

MISFIT

FX TYPE: Overdrive

Based on the Ibanez® Mostortion™

Enclosure Size: 125B

“Softie” compatibility: Softie3

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Overview

The Ibanez® Mostortion™ (MT-10) is one of the late comers in the gear-rage brigade. It's been discontinued for years but has gained some notoriety through various aficionado forum opines. And, with that comes a massive increase in price on the used market. Current listings on Reverb show the Mostortion to be in the \$600 to \$800 range.

So, what gives? As always, it comes down to another “mythical chip”. The MT-10 utilized the CA3260 as it's gain engine. It's a dual op-amp but with a twist: instead of internal FET or BJT transistors, the CA3260 uses mosfets. Specifically, PMOS input and CMOS output. According to its datasheet, the CA3260 is ideal for single rail applications and is capable of outputting a voltage swing near the supply rail. Does this mean it's better than a typical YATS with your favorite flavor of dual op-amp? No. But, it is different.

It's hard to describe sounds without falling into the same types of cliches over and over (buttery! smooth! tube-like!) Here's my attempt to describe what the MT-10 sounds like to me (at higher gain settings): a salty, textured liquid with carbonated bubbles on the surface. See, that actually makes sense *to me*. Maybe not you. I challenge you to come up with your own description! In all, it's a really nice OD to have in your arsenal and the BMT EQ opens it up to a lot of tone shaping with different guitar and amp setups.

Anyway, the **Misfit** is the MT-10 without any mods other than true-bypass operation and the use of large film caps in place of some electrolytics.

Special note: the CA3260E has a supply limit of 16v. So, don't run it at 18v or you may damage your expensive chip!

