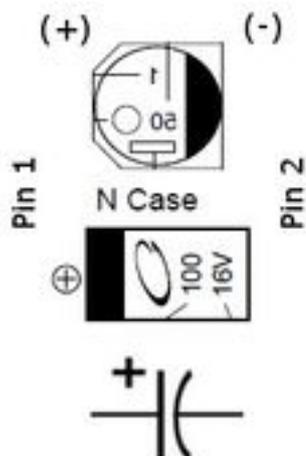


## Electrolytic Ambiguity

Screaming Circuits

I've written about ambiguity a few times before, like [this post](#) [1] about fiducials. But I'm not talking about the PC board today. I'm talking parts. More specifically, I'm talking about silk screen markings for your parts on the PCB.



[2]Diodes have a lot of opportunity for ambiguity, as you can read [here](#) [3]. There are many ways to mark parts, but fewer ways to clearly mark them. Take a typical electrolytic capacitor. It can be thru-hole, smt metal can, tantalum, or a few other form factors. The capacitor manufacturers aren't doing any of us any favors where markation is concerned.

Check out this image. Yikes! In all cases shown here, I've oriented positive on the left, which, according to IPC is pin 1. This is also the zero degree rotation for the centroid value. But, isn't it nice of those component manufacturers to put the identification bar on the positive side for tantalum capacitors and on the negative side for metal can electrolytics? Not!

So, how should you mark this in the silk screen on your PCB? For an electrolytic capacitor, the best approach is to mark the positive sided with a (+), plus sign. If you mark pin 1, with the number 1, it can easily be mistaken for the minus sign. If you mark the negative side with a minus sign, it can easily be mistaken for pin 1.

For a metal can capacitor, it is also acceptable to put the notched outline in silk screen. We still recommend that you place the (+) plus sign on there too.

Duane Benson

I'm just positive I put the negative right on the left

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<http://www.ecnmag.com/blogs/2012/07/electrolytic-ambiguity>

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### **Links:**

[1] <http://blog.screamingcircuits.com/2012/05/fiddling-with-fiducials-again.html>

[2] <http://screamingcircuits.typepad.com/.a/6a00d8341c008a53ef017616186170970c-popup>

[3] <http://blog.screamingcircuits.com/2009/10/led-silk-screen-markings.html>