

Footprint names:

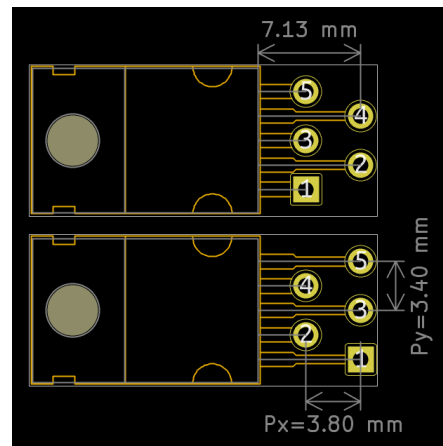
TO-220-5_P3.4x3.8mm_StaggerEven_Lead7.13mm_TabDown

TO-220-5_P3.4x3.8mm_StaggerOdd_Lead7.13mm_TabDown

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.

“TabDown” means the footprints have the metal tab contacting the PCB.



TO-220-5 “StaggerEven” footprint (top) and a “StaggerOdd” footprint (bottom) with distance to furthest hole and pin pitches shown.

Five pin TO-220 (Pentawatt) vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220-5_P3.4x3.7mm_<Pin stagger option>_Lead<Distance to furthest hole>_Vertical

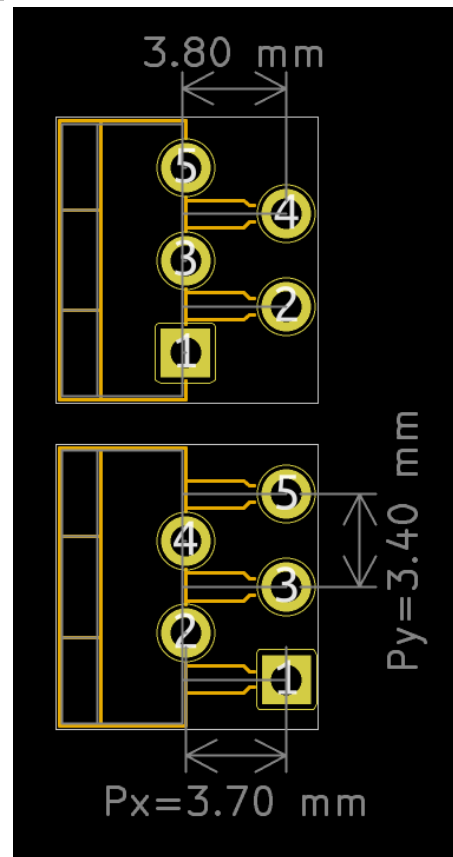
Footprint names:

TO-220-5_P3.4x3.7mm_StaggerEven_Lead3.8mm_Verical

TO-220-5_P3.4x3.7mm_StaggerOdd_Lead3.8mm_Verical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



TO-220-5 “StaggerEven” footprint (top) and a “StaggerOdd” footprint (bottom) with distance to furthest hole and pin pitches shown.

Seven pin TO-220 (Heptawatt) horizontal footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220-7_P2.54x3.8mm_<Pin stagger option>_Lead<Distance to furthest hole>_TabDown

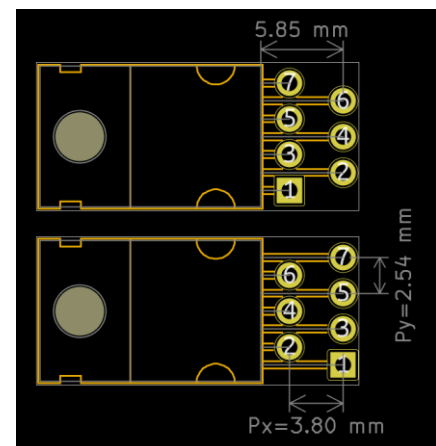
Footprint names:

TO-220-7_P2.54x3.8mm_StaggerEven_Lead5.85mm_TabDown

TO-220-7_P2.54x3.8mm_StaggerOdd_Lead5.85mm_TabDown

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward. “StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.

“TabDown” means the footprints have the metal tab contacting the PCB.



TO-220-7 “StaggerEven” footprint (top) and a “StaggerOdd” footprint (bottom) with distance to furthest hole and pin pitches shown.

Seven pin TO-220 (Heptawatt) vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220-7_P3.4x3.7mm_<Pin stagger option>_Lead<Distance to furthest hole>_Vertical

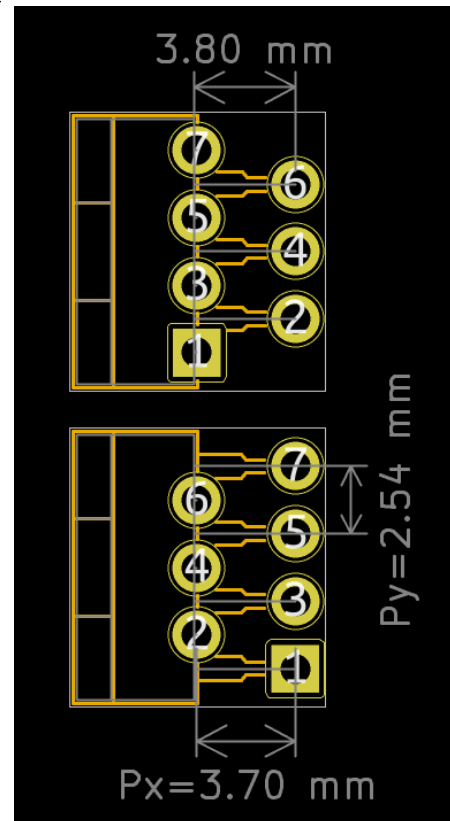
Footprint names:

TO-220-7_P2.54x3.7mm_StaggerEven_Lead3.8mm_Verical

TO-220-7_P2.54x3.7mm_StaggerOdd_Lead3.8mm_Verical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



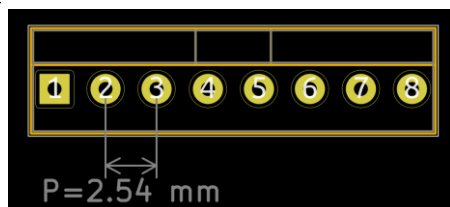
TO-220-7 “StaggerEven” footprint (top) and a “StaggerOdd” footprint (bottom) with distance to furthest hole and pin pitches shown.

Eight pin extended TO-220 footprint

Footprint name:

TO-220-8_Verical

8-pin version of the standard TO-220 package with wider body.



TO-220-8 vertical footprint.

Nine pin TO-220 horizontal footprints with staggered pins

Footprint count: 2

Footprint naming convention:

**TO-220-9_P2.54x3.8mm_<Pin stagger option>
_Lead<Distance to furthest hole>_TabDown**

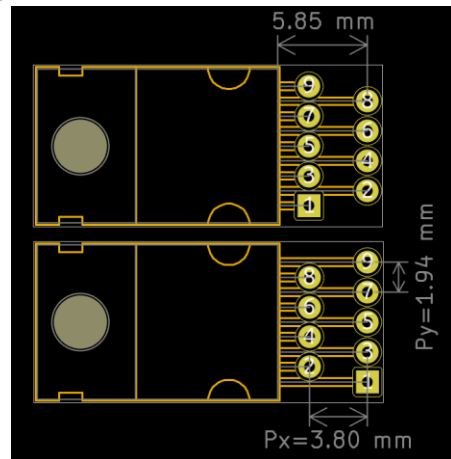
Footprint names:

TO-220-9_P1.94x3.8mm_StaggerEven_Lead5.85mm
_TabDown

TO-220-9_P1.94x3.8mm_StaggerOdd_Lead5.85mm
_TabDown

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward. “StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.

“TabDown” means the footprints have the metal tab contacting the PCB.



TO-220-9 “StaggerEven” footprint (top) and a “StaggerOdd” footprint (bottom) with distance to furthest hole and pin pitches shown.

Nine pin TO-220 vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

**TO-220-9_P1.94x3.7mm_<Pin stagger option>
_Lead<Distance to furthest hole>_Vertical**

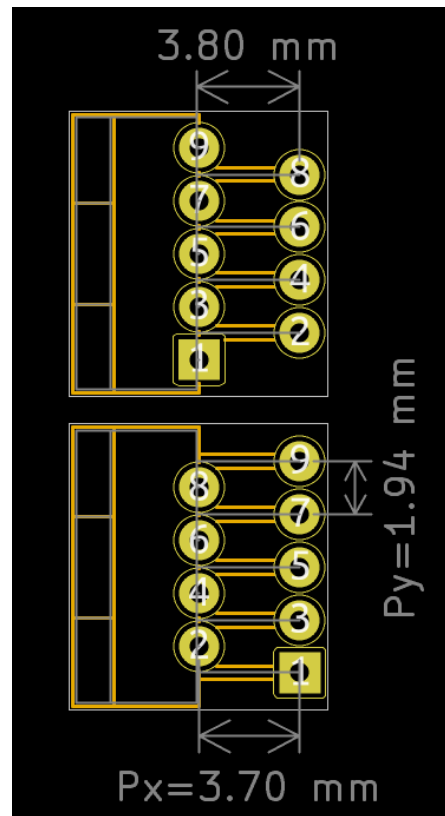
Footprint names:

TO-220-9_P1.94x3.7mm_StaggerEven_Lead3.8mm
_Vertical

TO-220-9_P1.94x3.7mm_StaggerEven_Lead3.8mm
_Vertical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



TO-220-9 “StaggerEven” footprint (top) and a “StaggerOdd” footprint (bottom) with distance to furthest hole and pin pitches shown.

11-pin extended TO-220 horizontal footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220-11_P<pitch x>**x**<pitch y>**mm_**<Pin stagger option>**_Lead**<Distance to furthest hole>**_TabDown**

Footprint names:

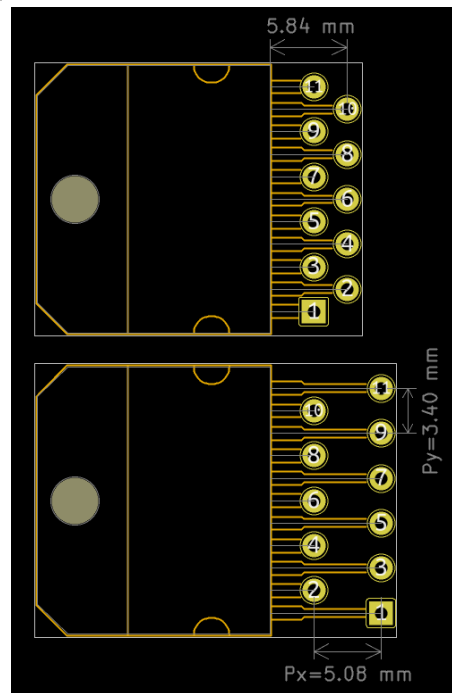
TO-220-11_P3.4x2.54mm_StaggerEven_Lead5.84mm
_TabDown

TO-220-11_P3.4x2.54mm_StaggerOdd_Lead5.84mm
_TabDown

TO-220-11_P3.4x5.08mm_StaggerOdd_Lead8.45mm
_TabDown

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward. “StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.

“TabDown” means the footprints have the metal tab contacting the PCB.



TO-220-11 “StaggerEven” footprint (top) and a “StaggerOdd” footprint (bottom) with distance to furthest hole and pin pitches shown.

11-pin extended TO-220 vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220-11_P3.4x5.08mm_<Pin stagger option>
_Lead<Distance to furthest hole>**_Vertical**

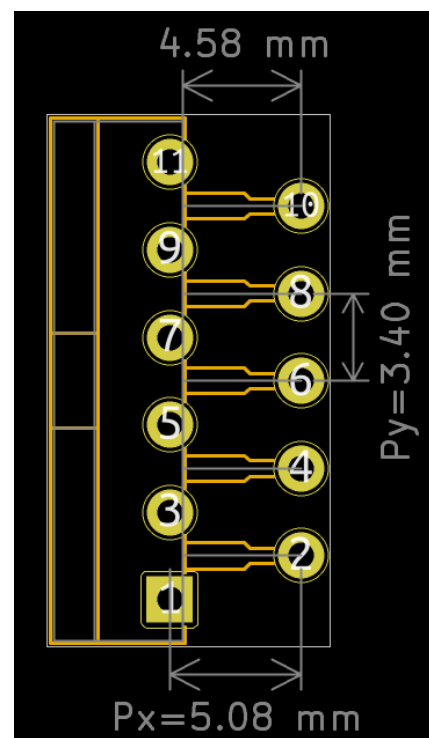
Footprint names:

TO-220-11_P3.4x5.08mm_StaggerEven_Lead4.85mm
_Vertical

TO-220-11_P3.4x5.08mm_StaggerEven_Lead4.85mm
_Vertical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



TO-220-11 “StaggerEven” footprint with distance to furthest hole and pin pitches shown.

15-pin extended TO-220 horizontal footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220-15_P2.54x2.54mm_<Pin stagger option>_Lead<Distance to furthest hole>_TabDown

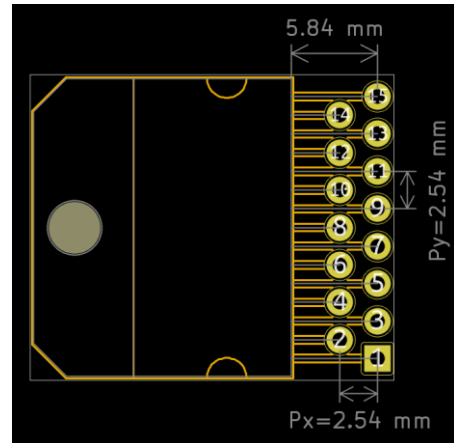
Footprint names:

TO-220-15_P2.54x2.54mm_StaggerEven_Lead5.84mm_TabDown

TO-220-15_P2.54x2.54mm_StaggerOdd_Lead5.84mm_TabDown

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward. “StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.

“TabDown” means the footprints have the metal tab contacting the PCB.



TO-220-15 “StaggerOdd” footprint with distance to furthest hole and pin pitches shown.

15-pin extended TO-220 vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220-15_P2.54x2.54mm_<Pin stagger option>_Lead<Distance to furthest hole>_Vertical

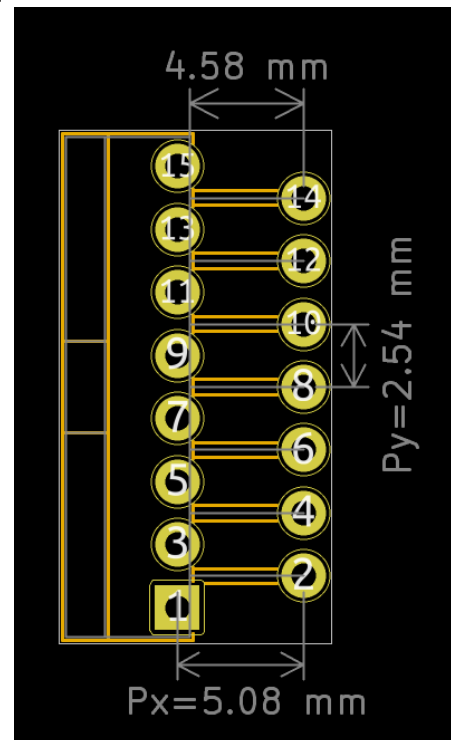
Footprint names:

TO-220-15_P2.54x2.54mm_StaggerEven_Lead4.85mm_Verical

TO-220-15_P2.54x2.54mm_StaggerEven_Lead4.85mm_Verical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



TO-220-15 “StaggerEven” footprint with distance to furthest hole and pin pitches shown.

Fully Molded TO-220 (TO-220F) vertical footprints

Footprint count: 9

Footprint naming convention:

TO-220F-3_Vertical <optional: pin marking order>

Name examples:

TO-220F-3_Vertical

TO-220F-3_Vertical_GCE

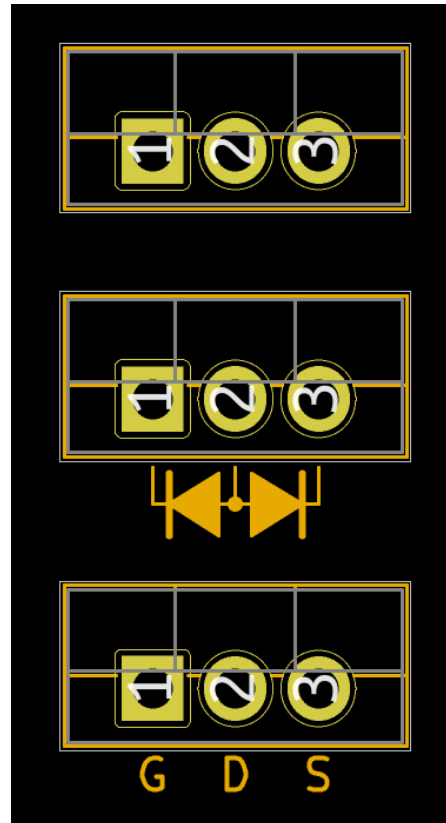
TO-220F-3_Vertical_Series

Available pin markings:

Diodes:	AKA, KAK, Series
Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-220F package is a fully insulated variant of the standard TO-220.



TO-220F standard footprint (top), dual diode series footprint (middle) and a bipolar transistor footprint (bottom).

TO-220F horizontal power transistor footprints

Footprint count: 18

Footprint naming convention:

TO-220F-3_Horizontal <tab orientation> <optional: pin marking order>

Name examples:

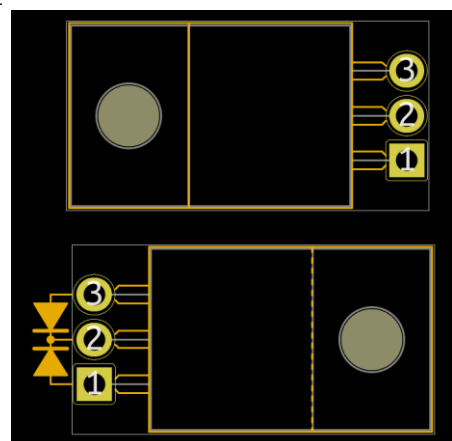
TO-220F-3_Horizontal_TabUp

TO-220F-3_Horizontal_TabDown_KAK

TO-220F-3_Horizontal_TabUp_GCE

TO-220F-3_Horizontal_TabDown

TO-220F-3_Horizontal_TabDown_GDS



TO-220F standard "TabDown" footprint (top) and an IGBT "TabUp" footprint (bottom).

Available pin markings:

Diodes:	AKA, KAK, Series
Bipolar transistors:	BCE
FET transistors:	GDS
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.

TO-220F vertical power transistor footprints with staggered pin layout

Footprint count: 6

Footprint naming convention:

TO-220F-3_Staggered_Vertical_<optional: pin marking order>

Name examples:

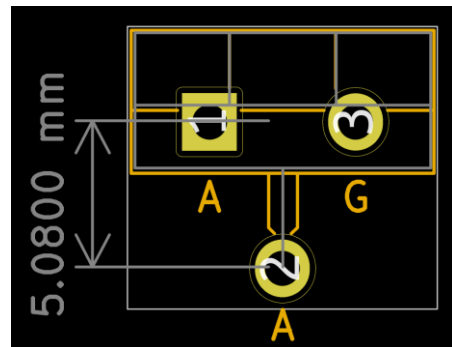
TO-220F-3_Staggered_Vertical
 TO-220F-3_Staggered_Vertical_BCE
 TO-220F-3_Staggered_Vertical_GDS

Available pin markings:

Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

Staggered pin spacing allows for greater clearance, important in high voltage applications.



TO-220F Thyristor footprint with staggered pin layout.

Two pin TO-220F vertical footprints

Footprint count: 2

Footprint naming convention:

TO-220F-2_Vertical_<optional: pin marking order>

Footprint names:

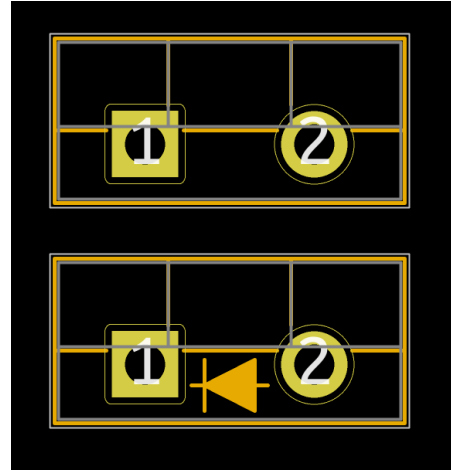
TO-220F-2_Vertical

TO-220F-2_Vertical_KA

Available pin markings:

Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).



TO-220F standard footprint (top) and a diode footprint (bottom).