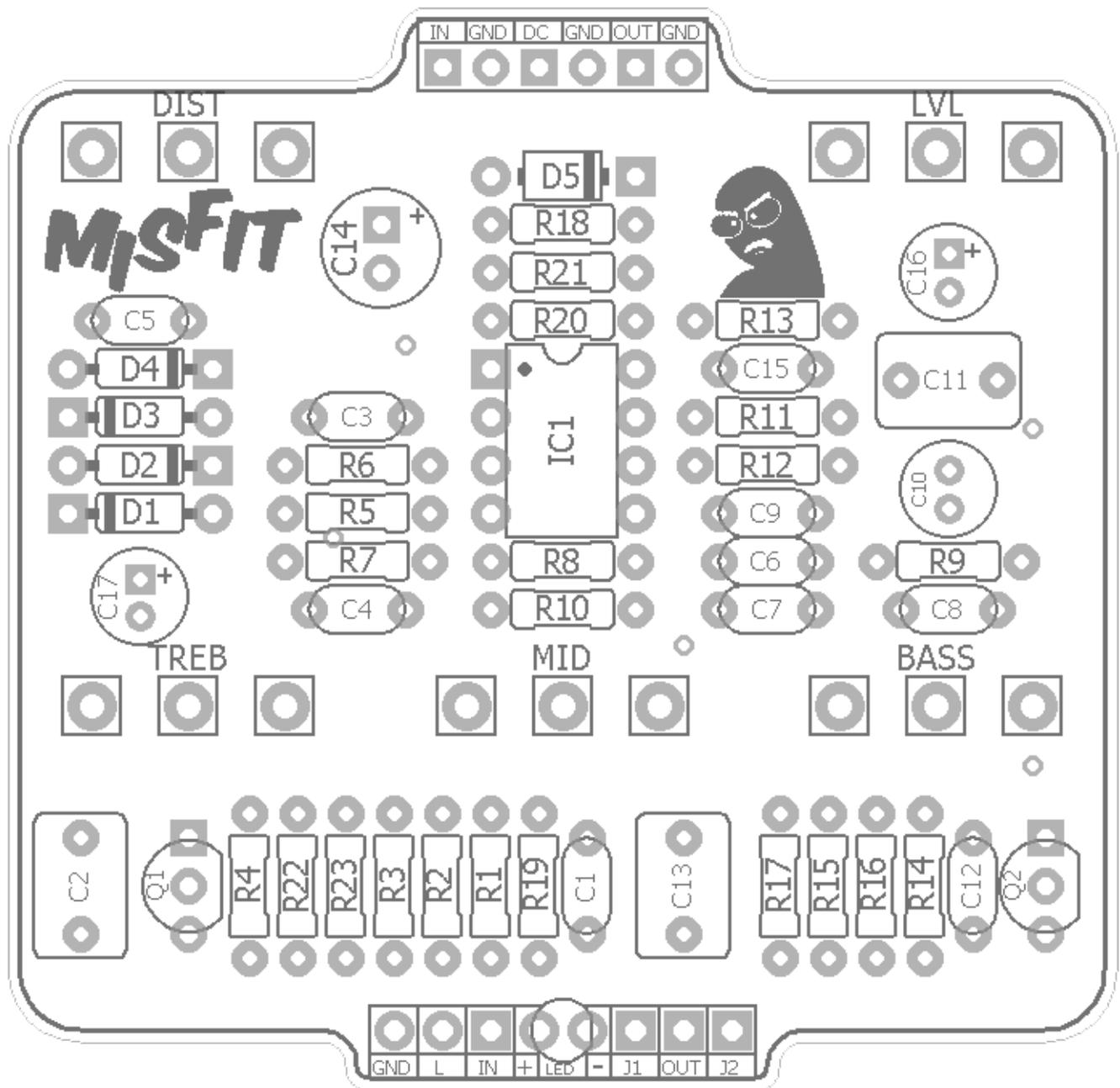
Controls

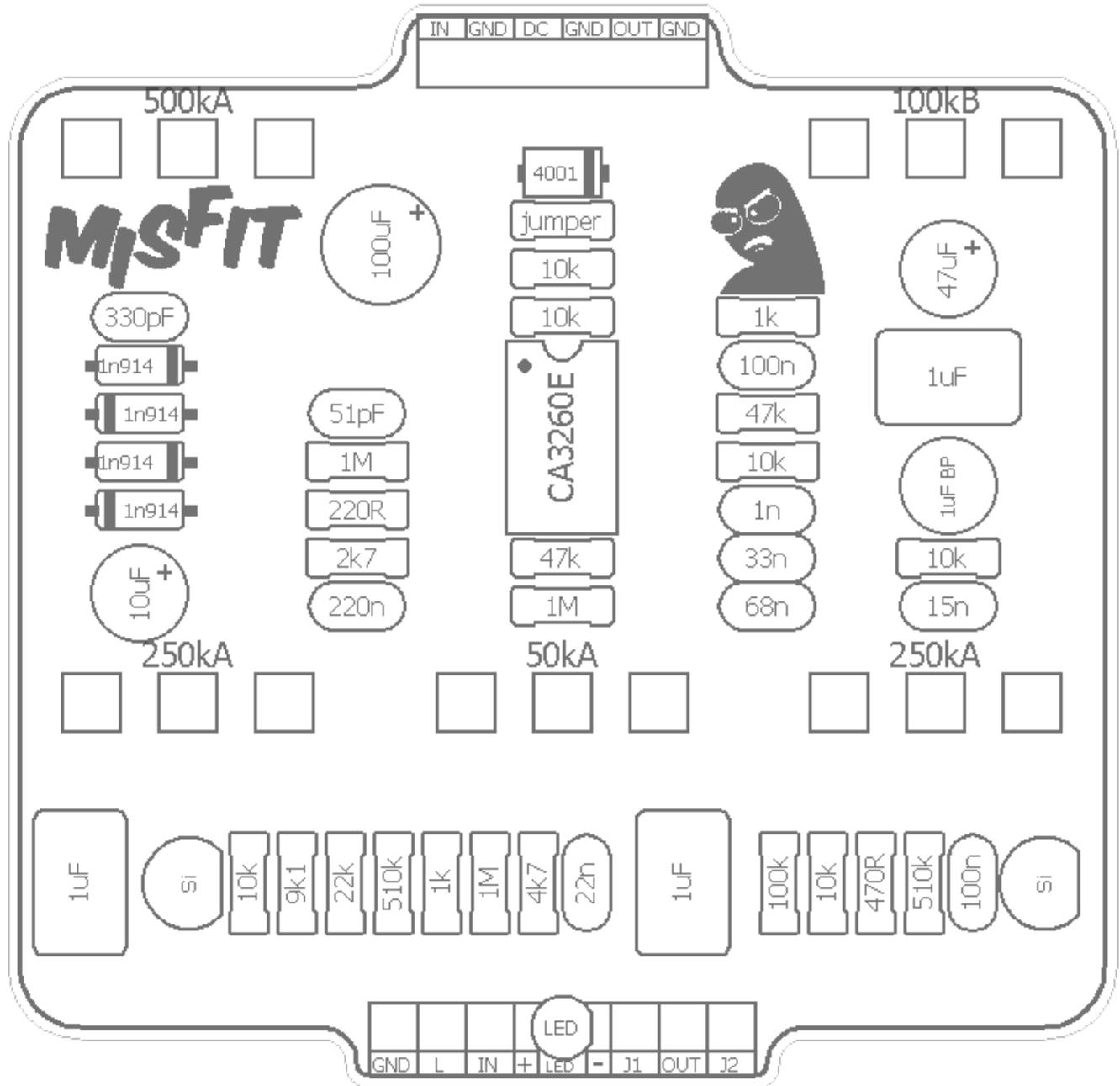
- **LVL** - Output level.
- **DIST** - Distortion amount.
- **BASS, MID, TREB**: A three band passive EQ.

