

# M EATöLAW

## FX TYPE: Boost

Based on the Colorsound® Power Boost™

Enclosure Size: 1590B

Softie compatibility: Softie3

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## Overview

Before deciding to build the M EATöLAW it's a good idea to familiarize yourself with the Colorsound Power Boost. The Power Boost is not a typical boost or overdrive in the contemporary sense (it was actually one of the first commercially available "overdrivers" for electric guitar). It was designed to address shortcomings of the gear of the time (high headroom amps that did not break up easily or ones that had no master volume) to drive them into higher amounts of compression than which they were capable. And, it produces an ugly amount of volume. The "volume" control of the PB (labeled "Gain" on the M EATöLAW) probably has something like 8-10dB of gain at the *minimum* setting. From there it gets crazy. And, the dirt it produces is not necessarily that great sounding on its own (IOW it's not a bedroom overdrive). It's very meaty on chords but a bit raspy and ratty sounding on single notes, lacking smooth decay. However, combined with a tube amp or slamming the front end of another overdrive or fuzz pedal some delicious tones can happen.

I suggest checking out some of these resources:

[https://www.gilmourish.com/?page\\_id=7748](https://www.gilmourish.com/?page_id=7748)

[http://www.kitrae.net/music/Music\\_mp3\\_Colorsound\\_Sound.html](http://www.kitrae.net/music/Music_mp3_Colorsound_Sound.html)

This timestamped video on YouTube is also informative:

<https://www.youtube.com/watch?v=KKvFcPc8v-4&t=1022s>

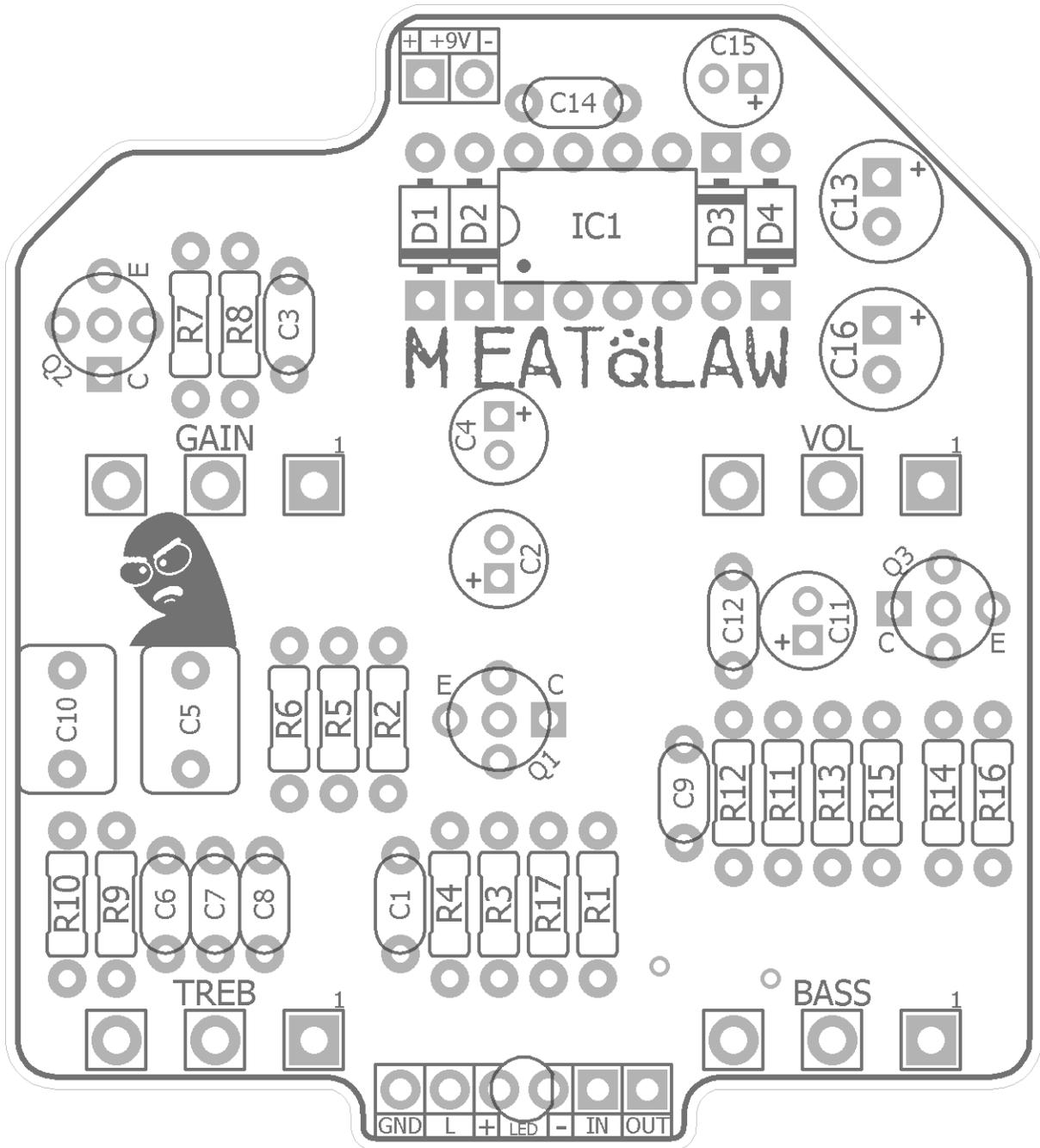
## Controls

- **VOL** - Master output. It only takes a very little for things to get very loud!
- **GAIN** - This is the volume control from the original unit (which did not have a master level control at the output). It very slowly increases the gain and output until about the last 10% where it jumps into fuzz.
- **BASS, TREBLE** - CCW: cut, CW: boost for bass. The Treble will also increase the overall fuziness when both it and the GAIN control are maxed out.

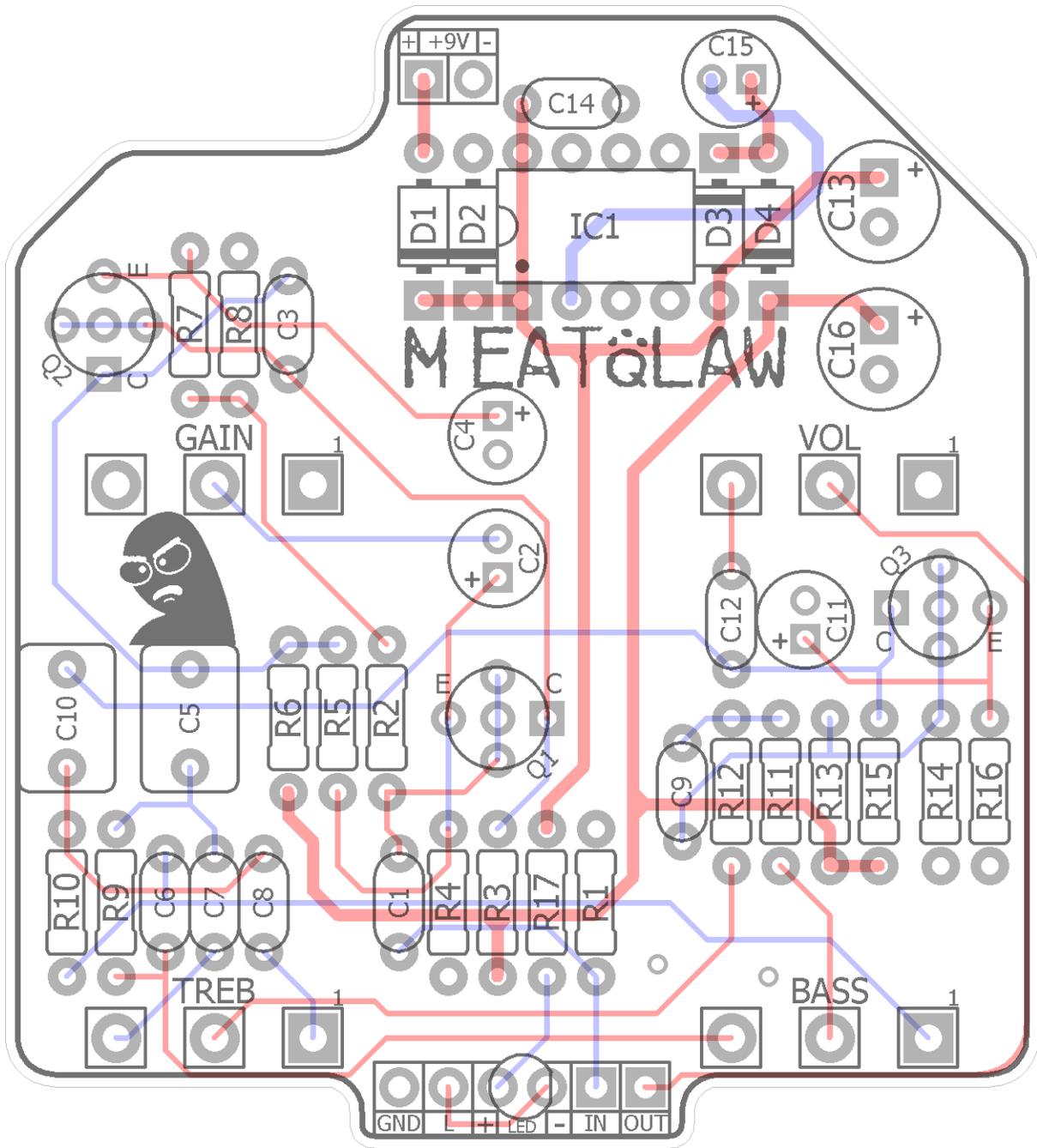
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**Technical assistance** for your build(s) is available via the [madbeanpedals forum](http://madbeanpedals.com/forum). Please go there rather than emailing me for assistance on builds. This is because (1) I'm not always available to respond via email in a timely and continuous manner, and (2) posting technical problems and solutions in the forum creates a record from which other members may benefit.