Two pin TO-220F horizontal footprints

Footprint count: 4

Footprint naming convention:

TO-220F-2_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:

TO-220F-2_Horizontal_TabDown

TO-220F-2_Horizontal_TabDown_KA

TO-220F-2_Horizontal_TabUp

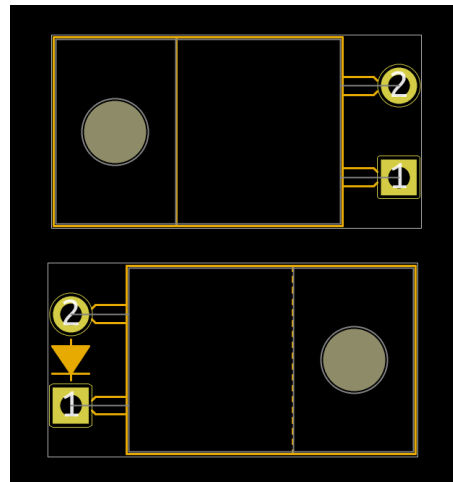
TO-220F-2_Horizontal_TabUp_KA

Available pin markings:

Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.



TO-220F "TabDown" footprint (top) and a diode "TabUp" footprint (bottom).

Four pin TO-220F vertical footprint

Footprint name:
TO-220F-4_Vertical



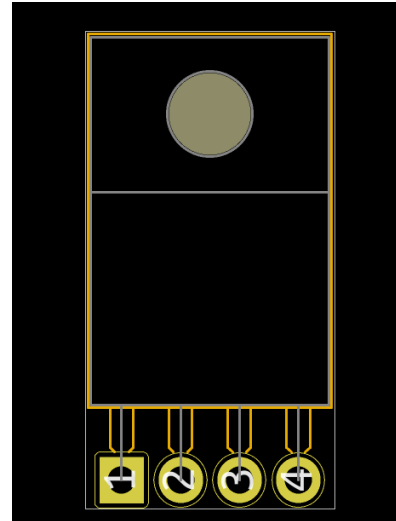
TO-220F-4 vertical footprint.

Four pin TO-220F horizontal footprints

Footprint count: 2

Footprint names:
TO-220F-4_Horizontal_TabDown
TO-220F-4_Horizontal_TabUp

“TabUp” footprints have the heat-sink tab facing away from the PCB, and “TabDown” footprints have the thermal tab contacting the PCB.



TO-220F-4 “TabDown” footprint.

Four pin TO-220F vertical footprints with staggered pins

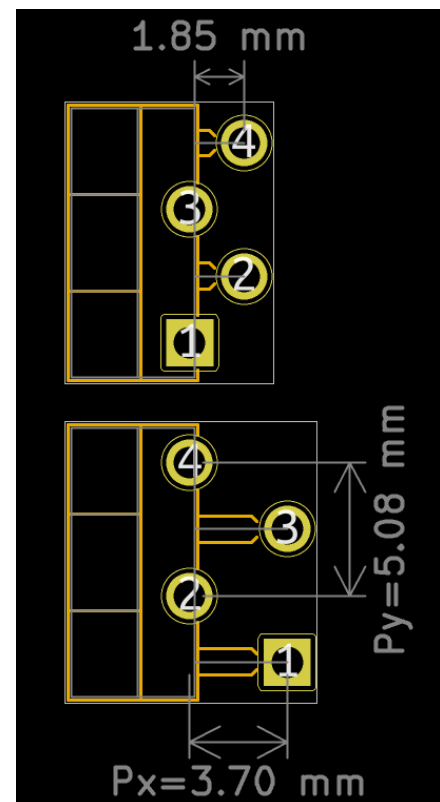
Footprint count: 4

Footprint naming convention:
TO-220F-4_P<Vertical pitch>**x**<Horizontal pitch>**_mm_**<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

Footprint names:
TO-220F-4_P5.08x2.05mm_StaggerEven_Lead1.85mm_Vertical
TO-220F-4_P5.08x2.05mm_StaggerEven_Lead1.85mm_Vertical
TO-220F-4_P5.08x3.7mm_StaggerEven_Lead3.5mm_Vertical
TO-220F-4_P5.08x3.7mm_StaggerEven_Lead3.5mm_Vertical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



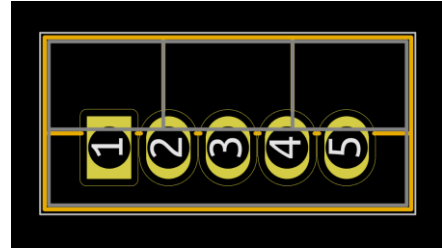
TO-220-4F “StaggerEven” footprint (top) and a “StaggerOdd” footprint (bottom) with distance to furthest hole and pin pitches shown.

Five pin TO-220F vertical footprint

Footprint name:

TO-220-5F_Vertical

5-pin version of the standard TO-220F package. Due to size constraints pin pitch is reduced to 1.7mm



TO-220F-5 vertical footprint.

Five pin TO-220F horizontal footprints

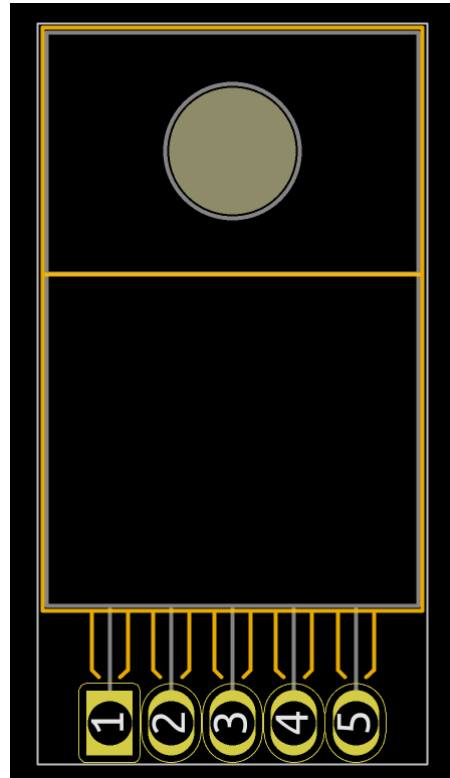
Footprint count: 2

Footprint names:

TO-220F-5_Horizontal_TabDown

TO-220F-5_Horizontal_TabUp

“TabUp” footprints have the heat-sink tab facing away from the PCB, and “TabDown” footprints have the thermal tab contacting the PCB.



TO-220F-5 “TabDown” footprint.

Five pin TO-220F vertical footprints with staggered pins

Footprint count: 4

Footprint naming convention:

TO-220F-5_P<Vertical pitch>**x**<Horizontal pitch>**_mm_**<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

Footprint names:

TO-220F-5_P3.4x2.06mm_StaggerEven_Lead1.86mm_Verical

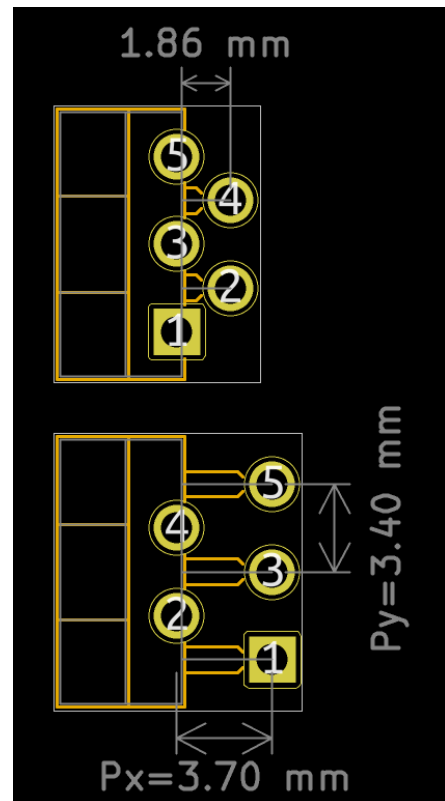
TO-220F-5_P3.4x2.06mm_StaggerOdd_Lead1.86mm_Verical

TO-220F-5_P3.4x3.7mm_StaggerEven_Lead3.5mm_Verical

TO-220F-5_P3.4x3.7mm_StaggerOdd_Lead3.5mm_Verical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4...) extended outward.

"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3...) extended outward.



TO-220F-5 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

Seven pin TO-220F vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220F-7_P2.54x3.7mm_<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

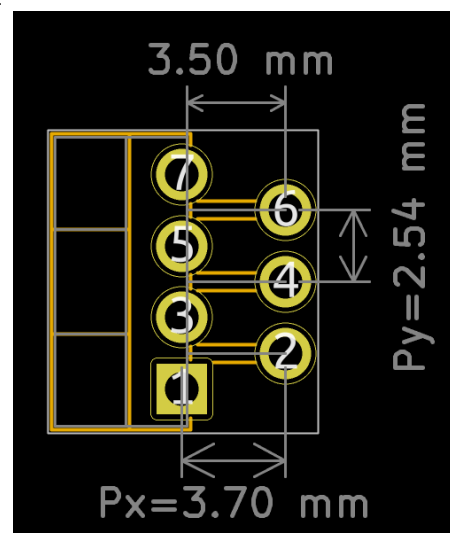
Footprint names:

TO-220F-7_P2.54x3.7mm_StaggerEven_Lead3.5mm_Verical

TO-220F-7_P2.54x3.7mm_StaggerEven_Lead3.5mm_Verical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4...) extended outward.

"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3...) extended outward.



TO-220F-7 "StaggerEven" footprint with distance to furthest hole and pin pitches shown.

Nine pin TO-220F vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220F-9_P1.8x3.7mm_<Pin stagger option>

_Lead<Distance to furthest hole>_Vertical

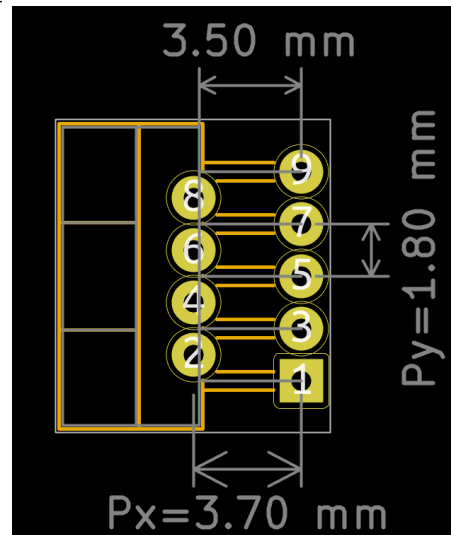
Footprint names:

TO-220F-9_P1.8x3.7mm_StaggerEven_Lead3.5mm
_Vertical

TO-220F-9_P1.8x3.7mm_StaggerEven_Lead3.5mm
_Vertical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



TO-220F-9 “StaggerOdd” footprint with distance to furthest hole and pin pitches shown.

11-pin extended TO-220F vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

TO-220F-11_P3.4x5.08mm_<Pin stagger option>

_Lead<Distance to furthest hole>_Vertical

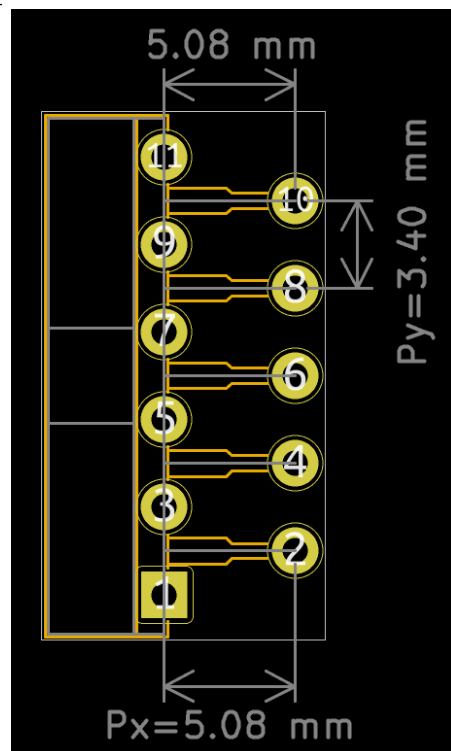
Footprint names:

TO-220F-11_P3.4x5.08mm_StaggerEven_Lead5.08mm
_Vertical

TO-220F-11_P3.4x5.08mm_StaggerEven_Lead5.08mm
_Vertical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



TO-220F-11 “StaggerEven” footprint with distance to furthest hole and pin pitches shown.

15-pin extended TO-220F vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:

**TO-220F-15_P2.54x5.08mm_<Pin stagger option>
_Lead<Distance to furthest hole>_Vertical**

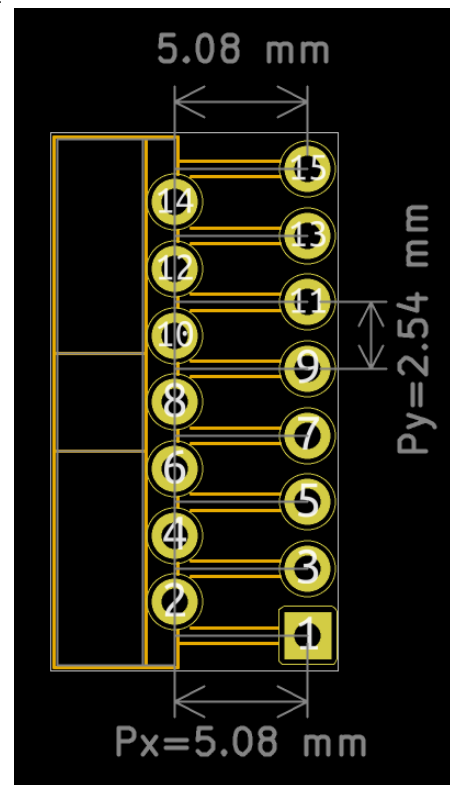
Footprint names:

TO-220F-15_P2.54x5.08mm_StaggerEven_Lead5.08mm_Verical

TO-220F-15_P2.54x5.08mm_StaggerOdd_Lead5.08mm_Verical

“StaggerEven” option denotes footprints with even-numbered pads (2, 4...) extended outward.

“StaggerOdd” option denotes footprints with odd-numbered pads (1, 3...) extended outward.



TO-220F-15 “StaggerOdd” footprint with distance to furthest hole and pin pitches shown.

TO-247 vertical power transistor footprints

Footprint count: 9

Footprint naming convention:

TO-247-3_Verical_<optional: pin marking order>

Name examples:

TO-247-3_Verical

TO-247-3_Verical_BCE

TO-247-3_Verical_KAG

TO-247-3_Verical_AKA

Available pin markings:

Diodes: AKA, KAK, xKA

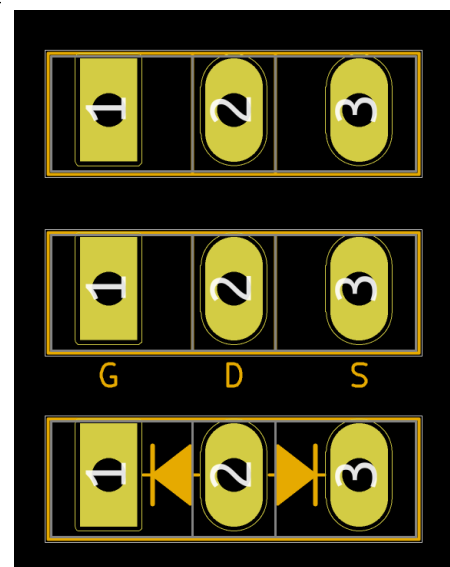
Bipolar transistors: BCE

FET transistors: GDS

IGBT transistors: GCE

Thyristors: KAG

Traics: AAG



TO-247 standard footprint (top), MOSFET footprint (middle) and a dual diode footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-247 horizontal power transistor footprints

Footprint count: 18

Footprint naming convention:

TO-247-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:

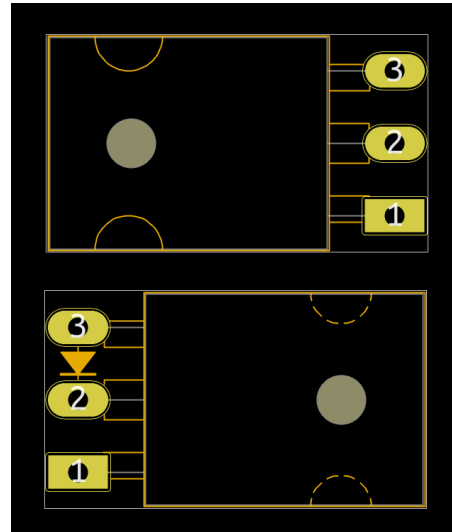
TO-247-3_Horizontal_TabUp
 TO-247-3_Horizontal_TabDown_KAK
 TO-247-3_Horizontal_TabUp_GCE
 TO-247-3_Horizontal_TabDown
 TO-247-3_Horizontal_TabDown_GDS
 TO-247-3_Horizontal_TabUp_Series
 TO-247-3_Horizontal_TabDown_KAG

Available pin markings:

Diodes: AKA, KAK, xKA
 Bipolar transistors: BCE
 FET transistors: GDS
 IGBT transistors: GCE
 Thyristors: KAG
 Traics: AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-247 standard "TabDown" footprint (top) and a single diode "TabUp" footprint (bottom).

Two pin TO-247 vertical footprints

Footprint count: 2

Footprint naming convention:

TO-247-2_Vertical_*<optional: pin marking order>*

Footprint names:

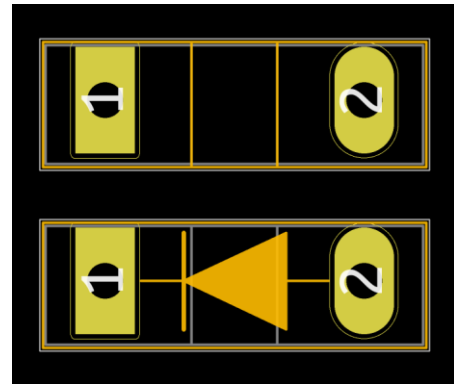
TO-247-2_Vertical

TO-247-2_Vertical_KA

Available pin markings:

Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).



TO-247 standard footprint (top) and a diode footprint (bottom).

Two pin TO-247 horizontal footprints

Footprint count: 4

Footprint naming convention:

TO-247-2_Horizontal_*<tab orientation>*_*<optional: pin marking order>*

Footprint names:

TO-247-2_Horizontal_TabDown

TO-247-2_Horizontal_TabDown_KA

TO-247-2_Horizontal_TabUp

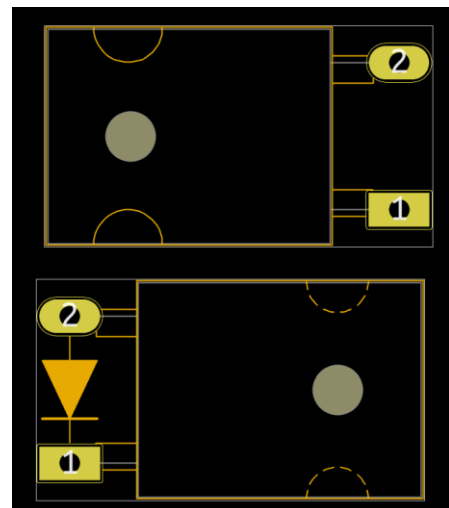
TO-247-2_Horizontal_TabUp_KA

Available pin markings:

Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.



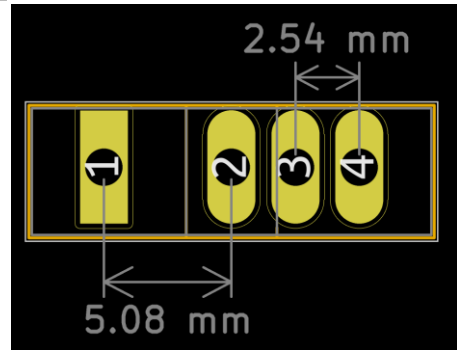
TO-247 "TabDown" footprint (top) and a diode "TabUp" footprint (bottom).

Four pin TO-247 vertical footprint

Footprint name:

TO-247-4_Vertical

Package used in some high-power switching transistors with kelvin connection for the source/emitter pin.



TO-247-4 vertical footprint.

