

# **Ultimate Fuzz Kit Instructions (older version before 5/1/06)**

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## Parts Checklist for Ultimate Fuzz Kit

### Resistors:

- 1 - 470ohm (yellow/purple/brown/gold)
- 1 - 1k (brown/black/red/gold)
- 1 - 4.7k (yellow/purple/red/gold)
- 1 - 33k (orange/orange/orange/gold)
- 1 - 100k (brown/black/yellow/gold)
- 2 - 1M (brown/black/green/gold)

### Capacitors:

- 1 - .047uf film(473)
- 1 - 0.1uf film (104)
- 1 - 2.2uf aluminum electrolytic
- 1 - 22uf aluminum electrolytic
- 1 - 47uf aluminum electrolytic

### Transistors:

- 2 - AC127 NPN germanium transistors
- 2 - BC108 NPN silicon transistors

### Diodes:

- 1 - 1N4001

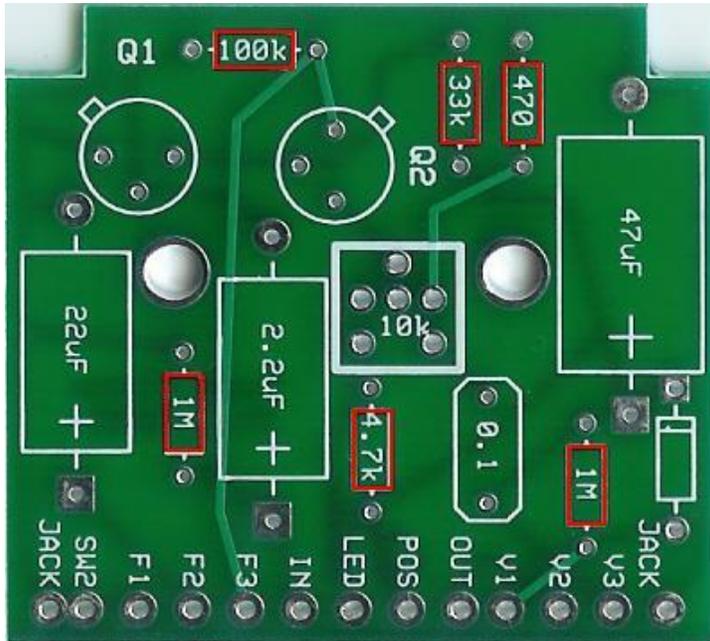
### Potentiometers:

- 1 - 10 trim pot
- 1 - A500K Audio Volume pot
- 1 - B2k Linear Fuzz pot
- 1 - B1K Linear Fuzz pot

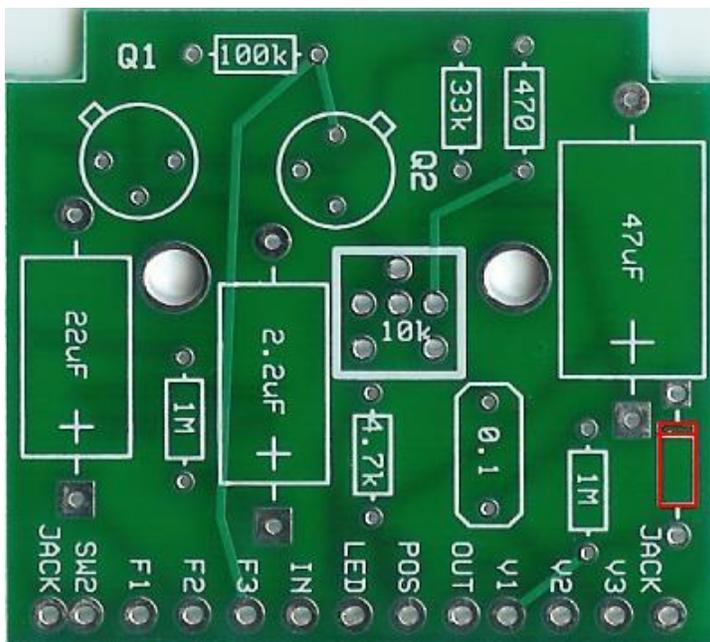
### Hardware:

- 1 - enclosure w/ 4 screws
- 1 - ultimate fuzz kit circuit board
- 1 - 3pdt footswitch
- 2 - knobs
- 1 - AC adaptor jack
- 1 - 1/4" stereo jack
- 1 - 1/4" mono jack
- 1 - battery snap
- 1 - red LED
- 1 - LED bezel
- hook-up wire

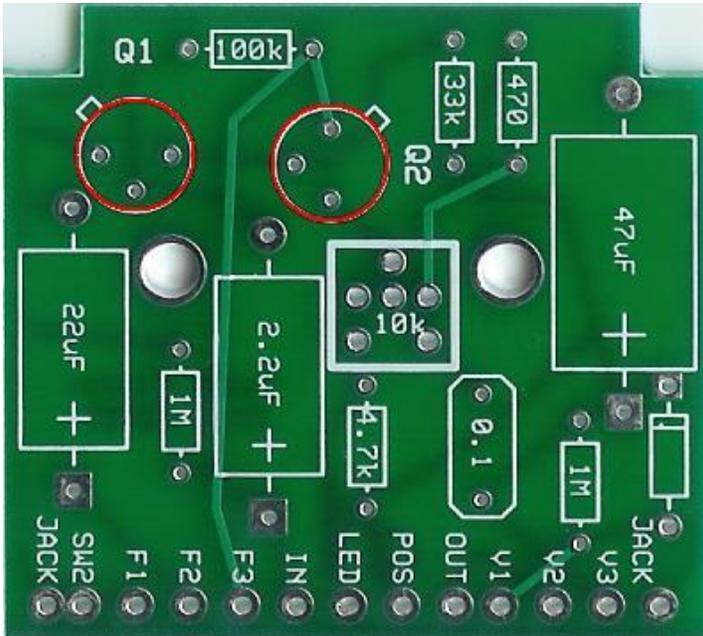
## Populating the Circuit Board



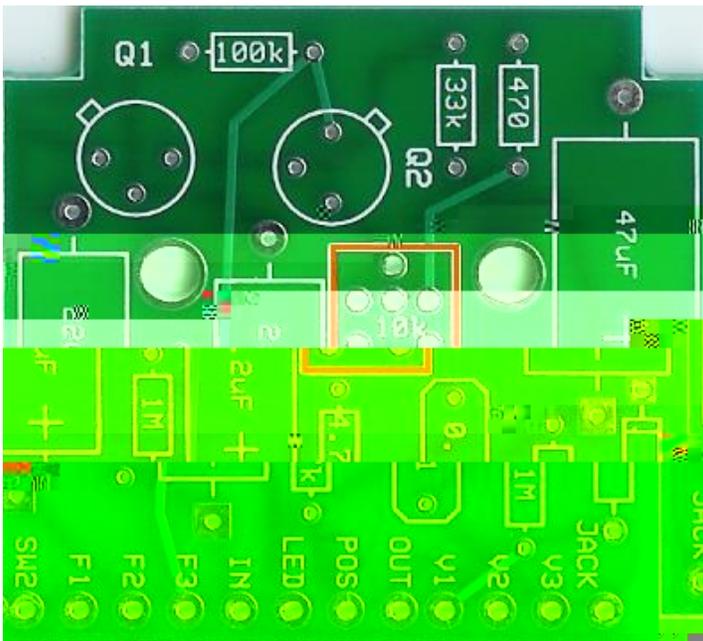
Step 1: Add all the resistors. The 1M resistors are optional. They reduce popping sound when you turn the pedal on and increase the pick attack response. Replace the 470ohm with the 1k if you want more output than the original fuzzface