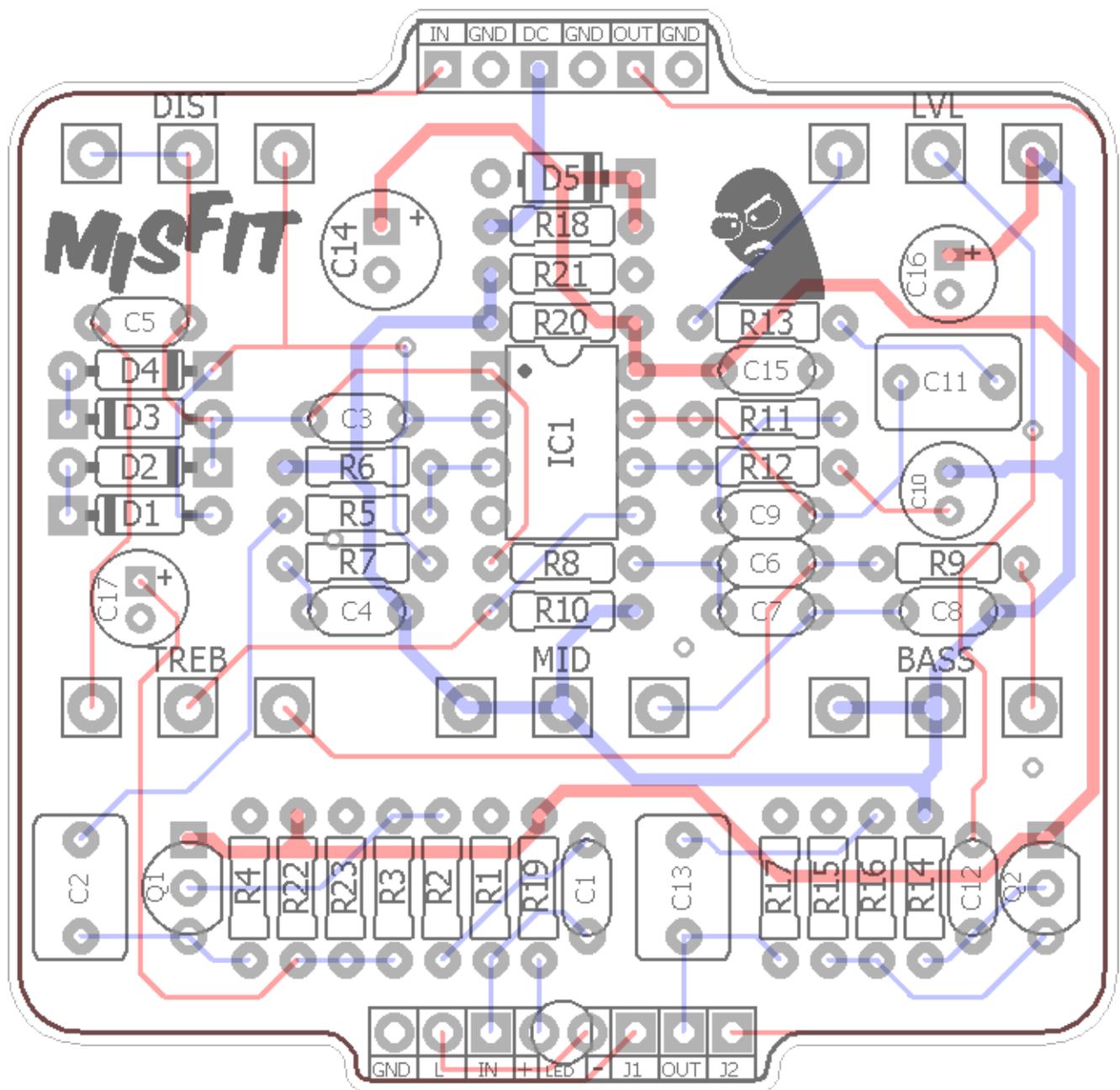
Kevin over at AIONFX has a really good writeup on the Mostortion MT-10 for his “Quantum” project: <https://aionfx.com/project/quantum-mosfet-distortion/>