Resistors		Caps		Diodes	
R1	1M	C1	220n	D1	1n5817
R2	150k	C2	22uF	D2	12v Zener
R3	120k	C3	220pF	D3	1n5817
R4	4k7	C4	22uF	D4	1n5817
R5	12k	C5	1uF	Transistors	
R6	1k8	C6	100n	Q1 - Q3	NPN
R7	470R	C7	10n	IC	
R8	1k2	C8	10n	IC1	TC1044SCPA
R9	4k7	C9	100n	Pots	
R10	4k7	C10	1uF	GAIN	10kC
R11	39k	C11	10uF	VOL	100kA
R12	5k6	C12	220n	BASS	100kB
R13	180k	C13	100uF	TREB	100kB
R14	33k	C14	100n		
R15	3k9	C15	47uF		
R16	1k	C16	100uF		
R17	4k7				

Value	QTY	Type	Rating
470R	1	Metal / Carbon Film	1/4W
1k	1	Metal / Carbon Film	1/4W
1k2	1	Metal / Carbon Film	1/4W
1k8	1	Metal / Carbon Film	1/4W
3k9	1	Metal / Carbon Film	1/4W
4k7	4	Metal / Carbon Film	1/4W
5k6	1	Metal / Carbon Film	1/4W
12k	1	Metal / Carbon Film	1/4W
33k	1	Metal / Carbon Film	1/4W
39k	1	Metal / Carbon Film	1/4W
120k	1	Metal / Carbon Film	1/4W
150k	1	Metal / Carbon Film	1/4W
180k	1	Metal / Carbon Film	1/4W
1M	1	Metal / Carbon Film	1/4W
220pF	1	Ceramic / MLCC	25v min.
10n	2	Film	25v min.
100n	3	Film	25v min.
220n	2	Film	25v min.
1uF	2	Film	25v min.
10uF	1	Electrolytic	25v min.
22uF	2	Electrolytic	25v min.
47uF	1	Electrolytic	25v min.
100uF	2	Electrolytic	25v min.
1n5817	3		
Zener	1	12v, 1W	
NPN	3	BC184C (see notes)	
TC1044SCPA	1		
10kC	1	PCB Right Angle	16mm
100kA	1	PCB Right Angle	16mm
100kB	2	PCB Right Angle	16mm

A low-ESR electrolytic is preferred for the 47uF but is not required. It will work fine with a regular electro.

**BC184L:**

<https://www.taydaelectronics.com/bc184-bc184l-bc184lc-general-purpose-transistor-npn.html>

**BC184B:**

<https://www.mouser.com/ProductDetail/610-BC184B>

**12v Zener:**

<https://stompboxparts.com/semiconductors/1n4742a-zener-diode-12-1v/>

<https://www.taydaelectronics.com/diodes/zener/1n4742a-1n4742-zener-diode-1w-12v.html>

