

POINDEXTER

FX TYPE: Octave Fuzz

Based on the Octane2™

Enclosure Size: 1590B

"Softie" compatibility: Softie3

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Overview

The **Poindexter** is an old mbp project from the very early days. It was last available in 2015 and being that I really like octave up fuzz boxes it seemed like a good time to bring it back for a while. It's based on the "Octane2™" style fuzz popularized by zVex. The circuit is pretty much a 'roided up Superfuzz with a tone control plus some other minor modifications. It uses a familiar phase splitter then recombines the two signals through a differential pair to produce the octave up tone. The tone control is a simple roll-off (being that the brightest setting is CCW and it darkens as the control is turned up). It uses readily available transistors and sounds very good with them.

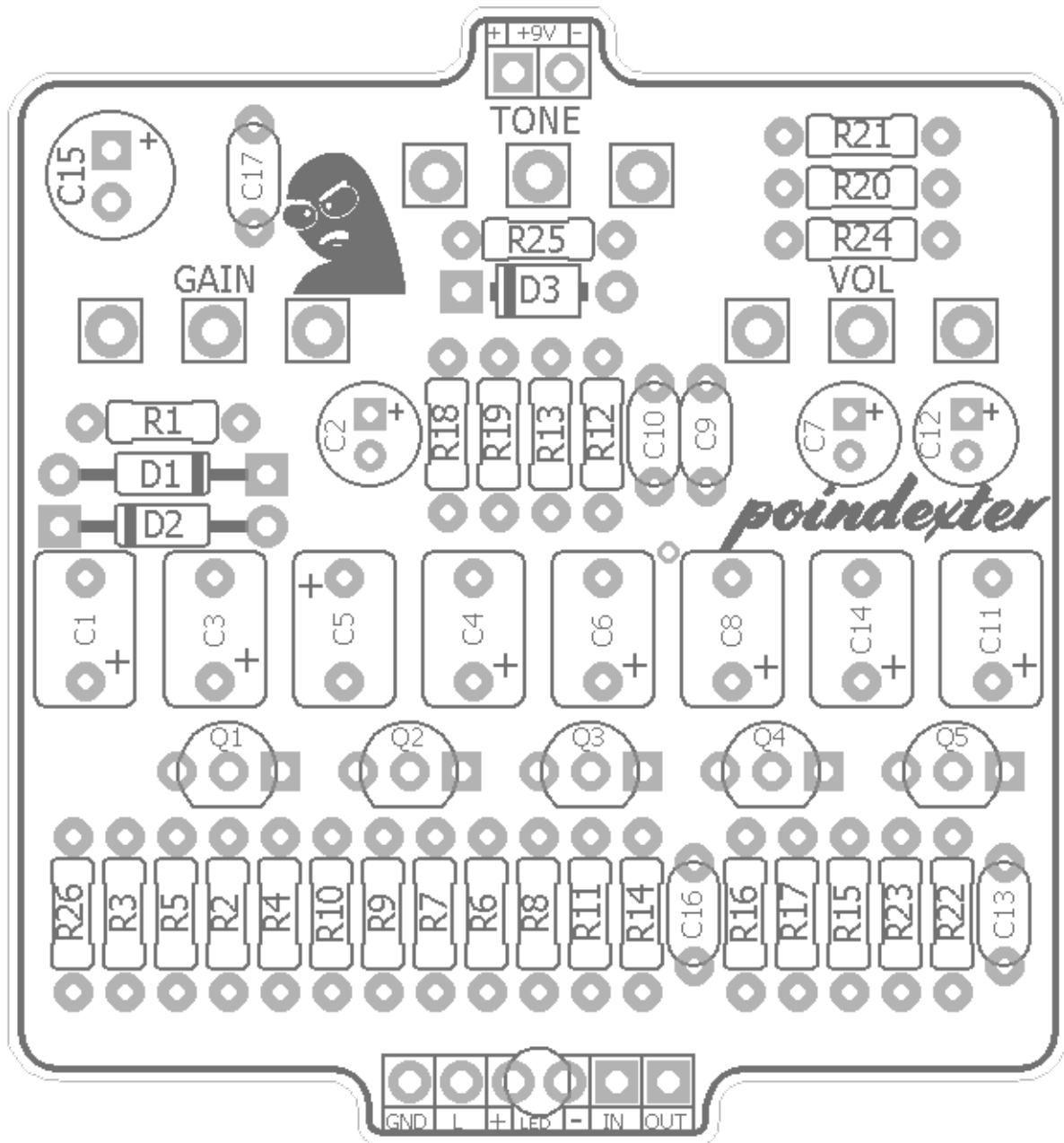
There is one work-around required for this project but it's very straight-forward. Since I had a proven schematic from 2015 I went straight to production on the this PCB after updating the layout. In the 2015 version is I used 1uF film coupling caps in place of the original 10uF electrolytic. After building it up as such I decided to build another one using 10uF this time. And, I was surprised to find that the 10uF cap version sounded slightly better to me. It's not a huge difference, but a legitimate one. With the 10uF caps, it's slightly squishier but retains more low end definition. And, the octave up sounds more pronounced. So, I'm going to recommend building it that way. See the Notes section on how to do the workaround to replace the film caps with electrolytic. I'll correct the parts on the next run of boards but for now, it's quite easy to do the modification. And, it makes the build cheaper, too!