Terms of Use: You are free to use purchased **Misfit** circuit boards for both DIY and small commercial operations. You may not offer **Misfit** 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). 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	22n	D1	1n914
R2	1k	C2	1uF	D2	1n914
R3	510k	C3	51pF	D3	1n914
R4	10k	C4	220n	D4	1n914
R5	220R	C5	330pF	D5	1n4001
R6	1M	C6	33n	Transistors	
R7	2k7	C7	68n	Q1	Si
R8	47k	C8	15n	Q2	Si
R9	10k	C9	1n	IC	
R10	1M	C10	1uF BP	IC1	CA3260E
R11	47k	C11	1uF	Pots	
R12	10k	C12	100n	MID	50kA
R13	1k	C13	1uF	LVL	100kB
R14	510k	C14	100uF	BASS	250kA
R15	10k	C15	100n	TREB	250kA
R16	470R	C16	47uF	DIST	500kA
R17	100k	C17	10uF		
R18	jumper				
R19	4k7				
R20	10k				
R21	10k				
R22	9k1				
R23	22k				

Values	QTY	Type	Rating
220R	1	Metal / Carbon Film	1/4W
470R	1	Metal / Carbon Film	1/4W
1k	2	Metal / Carbon Film	1/4W
2k7	1	Metal / Carbon Film	1/4W
4k7	1	Metal / Carbon Film	1/4W
9k1	1	Metal / Carbon Film	1/4W
10k	6	Metal / Carbon Film	1/4W
22k	1	Metal / Carbon Film	1/4W
47k	2	Metal / Carbon Film	1/4W
100k	1	Metal / Carbon Film	1/4W
510k	2	Metal / Carbon Film	1/4W
1M	3	Metal / Carbon Film	1/4W
51pF	1	Ceramic / MLCC	16v min.
330pF	1	Ceramic / MLCC	16v min.
1n	1	Film	16v min.
15n	1	Film	16v min.
22n	1	Film	16v min.
33n	1	Film	16v min.
68n	1	Film	16v min.
100n	2	Film	16v min.
220n	1	Film	16v min.
1uF	3	Film	16v min.
1uF BP	1	Film	16v min.
10uF	1	Film	16v min.
47uF	1	Film	16v min.
100uF	1	Film	16v min.
1n914	4		
1n4001	1		
Si	2	2n5088, 2n3904, etc.	
CA3260E	1		
50kA	1	PCB Right Angle	16mm
100kB	1	PCB Right Angle	16mm
250kA	2	PCB Right Angle	16mm
500kA	1	PCB Right Angle	16mm

CA3260E:

*see notes

16mm Right Angle Pots:

<http://smallbear-electronics.mybigcommerce.com/alpha-single-gang-16mm-right-angle-pc-mount/>

DC Jacks:

<https://smallbear-electronics.mybigcommerce.com/2-1-mm-all-plastic-round/>

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

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

1/4" jacks:

<https://smallbear-electronics.mybigcommerce.com/1-4-in-mono-nys229/>

<https://smallbear-electronics.mybigcommerce.com/1-4-in-mono-switchcraft-11/>

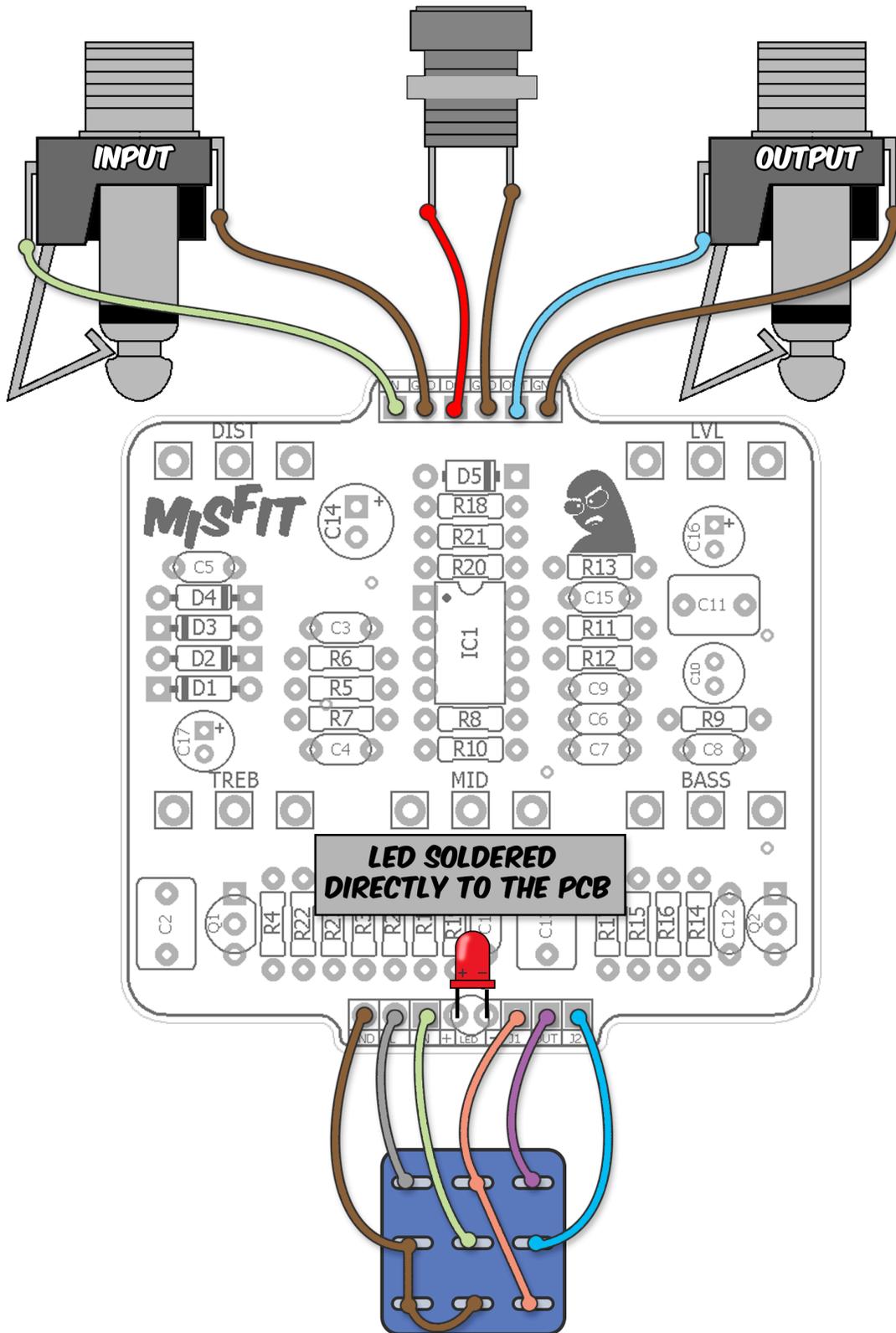
<https://lovemyswitches.com/1-4-mono-jack-lumberg-klbm-3/>