<https://www.mouser.com/ProductDetail/512-1N4742A>

**TC1044SCPA:**

<https://stompboxparts.com/semiconductors/tc1044scpa-charge-pump-ic/>

<https://www.mouser.com/ProductDetail/579-TC1044SCPA>

**16mm Pots:**

<https://stompboxparts.com/pots/16mm-potentiometer-smooth-shaft-short-pcb-leg/>

<https://lovemyswitches.com/16mm-potentiometers-1-4-smooth-shaft-right-angle-pcb-mount/>

**Low Profile DC Jack:**

<https://stompboxparts.com/power-connections/dc-power-jack-2-1mm-low-profile/>

<https://lovemyswitches.com/thinline-lumberg-dc-power-jack-2-1mm/>

**Mono 1/4" jacks:**

<https://stompboxparts.com/audio-jacks/>

<https://lovemyswitches.com/categories/1-4-jacks-and-cables/mono-jacks.html>

**My preferred 3PDT switch:**

<https://lovemyswitches.com/pro-3pdt-latched-foot-switch-solder-lugs-feather-soft-click/>

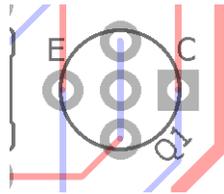
**Stompboxparts "Essentials" kit:**

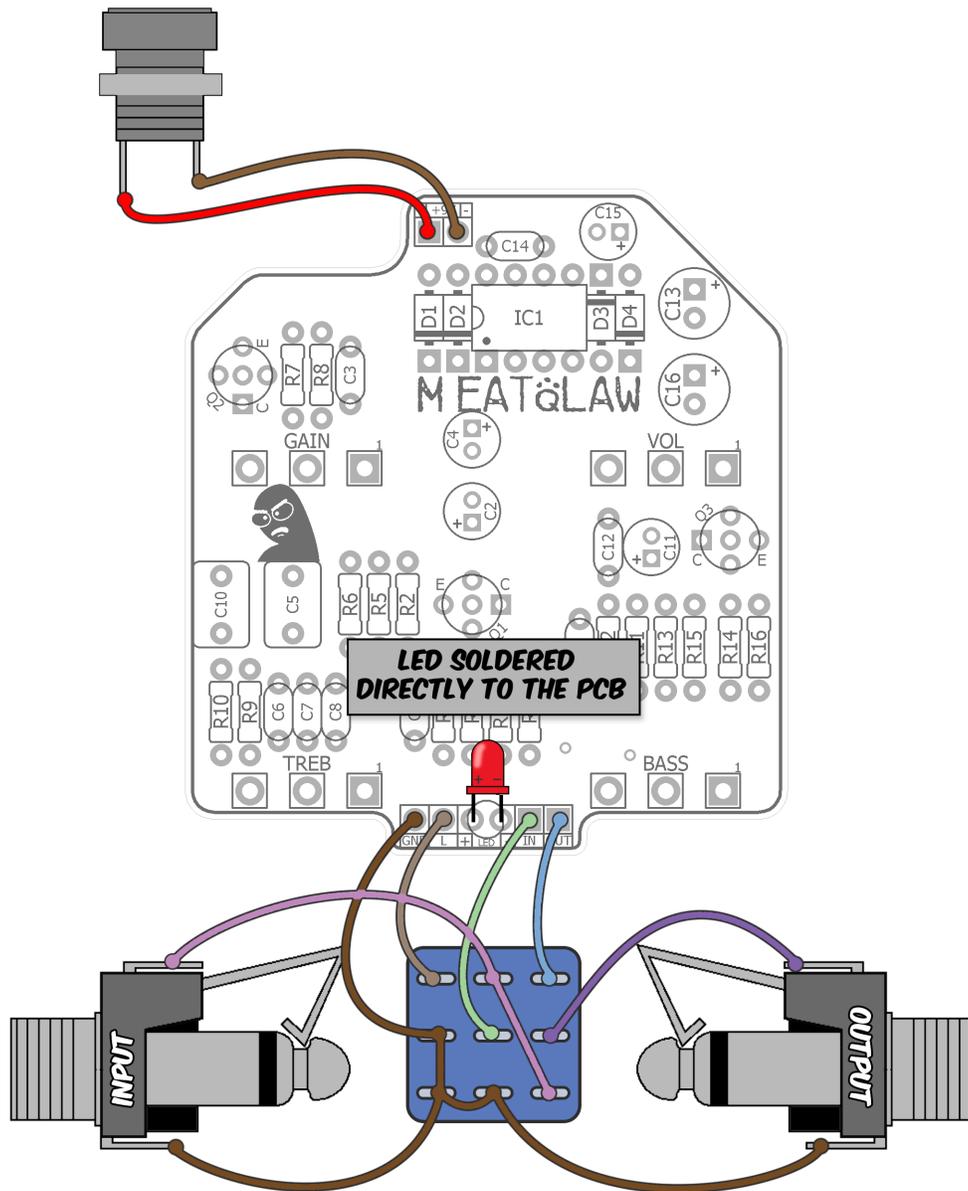
<https://stompboxparts.com/jacks/the-essentials-hardware-pack/>