Four pin TO-247 horizontal footprints

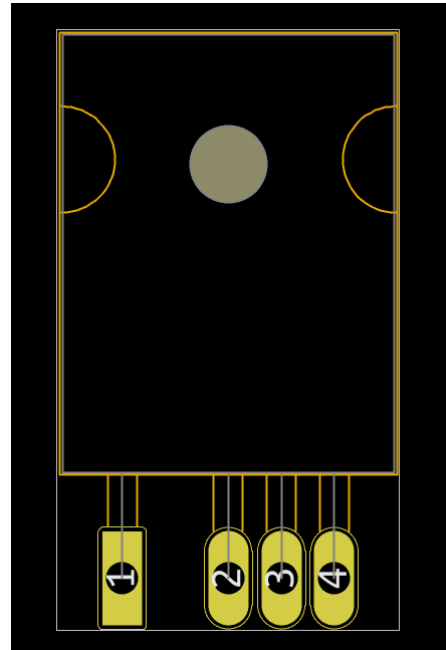
Footprint count: 2

Footprint names:

TO-247-4_Horizontal_TabDown

TO-247-4_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

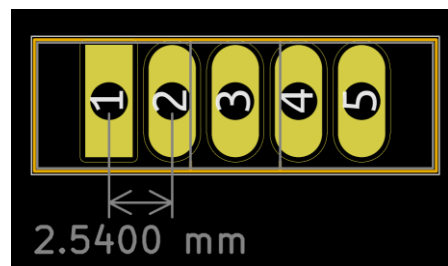


TO-247-4 "TabDown" footprint.

Five pin TO-247 vertical footprint

Footprint name:

TO-247-5_Vertical



TO-247-5 vertical footprint.

Five pin TO-247 horizontal footprints

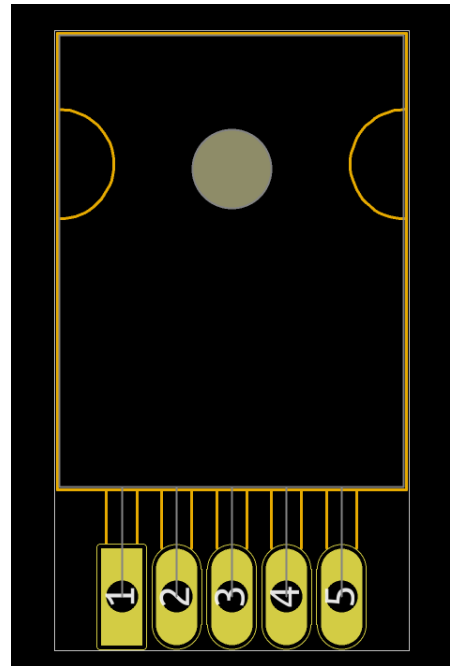
Footprint count: 2

Footprint names:

TO-247-5_Horizontal_TabDown

TO-247-5_Horizontal_TabUp

“TabUp” footprints have the heat-sink tab facing away from the PCB, and “TabDown” footprints have the metal tab contacting the PCB.



TO-247-5 “TabDown” footprint.

TO-251 (IPAK) vertical power transistor footprints

Footprint count: 4

Footprint naming convention:

TO-251-3_Vertical_<optional: pin marking order>

Footprint names:

TO-251-3_Vertical

TO-251-3_Vertical_BCE

TO-251-3_Vertical_GCE

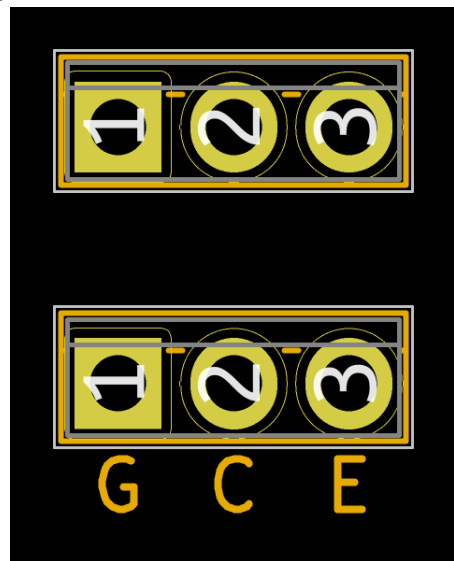
TO-251-3_Vertical_GDS

Available pin markings:

Bipolar transistors: BCE

FET transistors: GDS

IGBT transistors: GCE



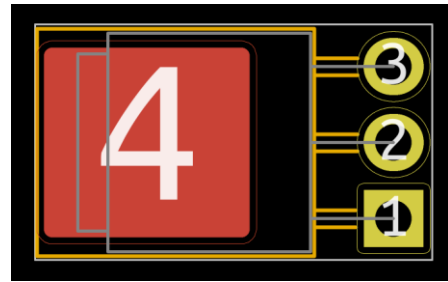
TO-251 standard footprint (top) and an IGBT footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device’s pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-251 (IPAK) horizontal footprint

Footprint name:

TO-251-3-1EP_Horizontal_TabDown

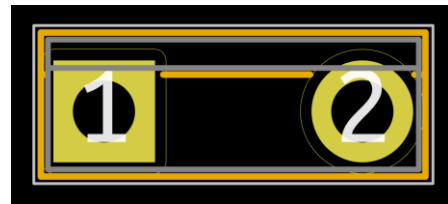


TO-251 horizontal footprint.

Two pin TO-251 (IPAK) vertical footprint

Footprint name:

TO-251-2_Vertical



TO-251-2 vertical footprint.

Two pin TO-251 (IPAK) horizontal footprint

Footprint name:

TO-251-2-1EP_Horizontal_TabDown



TO-251-2 horizontal footprint.

TO-262 (IIPAK/I²PAK) vertical power transistor footprints

Footprint count: 4

Footprint naming convention:

TO-262-3_Vertical_<optional: pin marking order>

Footprint names:

TO-262-3_Vertical

TO-262-3_Vertical_BCE

TO-262-3_Vertical_GCE

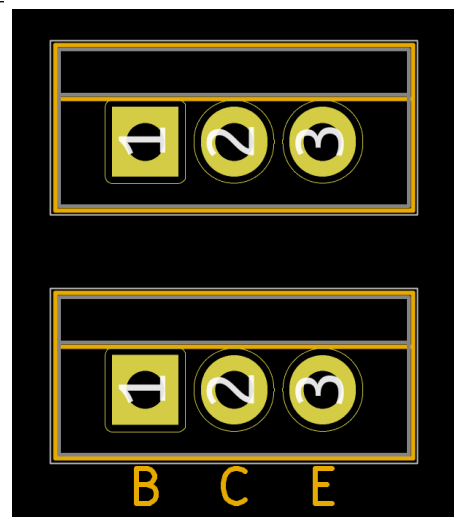
TO-262-3_Vertical_GDS

Available pin markings:

Bipolar transistors: BCE

FET transistors: GDS

IGBT transistors: GCE



TO-262 standard footprint (top) and an IGBT footprint (bottom).

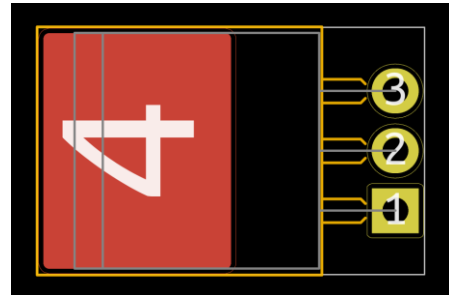
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order

of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-262 (IIPAK/I²PAK) horizontal footprint

Footprint name:

TO-262-3-1EP_Horizontal_TabDown



TO-262 horizontal footprint.

Two pin TO-262 vertical footprints

Footprint count: 2

Footprint naming convention:

TO-262-2_Vertical_<optional: pin marking order>

Footprint names:

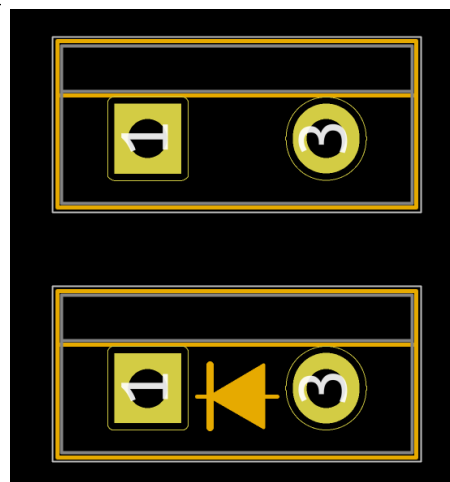
TO-262-2_Vertical

TO-262-2_Vertical_KA

Available pin markings:

Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: K means Cathode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).



TO-262-2 standard footprint (top) and a diode footprint (bottom).

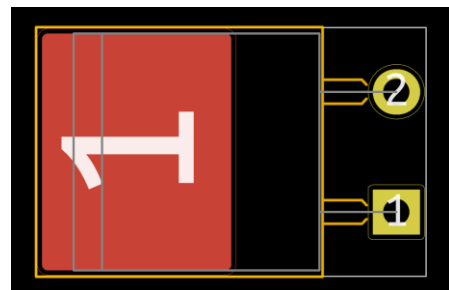
Two pin TO-262 horizontal footprints

Footprint name:

TO-262-2-1EP_Horizontal_TabDown

TO-262-2-1EP_Horizontal_TabPin1

"TabPin1" denotes a footprint for a device with the metal tab internally connected to pin 1.



TO-262-2 "TabPin1" horizontal footprint.

Five pin TO-262 vertical footprint

Footprint name:

TO-262-5_Vertical

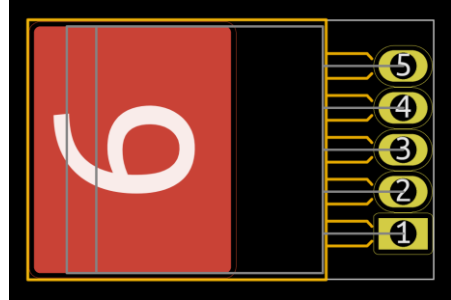


TO-262-5 vertical footprint.

Five pin TO-262 horizontal footprint

Footprint name:

TO-262-5-1EP_Horizontal_TabDown



TO-262-5 horizontal footprint.

TO-264 vertical power transistor footprints

Footprint count: 4

Footprint naming convention:

TO-264-3_Vertical_<optional: pin marking order>

Footprint names:

TO-262-3_Vertical

TO-262-3_Vertical_BCE

TO-262-3_Vertical_GCE

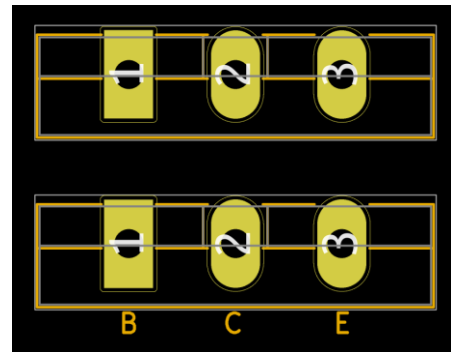
TO-262-3_Vertical_GDS

Available pin markings:

Bipolar transistors: BCE

FET transistors: GDS

IGBT transistors: GCE



TO-264 standard footprint (top) and an IGBT footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-264 horizontal power transistor footprints

Footprint count: 8

Footprint naming convention:

TO-264-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:

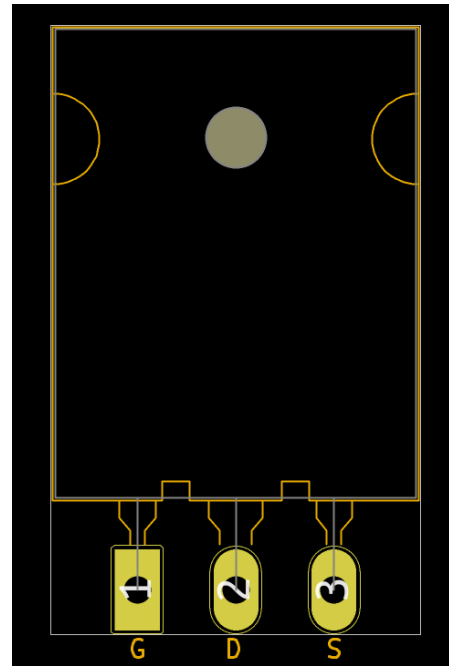
TO-264-3_Horizontal_TabDown
 TO-264-3_Horizontal_TabDown_BCE
 TO-264-3_Horizontal_TabDown_GCE
 TO-264-3_Horizontal_TabDown_GDS
 TO-264-3_Horizontal_TabUp
 TO-264-3_Horizontal_TabUp_BCE
 TO-264-3_Horizontal_TabUp_GCE
 TO-264-3_Horizontal_TabUp_GDS

Available pin markings:

Bipolar transistors: BCE
 FET transistors: GDS
 IGBT transistors: GCE

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

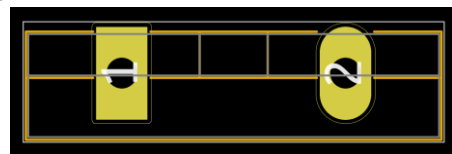


TO-264 standard "TabDown" FET transistor footprint.

Two pin TO-264 vertical footprint

Footprint name:

TO-264-2_Vertical



TO-264-2 vertical footprint.

Two pin TO-264 horizontal footprints

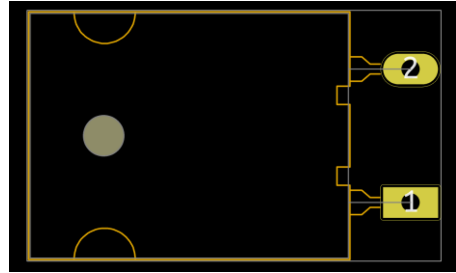
Footprint count: 2

Footprint names:

TO-264-2_Horizontal_TabDown

TO-264-2_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

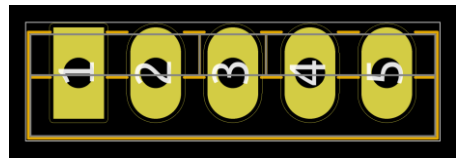


TO-264-2 "TabDown" footprint.

Five pin TO-264 vertical footprint

Footprint name:

TO-264-5_Vertical



TO-264-5 vertical footprint.

Five pin TO-264 horizontal footprints

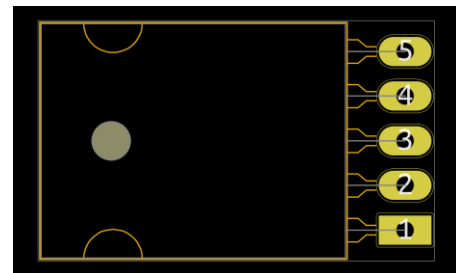
Footprint count: 2

Footprint names:

TO-264-5_Horizontal_TabDown

TO-264-5_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-264-5 "TabDown" footprint.

3.25. SMD Potentiometer Libraries

These libraries contain footprints for Surface Mount potentiometers and rheostats.

Hand soldering library variant contains additional symbols on the silkscreen layer placed under the part.

Hand soldering (US symbol) library variant has additional US - style symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: Potentiometer_SMD_AKL	
Footprint count:	26
Hand soldering variant	
Folder name: Potentiometer_SMD_Handsoldering_AKL	
Footprint count:	26
Hand soldering variant (US symbol)	
Folder name: Potentiometer_SMD_US_Handsoldering_AKL	
Footprint count:	26
Total footprints:	78

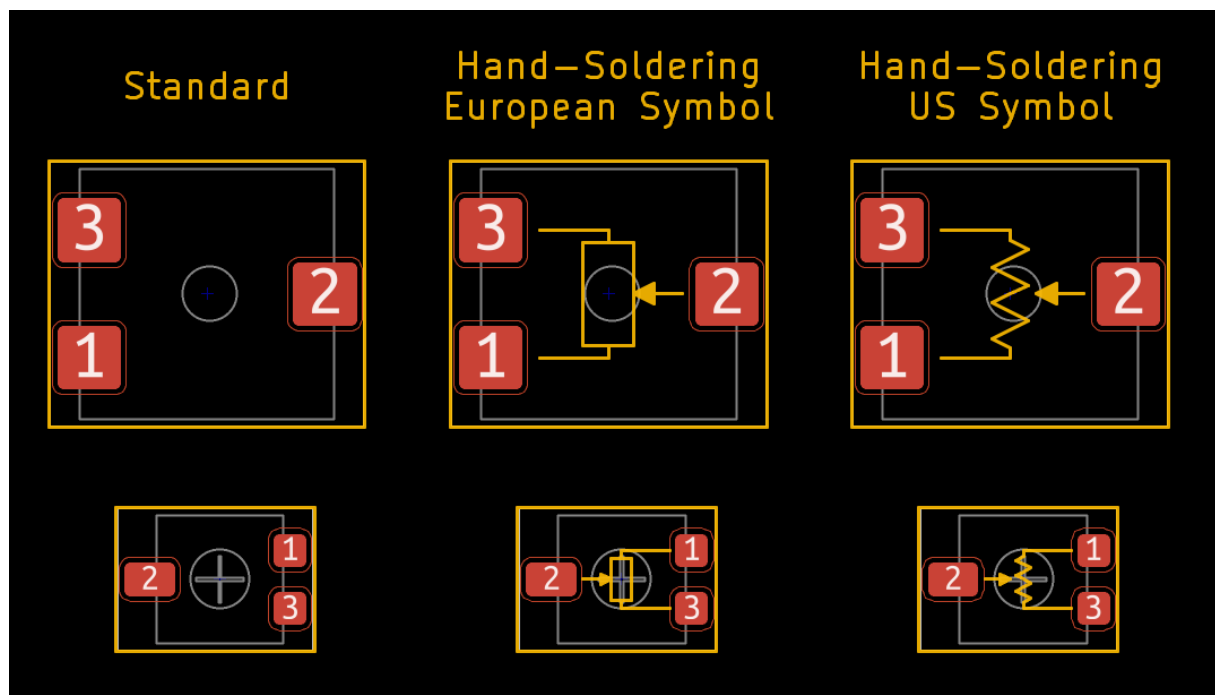


Figure 3.38. SMD potentiometer footprints demonstrating differences between the standard library (left), "Hand soldering" library (center) and a "US Handsoldering" library (right).

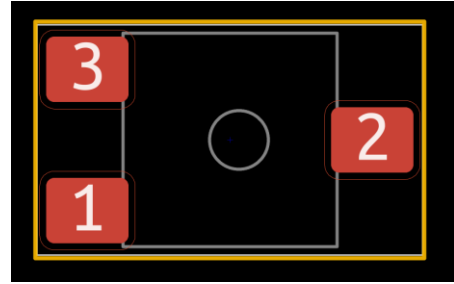
ACP CA6-VSMD footprints

Footprint count: 2

Footprint names:

Potentiometer_ACP_CA6-VSMD_Vertical
Potentiometer_ACP_CA6-VSMD_Vertical_Hole

"Hole" option denotes a footprint with a big NPTH hole allowing access to the bottom of the part.



CA6-VSMD footprint.

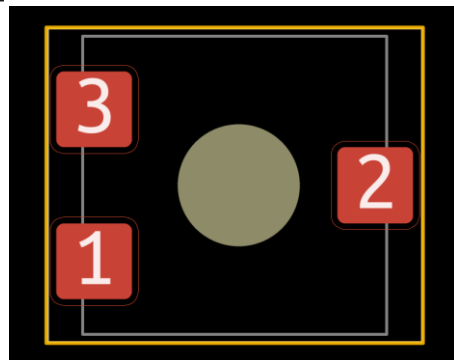
ACP CA9-VSMD footprints

Footprint count: 2

Footprint names:

Potentiometer_ACP_CA9-VSMD_Vertical
Potentiometer_ACP_CA9-VSMD_Vertical_Hole

"Hole" option denotes a footprint with a big NPTH hole allowing access to the bottom of the part.



CA9-VSMD "Hole" footprint.

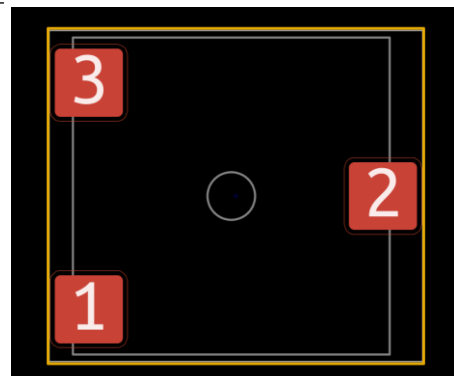
ACP CA14-VSMD footprints

Footprint count: 2

Footprint names:

Potentiometer_ACP_CA14-VSMD_Vertical
Potentiometer_ACP_CA14-VSMD_Vertical_Hole

"Hole" option denotes a footprint with a big NPTH hole allowing access to the bottom of the part.

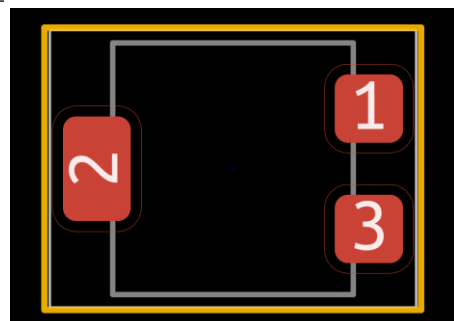


CA14-VSMD footprint.