Controls

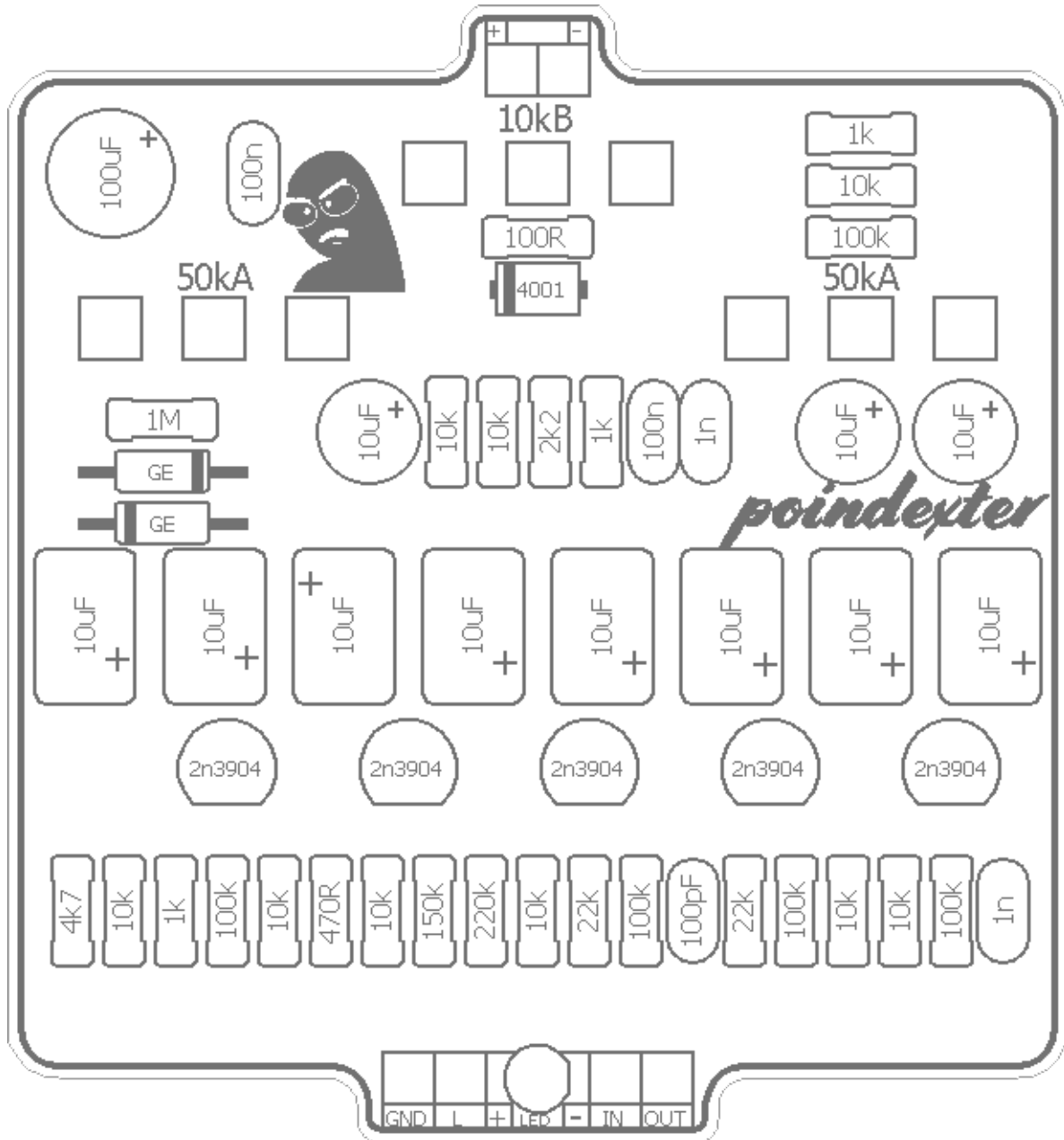
- **GAIN, TONE, VOL** - Standard controls.

