

FLUNKEE

FX TYPE: Envelope Filter

Based on the DOD® FX-25™

Enclosure Size: 1590A

"Softie" compatibility: none

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Overview

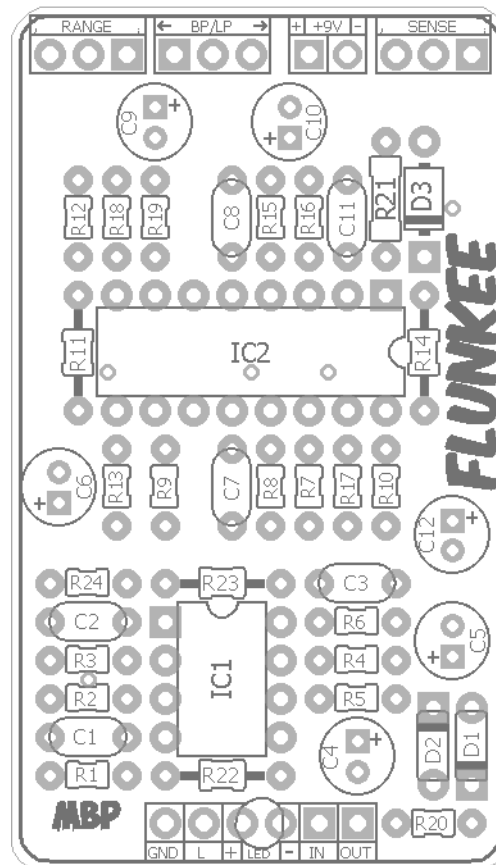
Yeah, yeah. Everyone loves the good ol' DOD 440. But, what about its cousin; the forgotten FX-25? If it's good enough for Flea is it not good enough for you? It is! Turns out that the FX-25 is a fairly righteous envelope filter on its own with a good amount of quack on tap. And, it has the advantage of using less expensive parts than its 440 counterpart (by virtue of not requiring a dual-vactrol that currently costs over \$10 and is a repro part). Plus, the Flunkee takes one extra step by adding a switch to allow you to select between the stock low pass filter and a band-pass filter and is also shrunk down to a 1590A size.