The BC184C looks to be hard to get. I tried several different transistors in this circuit. Here's a summary:

- BC549B: did not sound good
- BC109: much better, but maybe a bit too fuzzy and ratty sounding
- BC183C: very good
- BC239C: my favorite so far

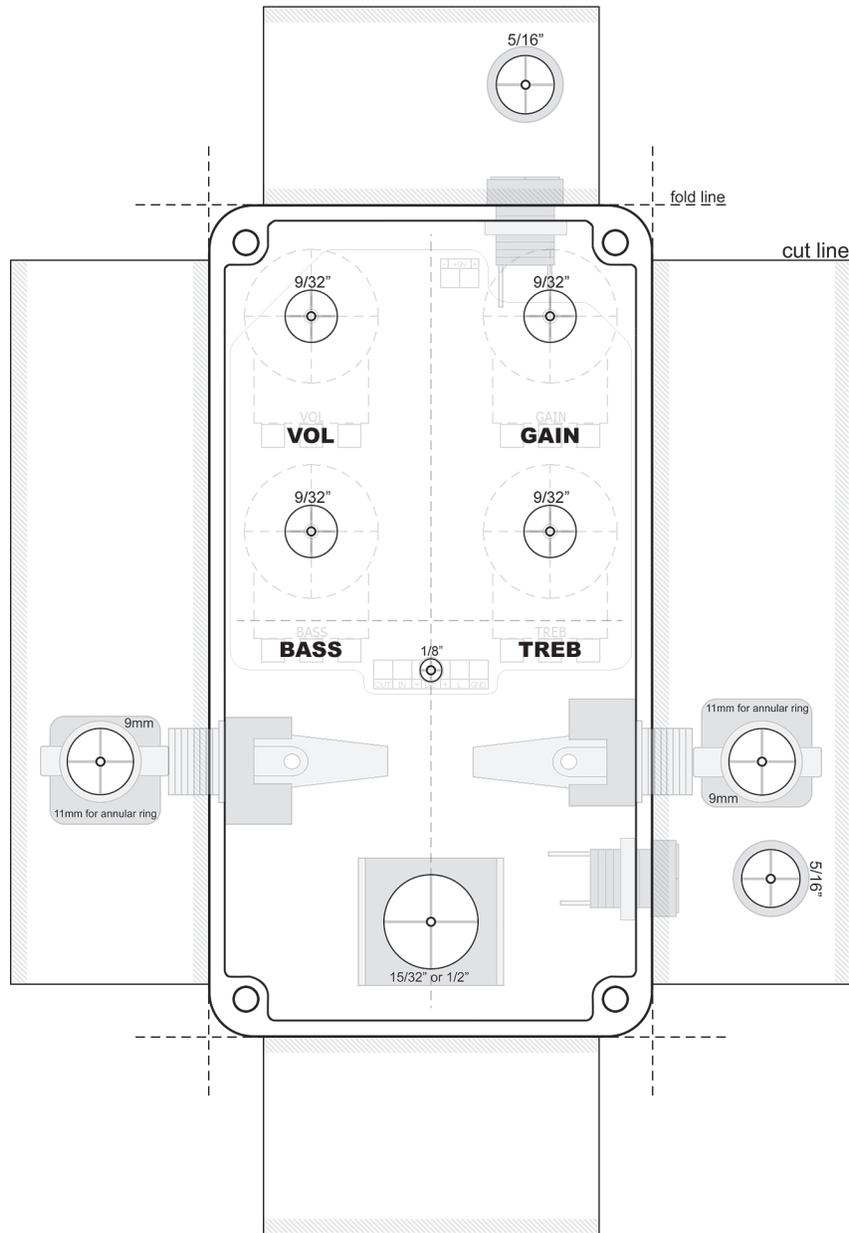
I also tried some other NPN type transistors that are more for fuzz and they were not a good match, IMO. Funny enough, I tried some really old Darlington's that were low gain and they sounded pretty good. So, if you don't have the BC184C it may take some experimentation to get the best sounding transistors for this circuit. I did not try 2n5088 so they may work okay here. Be mindful of pinouts because some of the ones mentioned above are CBE and some are EBC. Just make sure whatever transistors you pick are put in the correct way. The board is laid out for CBE like the 2n5088 but uses the multi-pin part to accommodate different pin configurations.