Terms of Use: You are free to use purchased **Poindexter** circuit boards for both DIY and small commercial operations. You may not offer **Poindexter** PCBs for resale or as part of a "kit" in a commercial fashion. Peer to peer re-sale is fine, though.

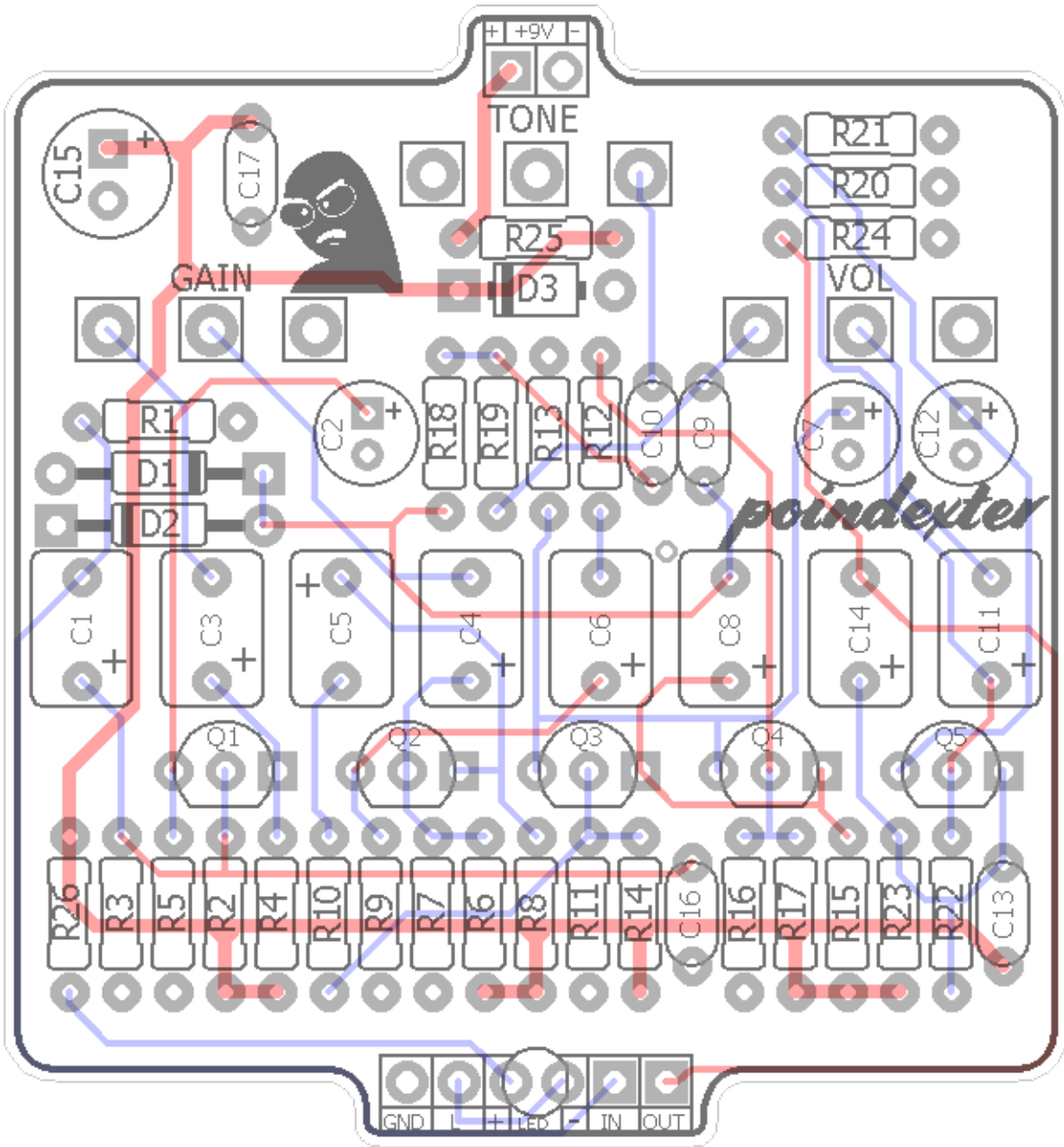
Technical assistance for your build(s) is available via the [madbeanpedals forum](http://madbeanpedals.com/forum). Please go there rather than emailing me for assistance on builds. This is because (1) I'm not always available to respond via email in a timely and continuous manner, and (2) posting technical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