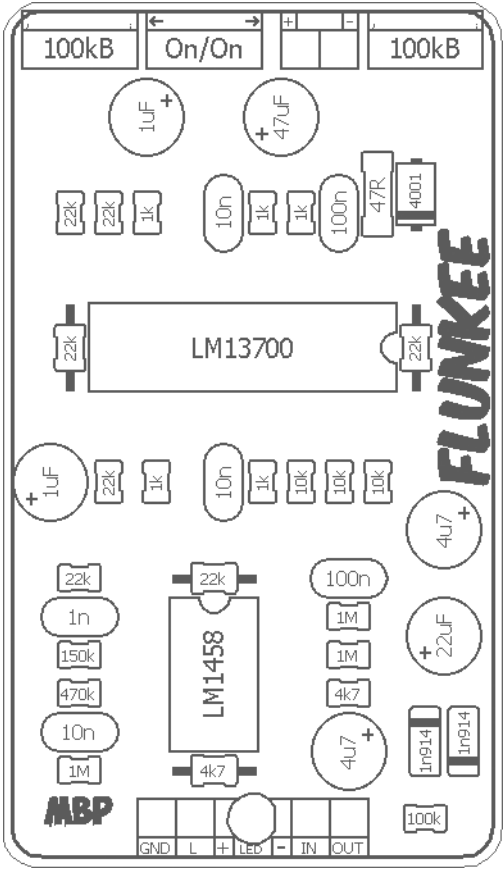
Controls

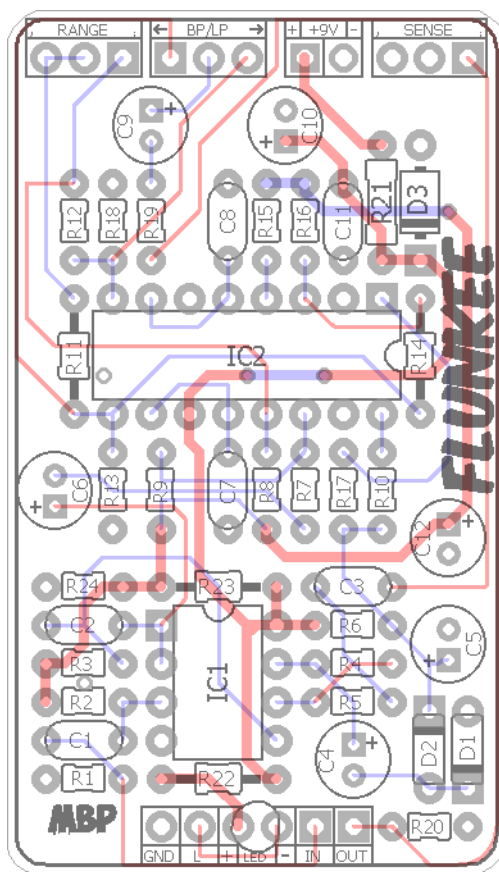
- **SENSE** - The overall sensitivity of the envelope detector.
- **RANGE** - The resonant peak of the swept filter from low to high.
- **BP/LP** - Select between band-pass and low-pass filtering.

Terms of Use: You are free to use purchased **Flunkee** circuit boards for both DIY and small commercial operations. You may not offer **Flunkee** 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](#). 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	
R1	1M	C1	10n
R2	470k	C2	1n
R3	150k	C3	100n
R4	1M	C4	4u7
R5	4k7	C5	22uF
R6	1M	C6	1uF
R7	10k	C7	10n
R8	1k	C8	10n
R9	1k	C9	1uF
R10	10k	C10	47uF
R11	22k	C11	100n
R12	22k	C12	4u7
R13	22k	Diodes	
R14	22k	D1	1n914
R15	1k	D2	1n914
R16	1k	D3	1N4001
R17	10k	IC	
R18	22k	IC1	LM1458
R19	1k	IC2	LM13700
R20	100k	Switch	
R21	47R	BP/LP	On/On
R22	4k7	Pots	
R23	22k	RANGE	100kB
R24	22k	SENSE	100kB

Value	QTY	Type	Rating
47R	1	Metal / Carbon Film	1/4W
1k	5	Metal / Carbon Film	1/8W
4k7	2	Metal / Carbon Film	1/8W
10k	3	Metal / Carbon Film	1/8W
22k	7	Metal / Carbon Film	1/8W
100k	1	Metal / Carbon Film	1/8W
150k	1	Metal / Carbon Film	1/8W
470k	1	Metal / Carbon Film	1/8W
1M	3	Metal / Carbon Film	1/8W
1n	1	Film	16v min.
10n	3	Film	16v min.
100n	2	Film	16v min.
1uF	2	Electrolytic, Low Profile	16v min.
4u7	3	Electrolytic, Low Profile	16v min.
22uF	1	Electrolytic, Low Profile	16v min.
47uF	1	Electrolytic, Low Profile	16v min.
1n914	2		
1N4001	1		
LM1458	1		
LM13700	1		
SPDT	1	Mini SPDT, On/On	
100kB	2	PC Mount	9mm

Low profile Electrolytic caps:

<http://smallbear-electronics.mybigcommerce.com/electrolytic-radial-low-profile-16v-1-f-100-f/>

LM1458:

<http://smallbear-electronics.mybigcommerce.com/ic-mc1458p-ti/>

LM13700:

<https://www.mouser.com/ProductDetail/Texas-Instruments/LM13700N-NOPB?qs=%2Fha2pyFaduglfGWMfMH8DwWFr55drC9Mfro%2FHT91qk%3D>

You can also use the 13600 which is available at smallbear:

<http://smallbear-electronics.mybigcommerce.com/ic-njm13600d/>

Mini SPDT:

<http://smallbear-electronics.mybigcommerce.com/spdt-on-on-mountain-10tc410/>

9mm PC Mount:

<http://smallbear-electronics.mybigcommerce.com/alpha-single-gang-9mm-pc-mount/>

Thinline DC Jack:

<http://smallbear-electronics.mybigcommerce.com/dc-power-jack-all-plastic-unswitched-2-1-mm/>

Enclosed Mono:

<http://smallbear-electronics.mybigcommerce.com/1-4-in-mono-enclosed-jack/>

<http://smallbear-electronics.mybigcommerce.com/1-4-in-mono-enclosed-switchcraft-111x/>

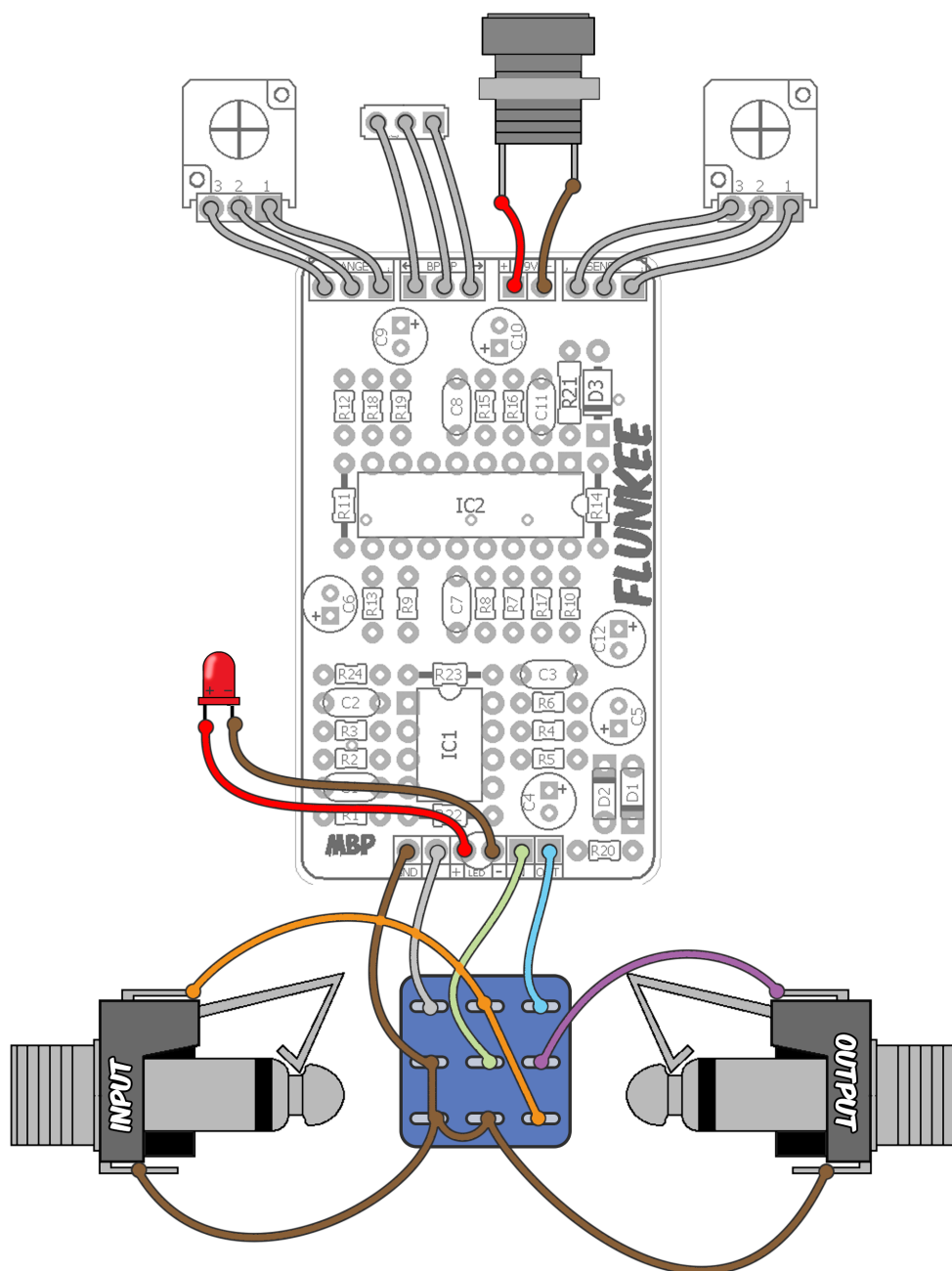
Lumberg Mono:

<http://smallbear-electronics.mybigcommerce.com/lumberg-1-4-compact-shrouded-mono-jack/>

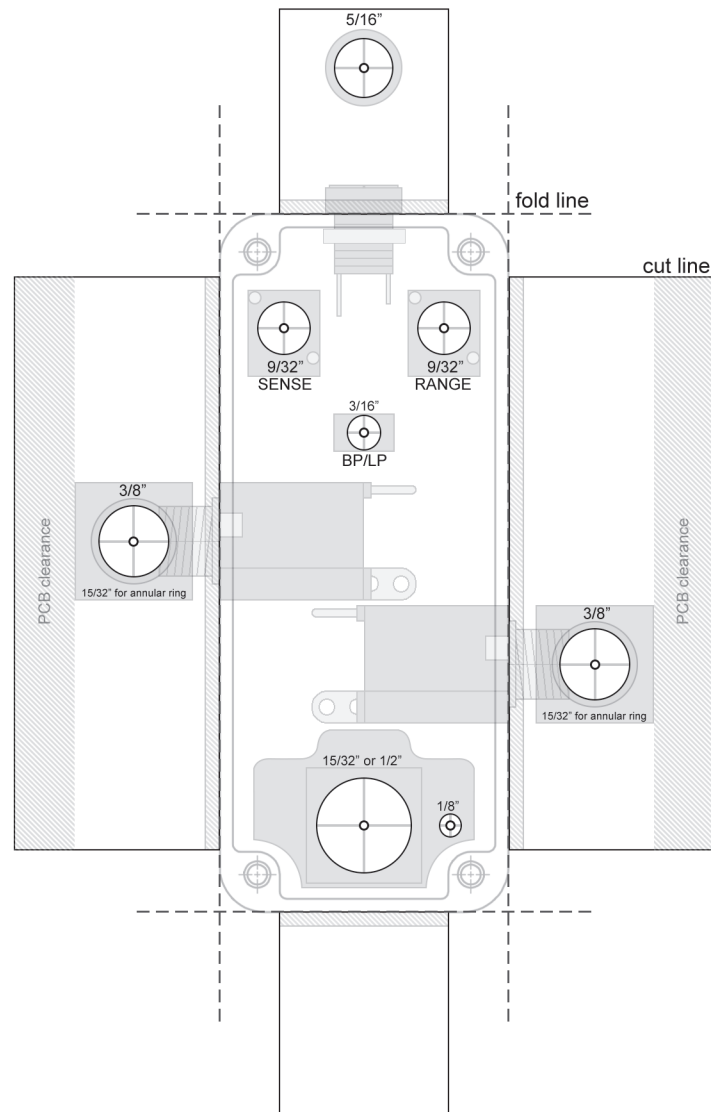
There's not much to note here. There's one area you could look at modding, if you like.

- Change the filter knee by using a different value for C7 and C8 (you want their values to remain identical).

I like where it sits stock, but there you have it :)