Bourns 3214G footprint

Footprint name:

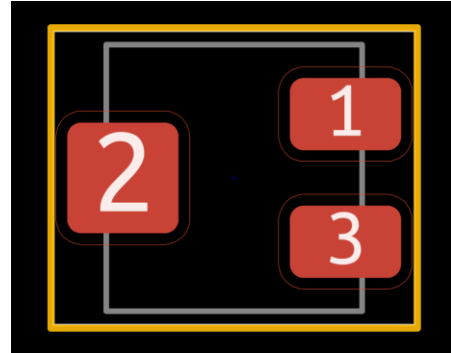
Potentiometer_Bourns_3214G_Horizontal



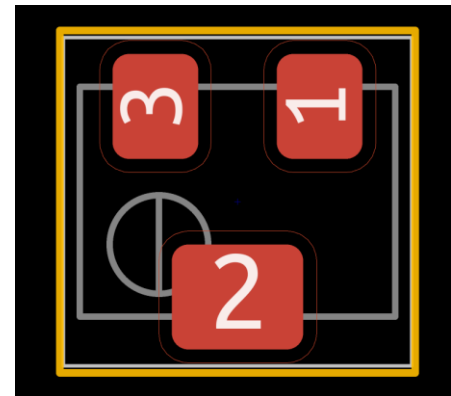
3214G footprint.

Bourns 3214J footprint**Footprint name:**

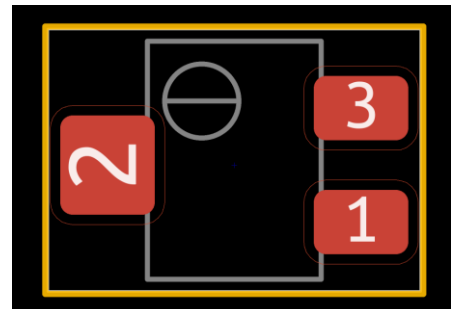
Potentiometer_Bourns_3214J_Horizontal

*3214J footprint.***Bourns 3214W footprint****Footprint name:**

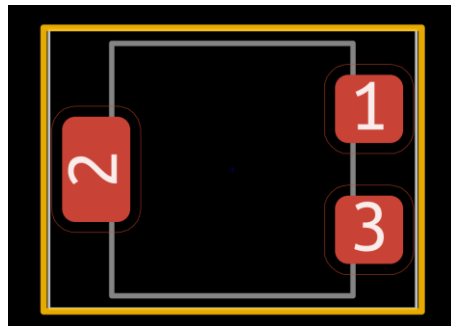
Potentiometer_Bourns_3214W_Vertical

*3214W footprint.***Bourns 3214X footprint****Footprint name:**

Potentiometer_Bourns_3214X_Vertical

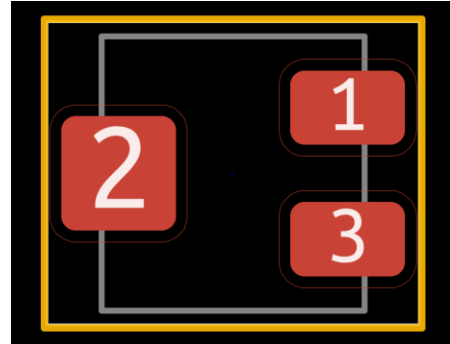
*3214X footprint.***Bourns 3224G footprint****Footprint name:**

Potentiometer_Bourns_3224G_Horizontal

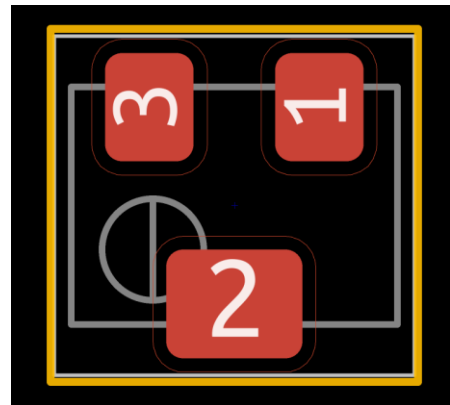
*3224G footprint.*

Bourns 3224J footprint**Footprint name:**

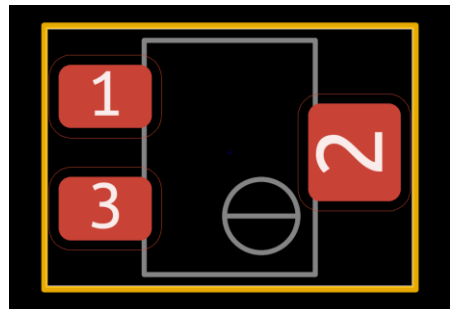
Potentiometer_Bourns_3224J_Horizontal

*3224J footprint.***Bourns 3224W footprint****Footprint name:**

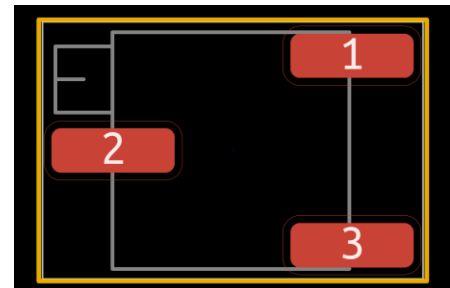
Potentiometer_Bourns_3224W_Vertical

*3224W footprint.***Bourns 3224X footprint****Footprint name:**

Potentiometer_Bourns_3224X_Vertical

*3224X footprint.***Bourns 3269P footprint****Footprint name:**

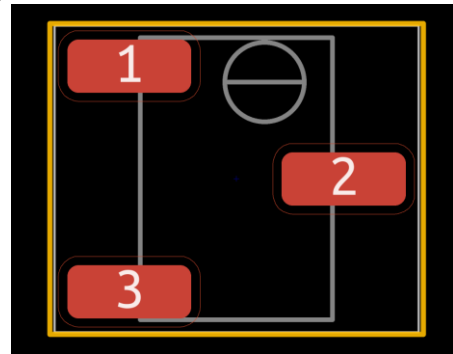
Potentiometer_Bourns_3269P_Horizontal

*3269P footprint.*

Bourns 3269W footprint

Footprint name:

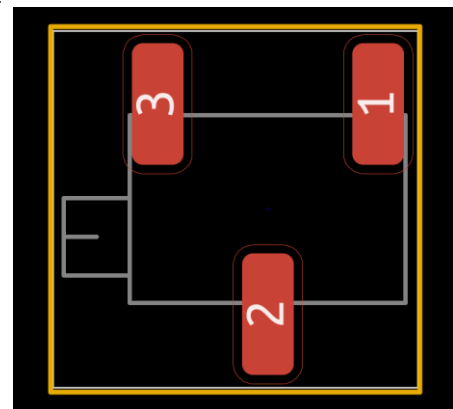
Potentiometer_Bourns_3269W_Vertical

*3269W footprint.*

Bourns 3269X footprint

Footprint name:

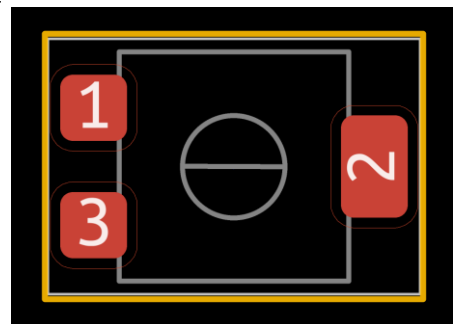
Potentiometer_Bourns_3269X_Horizontal

*3269X footprint.*

Bourns 3314G footprint

Footprint name:

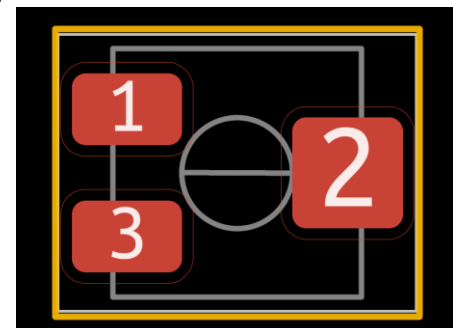
Potentiometer_Bourns_3314G_Vertical

*3314G footprint.*

Bourns 3314J footprint

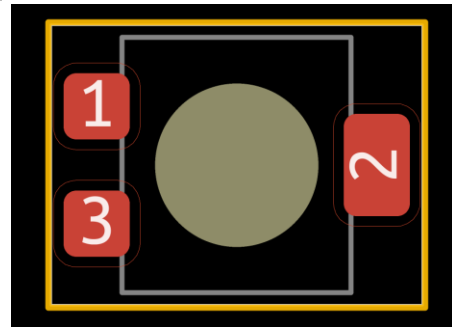
Footprint name:

Potentiometer_Bourns_3314J_Vertical

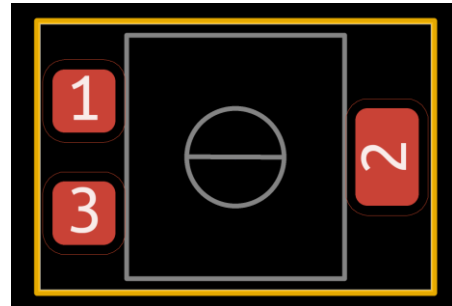
*3314J footprint.*

Bourns 3314R-1 footprint**Footprint name:**

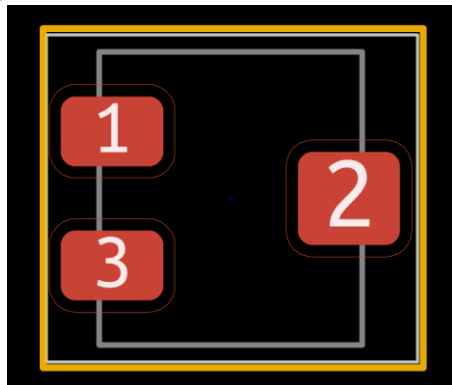
Potentiometer_Bourns_3314R-1_Vertical_Hole

*3314R-1 footprint.***Bourns 3314R-GM5 footprint****Footprint name:**

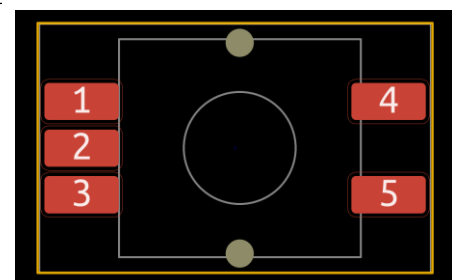
Potentiometer_Bourns_3314R-GM5_Vertical

*3314R-GM5 footprint.***Bourns 3314S footprint****Footprint name:**

Potentiometer_Bourns_3314S_Horizontal

*3314S footprint.***Bourns PRS11S footprint****Footprint name:**

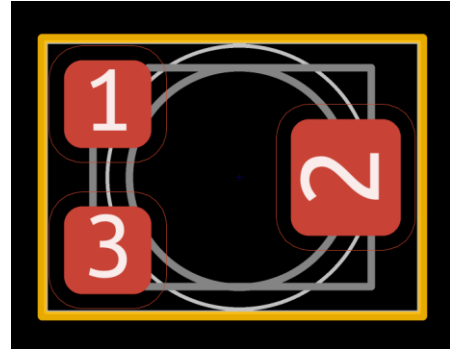
Potentiometer_Bourns_PRS11S_Vertical

*PRS11S footprint.*

Bourns TC33X footprint

Footprint name:

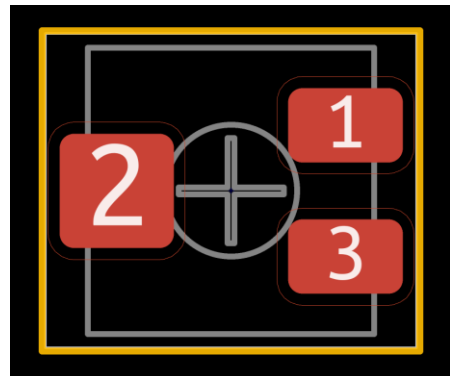
Potentiometer_Bourns_TC33X_Vertical

*TC33X footprint.*

Vishay TS53YJ footprint

Footprint name:

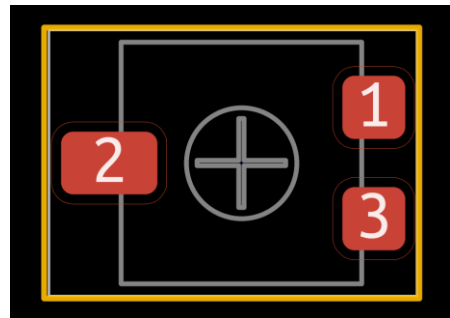
Potentiometer_Vishay_TS53YJ_Vertical

*TS53YJ footprint.*

Vishay TS53YL footprint

Footprint name:

Potentiometer_Vishay_TS53YL_Vertical

*TS53YL footprint.*

3.26. THT Potentiometer Libraries

These libraries contain footprints for Through-hole potentiometers and Rheostats

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

US symbol library variants use the US - style potentiometer symbol instead of the standard one on the silkscreen.

Standard variant	
Folder name: Potentiometer_THT_AKL	
Footprint count:	110
Double-sided variant	
Folder name: Potentiometer_THT_AKL_Double	
Footprint count:	104
Standard variant (US symbol)	
Folder name: Potentiometer_THT_US_AKL	
Footprint count:	110
Double-sided variant (US symbol)	
Folder name: Potentiometer_THT_US_AKL_Double	
Footprint count:	105
Total footprints:	429

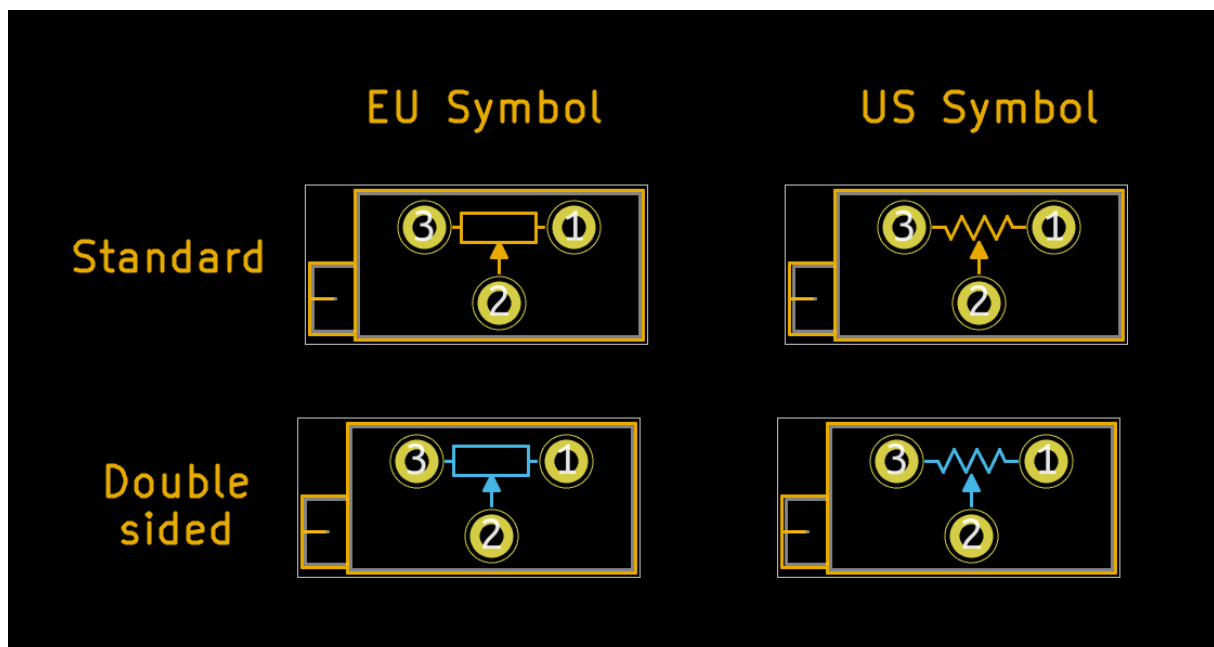
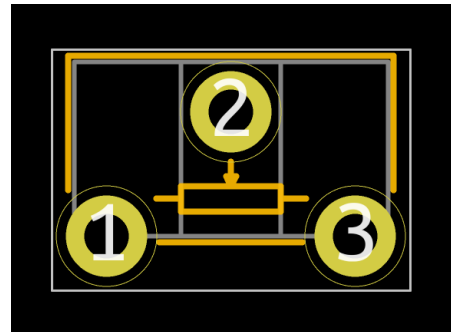


Figure 3.39. Potentiometer footprints demonstrating different library variants.

ACP CA6-H2.5 footprint

Footprint name:

Potentiometer_ACP_CA6-H2,5_Horizontal



CA6-H2.5 footprint.

ACP CA9 Horizontal footprints

Footprint count: 3

Footprint naming convention:

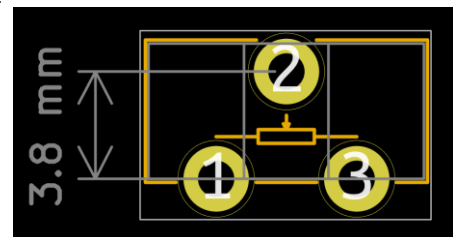
Potentiometer_ACP_CA9_H<Pin spacing>
_Horizontal

Footprint names:

Potentiometer_ACP_CA9_H2,5_Horizontal

Potentiometer_ACP_CA9_H3,8_Horizontal

Potentiometer_ACP_CA9_H5_Horizontal



CA9 footprint with pin spacing indicated.

ACP CA9 Vertical footprints

Footprint count: 2

Footprint naming convention:

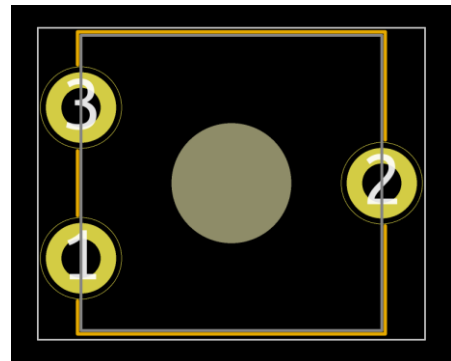
Potentiometer_ACP_CA9_V10_Vertikal<optional: hole>

Footprint names:

Potentiometer_ACP_CA9_V10_Vertikal

Potentiometer_ACP_CA9_V10_Vertikal_Hole

"Hole" option denotes a footprint with a NTPH hole allowing access to the bottom of the potentiometer



CA9 vertical footprint with bottom access hole.

ACP CA14 Horizontal footprints

Footprint count: 3

Footprint naming convention:

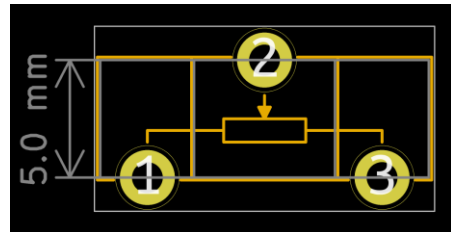
Potentiometer_ACP_CA14_H<Pin spacing>_Horizontal

Footprint names:

Potentiometer_ACP_CA14_H2,5_Horizontal

Potentiometer_ACP_CA14_H3,8_Horizontal

Potentiometer_ACP_CA14_H5_Horizontal



CA14 footprint with pin spacing indicated.

ACP CA14 Vertical footprints

Footprint count: 2

Footprint naming convention:

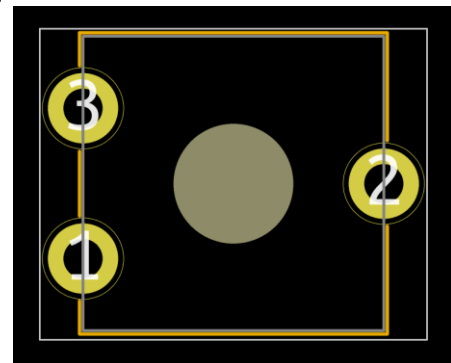
Potentiometer_ACP_CA14V-15_Veritical<optional: hole>

Footprint names:

Potentiometer_ACP_CA14V-15_Veritical

Potentiometer_ACP_CA14V-15_Veritical_Hole

"Hole" option denotes a footprint with a NTPH hole allowing access to the bottom of the potentiometer



CA14 vertical footprint.

