

# Ultimate Fuzz Kit Instructions

**note: these instructions are for the latest “bezel free” version. If your kit contains a bezel, please download 2.0version instructions:**

**[www.buildyourownclone.com/fuzzinstructionsV2.pdf](http://www.buildyourownclone.com/fuzzinstructionsV2.pdf)**

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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

### Diodes:

- 1 - 1N4001

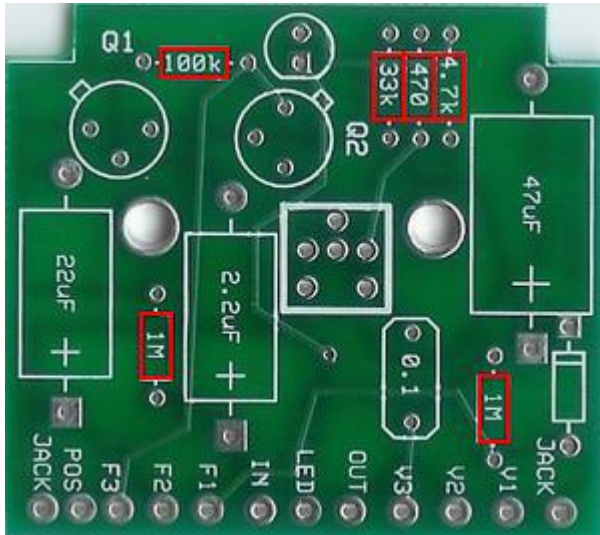
**Potentiometers: SNAP THE SMALL TABS ON THE TOPS OF THE POTS OFF WITH A PAIR OF NEEDLE NOSE PLIERS**

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

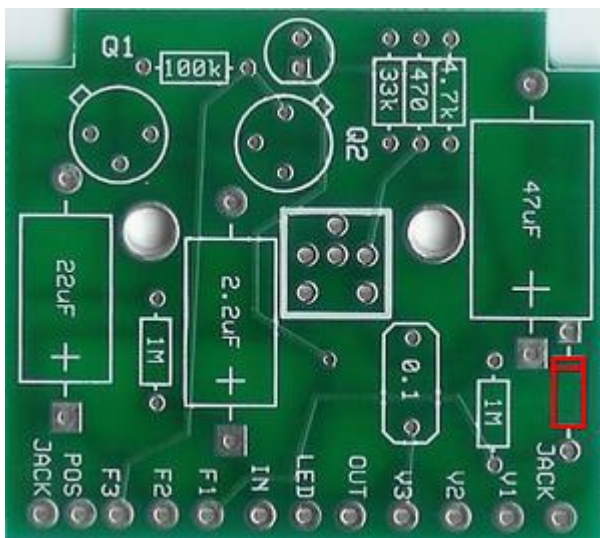
### Hardware:

- 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
- hook-up wire

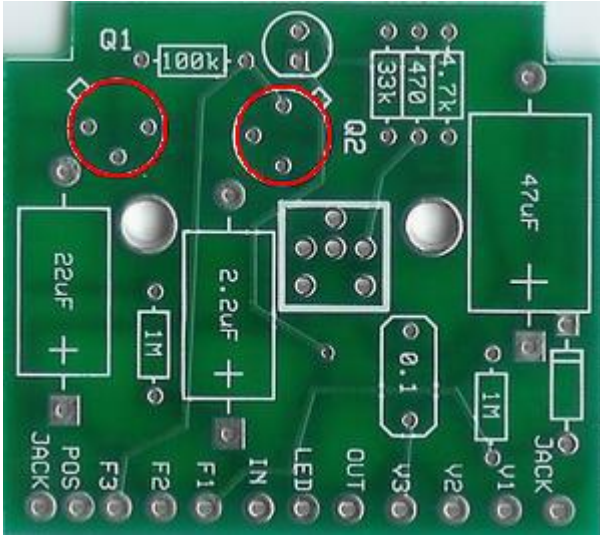
## Populating the Circuit Board



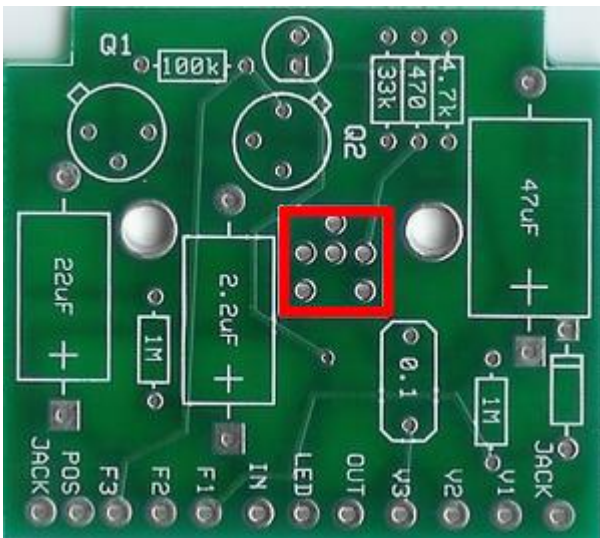
Step 1: Add all the resistors. The 1M resistors are optional. They reduce popping sound when you turn the pedal on and increase the pick attack response. Replace the 470ohm with the 1k if you want more output than the original fuzzface



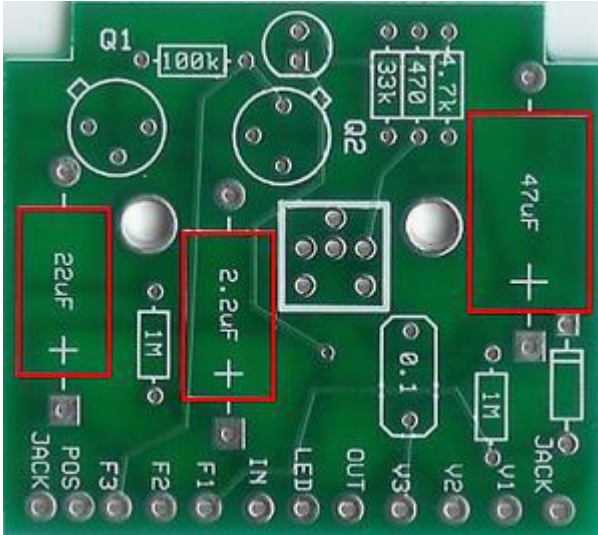
Step 2: Add the diode. Make sure the anode - the side with the white stripe matches the white stripe on the circuit board. This component is optional. It provides protection from accidental reverse power polarity. It does not affect the tone of the pedal in anyway



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.



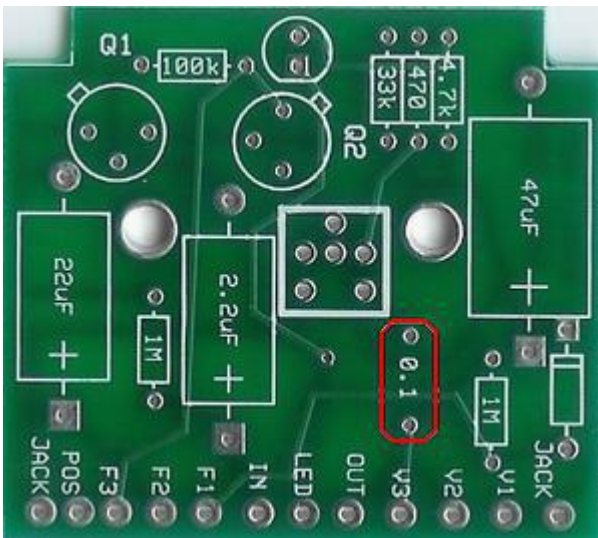
Step 4: Add the bias trimpot. The board is designed to accept several brands of trimmers, but there is only one way to insert the trimpot that comes with the kit.



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.