While not on the silk screen of the PCB, I've added a "+" indicator here to denote the positive end of the 10uF caps used in place of film caps. Use this image as a reference when populating your board.



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Resistors		Caps		Diodes	
R1	1M	C1	10uF	D1	GE
R2	100k	C2	10uF	D2	GE
R3	10k	C3	10uF	D3	1n4001
R4	10k	C4	10uF	Transistors	
R5	1k	C5	10uF	Q1 - Q5	2n3904
R6	220k	C6	10uF	Pots	
R7	150k	C7	10uF	TONE	10kB
R8	10k	C8	10uF	GAIN	50kA
R9	10k	C9	1n	VOL	50kA
R10	470R	C10	100n		
R11	22k	C11	10uF		
R12	1k	C12	10uF		
R13	2k2	C13	1n		
R14	100k	C14	10uF		
R15	10k	C15	100uF		
R16	22k	C16	100pF		
R17	100k	C17	100n		
R18	10k				
R19	10k				
R20	10k				
R21	1k				
R22	100k				
R23	10k				
R24	100k				
R25	100R				
R26	4k7				

Values	QTY	Type	Rating
100R	1	Metal / Carbon Film	1/4W
470R	1	Metal / Carbon Film	1/4W
1k	3	Metal / Carbon Film	1/4W
2k2	1	Metal / Carbon Film	1/4W
4k7	1	Metal / Carbon Film	1/4W
10k	9	Metal / Carbon Film	1/4W
22k	2	Metal / Carbon Film	1/4W
100k	5	Metal / Carbon Film	1/4W
150k	1	Metal / Carbon Film	1/4W
220k	1	Metal / Carbon Film	1/4W
1M	1	Metal / Carbon Film	1/4W
100pF	1	Ceramic / MLCC	16v min.
1n	2	Film	16v min.
100n	2	Film	16v min.
10uF	11	Electrolytic or BiPolar	16v min.
100uF	1	Electrolytic	16v min.
GE	2	1n34a type	
1n4001	1		
2n3904	5		
10kB	1	PCB Right Angle	16mm
50kA	1	PCB Right Angle	16mm

1n34a GE diode: You can sub a BAT41 Schottky for 1n34a.

1. <https://stompboxparts.com/semiconductors/1n34a-germanium-diode/>

10uF BiPolar (sub for regular electrolytic):

1. <https://www.mouser.com/ProductDetail/667-ECE-A1EN100U>

16mm Right Angle Pots:

1. <http://smallbear-electronics.mybigcommerce.com/alpha-single-gang-16mm-right-angle-pc-mount/>
2. <https://stompboxparts.com/pots/16mm-potentiometer-short-pcb-leg/>

DC Jacks:

1. <https://smallbear-electronics.mybigcommerce.com/2-1-mm-all-plastic-round/>
2. <https://stompboxparts.com/power-connections/dc-power-jack-2-1mm-low-profile/>
3. <https://lovemyswitches.com/thinline-lumberg-dc-power-jack-2-1mm/>

1/4" jacks:

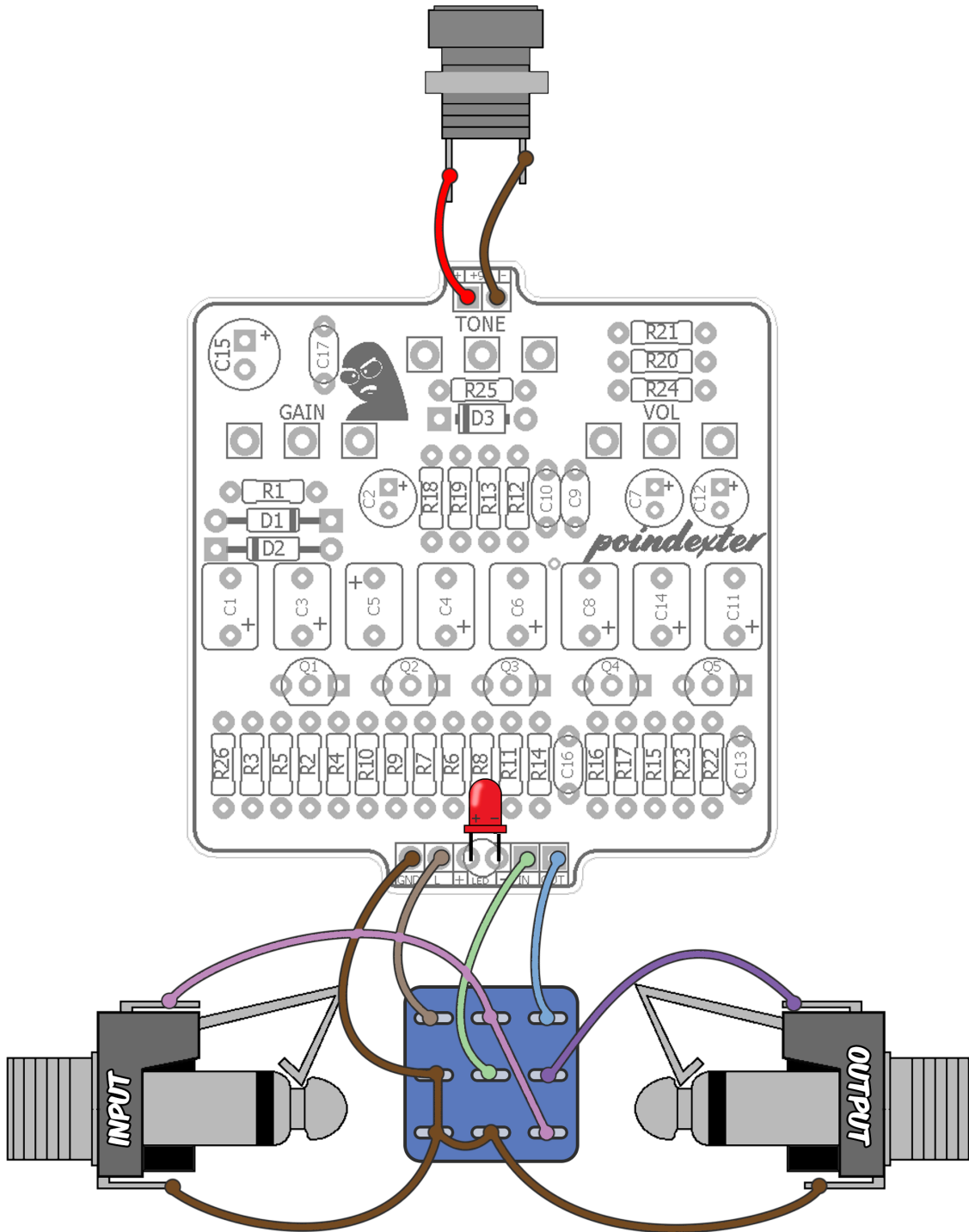
1. <https://smallbear-electronics.mybigcommerce.com/1-4-in-mono-nys229/>
2. <https://smallbear-electronics.mybigcommerce.com/1-4-in-mono-switchcraft-11/>
3. <https://lovemyswitches.com/1-4-mono-jack-lumberg-klbm-3/>
4. <https://lovemyswitches.com/1-4-mono-jack-neutrik-rean-nys229/>

My preferred 3PDT switch:

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

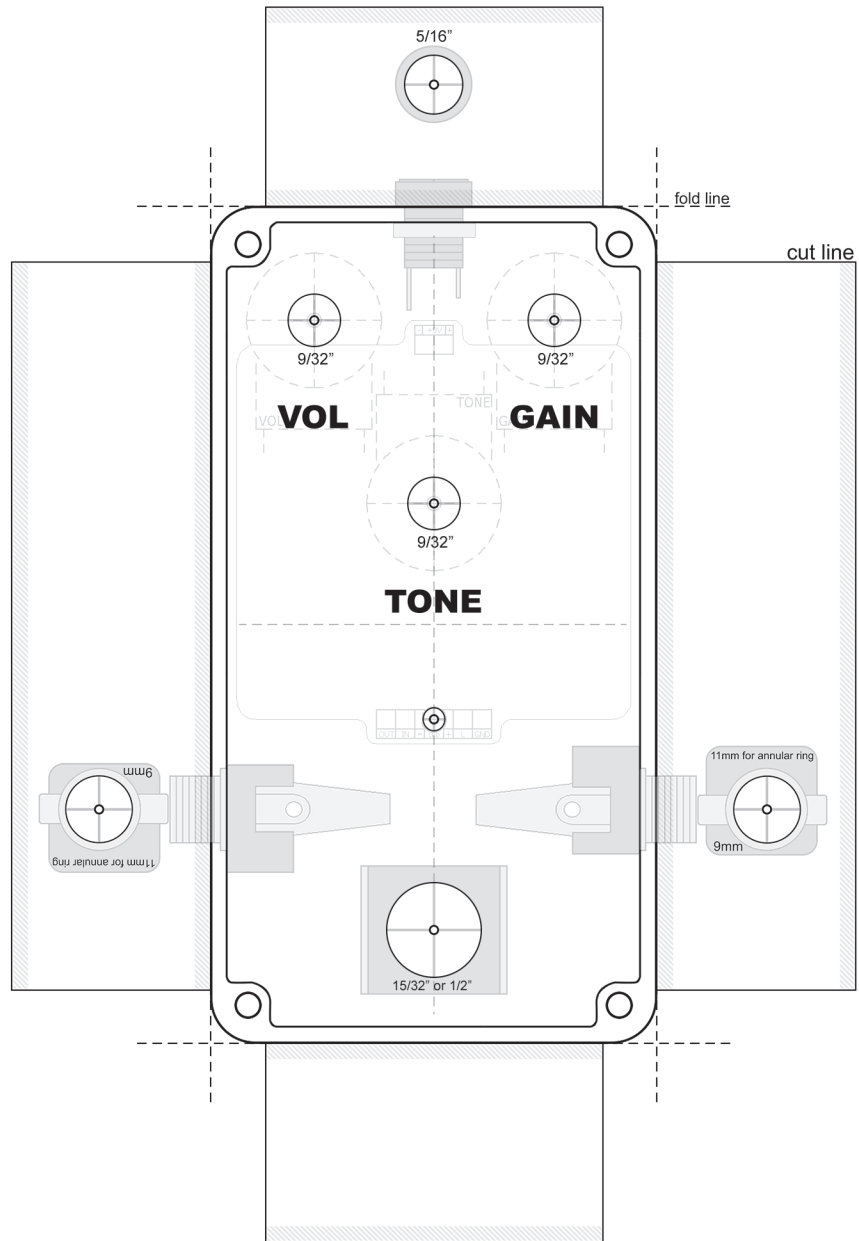
NOTE: I happen to have a bunch of 10uF BiPolar caps so I used those in place of regular electrolytic. You do not need to do this, but I've linked the exact caps I used in my build for funsies.

- When subbing in 10uF electrolytic for the 1uF film caps, make sure you follow the orientation I've made on the Parts and Values images at the beginning of the doc. If you happen to use BiPolar caps like I did, then orientation doesn't matter. Since the pads are spaced 5mm instead of the standard 2 or 2.5mm you'll need to bend the leads out a bit. It's awkward and not the cleanest looking, but if you take care it'll be hard to tell they are seated that way.
- I've substituted audio taper in place of linear for the Gain and Vol controls. This circuit has an ungodly amount of output (ridiculous amounts) and the audio taper helps make the controls a little more usable. If you want to reduce the output further, you can try omitting C12 and perhaps increasing R21 to 2k7 or 3k. I haven't tested that, but it's what I would do.
- If you happen to have an Peak Atlas DCA (or HFE measurement on your DMM), match the gains on Q3 and Q4. Using matched transistors in that spot will produce the most balanced octave up sound along with the regular fuzz tone. I don't think the actual gain numbers matter too much. Mine were 166 and 167, resp. That's pretty low for a 2n3904 but I got lucky.