Alpha DR901F-40-00D footprints

Footprint count: 2

Footprint naming convention:

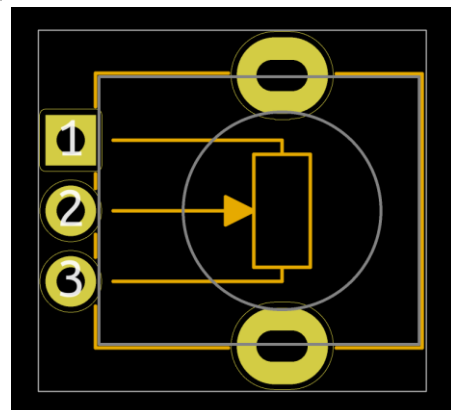
**Potentiometer_Alpha_RD901F-40-00D
_Single_Veritical<optional: CurcularHoles>**

Footprint names:

Potentiometer_Alpha_RD901F-40-00D_Single_Veritical

Potentiometer_Alpha_RD901F-40-00D_Single_Veritical
_CircularHoles

"CircularHoles" option denotes a footprint with round case PTH pads instead of slots.



DR901F-40-00D footprint.

Alpha DR902F-40-00D footprints

Footprint count: 2

Footprint naming convention:

Potentiometer_Alpha_RD902F-40-00D

_Single_Vertical<optional: CurcularHoles>

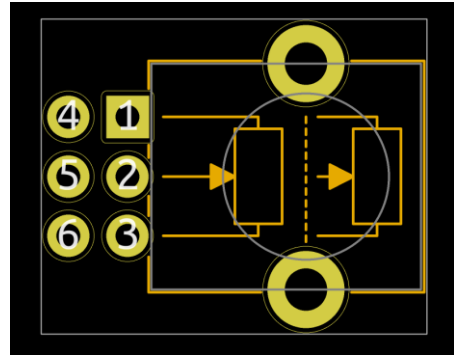
Footprint names:

Potentiometer_Alpha_RD902F-40-00D_Single_Vertical

Potentiometer_Alpha_RD902F-40-00D_Single_Vertical

_CircularHoles

"CircularHoles" option denotes a footprint with round case PTH pads instead of slots.

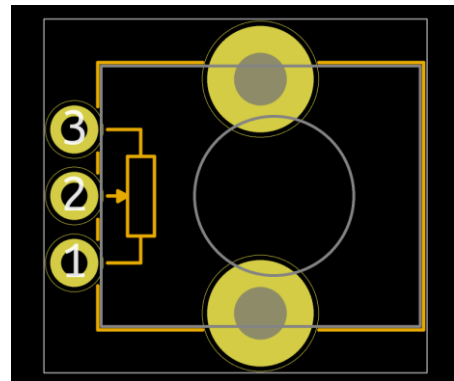


DR902F-40-00D "CircularHoles" footprint.

Alps RK09K-Single Vertical footprint

Footprint name:

Potentiometer_Alps_RK09K_Single_Vertical

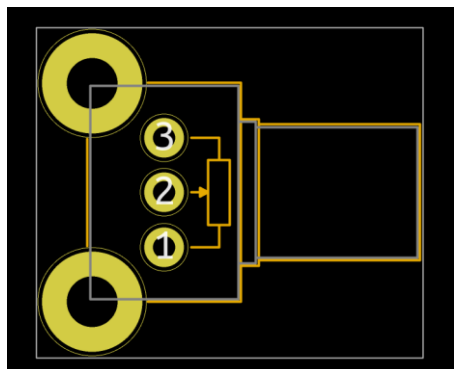


RK09K Single Vertical footprint.

Alps RK09K-Single Horizontal footprint

Footprint name:

Potentiometer_Alps_RK09K_Single_Horizontal

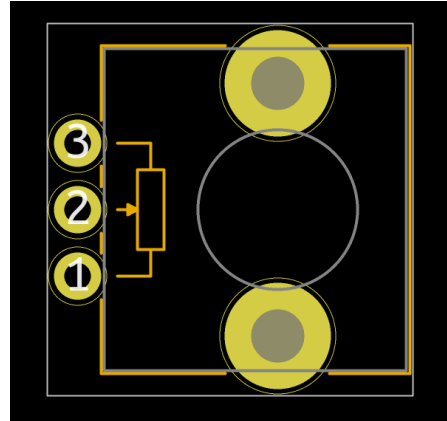


RK09K Single Horizontal footprint.

Alps RK09L-Single Vertical footprint

Footprint name:

Potentiometer_Alps_RK09L_Single_Vertical

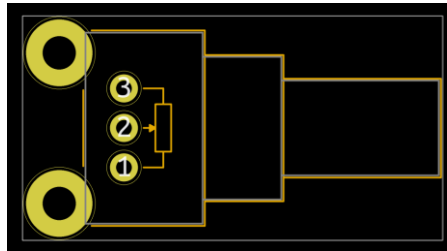


RK09L Single Vertical footprint.

Alps RK09L-Single Horizontal footprint

Footprint name:

Potentiometer_Alps_RK09L_Single_Horizontal

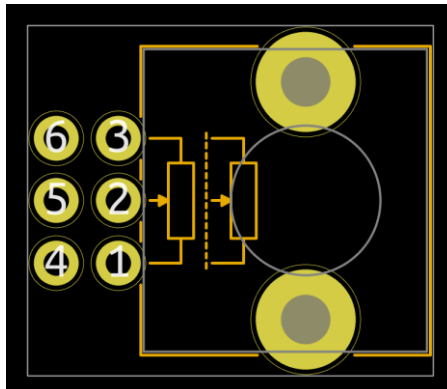


RK09L Single Horizontal footprint.

Alps RK09L-Double Vertical footprint

Footprint name:

Potentiometer_Alps_RK09L_Double_Vertical

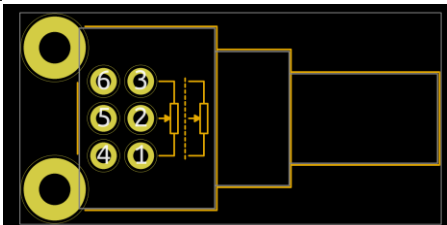


RK09L Double Vertical footprint.

Alps RK09L-Double Horizontal footprint

Footprint name:

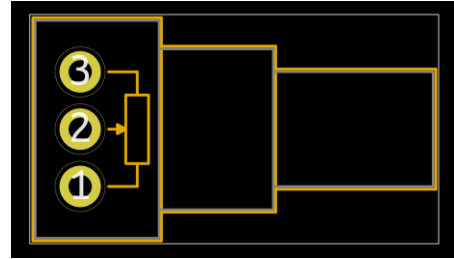
Potentiometer_Alps_RK09L_Double_Horizontal



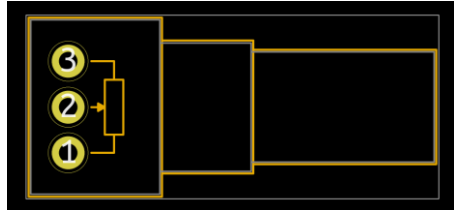
RK09L Double Horizontal footprint.

Alps RK09Y11-Single Horizontal footprint**Footprint name:**

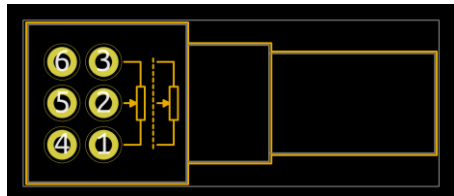
Potentiometer_Alps_RK09Y11_Single_Horizontal

*RK09Y11 Single Horizontal footprint.***Alps RK097-Single Horizontal footprint****Footprint name:**

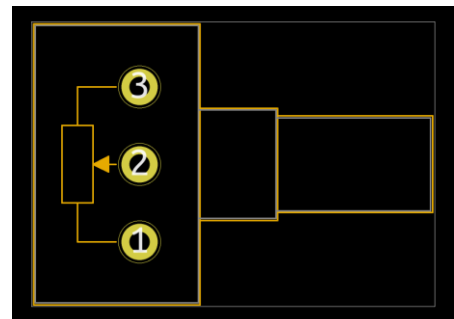
Potentiometer_Alps_RK097_Single_Horizontal

*RK097 Single Horizontal footprint.***Alps RK097-Dual Horizontal footprint****Footprint name:**

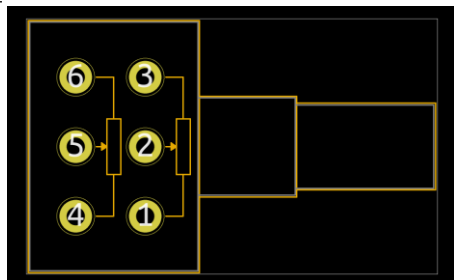
Potentiometer_Alps_RK097_Dual_Horizontal

*RK097 Double Horizontal footprint.***Alps RK163-Single Horizontal footprint****Footprint name:**

Potentiometer_Alps_RK163_Single_Horizontal

*RK163 Single Horizontal footprint.***Alps RK163-Dual Horizontal footprint****Footprint name:**

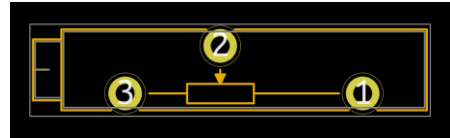
Potentiometer_Alps_RK163_Dual_Horizontal

*RK163 Double Horizontal footprint.*

Bourns 3005 10-turn potentiometer footprint

Footprint name:

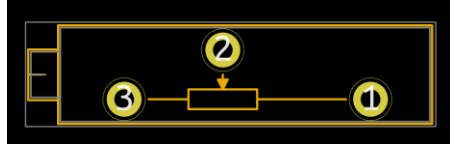
Potentiometer_Bourns_3005_Horizontal

*Bourns 3005 footprint.*

Bourns 3006P 10-turn potentiometer footprint

Footprint name:

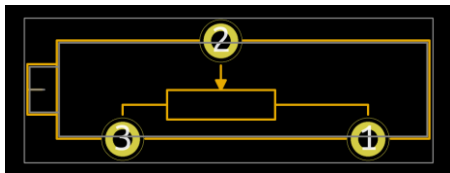
Potentiometer_Bourns_3006P_Horizontal

*Bourns 3006P footprint.*

Bourns 3006W 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3006W_Horizontal

*Bourns 3006W footprint.*

Bourns 3006Y 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3006Y_Horizontal

*Bourns 3006Y footprint.*

Bourns 3009P 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3009P_Horizontal

*Bourns 3009P footprint.*

Bourns 3009Y 10-turn potentiometer footprint

Footprint name:

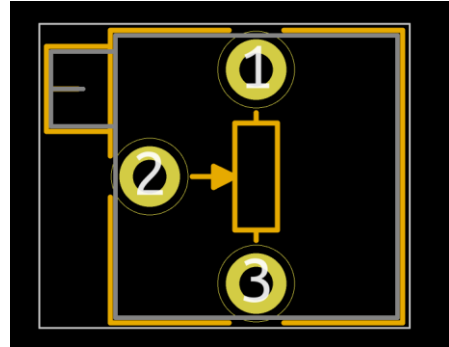
Potentiometer_Bourns_3009Y_Horizontal

*Bourns 3009Y footprint.*

Bourns 3266P 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3266P_Horizontal

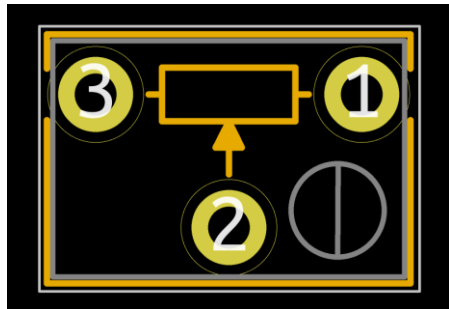


Bourns 3266P footprint.

Bourns 3266W 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3266W_Horizontal

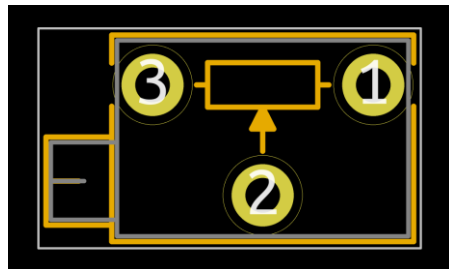


Bourns 3266W footprint.

Bourns 3266X 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3266X_Horizontal

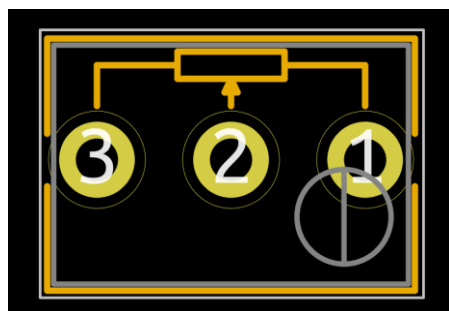


Bourns 3266X footprint.

Bourns 3266Y 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3266Y_Horizontal

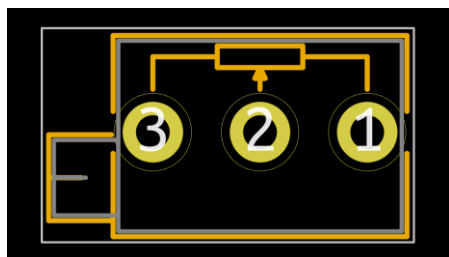


Bourns 3266Y footprint.

Bourns 3266Z 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3266Z_Horizontal

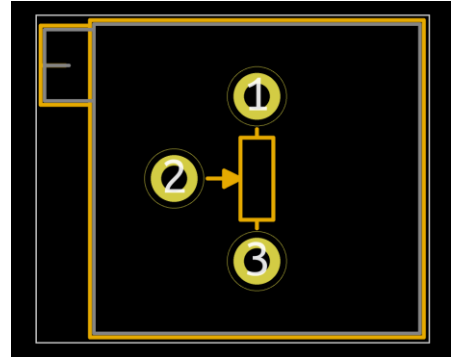


Bourns 3266Z footprint.

Bourns 3296P 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3296P_Horizontal

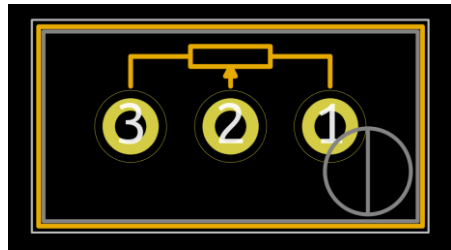


Bourns 3296P footprint.

Bourns 3296W 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3296W_Horizontal

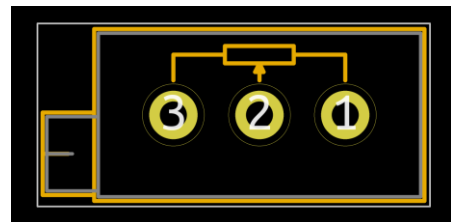


Bourns 3296W footprint.

Bourns 3296X 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3296X_Horizontal

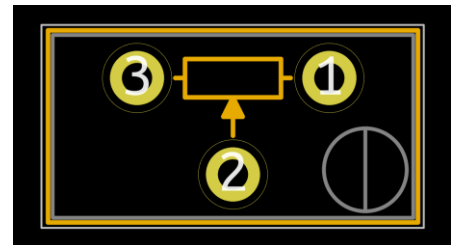


Bourns 3296X footprint.

Bourns 3296Y 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3296Y_Horizontal

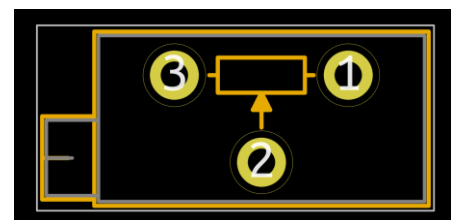


Bourns 3296Y footprint.

Bourns 3296Z 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3296Z_Horizontal

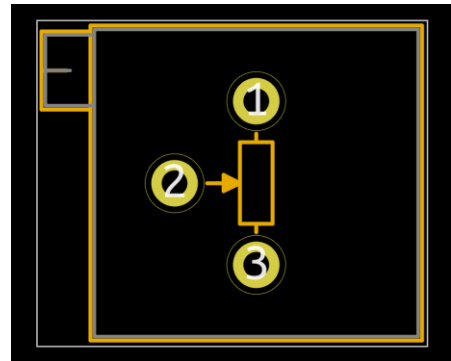


Bourns 3296Z footprint.

Bourns 3299P 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3299P_Horizontal

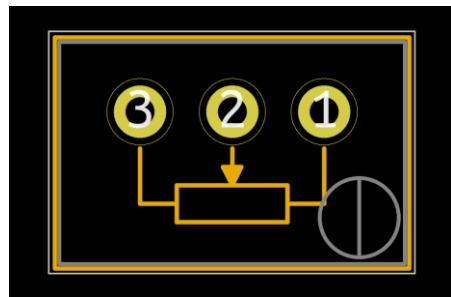


Bourns 3299P footprint.

Bourns 3299W 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3299W_Horizontal

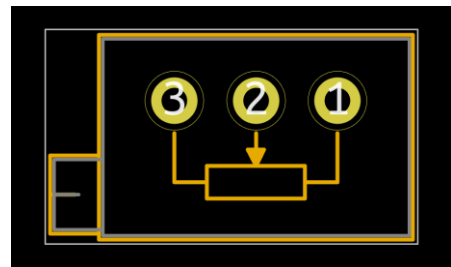


Bourns 3299W footprint.

Bourns 3299X 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3299X_Horizontal

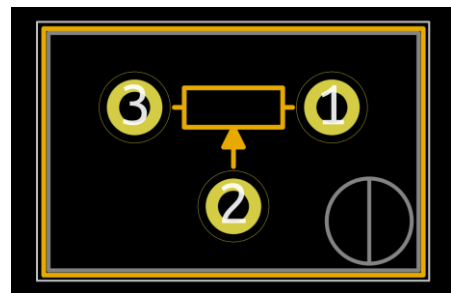


Bourns 3299X footprint.

Bourns 3299Y 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3299Y_Horizontal

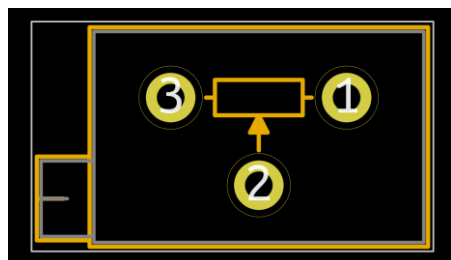


Bourns 3299Y footprint.

Bourns 3299Z 10-turn potentiometer footprint

Footprint name:

Potentiometer_Bourns_3299Z_Horizontal

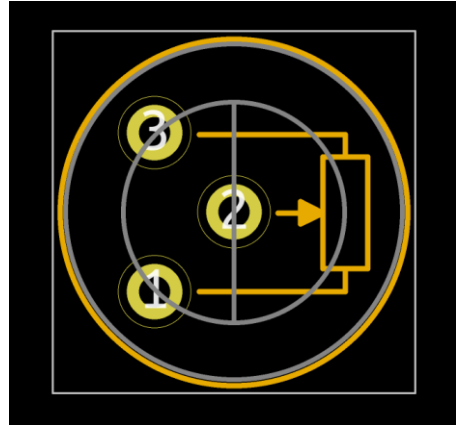


Bourns 3299Z footprint.

Bourns 3339H footprint

Footprint name:

Potentiometer_Bourns_3339H_Vertical



Bourns 3339H footprint.

Bourns 3339P footprints

Footprint count: 2

Footprint naming convention:

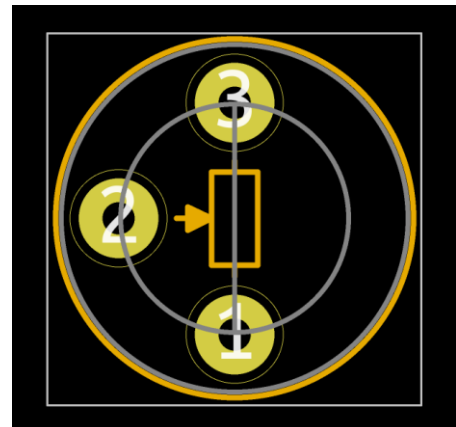
Potentiometer_Bourns_3339P_Vertical <optional:
HandSoldering>

Footprint names:

Potentiometer_Bourns_3339P_Vertical

Potentiometer_Bourns_3339P_Vertical_HandSoldering

“HandSoldering” option denotes a footprint with enlarged pads.

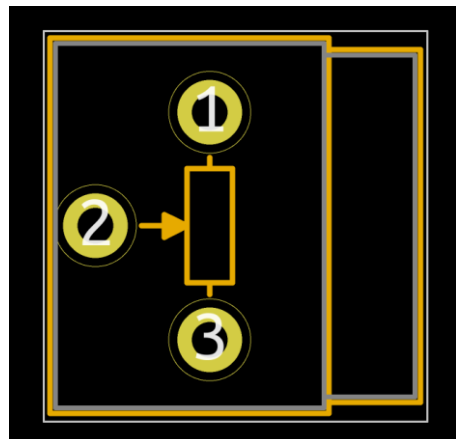


Bourns 3339P “HandSoldering” footprint.