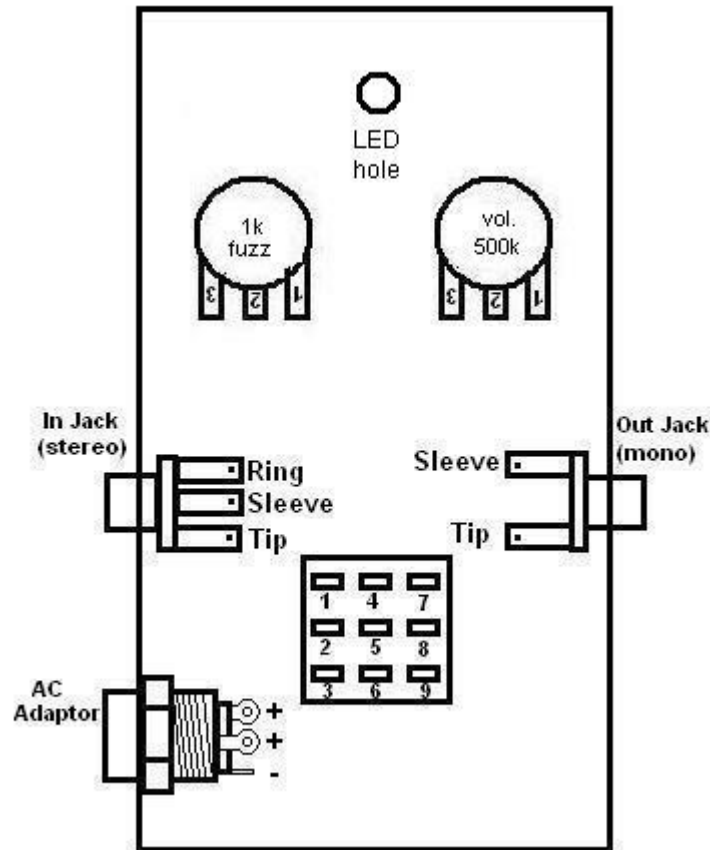
Replace the 2.2uF input cap with the .047uF film cap if you want the bass cut mod. The .047uF cap is not polarized so it can go in either way.

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



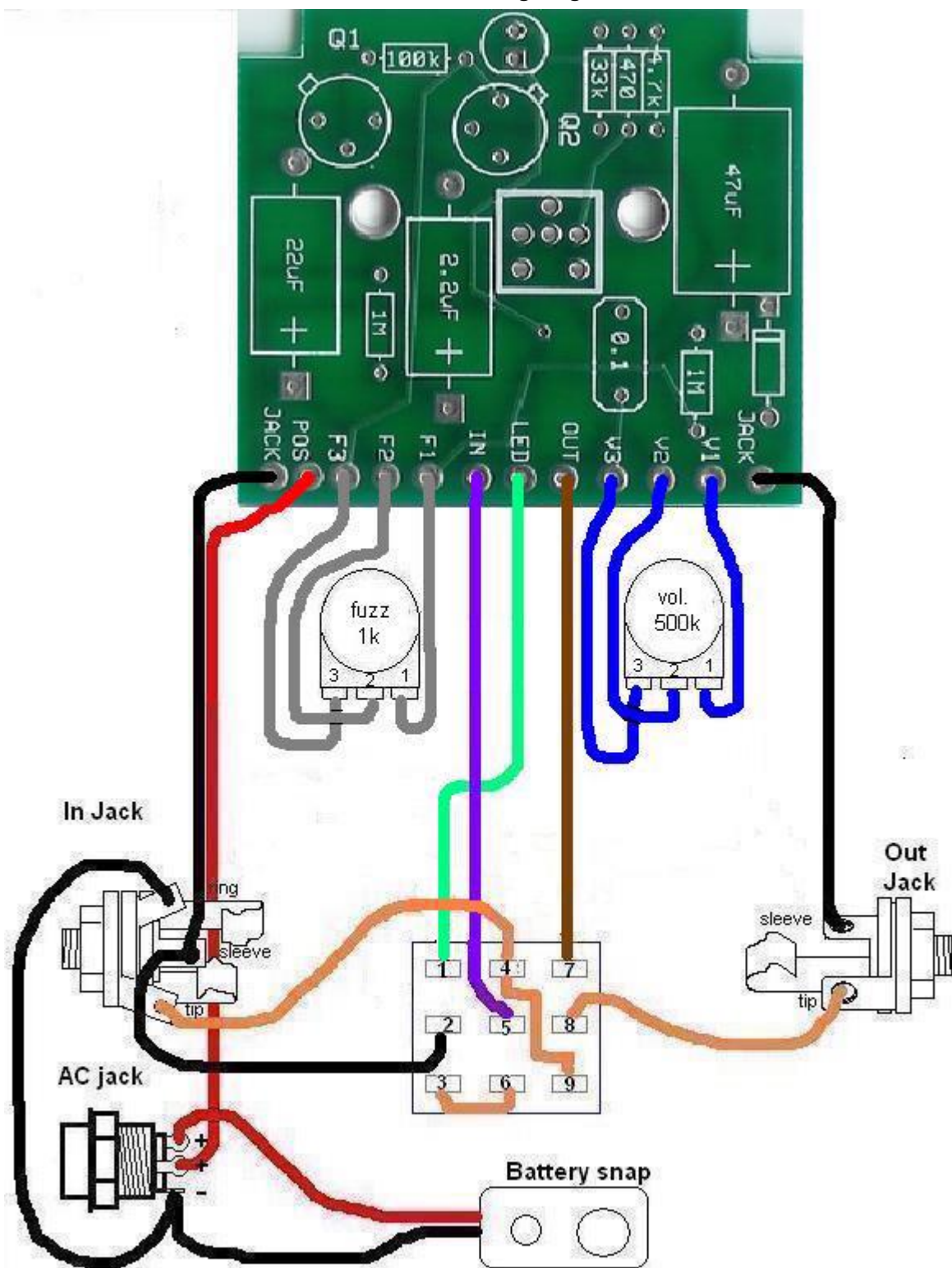
Step 6: Add the .01uF film capacitor. This is non-polarized so it can go in either direction.