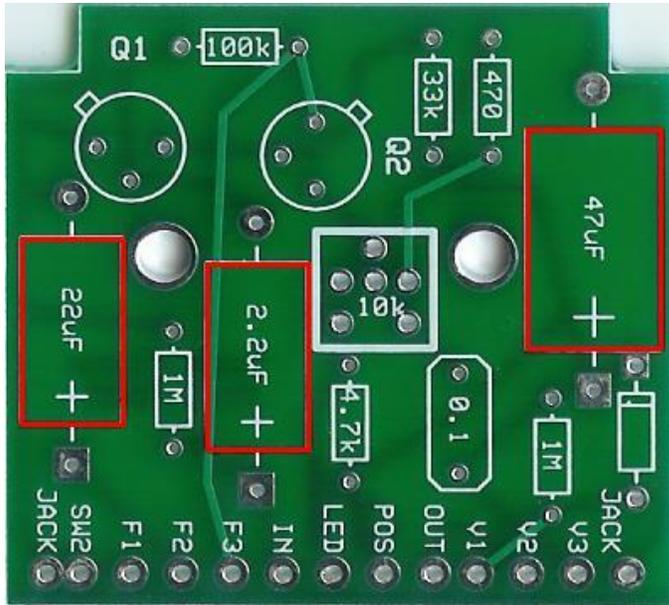
Step 2: Add the diode. Make sure the anode the side with the white stripe matches the white stripe on the circuit board. This component is optional. It provides protection from accidental reverse power polarity. It does not affect the tone of the pedal in anyway



Step 3: Add the transistor sockets. Make sure that the tab on the socket matches up with the tab on the circuit board. Do not add the transistors yet. Do not solder the transistors to anything. Only solder the sockets.



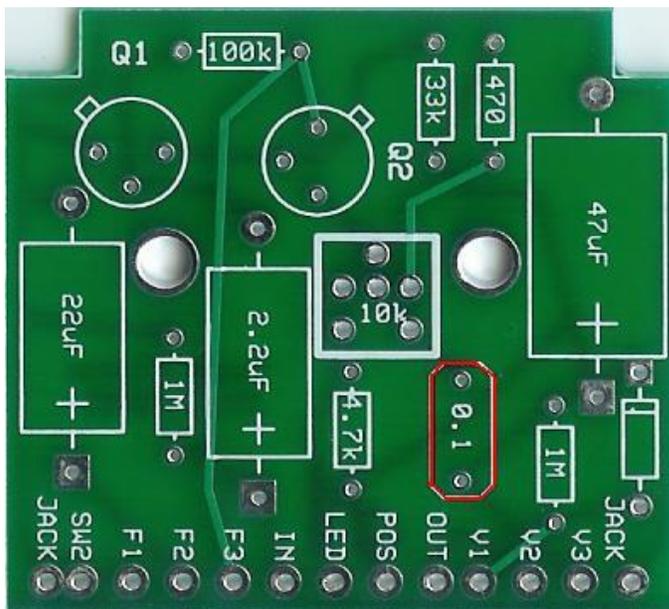
Step 4: Add the bias trimpot. The board is designed to accept several brands of trimmers, but there is only one way to insert the trimpot that comes with the kit.



Step 5: Add the aluminum electrolytic capacitors. These are polarized and the positive solder pad will be labeled on the board by a "+" symbol. The negative end of the capacitor will have a strip of black arrows pointing to it. The positive end will have a rubber seal on that end.