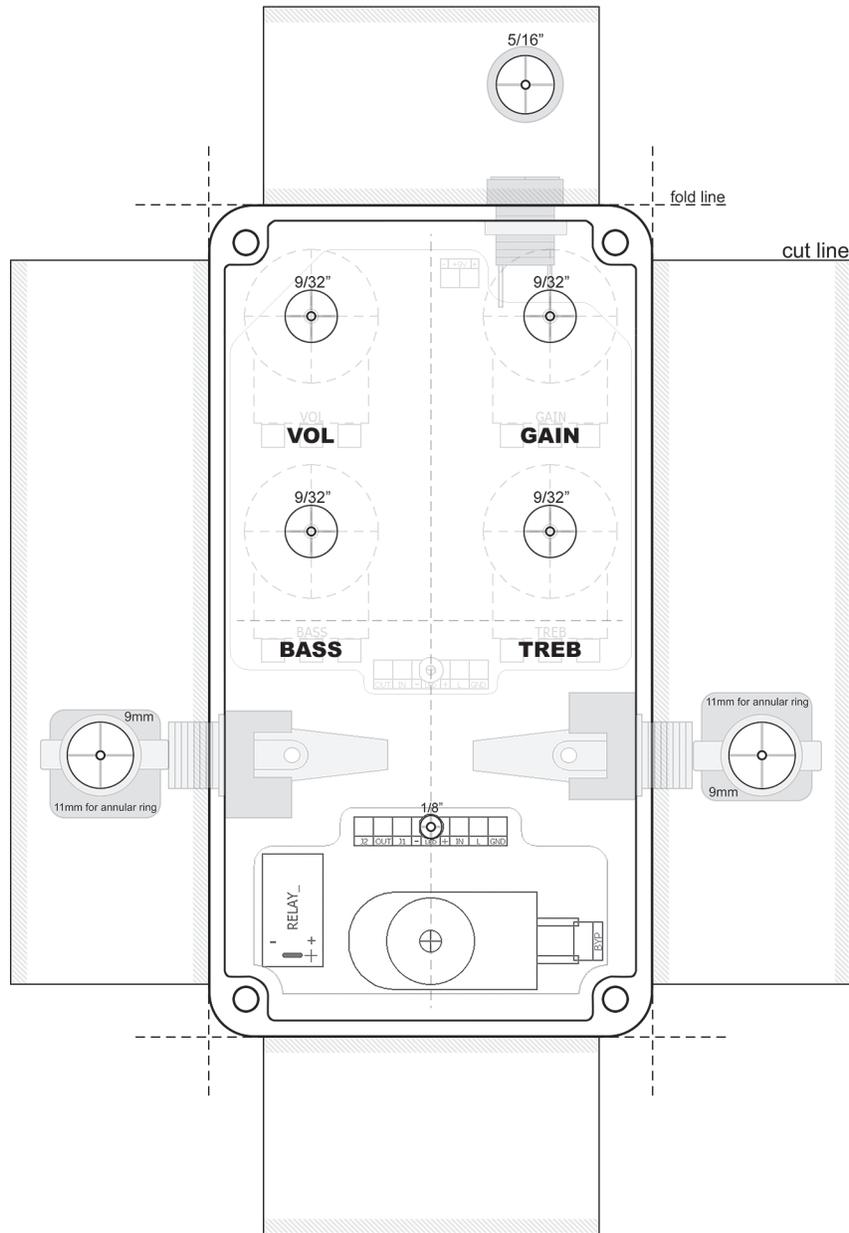
3PDT bypass wiring. If you want to use the Softie3 relay bypass instead (sold separately) please refer to that project documentation for wiring instructions.

**Note:** Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.



Use this drill template for regular 3PDT bypass. There are two locations for the DC jack depending on your preference. Be sure to only drill for one!