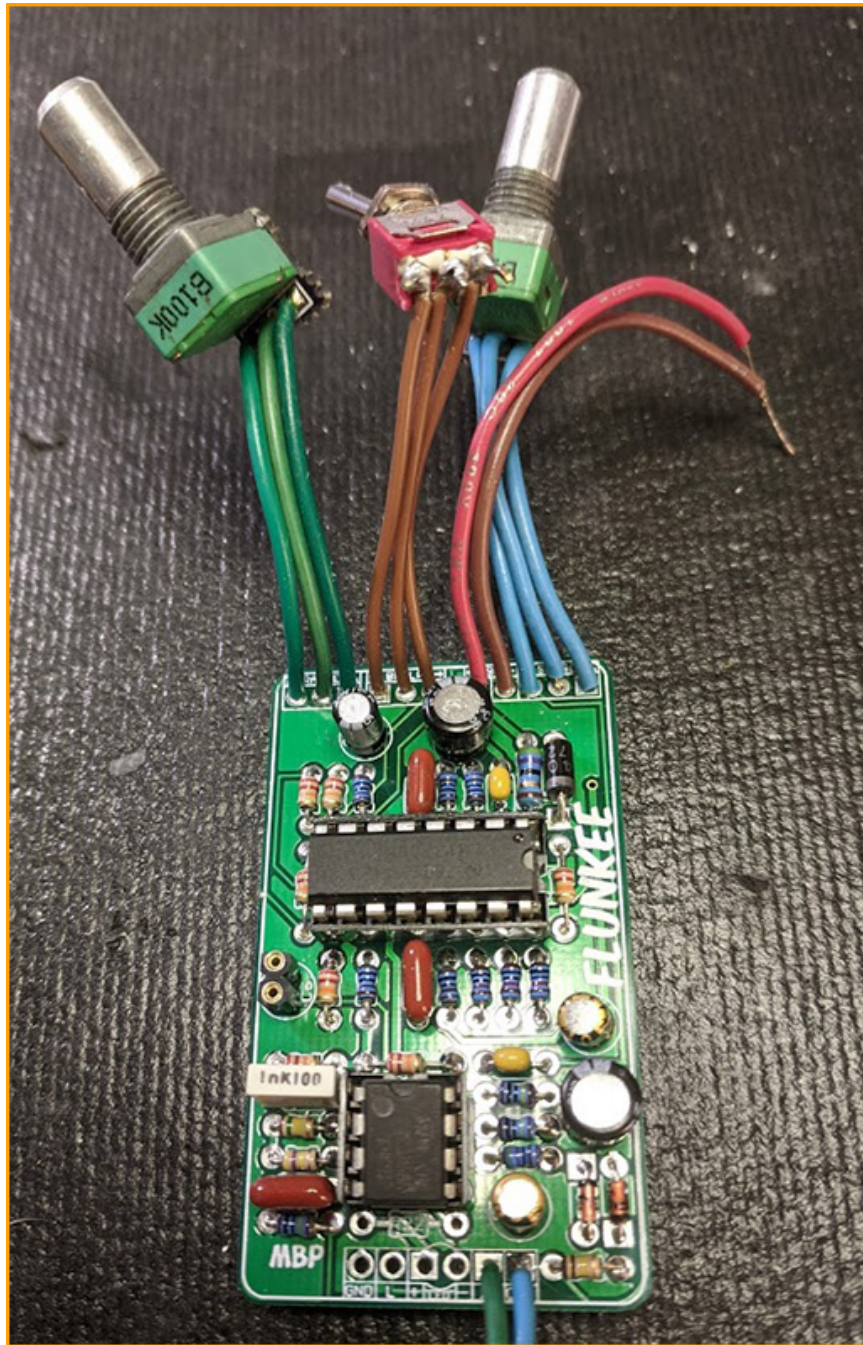
Note: Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.



- This template will work for either mono enclosed jacks or the “Lumberg” style.
- It uses the “Thinline” style DC Jack but you should be able to fit other styles in there (different drill size req’d).
- It also shows the 3PDT02 bypass PCB but this is not required. If you are wiring straight to a 3PDT you can use the same LED location on the right side or choose a different spot.

IC1	DC	IC2	DC
1	4.68	1	1.9
2	4.68	2	0.52
3	4.4	3	4.69
4	0	4	4.68
5	4.61	5	5.86
6	4.64	6	0
7	4.7	7	5.86
8	9.34	8	4.67
		9	4.71
		10	5.74
		11	9.34
		12	5.86
		13	4.72
		14	4.7
		15	0.44
		16	1.09

- 9.42vDc One Spot
- Current Draw: ~2mA



The reason I have a socket for C6 is that, from the original schematic, I knew that pin1 of IC1 and the left side of R7 would both be sitting near V_b but probably not exactly the same voltage. So, I was curious if the orientation of the + side of the 1uF cap would make a difference. It doesn't.