<https://lovemyswitches.com/1-4-mono-jack-neutrik-rean-nys229/>

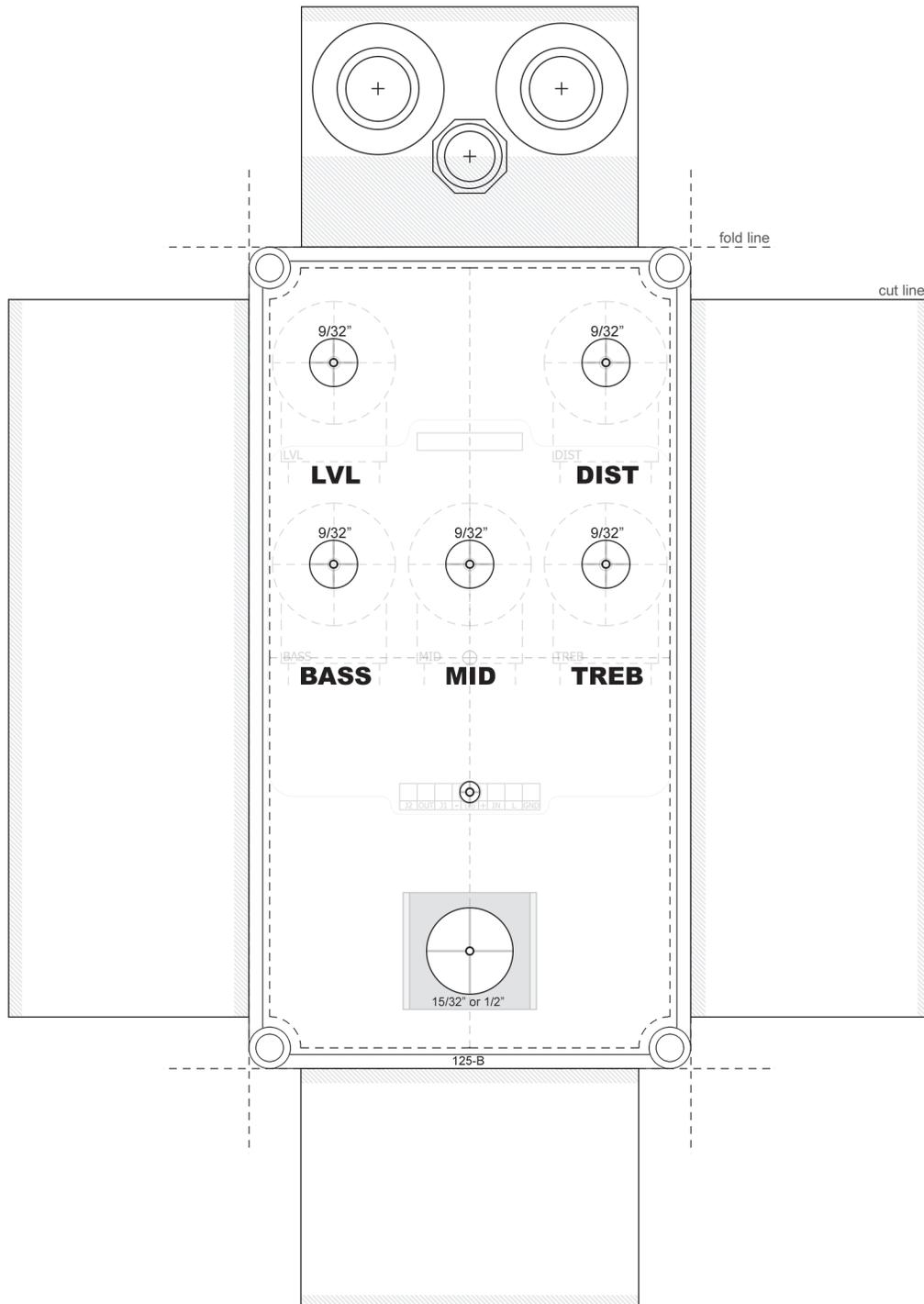
My preferred 3PDT switch:

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

- Since the CA3260E has been obsoleted it is not readily available, even at the typical DIY supply sites. However, I have secured a small batch of them and pre-tested them against a known good one (each chip was plugged in and compared). I will offer these for sale along with the Misfit PCB when I have them available. If you want to looking on your own, I had good luck with UTSource. Not perfect luck, but good.
- If you don't have the CA3260 you can just sub in another dual op-amp. True, it may not sound exactly the same but it will still sound *good*. If you socket it you always have the option to swap it out later.
- Q1 and Q2 can be any typical BJT type since they are just emitter-followers. I used 2n5088 for my build. 2n3904 is another good choice. Whatever you choose, the PCB pinout for Q1 and Q2 is the same as the 2n3904 C-B-E.
- I added R18 for a bit of extra filtering on the power supply part of the circuit but it turned out to not be needed. **You should jumper R18**. Of course, there's no harm in putting in a small resistor there (10R or 22R 1/4W), but it's not necessary and it will lower your supply voltage a little.
- If you don't have a 9k1 resistor for R22 use two resistors in series to approximate that value. I used 8k2 and 910R.
- If you do not have a 1uF Bi-Polar electrolytic cap for C10, you can use a 1uF MLCC. That's what I used in my build.