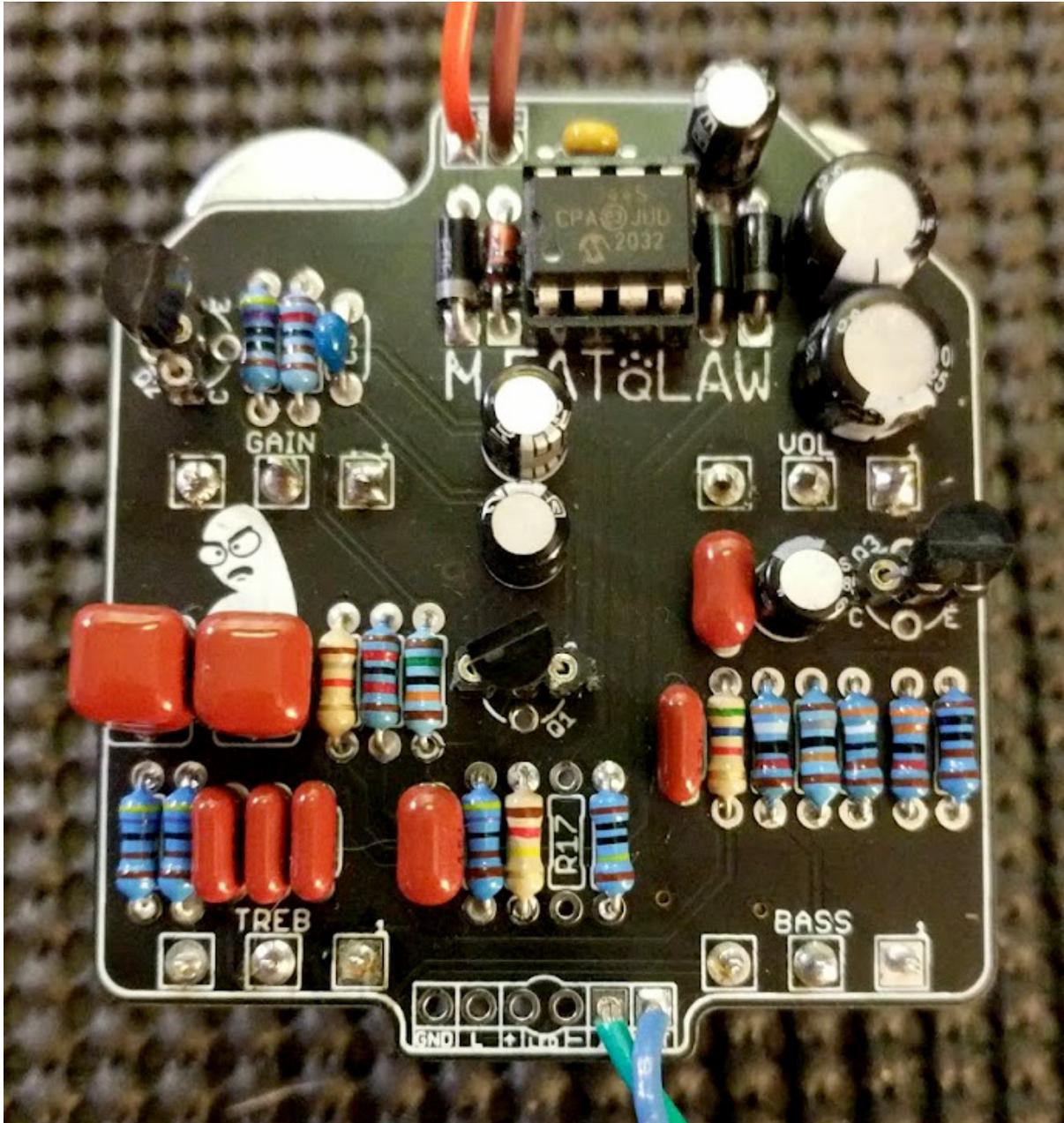
**Note:** Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.



Use this drill template for Softie3 relay bypass (sold separately). When using the Softie3, the DC jack needs to be at the top. Note the different LED location, too.

Q1	NPN	IC1	TC1044
C	6.19	1	9.25
B	3.66	2	4.73
E	3.36	3	0
Q2	NPN	4	0
C	10.87	5	0
B	6.19	6	4.48
E	5.52	7	6.49
Q3	NPN	8	9.25
C	10.12		
B	2.63		
E	1.98		

- 9.5vDC One Spot
- Current Draw: ~14mA



When you put in your IC socket backwards then spend five minutes wondering why there's no power in your PCB...

