



A mini-reel for SMD components, version 3



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Summary

The mini-reel is a reel for SMD components on cut tape. It is compatible with the standard 7" reels, only smaller.

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Tags: [reel](#) [smd](#) [smdcomponents](#) [smt](#) [minireel](#)

The mini-reel is a reel for SMD components on cut tape. It is compatible with the standard 7" reels, only smaller. Its capacity is therefore also much smaller: about 1/4th of what a 7" reel can hold.

This is a update (remix) from my earlier mini-reel designs:

- [A mini-reel for SMD components, version 2B.](#)
- [A mini-reel for SMD components.](#)

More information about the design and the rationale for a mini-reel, is in [a fuller description our web site](#).

Features

The basic feature of the mini-reel is that it is compatible with industry-standard reels. It conforms to all essential dimensions and design elements in IEC-481. However, the mini-reel also has a few extra features.

Slot for estimating the number of components left on the reel

The mini-reel optionally has a slot, with scale markings. This allows you to estimate the number of components that are left on the reel.



Each scale mark represents 10% of tape on the reel. So if a full mini-reel holds 1200 components, and the roll of tape reaches the sixth marker, then there are approximately 720 components left on the reel (1200 time 60%).

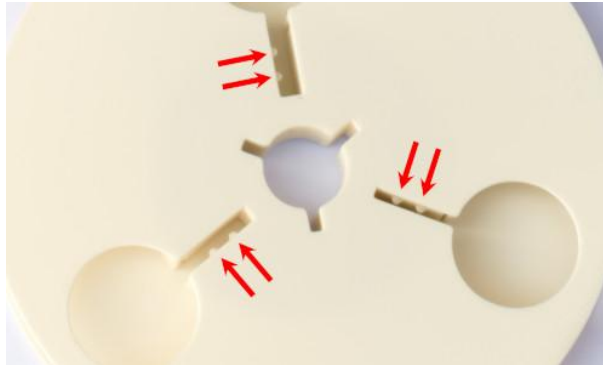
This requires you to know how many components are on a full mini-reel. There are a few ways to establish this, see the [article on our web site](#).

You do not have to repeat this procedure every time again, of course. When we put a strip of cut tape on a mini-reel, we also make a label with the component's type, value & package. Then we calculate the number of components that a full mini-reel would hold, and write that on the label. So, every next time we reach for the mini-reel, we check the scale, then read the capacity of a full mini-reel, and we have a quick & relatively accurate estimate of the quantity left.

Slots holding the tape ends

The reel must hold the end of the tape. It must allow it to slide out without too much effort, but it must also avoid that the tape slides out too easily. The problem is: tape for SMD components comes in different thicknesses.

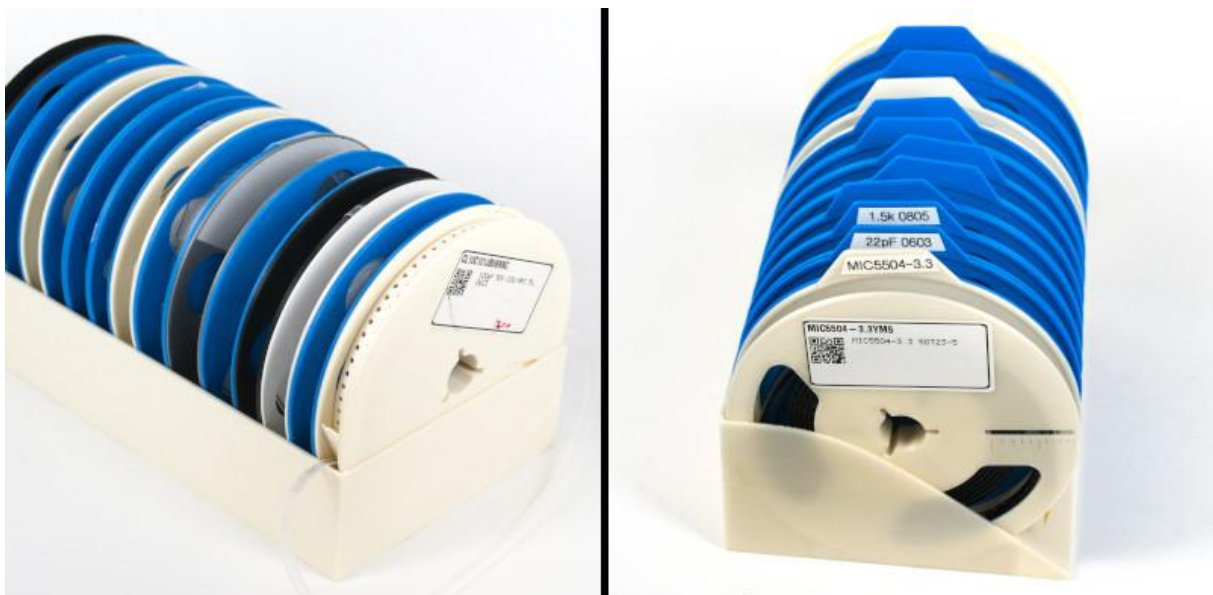
The mini-reel has three slots, with different width. As a general rule, the narrowest slot that the tape fits in, is the best slot to use. In addition, the slots each have two “pins”, that snap into the sprocket holes of the cut tape.



The purpose of the pins is to keep the end of the cut tape to slip out of the slot too easily (after which the cut tape has the tendency to unroll from the reel completely).

Edge label

The edge label is a feature of version 3 of the mini-reel.



If you store mini-reels in a tray, at best you see the label of the reel at the front, but you do not see the labels of the other reels. See the left side of the picture (this is the mini-reel, version 2). Searching for a reel with the

right component, requires that you remove the reels from the tray, to look at the label.

The right side of the picture, shows the current design (version 3) with edge labels. Edge labels allow you to quickly spot what component a reel holds, without removing it from the tray.

The edge labels are optional (many features and options can be configured in the [OpenSCAD](#) source file). In the “Files” section, I added STL files for mini-reels with and without edge label.

Print instructions

A mini-reel consists of two parts, which you can simply clip together. No glue is needed.

I recommend that the parts are printed on a smooth surface (so not a "powder-coated" steel sheet; the satin-coated sheet works great-though). You will want the top side of the reel to be smooth for the label to stick well.

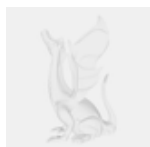
The pins for the sprocket holes are essentially “perimeter bridges”. So I recommend PLA, which bridges well. (You can also disable the pins in the OpenSCAD customizer.) A brim or supports are not needed.

This remix is based on



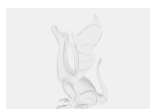
A mini-reel for SMD components, version 2B

by Thiadmer Riemersma



Mini-reel for SMD components

Model files



minireel.scad

☐ OpenSCAD source (see also the predefined configurations in the "Other files")



minireel-8mm.stl

☐ mini-reel for 8mm tape



minireel-12mm.stl

☐ mini-reel for 12mm tape



minireel-16mm.stl

☐ mini-reel for 16mm tape



minireel-8mm-label.stl

☐ mini-reel for 8mm tape, with edge label



minireel-12mm-label.stl

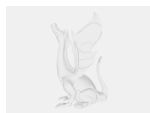
☐ mini-reel for 12mm tape, with edge label



minireel-16mm-label.stl

☐ mini-reel for 16mm tape, with edge label

Other files



minireeljson.txt

☐ Predefined mini-reel configurations for the OpenSCAD source, rename to .json.

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