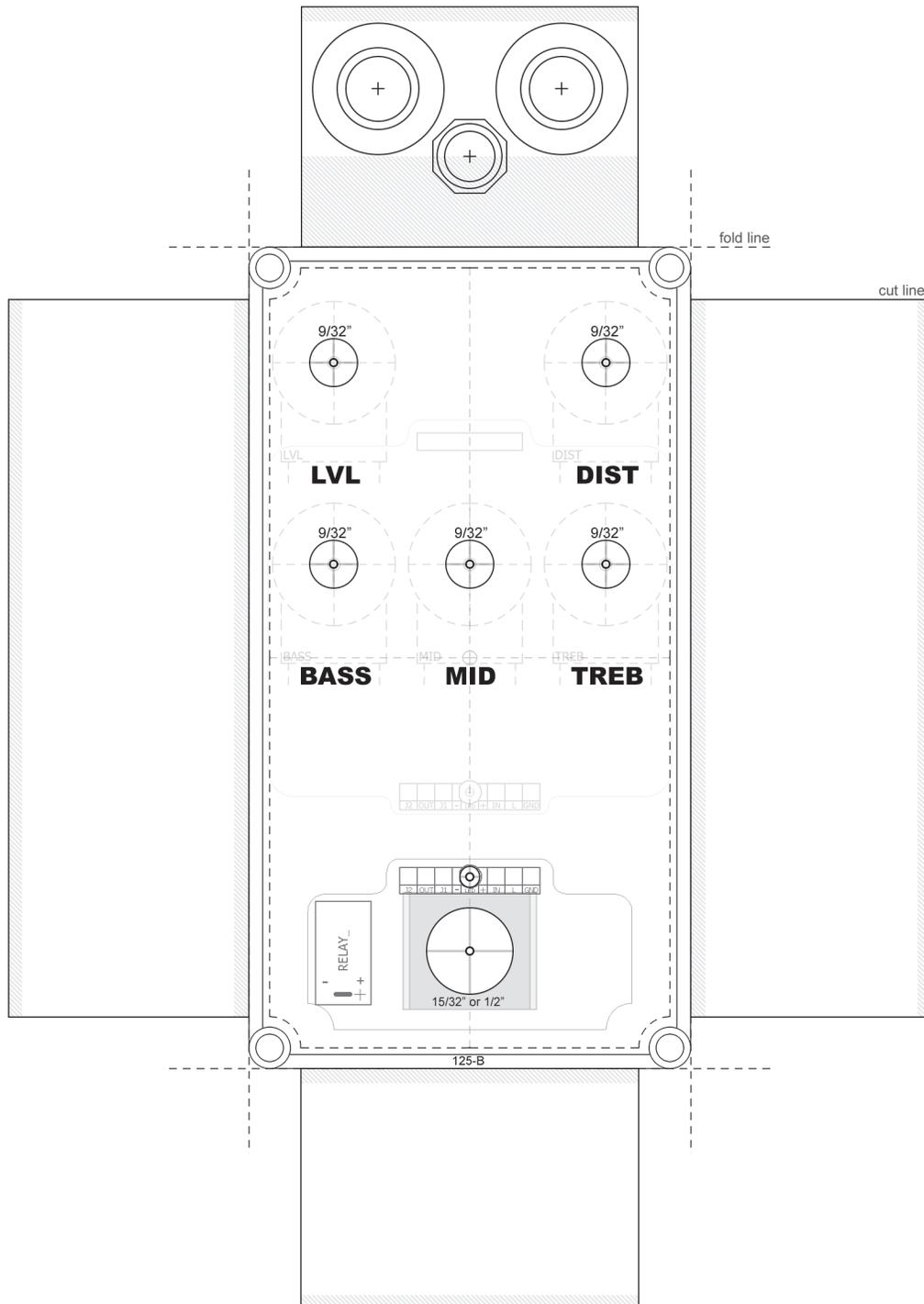


Note: Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.



Use this template for regular 3PDT bypass.

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Use this template for “Softie3” relay bypass. Note the different bypass LED location. The drill location for the bypass switch is the same.

IC1	CA3260E	Q1	Si
1	4.72	C	9.5
2	4.72	B	5.93
3	4.34	E	5.57
4	0	Q1	Si
5	4.71	C	9.5
6	4.74	B	4.14
7	4.74	E	3.73
8	9.5		

- 9.42vDC One Spot
- Current Draw: ~7mA



I put a grey Sharpie line on my test chip so as to not lose track of it when I was evaluating the CA3260 batch I received.