# Assembly

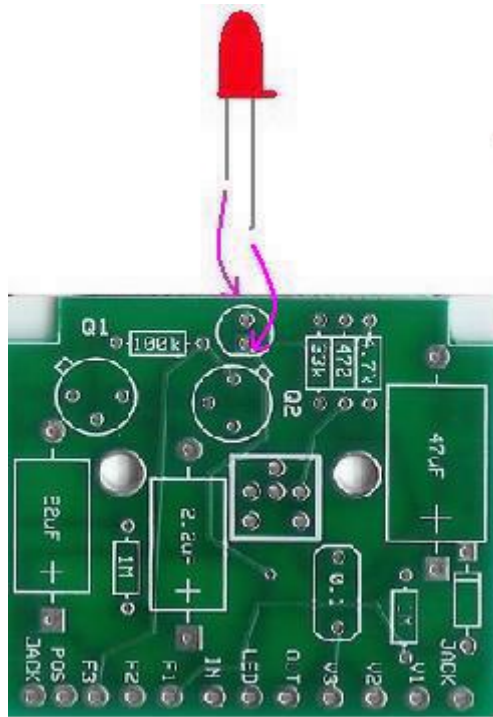


1. Install the jacks first. If you are looking down inside the enclosure, the mono jack goes on the right side and the stereo jack goes on the left. Place the washer on the outside of the enclosure. Use a 1/2" wrench to tighten.
2. Install the AC adaptor jack. The bolt goes on the inside. Use a 3/4" or 14mm wrench to tighten.
3. Install the potentiometers so that the solder lugs are pointing down. 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.
4. 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.