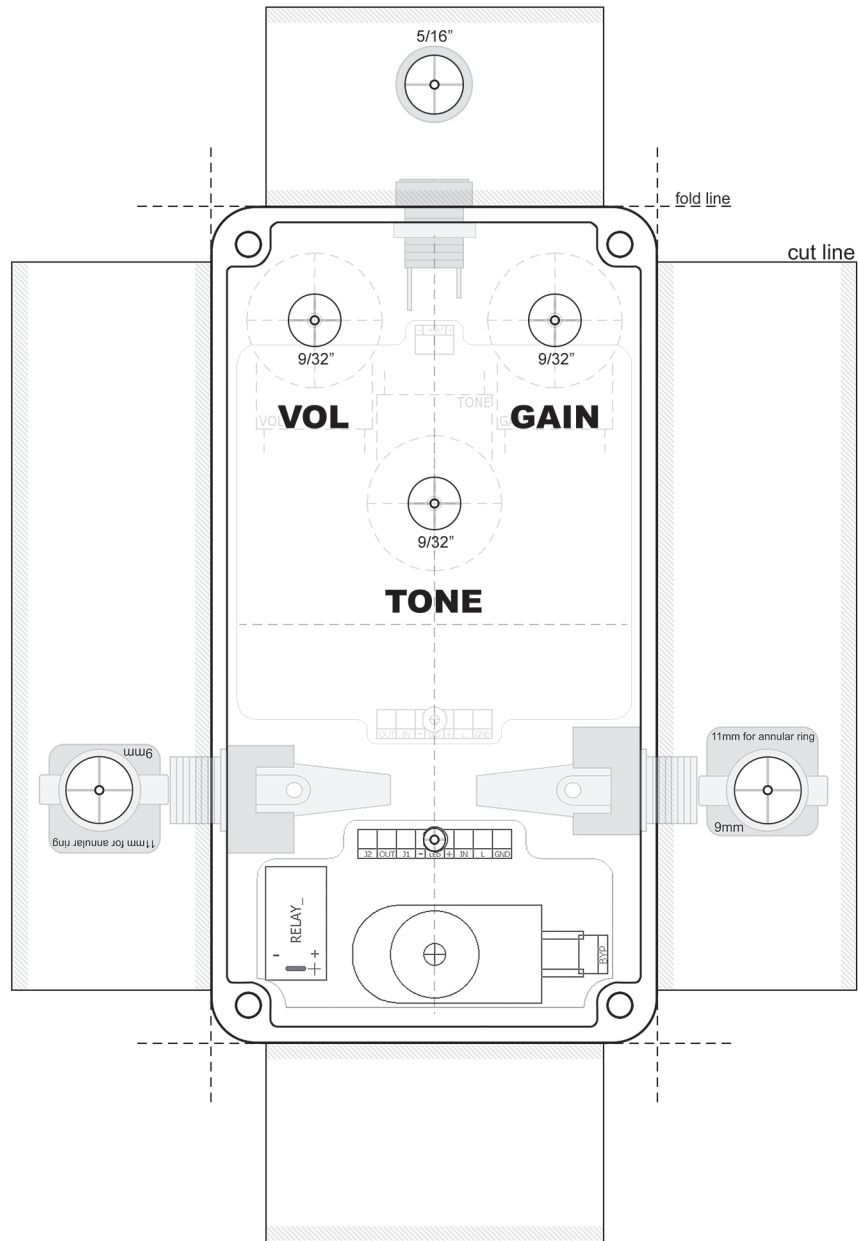
The bypass LED is soldered directly to the PCB.

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



Use this template for regular 3PDT bypass.

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Use this template for "Softie3" relay bypass. Note the different bypass LED location.

Q1	2n3904
C	7.26
B	0.84
E	0.21
Q2	2n3904
C	6.33
B	3.62
E	3.03
Q3	2n3904
C	4.75
B	1.65
E	1.06
Q4	2n3904
C	4.75
B	1.67
E	1.02
Q5	2n3904
C	7.79
B	0.7
E	86mV

- 9.5vDC One Spot
- Current Draw: 1mA