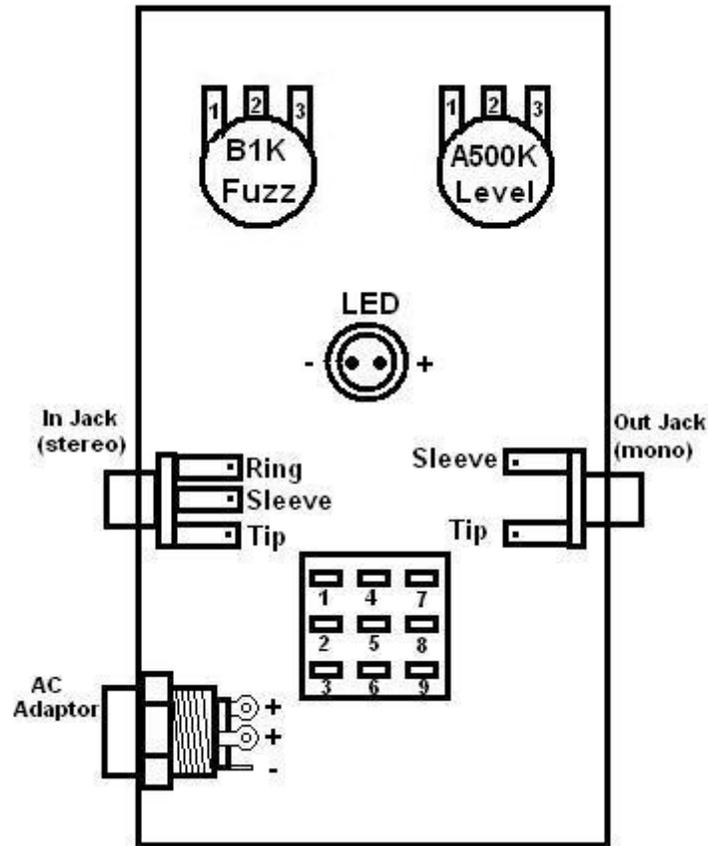
Replace the 2.2uf input cap with the .047uf film cap if you want the bass cut mod. The .047uf cap is not polarized so it can go in either way.

The 47uf is optional. This is the power filter cap. It will help reduce any AC hum you may experience with a power adaptor



Step 6: Add the .1uf film capacitor. This is non-polarized so it can go in either direction.

