

SMD LED Circuit Wiring

by erkrystof - Sunday, August 08, 2010

<http://www.hoverandsmile.com/smd-led-circuit-wiring/>

Reference our earlier articles for sources of these LEDs as well as our web calculator links to figure out resistance values.

They're tiny, they're awesome. Surface Mounted Device (SMD) LEDs. They have brightness, wide viewing angles, and plenty of colors. They're great for concealment, but that concealment comes at a price.

Tiny little “insert expletive here” S.M.D. LEDs





Tiny little SMD LEDs

I don't have the hands of a surgeon, in fact if I *don't* have caffeine my hands are so shaky I look like I just watched a marathon of *Who's the Boss?*.

Alas, if you're up to the task, these little guys can really bring out some neat lighting effects for your LED circuits. Here's how we put them together and some things to note.

A lot of times you'll find these LEDs with no clear markings as to which side is negative and which is positive. This is a problem for diodes, because they only work with current going the right way. Therefore, if you buy any of these, take care to look at the data sheets that typically come with them, or look for identifying marks. In our case here, the little notch you can see in the above photo designates the negative side of our LED.

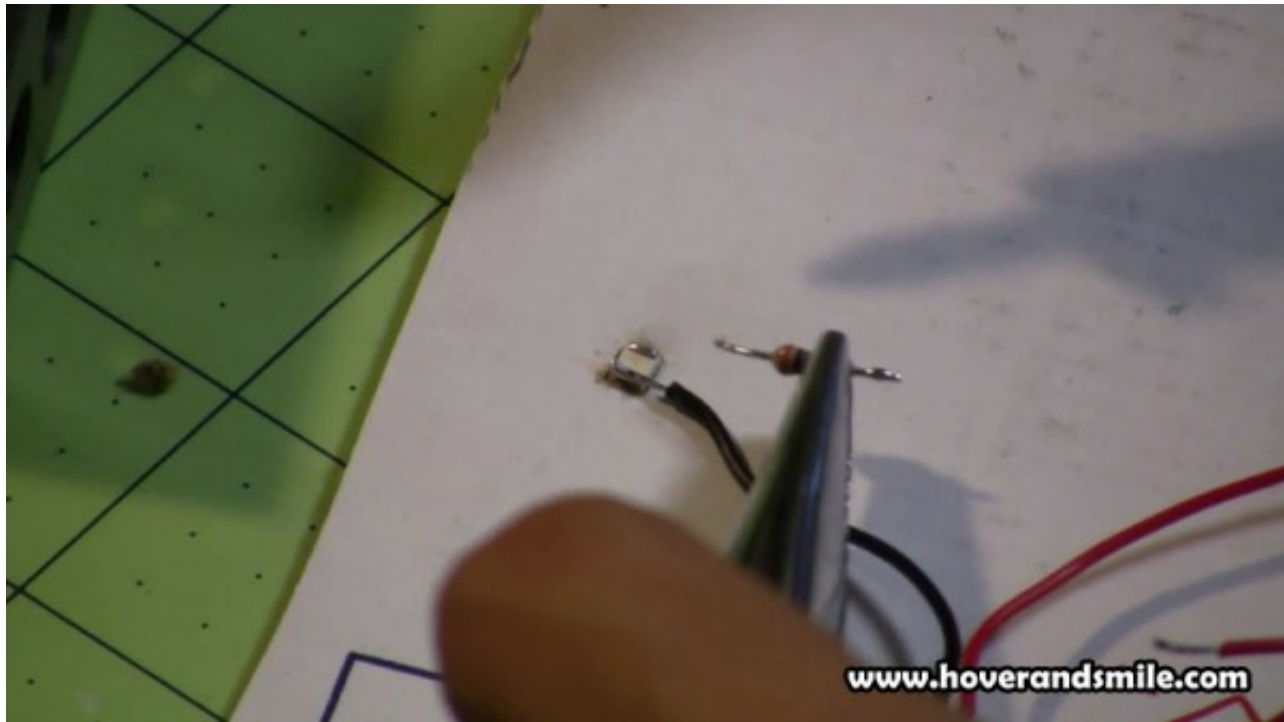


Third arms and alligator clips are just too big to easily handle these guys, so at this point I've used a small cardboard cradle to hold these LEDs in. It's cheap, but it works. Just make sure you know which metal contact side is negative and positive, flip the LED over into the cradle, and get to putting some solder on the small metal contacts.