Bourns 3339S footprint

Footprint name:

Potentiometer_Bourns_3339S_Horizontal

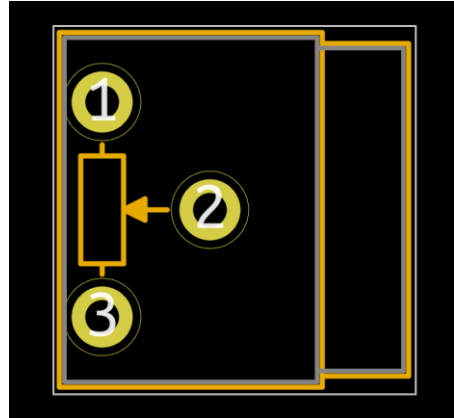


Bourns 3339S footprint.

Bourns 3339W footprint

Footprint name:

Potentiometer_Bourns_3339W_Horizontal



Bourns 3339W footprint.

Bourns 3386C footprint

Footprint name:

Potentiometer_Bourns_3386C_Horizontal

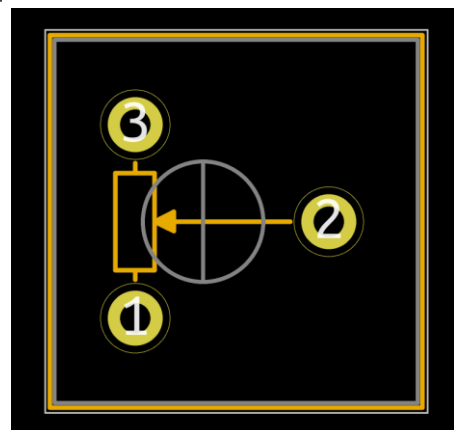


Bourns 3386C footprint.

Bourns 3386F footprint

Footprint name:

Potentiometer_Bourns_3386F_Vertical

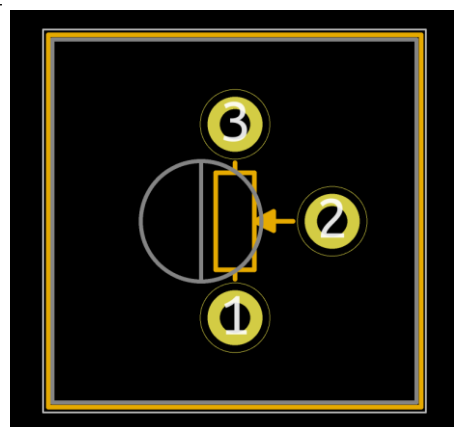


Bourns 3386F footprint.

Bourns 3386P footprint

Footprint name:

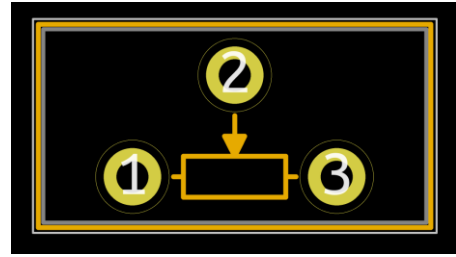
Potentiometer_Bourns_3386P_Vertical



Bourns 3386P footprint.

Bourns 3386X footprint**Footprint name:**

Potentiometer_Bourns_3386X_Horizontal

*Bourns 3386X footprint.***Bourns PTA1543 footprint****Footprint name:**

Potentiometer_Bourns_PTA1543_Single_Slide

*PTA1543 footprint.***Bourns PTA2043 footprint****Footprint name:**

Potentiometer_Bourns_PTA2043_Single_Slide

*PTA2043 footprint.***Bourns PTA3043 footprint****Footprint name:**

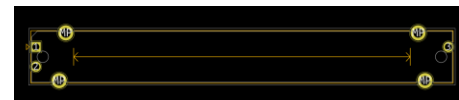
Potentiometer_Bourns_PTA3043_Single_Slide

*PTA3043 footprint.***Bourns PTA4543 footprint****Footprint name:**

Potentiometer_Bourns_PTA4543_Single_Slide

*PTA4543 footprint.***Bourns PTA6043 footprint****Footprint name:**

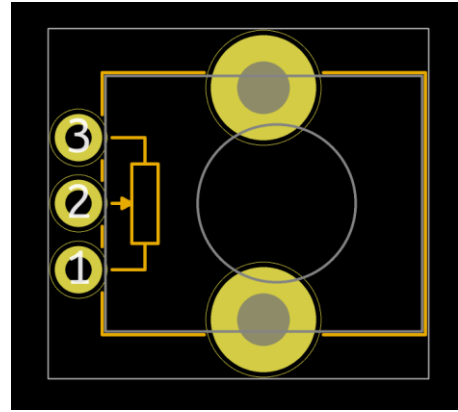
Potentiometer_Bourns_PTA6043_Single_Slide

*PTA6043 footprint.*

Bourns PTV09A-1 footprint

Footprint name:

Potentiometer_Bourns_PTV09A-1_Single_Vertical

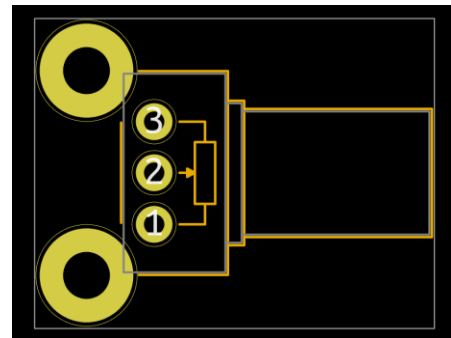


PTV09A-1 footprint.

Bourns PTV09A-2 footprint

Footprint name:

Potentiometer_Bourns_PTV09A-2_Single_Vertical



PTV09A-2 footprint.

22mm Round Wire-wound Potentiometer footprints

Footprint count: 2

Footprint naming convention:

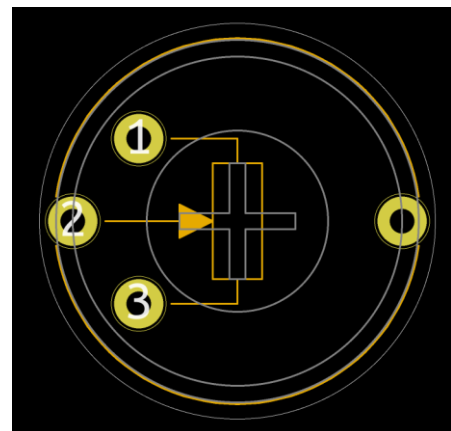
Potentiometer_D22mm_H12.5mm<optional: Hole>

Footprint names:

Potentiometer_D22mm_H12.5mm

Potentiometer_D22mm_H12.5mm_Hole

"Hole" option denotes a footprint with bottom access hole.



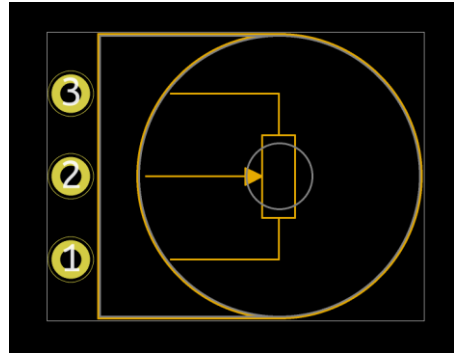
22mm round potentiometer footprint.

This footprint was created based on real-life measurement of a long-obsolete part.

Omeg PC16BU Vertical footprint

Footprint name:

Potentiometer_Omeg_PC16BU_Vertical

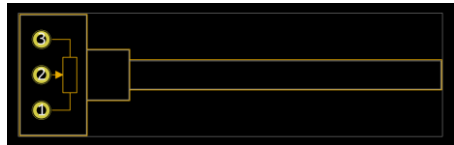


PC16BU Vertical footprint.

Omeg PC16BU Horizontal footprint

Footprint name:

Potentiometer_Omeg_PC16BU_Horizontal

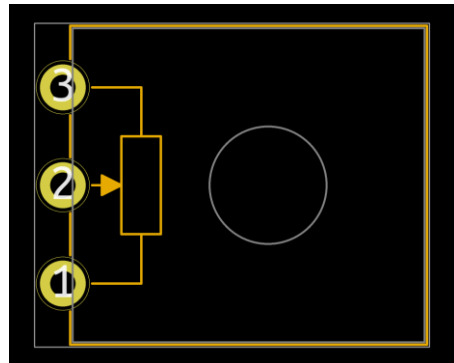


PC16BU Horizontal footprint.

Piher PC-16 Vertical footprint

Footprint name:

Potentiometer_Piher_PC-16_Single_Vertical

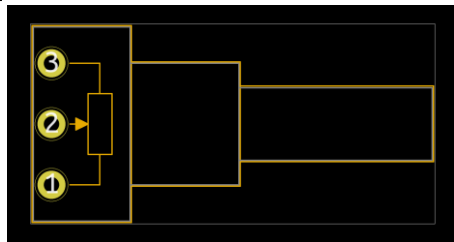


PC-16 Vertical footprint.

Piher PC-16 Horizontal footprint

Footprint name:

Potentiometer_Piher_PC-16_Single_Horizontal

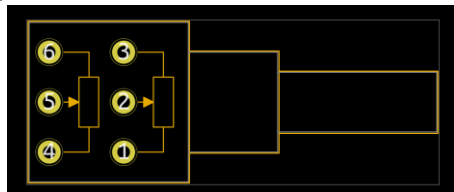


PC-16 Horizontal footprint.

Piher PC-16 Dual Horizontal footprint

Footprint name:

Potentiometer_Piher_PC-16_Dual_Horizontal

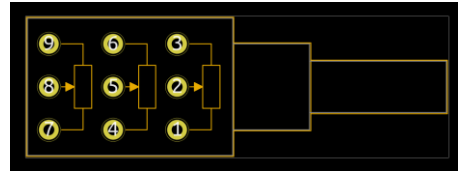


PC-16 Dual Horizontal footprint.

Piher PC-16 Triple Horizontal footprint

Footprint name:

Potentiometer_Piher_PC-16_Triple_Horizontal



PC-16 Triple Horizontal footprint.

Piher PT-6 Vertical footprints

Footprint count: 2

Footprint naming convention:

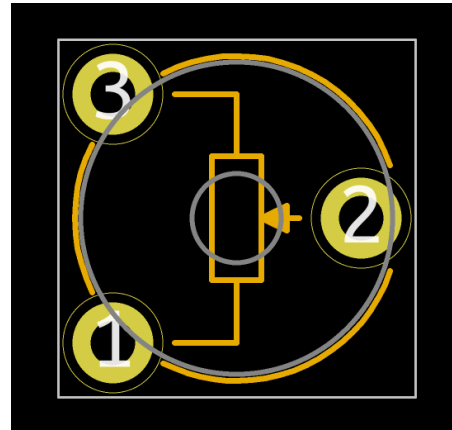
Potentiometer_Piher_PT-6-V_Vertical<optional: Hole>

Footprint names:

Potentiometer_Piher_PT-6-V_Vertical

Potentiometer_Piher_PT-6-V_Vertical_Hole

"Hole" option denotes a footprint with bottom access hole.

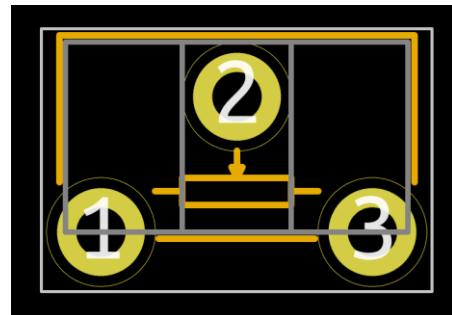


PT-6 Vertical footprint.

Piher PT-6 Horizontal footprint

Footprint name:

Potentiometer_Piher_PT-6-H_Horizontal



PT-6 Horizontal footprint.

Piher PT-10 Horizontal footprints

Footprint count: 2

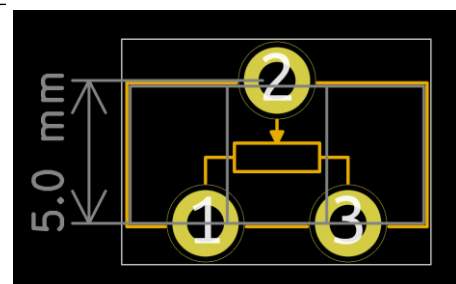
Footprint naming convention:

Potentiometer_Piher_PT-10-H<Pin spacing>
_Horizontal

Footprint names:

Potentiometer_Piher_PT-10-H01_Horizontal

Potentiometer_Piher_PT-10-H05_Horizontal



PT-10 Vertical footprint with pin spacing indicated.

Piher PT-10 Vertical footprints

Footprint count: 3

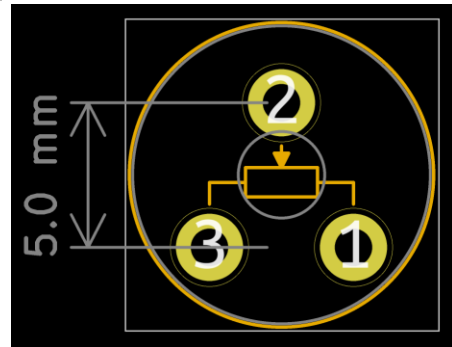
Footprint naming convention:

Potentiometer_Piher_PT-10-V<Pin spacing>
_Vertical<optional: Hole>

Footprint names:

Potentiometer_Piher_PT-10-V05_Verical
 Potentiometer_Piher_PT-10-V10_Verical
 Potentiometer_Piher_PT-10-V10_Verical_Hole

"Hole" option denotes a footprint with bottom access hole.



PT-10 Vertical footprint with pin spacing indicated.

Piher PT-15 Horizontal footprints

Footprint count: 4

Footprint naming convention:

Potentiometer_Piher_PT-15-H<Pin spacing>
_Horizontal

Footprint names:

Potentiometer_Piher_PT-15-H01_Horizontal
 Potentiometer_Piher_PT-15-H05_Horizontal
 Potentiometer_Piher_PT-15-H06_Horizontal
 Potentiometer_Piher_PT-15-H25_Horizontal

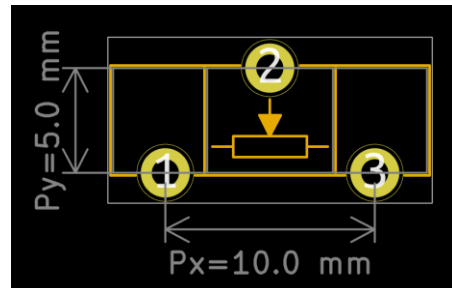
Pin spacing according to manufacturer data found in the footprint description ([link](#)):

H01: Px = 10mm, Py = 2.5mm

H05: Px = 10mm, Py = 5mm

H06: Px = 8.8mm, Py = 4mm

H25: Px = 10mm, Py = 5mm



PT-15 Vertical footprint with pin spacing indicated.

Piher PT-15 Vertical footprints

Footprint count: 4

Footprint naming convention:

Potentiometer_Piher_PT-15-V<Pin spacing>
_Vertical<optional: Hole>

Footprint names:

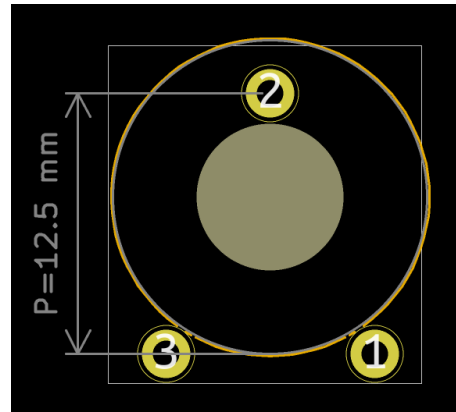
Potentiometer_Piher_PT-15-V02_Verical
 Potentiometer_Piher_PT-15-V02_Verical_Hole
 Potentiometer_Piher_PT-15-V15_Verical
 Potentiometer_Piher_PT-15-V15_Verical_Hole

“Hole” option denotes a footprint with bottom access hole.

Pin spacing according to manufacturer data found in the footprint description ([link](#)):

V02: P = 12.5mm

V15: P = 15 mm

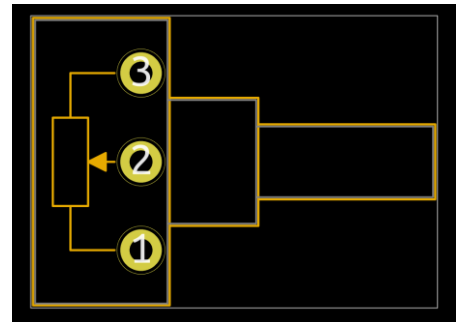


PT-15 Vertical footprint with pin spacing indicated.

Piher T-16H footprint

Footprint name:

Potentiometer_Piher_T-16H_Single_Horizontal

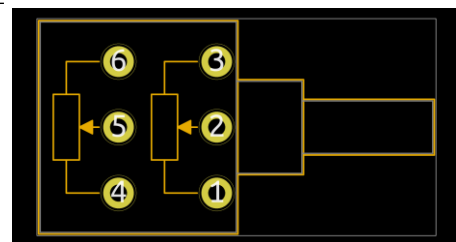


T-16H footprint.

Piher T-16H Dual footprint

Footprint name:

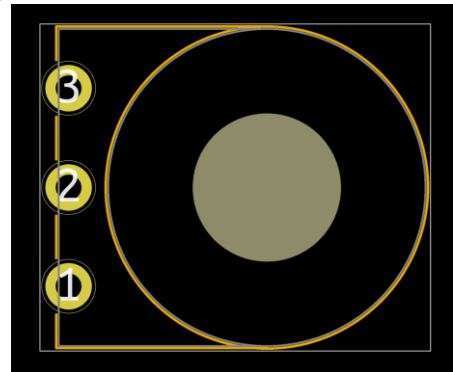
Potentiometer_Piher_T-16H_Double_Horizontal



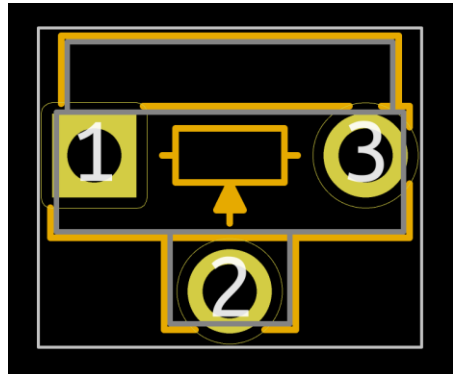
T-16H Dual footprint.

Piher T-16L footprint**Footprint name:**

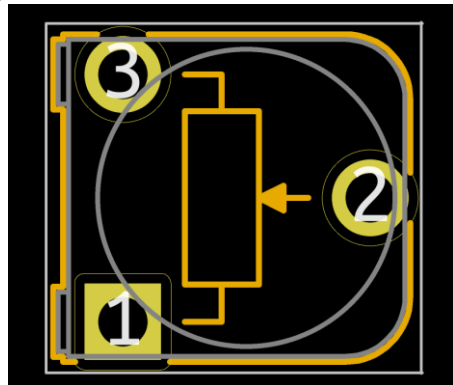
Potentiometer_Piher_T-16L_Single_Vertical_Hole

*T-16L footprint.***Runtron RM-063 footprint****Footprint name:**

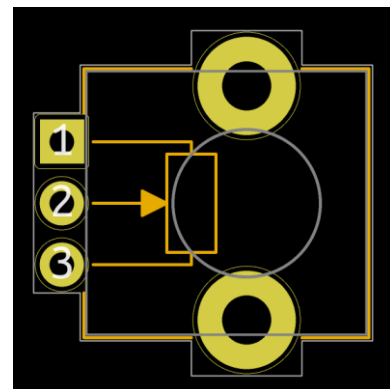
Potentiometer_Runtron_RM-063_Horizontal

*RM-063 footprint.***Runtron RM-065 footprint****Footprint name:**

Potentiometer_Runtron_RM-065_Horizontal

*RM-065 footprint.***TT P0915N footprint****Footprint name:**

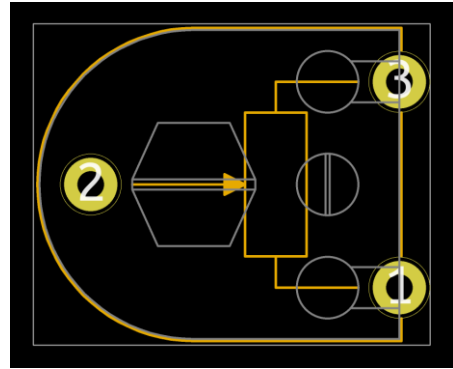
Potentiometer_TT_P0915N

*P0915N footprint.*

Telpod CN15.1 footprint

Footprint name:

Potentiometer_Telpod_CN15.1

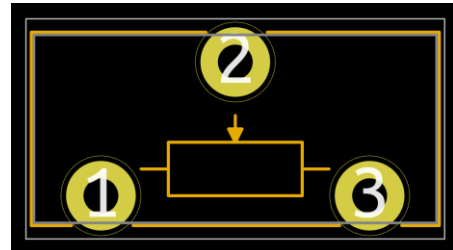


CN15.1 footprint.