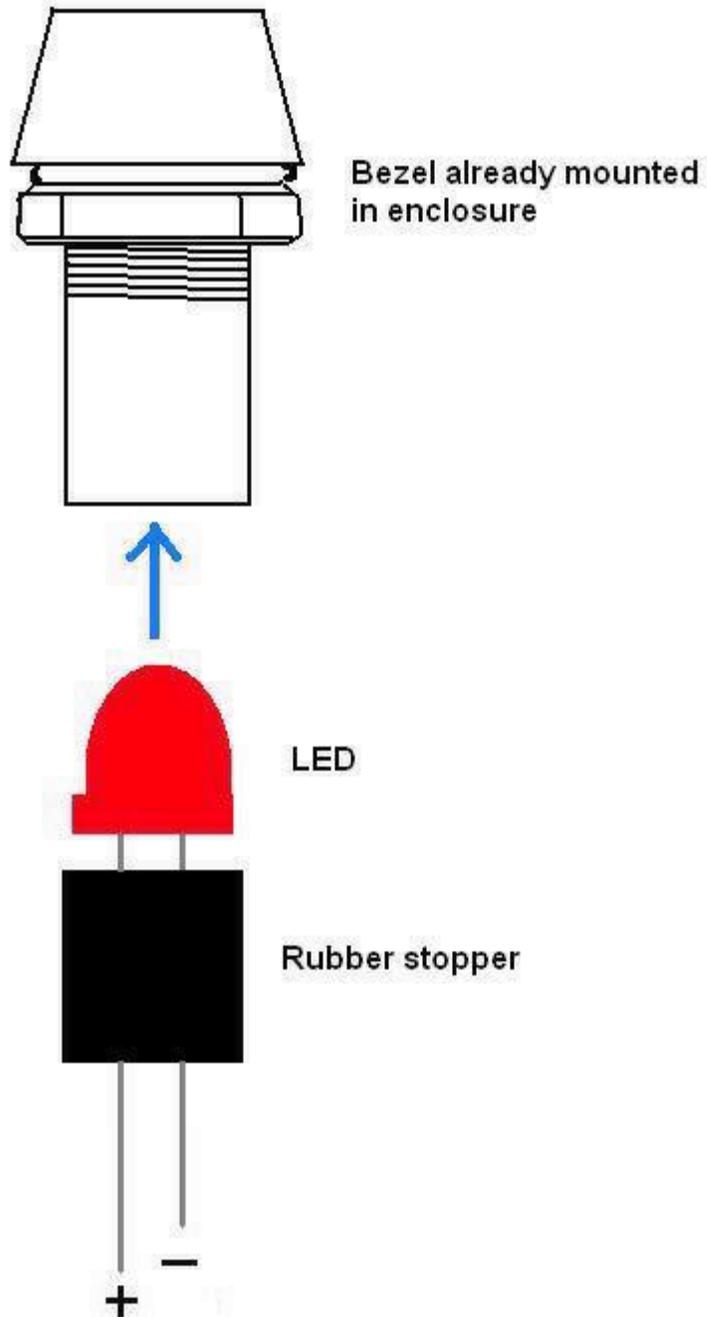
# Assembly



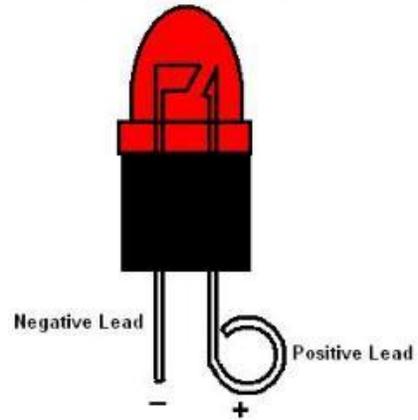
1. Install the jacks first. If you are looking down inside the enclosure, the mono jack goes on the right side and the stereo jack goes on the left. Place the washer on the outside of the enclosure. Use a 1/2" wrench to tighten.
2. Install the AC adaptor jack. The bolt goes on the inside. Use a 3/4" or 14mm wrench to tighten.
3. Install the bezel. The washer and bolt go on the inside. Use a 10mm wrench to tighten.
4. Install the potentiometers so that the solder lugs are pointing up. The 1k (fuzz/attack) pot goes on the left side and the 500k (volume) pot goes on the right. The washers go on the outside. Use a 10mm wrench to tighten but only snug. Do not over tighten the pots.
5. Install the footswitch. The first bolt and metal washer go inside. The plastic washer and second bolt go on the outside. It does not matter which side you designate as the "leading edge" of the footswitch as long as you orientate it so that the flat sides of the solder lugs are aligned in horizontal rows, not vertical columns.

# Wiring

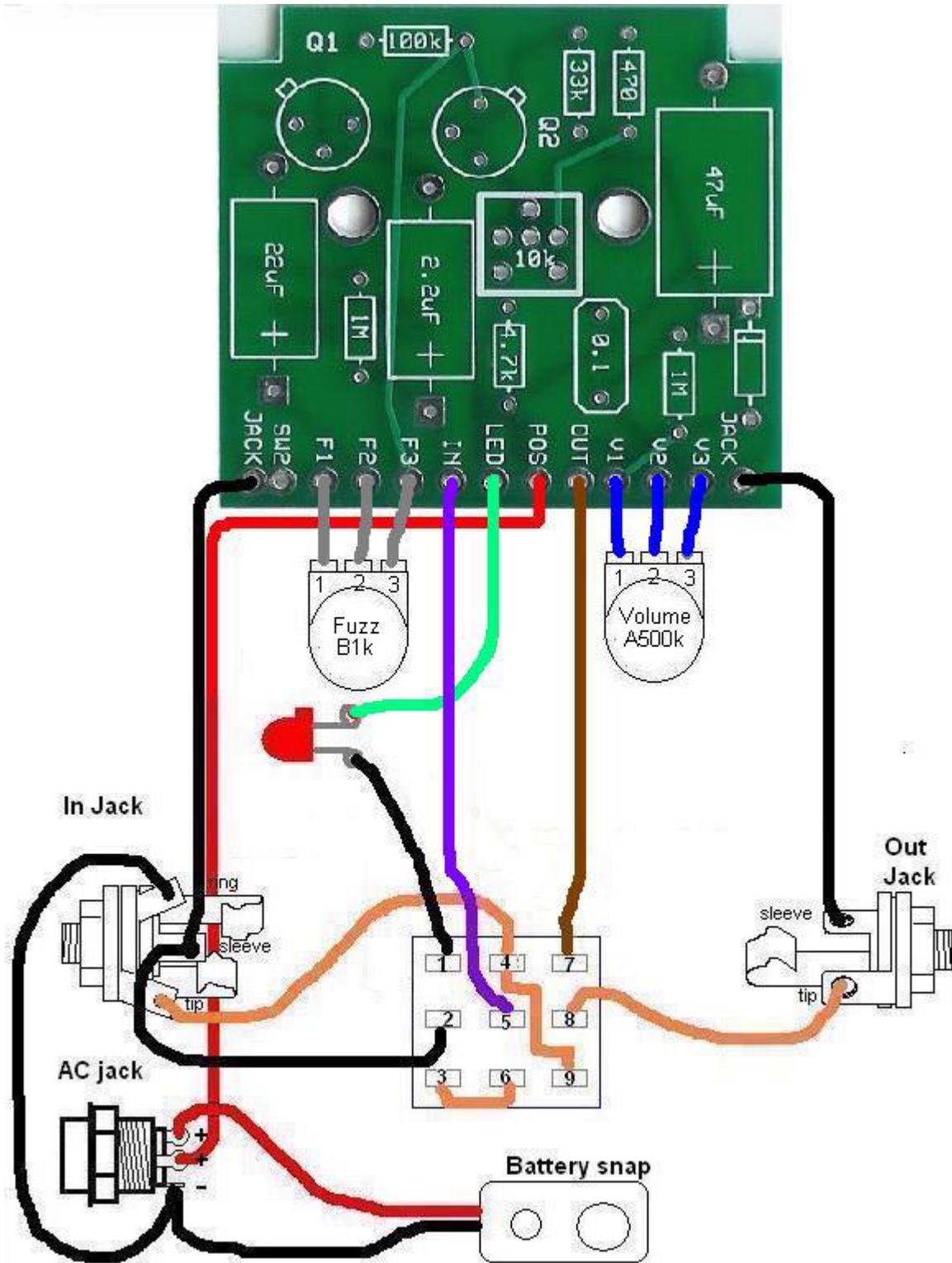
So many people make the mistake of inserting the LED in through the top of the bezel.  
You insert the LED in through the bottom