Of course, if you're really not sure which side is negative and which is positive, wire one up and put a 3V battery against it. It should be enough to light the LED and not kill it if you place the wrong voltage ends against it. Just don't do anymore than that, they're easily smoked.

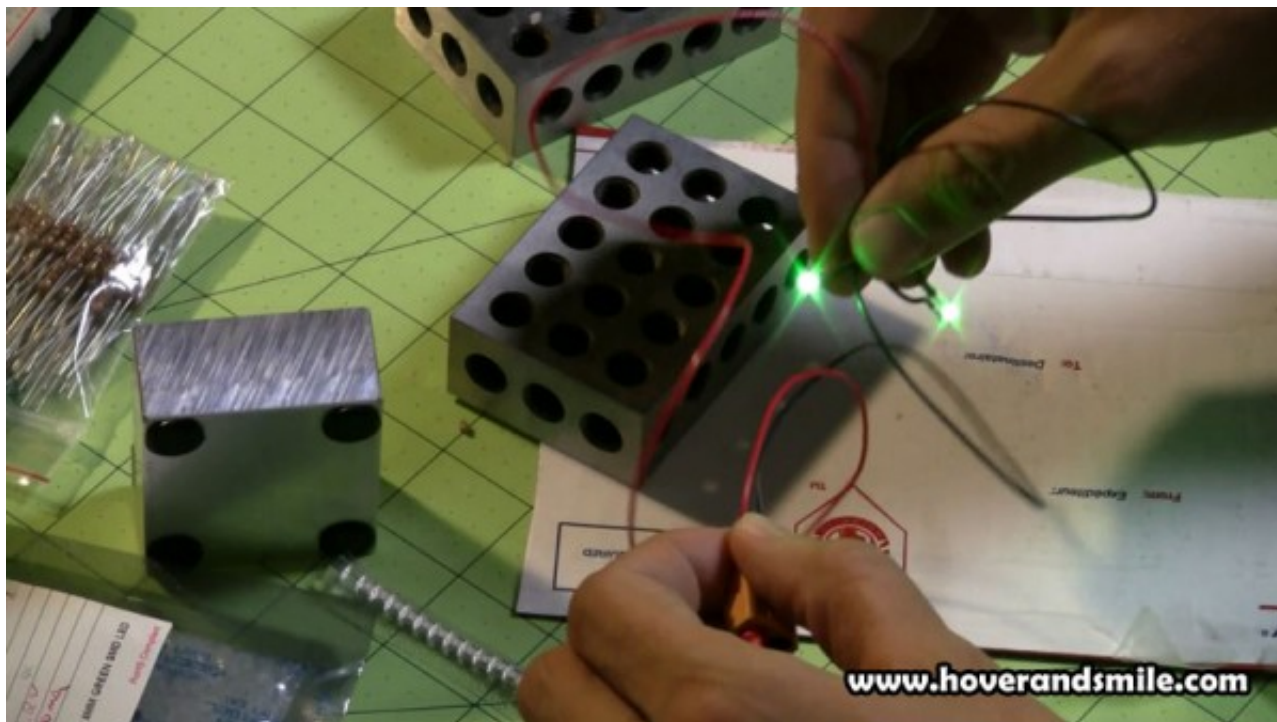
Also, when soldering your wires and resistors to these guys, keep the heat on as little as possible. They're tiny, and they melt if you keep that hot old soldering iron there too long!



SMD Resistor Wiring

We're just using two LEDs in our SMD circuits, since we'll have green, red, and white, that's six SMD LEDs, three separate circuits. So, we'll use in general, a 330 Ohm resistor for each SMD pair.

Wiring just as we did in our previous articles, you can see at the end our completed wire circuits, resistor included, lit up with a 12 volt battery.



SMD Circuit Testing

In the next article and video, we'll be done with our basic single circuit LED wiring, now it's time to look at wiring all eight of our LED circuits together!

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