

Creating a QFN footprint - the center pad

Screaming Circuits

I've written bits and pieces about creating [footprints](#) [1] in Eagle and a lot about what the QFN solder paste layer should look like, so maybe it's time to connect the two dots. I'm using Eagle CAD here, so your process will likely be different unless you're using Eagle, but the concept should be the same. This process takes place in the package section of the Library editor. I'm assuming that you're already part way through and just need to put in the center pad.



[2]



[3] First, add the center pad to your QFN using the "Smd" tool and set the size based on the recommended pad size specified in your part datasheet.

The center of the pad should be located at 0,0 unless you have a QFN with odd shaped or multiple pads.

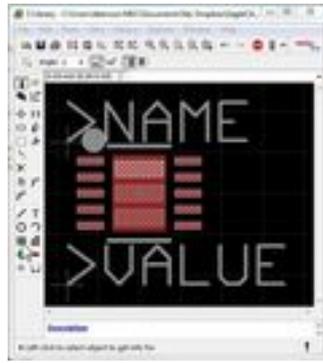
Make sure you un check the "Cream" box in the lower left corner as we'll be doing that manually.

After the pad is there and sized right, you need to add in the cream (solder paste) layer. You'll be drawing the cut-outs in the stencil with the rectangle tool. Use the rectangle tool to draw the stencil cut-outs. Set the rectangle to the "Cream" layer. In my installation of Eagle, the Cream layer defaults to layer 31.

Most parts should get 50 - 75% paste coverage to prevent floating ([read this for more details](#) [4]). If your

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[5]



[6]part

datasheet gives a specific number, use that. However, in my experience, most part datasheets just show a wide open stencil with 100% paste coverage. Unless you have good reason, don't do that.

Without any specific guidance, I usually aim for about 70%. In high volume manufacturing situations, the manufacturing engineers will likely spend time tweaking the coverage, but it'll be close and for a prototype, 70% is a good number.

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Source URL (retrieved on 07/28/2015 - 11:30am):

<http://www.ecnmag.com/blogs/2013/04/creating-qfn-footprint-center-pad>

Links:

[1] <http://blog.screamingcircuits.com/2012/11/beagle-cad-paw-prints.html>

[2] <http://screamingcircuits.typepad.com/.a/6a00d8341c008a53ef017d42d0bd4e970c-popup>

[3] <http://screamingcircuits.typepad.com/.a/6a00d8341c008a53ef017d42d0c192970c-popup>

[4] http://blog.screamingcircuits.com/2006/10/more_qfn_dfm.html

[5] <http://screamingcircuits.typepad.com/.a/6a00d8341c008a53ef017eea453b45970d-popup>

[6] <http://screamingcircuits.typepad.com/.a/6a00d8341c008a53ef017eea453bd6970d-popup>