## LED (Light Emitting Diode)



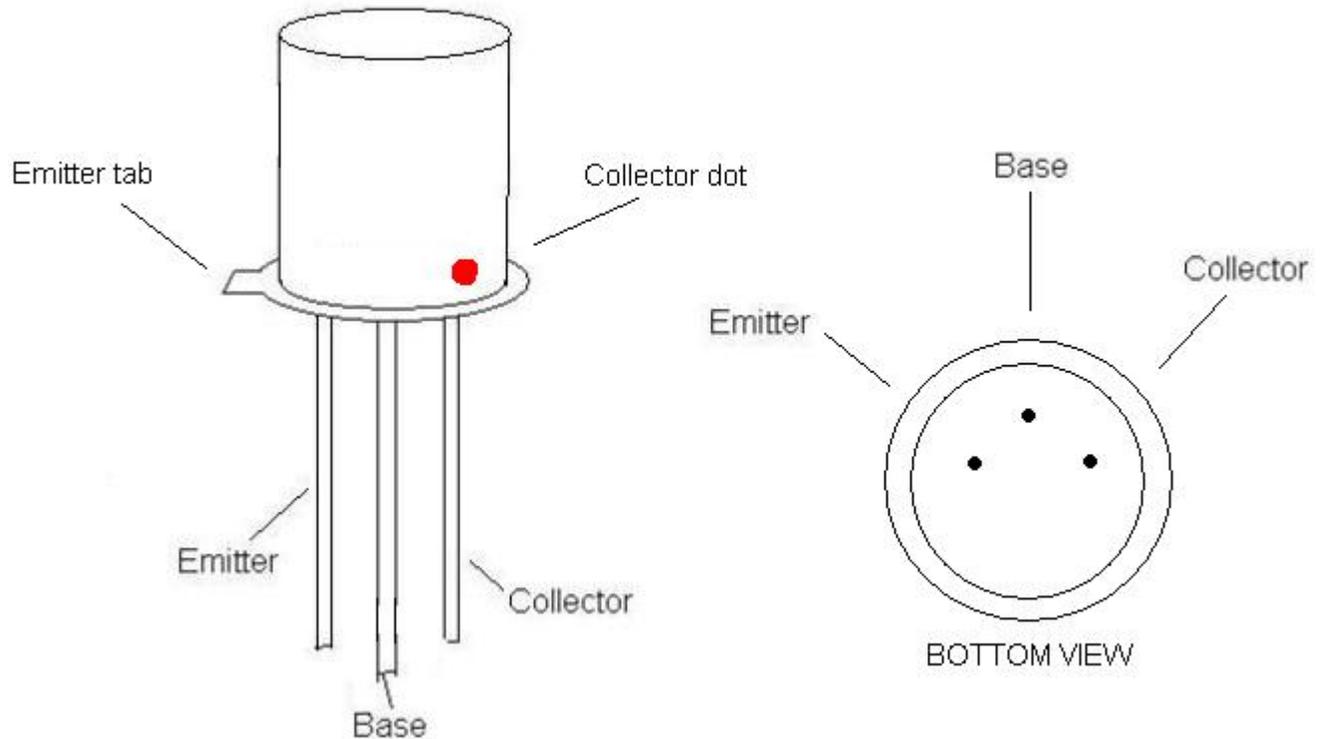
After you mount and install the LED/bezel, Bend the leads of the LED into circles so that you will have something to solder the hookup wire to. DON'T lose track of which lead is negative and positive. The positive lead will be longer. The negative side has a flat side.