Ultimate fuzz wiring diagram

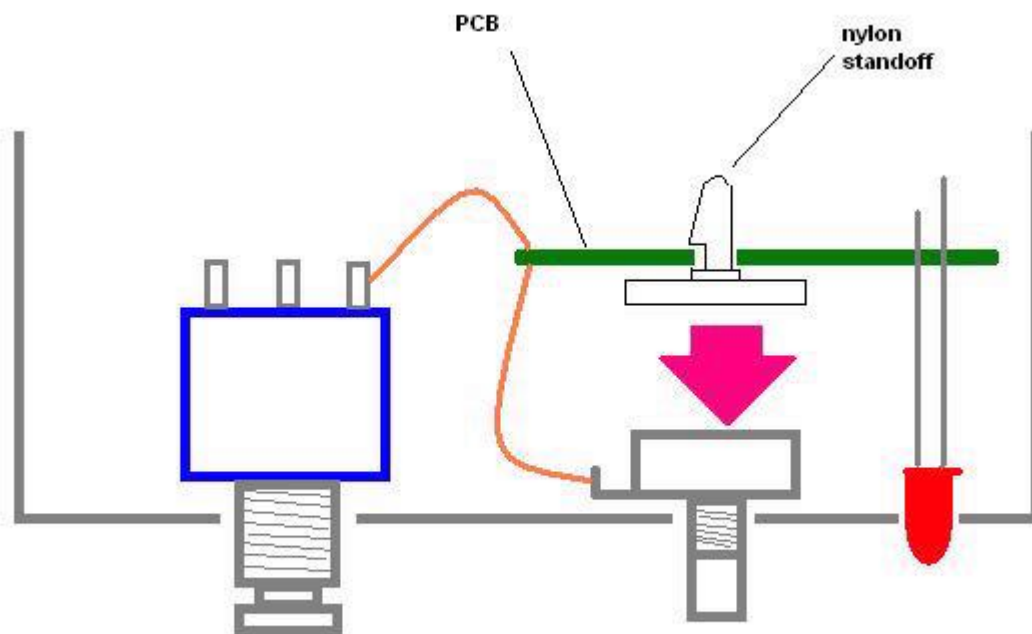


## Intalling the LED and Mounting the Circuit Board

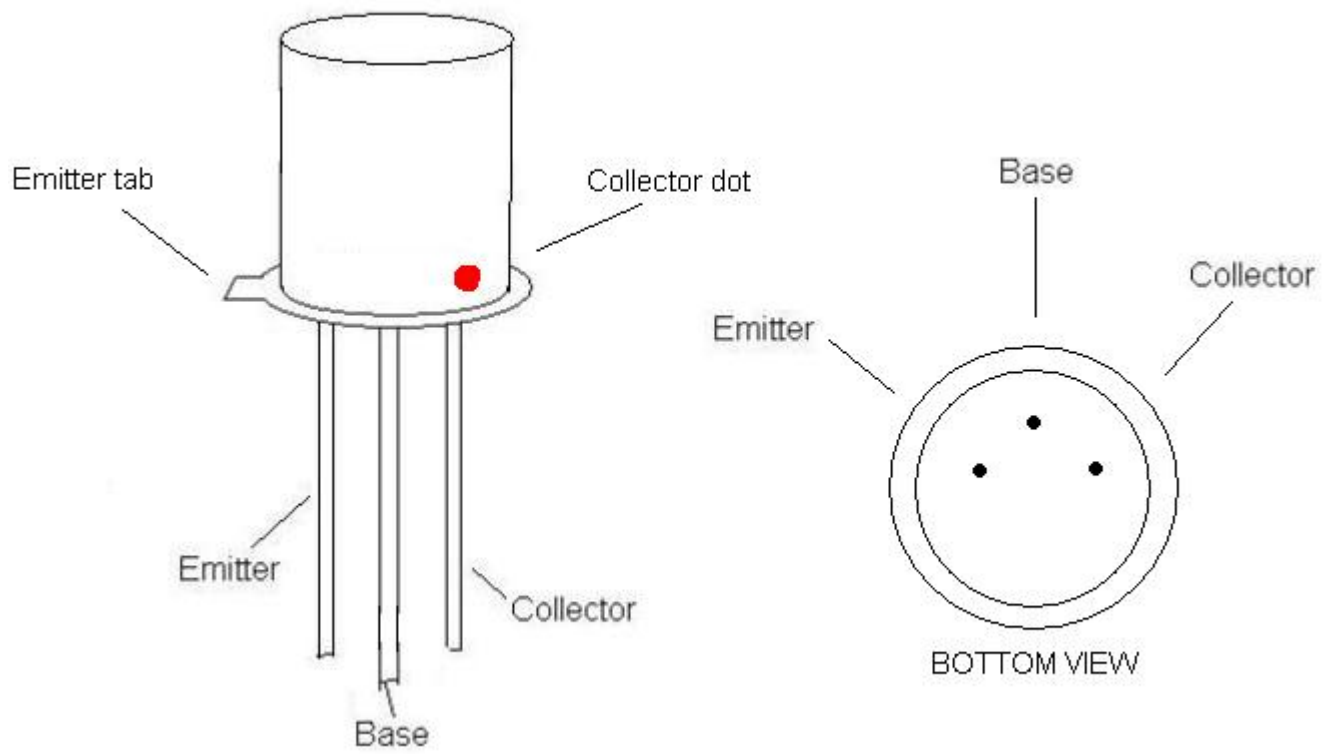


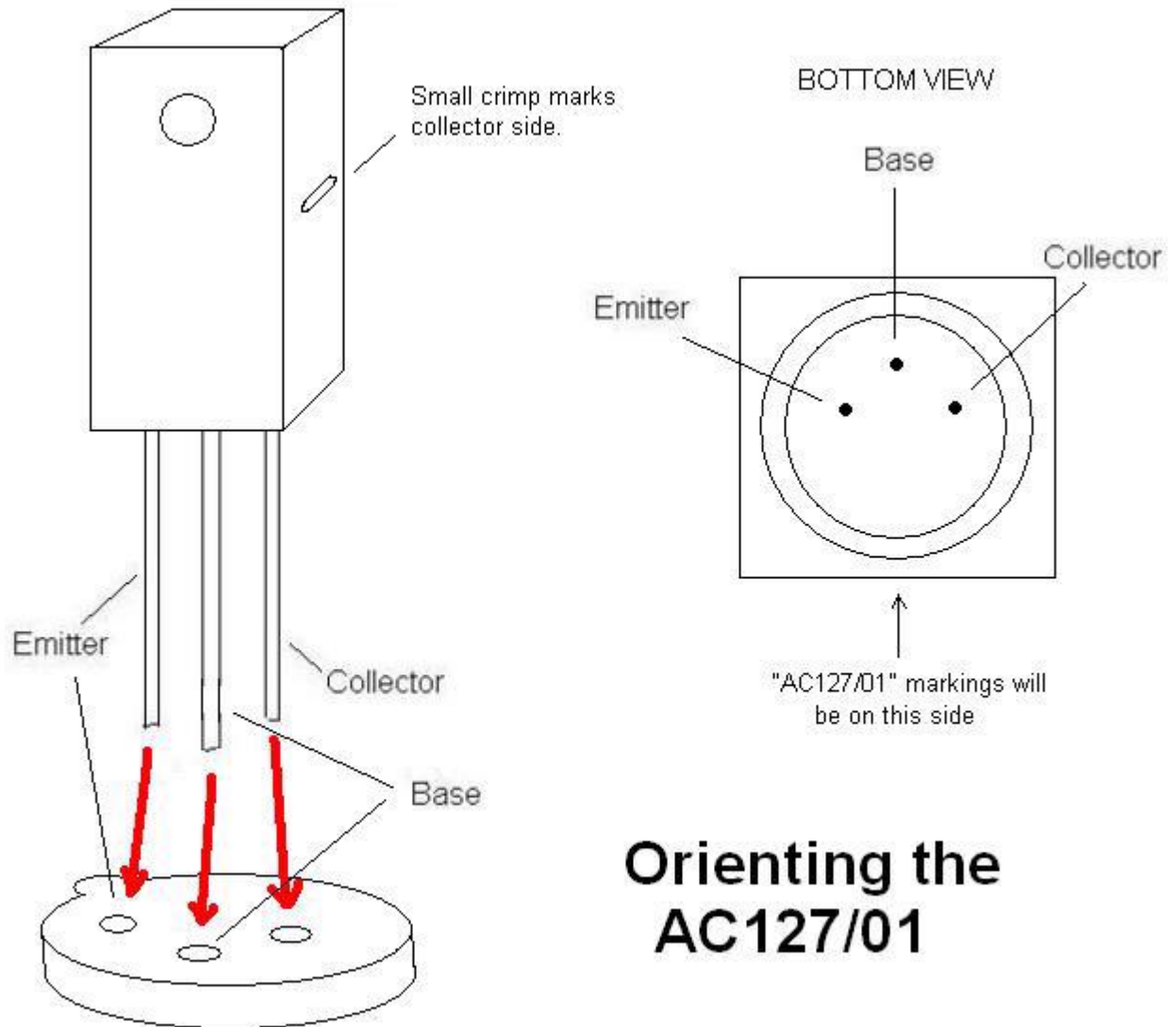
You will install the LED at the same time you mount the circuit board.

1. Insert the LED into its slot on the underside or “solder side” of the circuit board, but DO NOT SOLDER it yet. Make sure the anode (the long leg) goes in the round solder pad and the cathode (the short leg) goes in the square solder pad. This is opposite of how a PCB mounted LED should be installed. This is unique only to the Tonebender kit.
2. Once you have the LED in place, bend the leads a little bit so that it will not fall out when you turn the PCB over.
3. Install the nylon circuit board standoffs into the mounting holes.
4. Remove the paper backings on the standoff to expose the self-adhesive tape.
5. Insert the LED bulb into the LED hole in the enclosure.
6. Secure the Standoffs to the back of the potentiometers.
7. Your LED should still be free to move up and down slightly. You probably do not want your LED sticking all the way out of the hole. So pull up on the LED legs till you have it properly positioned and then solder.
8. Clip off the excess LED leg wire.



# Finishing Touches (Installing the transistors)





## Orienting the AC127/01

Install the transistors. Do not solder the transistors. Simply push the lead wires into the appropriate socket holes. The transistor socket hole with the tab next to it will be the emitter. 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).

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