Telpod CN15.2 footprint

Footprint name:

Potentiometer_Telpod_CN15.2

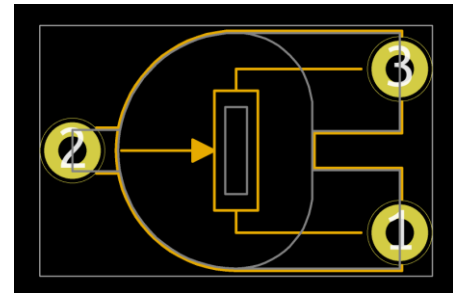


CN15.2 footprint.

Telpod TVP1212 footprint

Footprint name:

Potentiometer_Telpod_TVP1212

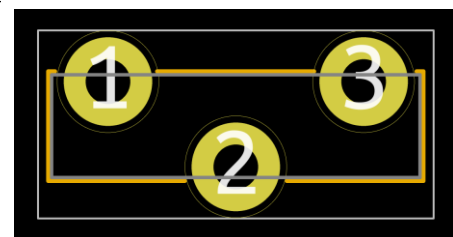


TVP1212 footprint.

Telpod TVP1232 footprint

Footprint name:

Potentiometer_Telpod_TVP1232



TVP1232 footprint.

Vishay 43 footprint

Footprint name:

Potentiometer_Vishay_43_Horizontal

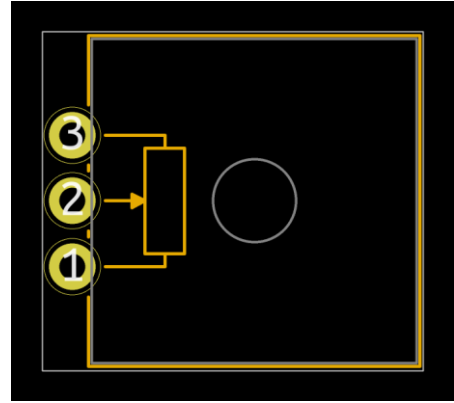


Vishay 43 footprint.

Vishay 148/149 vertical footprint

Footprint name:

Potentiometer_Vishay_148-149_Single_Vertical

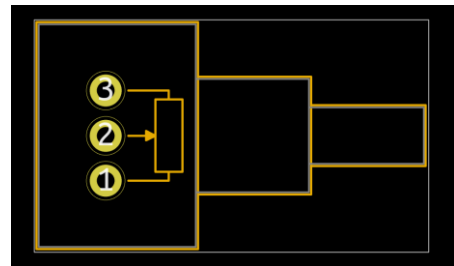


Vishay 148/149 vertical footprint.

Vishay 148/149 horizontal footprint

Footprint name:

Potentiometer_Vishay_148-149_Single_Horizontal

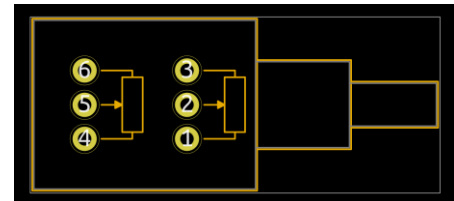


Vishay 148/149 horizontal footprint.

Vishay 148/149 dual horizontal footprint

Footprint name:

Potentiometer_Vishay_148-149_Dual_Horizontal

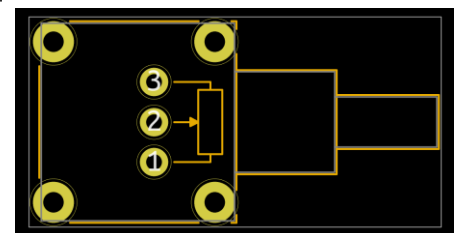


Vishay 148/149 dual horizontal footprint.

Vishay 148E/149E horizontal footprint

Footprint name:

Potentiometer_Vishay_148E-149E_Single_Horizontal

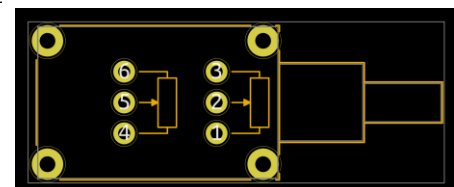


Vishay 148E/149E horizontal footprint.

Vishay 148E/149E dual horizontal footprint

Footprint name:

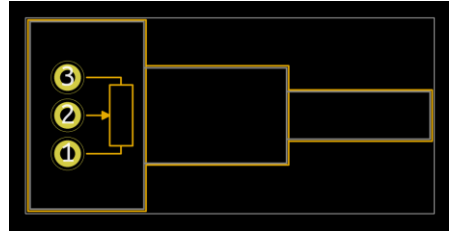
Potentiometer_Vishay_148E-149E_Dual_Horizontal



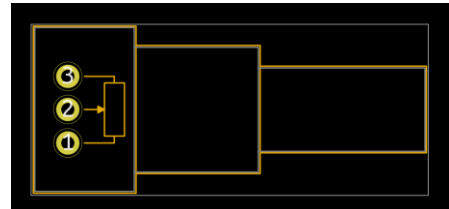
Vishay 148E/149E dual horizontal footprint.

Vishay 248BH/249BH horizontal footprint**Footprint name:**

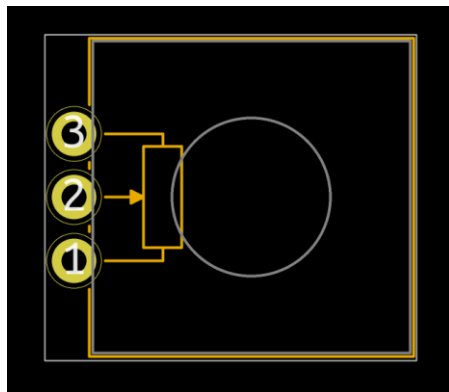
Potentiometer_Vishay_248BH-249BH_Single_Horizontal

*Vishay 248BH/249BH horizontal footprint.***Vishay 248GJ/249GJ horizontal footprint****Footprint name:**

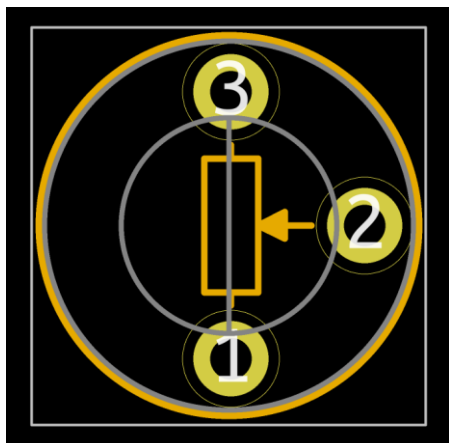
Potentiometer_Vishay_248GJ-249GJ_Single_Horizontal

*Vishay 248GJ/249GJ horizontal footprint.***Vishay 248GJ/249GJ vertical footprint****Footprint name:**

Potentiometer_Vishay_248GJ-249GJ_Single_Vertical

*Vishay 248GJ/249GJ vertical footprint.***Vishay T7-YA footprint****Footprint name:**

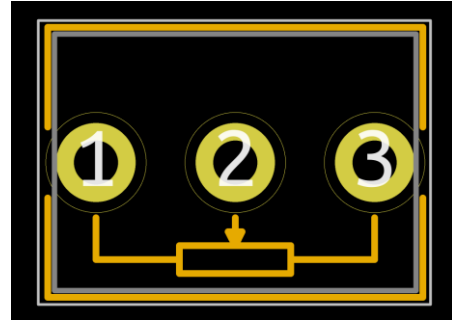
Potentiometer_Vishay_T7-YA_Horizontal

*Vishay T7-YA footprint.*

Vishay T73XW footprint

Footprint name:

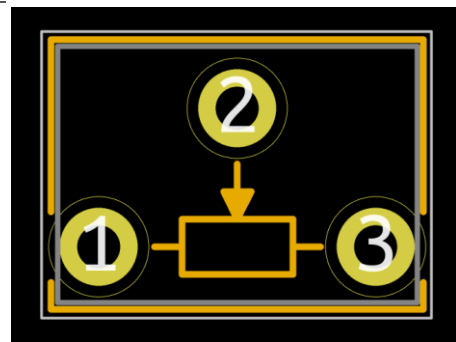
Potentiometer_Vishay_T73XW_Horizontal

*Vishay T73XW footprint.*

Vishay T73XX footprint

Footprint name:

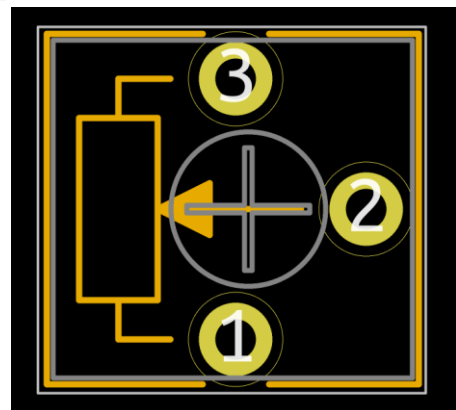
Potentiometer_Vishay_T73XX_Horizontal

*Vishay T73XX footprint.*

Vishay T73XP footprint

Footprint name:

Potentiometer_Vishay_T73XP_Vertical

*Vishay T73XP footprint.*

3.27. SMD Resistor Library

This library contains footprints for surface mount resistors, current shunts and resistor networks.

Standard variant	
Folder name:	Resistor_THT_AKL
Footprint count:	71
Total footprints:	71

Chip Resistor footprints

Footprint count: 41

Footprint naming convention:

R_<imp. size code>_<metric size code>Metric
(optional: **_Pad<pad width>x<pad length>mm**)

Name examples:

R_0805_2012Metric

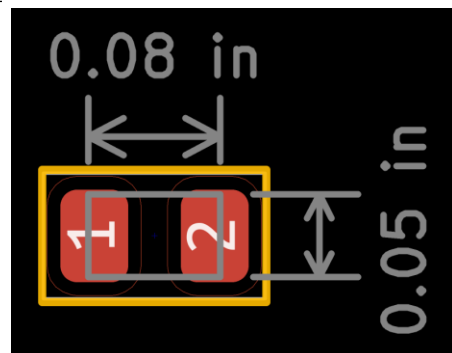
R_0603_1608Metric_Pad1.05x095mm

Imperial size code:

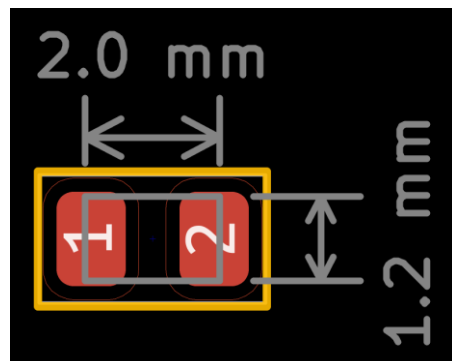
First two digits denote length of the capacitor package
last two digits correspond to its width measured in
0.01 in. Example: 0805 size code means package length
of 0.08 in and width of 0.05 in.

Metric size code:

First two digits denote length of the capacitor package
last two digits correspond to its width measured in
0.1 mm. Example: 2012 metric size code means package
length of 2 mm and width of 1.2 mm.



SMD Chip Resistor footprint with 0805 imperial size code, length and width of the package indicated.



SMD Chip Resistor footprint with 2012 metric size code, length and width of the package indicated.

Chip Resistor Pack footprints

Footprint count: 14

Footprint naming convention:

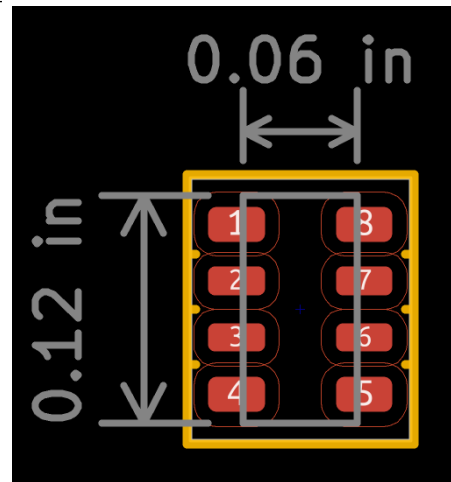
R_Array <pin shape> <number of resistors> x
<resistor size>

Name examples:

R_Array_Concave_4x0603

R_Array_Convex_4x0402

Resistor pack pad shape can either be convex or concave, with convex being generally regarded as easier to solder and visually inspect.



4x0603 resistor network footprint with size indicated (0.12in equals 4 resistors 0.03in wide)

Bourns Cat16 Resistor Pack footprints

Footprint count: 3

Footprint naming convention:

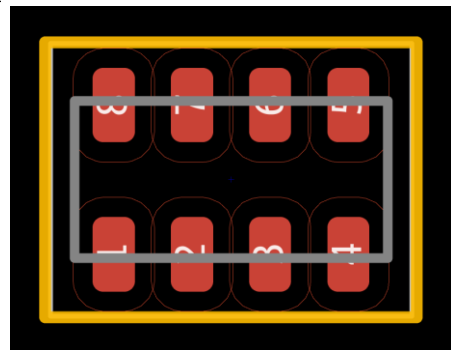
R_Cat16- <resistor count>

Footprint names:

R_Cat16-2

R_Cat16-4

R_Cat16-8

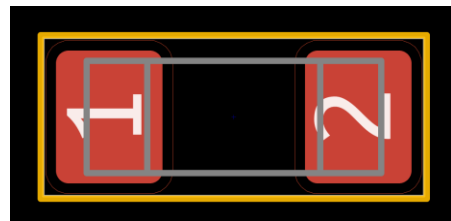


Cat16-4 footprint.

Metal Electrode Leadless Face (MELF) Resistor footprint

Footprint name:

R_MELF_MMB-0207

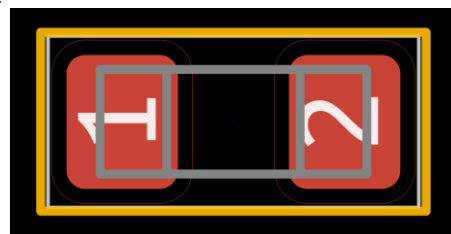


MELF Resistor footprint.

Mini Metal Electrode Leadless Face (MiniMELF) Resistor footprint

Footprint name:

R_MinimELF_MMA-0204

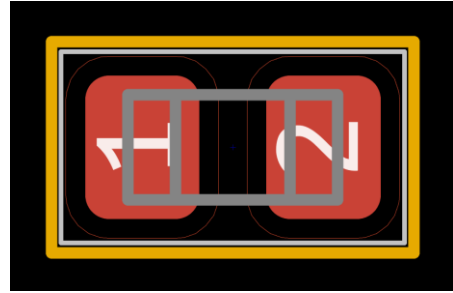


MiniMELF Resistor footprint.

Micro Metal Electrode Leadless Face (MicroMELF) Resistor footprint

Footprint name:

R_MicroMELF_MMA-0204

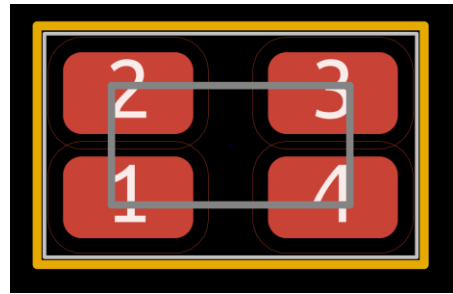


MicroMELF Resistor footprint.

Ohmite LVK12 Shunt Resistor footprint

Footprint name:

R_Shunt_Ohmite_LVK12

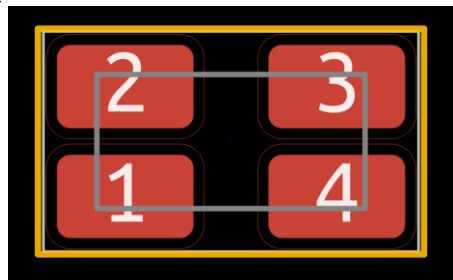


LVK12 footprint.

Ohmite LVK20 Shunt Resistor footprint

Footprint name:

R_Shunt_Ohmite_LVK20

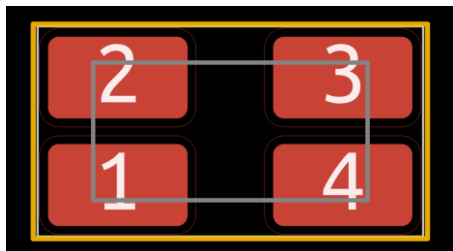


LVK20 footprint.

Ohmite LVK24 Shunt Resistor footprint

Footprint name:

R_Shunt_Ohmite_LVK24

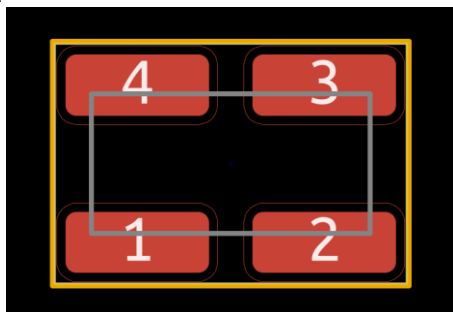


LVK24 footprint.

Ohmite LVK25 Shunt Resistor footprint

Footprint name:

R_Shunt_Ohmite_LVK25



LVK25 footprint.

Vishay WSK2512 Shunt Resistor footprints

Footprint count: 3

Footprint naming convention:

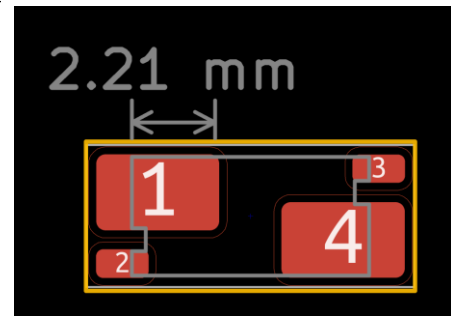
R_Shunt_Vishay_WSK2512_6332Metric_T<pad depth>

Footprint names:

R_Shunt_Vishay_WSK2512_6332Metric_T1.19mm

R_Shunt_Vishay_WSK2512_6332Metric_T2.21mm

R_Shunt_Vishay_WSK2512_6332Metric_T2.66mm

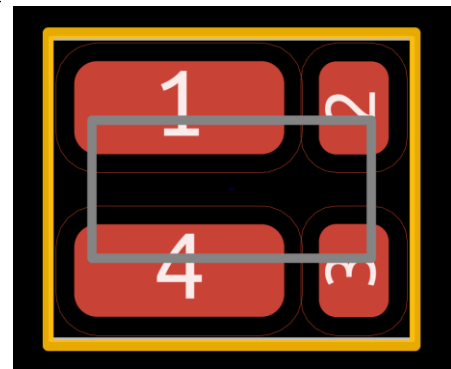


WSK2512 footprint with pad depth indicated.

Vishay WSKW0612 Shunt Resistor footprint

Footprint name:

R_Shunt_Vishay_WSKW0612



WSKW0612 footprint.

Vishay WSR2/WSR3 Shunt Resistor footprints

Footprint count: 2

Footprint naming convention:

R_Shunt_Vishay_WSR2_WSR3 <optional:
KelvinConnection>

Footprint names:

R_Shunt_Vishay_WSR2_WSR3

R_Shunt_Vishay_WSR2_WSR3_KelvinConnection

"KelvinConnection" option denotes a footprint with pad shaped specifically for easier sense trace placement.



WSR2/WSR3 "KelvinConnection" footprint.

3.28. THT Resistor Libraries

These libraries contain footprints for Through-hole resistors, current shunts and resistor networks.

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

US symbol library variants use the US - style resistor symbol instead of the standard one on the silkscreen.