## Keith's tips to for a cleaner build

1. Use the left over clippings from you capacitors and resistors when ever possible. But don't use them if it may cause a short. You wouldn't want to use them to make the connection from the sw2 eyelet to lug 2 of the footswitch and for sw1 to lug 1 of the footswitch because those would overlap and probably touch. I like to use them to make the jumper from Lug 3 of the footswitch to lug 6 of the footswitch and Lug 4 to lug 9 as well. I also like to use the clippings to connect the "Jack" eyelets of the circuit board to the sleeves of the jacks because these are very very short connections. When you use wire for these connections you have to use a length that is longer than what is actually needed because the distance from the sleeve lug to the eyelet when the board is mounted is much to short to strip. **BUT!!!**If you do use the clippings to connect the board to the jacks, you should save this till near the end when you've got your board mounted because you aren't going to be able to move the board very much after that. When you use solid wire without a protective plastic coating, it's called bare bus wire.
2. Wire up the potentiometer first and then do a mock up mount. By this I mean, install the self adhesive standoffs, but DO NOT remove the paper backings. Then put the circiut into position as if you were actually going to mount it. From here, you will be able to better measure the shortest length of wire needed for the rest of the connections...which means a cleaner build.
3. Solder the pot wires to the underside of the circuit board. It's a doublesided board! The less wire you see, the cleaner it will look.
4. Make one joint for each lug. Take the negative terminal of the AC jack for example. You have 2 wires connected to it, right? It is infinitely easier if you stick both wires in the hole and solder them at the same time then if you solder one first, then try to heat up the joint so you can fit the second wire in. The same thing goes for the sleeve of the in jack and lug 4 of the footswitch.
5. Take your time. Don't strip the wires any more than is needed. You'll only need to strip the wires about 1mm for the footswitch lugs. But for the jack and pot lugs you'll want about 1/4". This will make it look cleaner and also help prevent shorts.

## Finishing Touches



Install the transistors. Do not solder the transistors. Simply push the lead wires into the appropriate socket holes. The lead wires on the germanium transistors will be rather long, so you will want to clip off the excess. But be sure to leave enough so you can bend the transistor down and out of the way when you seal the enclosure. Some brands will only have a dot (could be any color) to denote the collector. Some brands will have a tab to denote the emitter. Some brands could have both indicators. Some brands may have neither. In this case they will position the lead wires in a triangular formation that is offset from the center ( see bottom view).

If you were holding out to bare bus wire the sleeves of the jacks don't forget to do that. Install the base of the enclosure with the 4 screws that came with your kit. Add the rubber bumper feet...unless you're a velcro person. If you've got any problems that you can't figure out yourself, visit [board.buildyourownclone.com](http://board.buildyourownclone.com) for technical support