Standard variant	
Folder name: Resistor_THT_AKL	
Footprint count:	129
Double-sided variant	
Folder name: Resistor_THT_AKL_Double	
Footprint count:	101
Standard variant (US symbol)	
Folder name: Resistor_THT_US_AKL	
Footprint count:	129
Double-sided variant (US symbol)	
Folder name: Resistor_THT_US_AKL_Double	
Footprint count:	94
Total footprints:	453

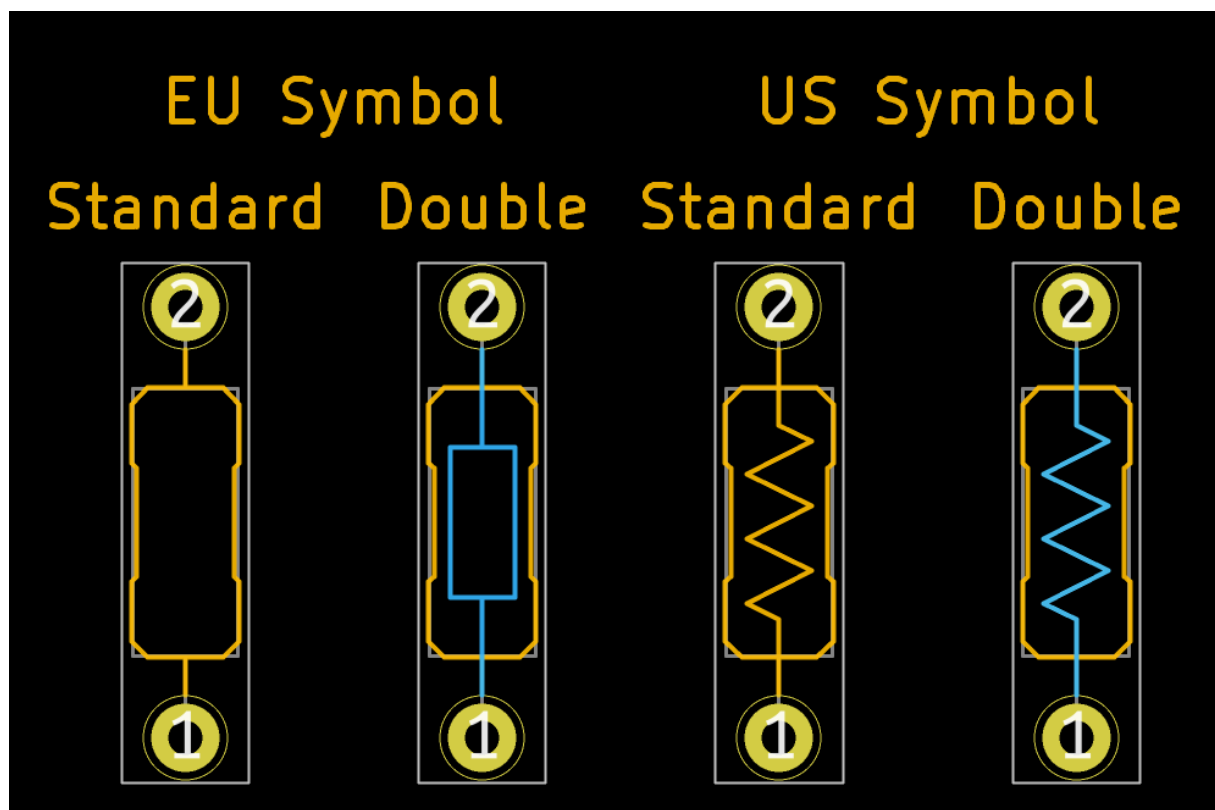


Figure 3.40. Axial resistor footprints demonstrating different library variants.

SIP resistor network footprints

Footprint count: 22

Footprint naming convention:

R_Array_SIP<pin count>_<optional: BigPads>

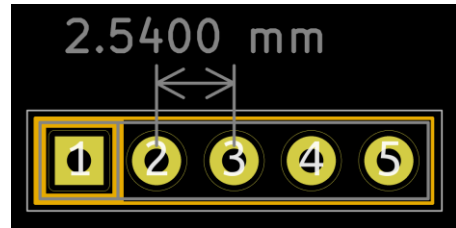
Name examples:

R_Array_SIP7

R_Array_SIP9_BigPads

R_Array_SIP14

“BigPads” option denotes a footprint with enlarged pads.



SIP-5 footprint with pin pitch indicated.

Axial resistor footprints

Footprint count: 63

Footprint naming convention:

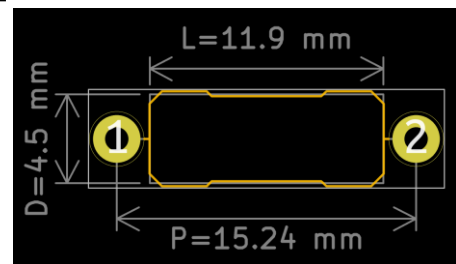
R_Axial_DIN<size code>_L<length>mm_D<diameter>mm
P<pin pitch>mm<orientation>

Name examples:

R_Axial_DIN0204_L3.6mm_D1.6mm_P2.554mm_Vertical

R_Axial_DIN0207_L6.3mm_D2.5mm_P12.70mm_Horizontal

R_Axial_DIN0414_L11.9mm_D4.5mm_P30.48mm_Horizontal



Axial resistor footprint with its dimensions indicated.

Axial ceramic power resistor footprints

Footprint count: 26

Footprint naming convention:

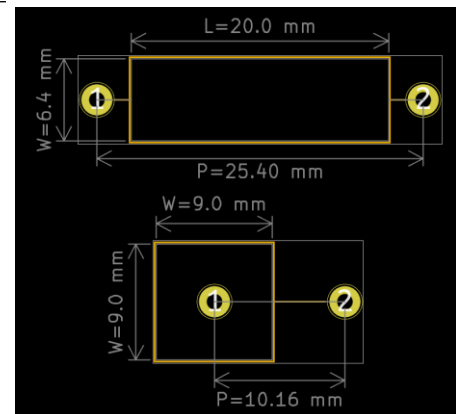
R_Axial_Power_L<length>mm_W<width>mm
P<pin pitch>mm<optional: vertical>

Name examples:

R_Axial_Power_L20.0mm_W6.4mm_P25.40mm

R_Axial_Power_L25.0mm_W9.0mm_P10.16mm_Vertical

R_Axial_Power_L50.0mm_W9.0mm_P60.96mm



Axial horizontal power resistor footprint (Top) and a vertical power resistor footprint (Bottom) with all dimensions indicated.

Axial shunt resistor footprints

Footprint count: 5

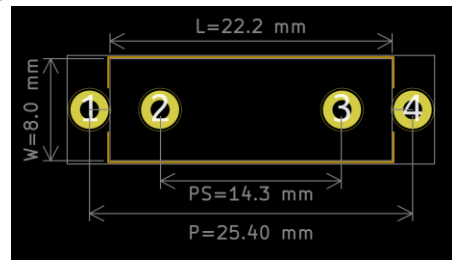
Footprint naming convention:

R_Axial_Shunt_L<length>**mm_W**<width>**mm**
_PS<sense pin pitch>**mm_P**<pin pitch>**mm**

Name examples:

R_Axial_Shunt_L22.2mm_W8.0mm_PS14.30mm
 _P25.40mm

R_Axial_Shunt_L35.3mm_W9.5mm_PS25.40mm
 _P38.10mm



Axial shunt resistor footprint with all dimensions indicated.

Metal element resistor footprints

Footprint count: 3

Footprint naming convention:

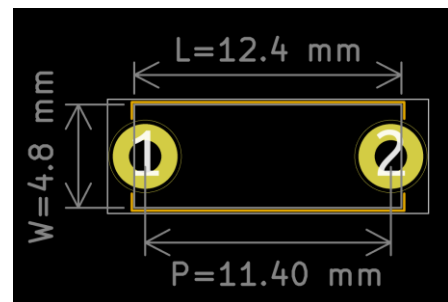
R_Bare_Metal_Element_L<length>**mm_W**<width>**mm**
_P<pin pitch>**mm**

Footprint names:

R_Bare_Metal_Element_L12.4mm_W4.8mm_P11.40mm

R_Bare_Metal_Element_L16.3mm_W4.8mm_P15.30mm

R_Bare_Metal_Element_L21.3mm_W4.8mm_P20.30mm



Bare metal element resistor footprint with all dimensions indicated

Box resistor footprints

Footprint count: 4

Footprint naming convention:

R_Box_L<length>**mm_W**<width>**mm_P**<pin pitch>**mm**

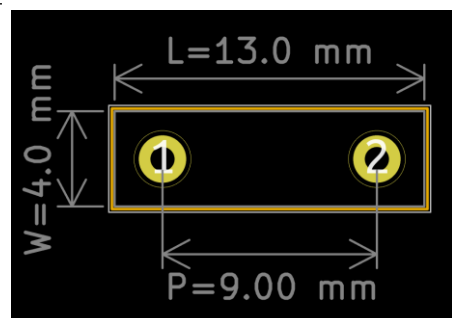
Footprint names:

R_Box_L8.4mm_W2.5mm_P5.08mm

R_Box_L13.0mm_W4.0mm_P9.00mm

R_Box_L14.0mm_W5.0mm_P9.00mm

R_Box_L26.0mm_W5.0mm_P20.00mm



Box resistor footprint with all dimensions indicated

Radial ceramic power resistor footprints

Footprint count: 6

Footprint naming convention:

R_Radial_Power_L<length>**mm_W**<width>**mm**

(Either: **_P**<pin pitch>**mm**, or:

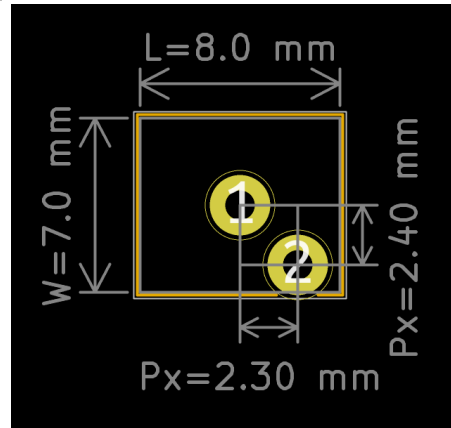
_Px<horizontal pin pitch>**mm_Py**<vertical pin pitch>**mm**)

Name examples:

R_Radial_Power_L11.0mm_W7.0mm_P5.00mm

R_Radial_Power_L16.1mm_W9.0mm_P7.37mm

R_Radial_Power_L9.0mm_W10.0mm_Px2.70mm
_Py2.30mm



Radial power resistor footprint with all dimensions indicated.

4. Version History

This chapter contains summary changes to the Alternate KiCad Library and its User Manual.

4.1. User Manual Version History

Version	Description	Date
1.0	Initial release alongside AKL 2.0	11/2021
2.0	AKL 3.0 release, document changed to a new, scalable format	09/2022

4.2. Library Version History

Version	Description	Date
1.0	Initial Release: -Added Capacitor_SMD_AKL footprint library -Added Capacitor_Tantalum_SMD_AKL footprint library -Added Capacitor_THT_AKL footprint library -Added Crystal_AKL footprint library -Added Diode_SMD_AKL footprint library -Added Diode_THT_AKL footprint library -Added Inductor_SMD_AKL footprint library -Added Inductor_THT_AKL footprint library -Added Package_DFN_QFN_AKL footprint library -Added Package_DIP_AKL footprint library -Added Package_LCC_AKL footprint library -Added Package_QFP_AKL footprint library -Added Package_SO_AKL footprint library -Added Package_SON_AKL footprint library -Added Package_TO_SOT_SMD_AKL footprint library -Added Package_TO_SOT_THT_AKL footprint library -Added Resistor_SMD_AKL footprint library -Added Resistor_THT_AKL footprint library -Added Jumper_AKL footprint library	04/2021
1.1	AKL 1.1 Release: -SMD Diode, Capacitor and Inductor footprint libraries were split into two variants. Standard variant has no silkscreen under the part bodies, "Hand soldering" variant has silkscreen symbols under the part bodies. -Improvements to SMD Inductor libraries -Removed unnecessary polarity marks on some TVS diode footprints -Removed silkscreen from under the parts in Crystal and SMD Resistor libraries.	05/2021
2.0	AKL 2.0 Release: -Added Diode_AKL symbol library -Added Diode_Schottky_AKL symbol library	11/2021

	<ul style="list-style-type: none"> -Added Diode_Capacitance_AKL symbol library -Added Diode_Zener_AKL symbol library -Added Diode_TVS_AKL symbol library -Added Diode_Bridge_AKL symbol library -Added Diode_Current_Limiting_AKL symbol library -Added Diac_AKL symbol library -Added Transistor_BJT_AKL symbol library -Added Transistor_BJT_Darlington_AKL symbol library -Added Transistor_BJT_Pre-Biased_AKL symbol library -Added Transistor_MOSFET_AKL symbol library -Added Transistor_JFET_AKL symbol library -Added Transistor_IGBT_AKL symbol library -Added Thyristor_AKL symbol library -Added Triac_AKL symbol library -Added Optocoupler_AKL symbol library -Added Optocoupler_Gate_Driver_AKL symbol library -Added Optocoupler_Logic_AKL symbol library -Added Optocoupler_Triac_AKL symbol library -Added Optocoupler_Misc_AKL symbol library -Added Device_AKL symbol library -Added Optocoupler_AKL footprint library -Added Package_CSP_AKL footprint library -Added Ferrite_THT_AKL footprint library -Added Ferrite_SMD_AKL footprint library -Added Ferrite_SMD_Handsoldering_AKL footprint library -Added Fuse_AKL footprint library -Added Fuse_AKL_Double footprint library -Added Fuse_Handsoldering_AKL footprint library -Added Capacitor_AKL_Double footprint library -Added Diode_THT_AKL_Double footprint library -Added Inductor_THT_AKL_Double footprint library -Added Jumper_AKL_Double footprint library -Added Package_TO_SOT_THT_AKL_Double footprint library -Added Resistor_AKL_Double footprint library -Added new footprints to Diode_SMD_AKL and its variants: <ul style="list-style-type: none"> SOD-882, SOD-882_TVS SMP (DO220AA) MicroSMP (DO219AD) SMAFL (SMA – Flat Lead) SMBFL (SMB – Flat Lead) MBF Diode Bridge -Added new footprints to Diode_THT_AKL: <ul style="list-style-type: none"> 5W_Zener (CASE-017AA) DO-35_Diac Diode_Bridge_28.6x28.6x7.3mm_P5.08mm_Vertical 	
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	<p>Diode_Bridge_3F_35x25x5.5mm_P7.5mm Diode_Bridge_3F_40x21.5x5.4mm_P7.5mm</p> <p>-Added new footprints to Package_DFN_QFN_AKL: DFN-4_2x2mm_P0.45mm_EP1x1.35mm DFN-4_2x2mm_P0.45mm_EP1x1.35mm DFN-6_1.6x1.6mm_P0.5mm DFN-6-1EP_1.6x1.6mm_P0.5mm_EP0.6x1mm DFN-6-2EP_2x2mm_P0.65mm_EP1.15x0.95mm_EP0.8x0.48mm DFN-8-1EP_3x3mm_P0.5mm_EP1.55x1.85mm DFN-8-1EP_3x3mm_P0.5mm_EP1.7x1.7mm DFN-8-1EP_3x3mm_P0.5mmEP1.45x2.4mm DFN-10-1EP-2.6x2.6mm_P0.5_EP1.26x2.35mm DFN-10-1EP-2x2mm_P0.4mm_EP0.9x1.5mm Linear_DJC_DFN22_6x3mm OnSemi_WQFN-10_2.6x2.6mm_P0.5mm</p> <p>-Added new footprints to Package_DIP_AKL: DIP-4-8_W7.62mm DIP-4-8_W7.62mm_LongPads</p> <p>-Added new footprints to Package_SON_AKL: Infineon_PG-TDSON-8 Infineon_PG-TDSON-8_FL Infineon_PG-TDSON-8_Dual Infineon_PG-TSDSON-8 Infineon_PG-TSDSON-8_FL Texas_S-PWSON-N8_EP2.2x3mm Texas_S-PWSON-N8_EP2.2x3mm_ThermalVias WSON-8-1EP_3x3mm_P0.5mm_EP1.45x2.4mm</p> <p>-Added new footprints to Package_SO_AKL: SO-5_4.4x4.1mm_P1.27mm SO-6_6.8x4.6mm_P1.27mm SO-6_6.8x4.6mm_P1.27mm_Wide SO-6_7.5x3.84mm_P1.27mm SO-6_7.5x3.84mm_P1.27mm_Wide SO-8_4.4x5mm_P1.27mm SOIC-28W-8_7.5x17.9mm_P1.27mm</p> <p>-Added new footprints to Package_TO_SOT_THT_AKL: TO-3-8_Isolated Package TO-262-2 Package TO-66 Package</p> <p>Added more pin indicator variants for existing footprints</p> <p>-Fixes for Diode_THT_AKL: Some diode bridges had their pin numbering changed.</p> <p>-Fixes for Package_DIP_AKL: Some DIP package footprints were too short leading to component collisions when placed right next to each other. (DIP14, DIP18, DIP20, DIP24, DIP28, DIP32, DIP40, DIP48 now have slightly longer bodies).</p>	
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2.1	<p>AKL 2.1 Release:</p> <ul style="list-style-type: none"> -Footprints now load KiCad's 3D models correctly -No-connect pads now have empty net name instead of '~' -SMD and THT Trimmers now have directional marks with external electrode being the pad 2 (connect to low impedance) -SIP Resistor networks have more pronounced pin 1 indicators. 	12/2021
3.0	<p>AKL 3.0 Release:</p> <ul style="list-style-type: none"> -Added Amplifier_Operational_AKL symbol library -Added Amplifier_Instrumental_AKL symbol library -Added Amplifier_Difference_AKL symbol library -Added Amplifier_Differential_AKL symbol library -Added Amplifier_Programmable_AKL symbol library -Added Amplifier_Isolation_AKL symbol library -Added Analog_Comparator_AKL symbol library -Added Analog_AKL symbol library -Added Capacitor_AKL symbol library -Added Capacitor_US_AKL symbol library -Added Resistor_AKL symbol library -Added Resistor_US_AKL symbol library <p>SMD Footprints have been revamped:</p> <ul style="list-style-type: none"> - All pads are rounded rectangles with either 25% or 0.25mm corner radius (whichever is smaller). - Updated FAB Layer for better assembly drawings. - Silkscreen outline snaps to 0.1mm (or 0.05mm for small footprints) outside the courtyard. <ul style="list-style-type: none"> -Added Capacitor_SMD_US_Handsoldering_AKL footprint library -Added Capacitor_SMD_Tantalum_US_Handsoldering_AKL footprint library -Added Capacitor_THT_US_AKL footprint library -Added Capacitor_THT_US_AKL_Double footprint library -Added Crystal_AKL_Double footprint library -Added Crystal_Handsoldering_AKL footprint library -Added Fuse_US_AKL footprint library -Added Fuse_US_AKL_Double footprint library -Added Fuse_US_Handsoldering_AKL footprint library -Added Potentiometer_SMD_AKL footprint library -Added Potentiometer_SMD_Handsoldering_AKL footprint library -Added Potentiometer_SMD_US_Handsoldering_AKL footprint library -Added Potentiometer_THT_AKL footprint library -Added Potentiometer_THT_AKL_Double footprint library -Added Potentiometer_THT_US_AKL footprint library 	09/2022

	<ul style="list-style-type: none"> -Added Potentiometer_THT_US_AKL_Double footprint library -Added Package_SIP_AKL footprint library -Added new footprints to Package_DFN_QFN_AKL: <ul style="list-style-type: none"> DFN-8-1EP_3x3mm_P0.5mm_EP1.2x2mm Texas_RSV_UQFN16_1.8x2.6mm_P0.4mm DFN-6_1.3x1.6_P0.4mm QFN-16_3x3mm_P0.5mm Diodes_UDFN-6_1.4x1.0mm_P0.5mm Texas_X2QFN-8_1.5x1.5mm -Added new footprints to Package_SO_AKL: <ul style="list-style-type: none"> TSSOP-14-1EP_4.4x5mm_P0.65mm_EP2.31x2.46mm TSSOP-20-1EP_4.4x6.5mm_P0.65mm_EP2.4x3.4mm SSOP-8_4.4x3.5mm_P0.65mm SO-8_5x5mm_P1.27mm -Added new footprints to Package_SON_AKL: <ul style="list-style-type: none"> Texas_X2SON_6_1x1mm_P0.35mm -Added new footprints to Capacitor_THT_AKL and all its variants: <ul style="list-style-type: none"> C_Rect_L15mm_W15mm_P10x10mm C_Rect_L17mm_W8.5mm_P12.50mm C_Rect_L36.5mm_W15mm_P32.50mm -Added new footprints to Resistor_THT_AKL and Resistor_THT_US_AKL: <ul style="list-style-type: none"> R_Array_SIP4_BigPads R_Array_SIP5_BigPads R_Array_SIP6_BigPads R_Array_SIP7_BigPads R_Array_SIP8_BigPads R_Array_SIP9_BigPads R_Array_SIP10_BigPads R_Array_SIP11_BigPads R_Array_SIP12_BigPads R_Array_SIP13_BigPads R_Array_SIP14_BigPads 	
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