FRITTER

FX TYPE: Overdrive

Based on the Crowther® Hotcake™

Enclosure Size: 1590A

“Softie” compatibility: none

Overview

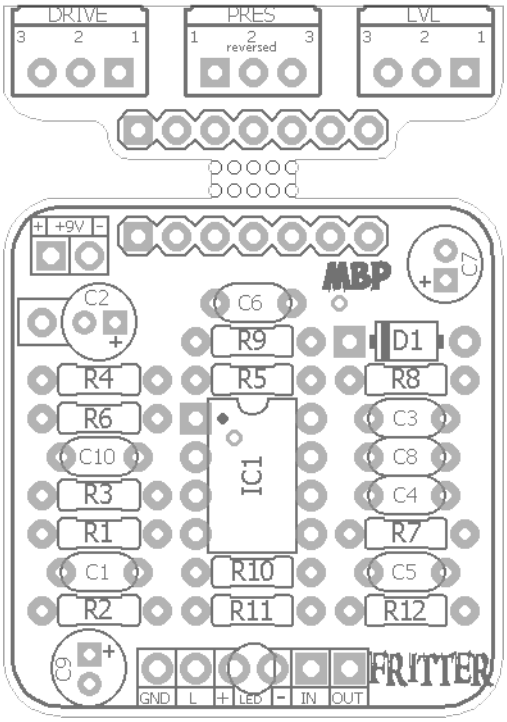
The **Fritter** is based on the 2000’s era version of the Hotcake™ and is designed to fit in a 1590A enclosure. This is a pretty gnarly sounding overdrive, which is probably due to the lack of any sort of clipping diode. But, I wouldn’t characterize it as harsh sounding, either. Rather, it strikes a good balance between being a hairy low to medium gainer without sounding like everything else out there.

I have included suggested mods for an “mbp” version which I arrived at by tweaking the circuit on a breadboard. The mbp version has less gain but is nowhere near as bassy, has a smoothing cap (220pF) in the feedback loop of the IC and a smaller value cap in the Presence control. I prefer this version but let your own ear be your guide. Luckily it only takes about 10 minutes to breadboard the circuit if you want to evaluate the changes yourself before committing to them.

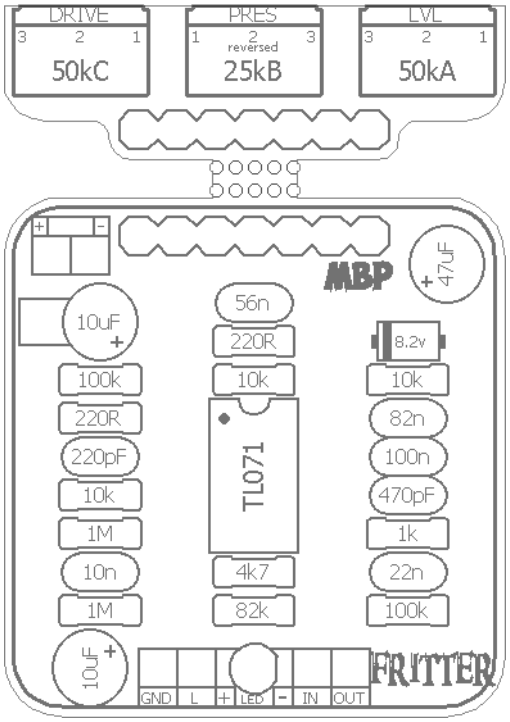
NOTE: This is the same circuit as the giveaway version from May 2019 with just a few small tweaks to the layout.

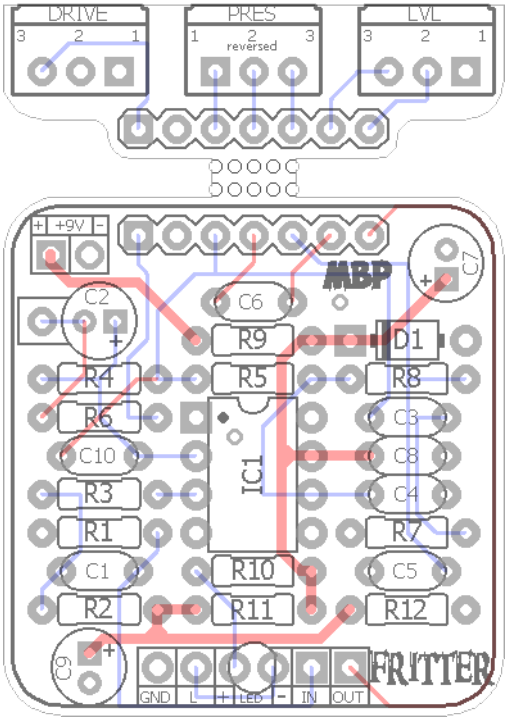
Controls

- **DRIVE, PRESENCE and LEVEL -** self explanatory.



The extra hole next to C2 is for the “mbp” mod. This replaces the stock 10uF with a 100n film cap.


DRIVE
3 2 1
50kC
PRES
1 2 3
reversed
25kB
LVL
3 2 1
50kA
MBP
47uF
10uF
56n
220R
10k
8.2v
10k
100k
220R
220pF
10k
1M
10n
1M
TL071
82n
100n
470pF
1k
22n
100k
4k7
82k
10uF
GND
L
+
LED
-
IN
OUT
FRITTER


DRIVE
PRES
reversed
LVL
+9V
MBP
C2
C6
C7
R9
D1
R4
R5
R8
R6
C3
C10
IC1
C8
R3
C4
R1
R7
C1
R10
C5
R2
R11
R12
C9
FRITTER
GND
LED
IN
OUT

Resistors		Caps		Diodes	
R1	1M	C1	10n	D1	8.2v Zener
R2	1M	C2	10uF	IC	
R3	10k	C3	82n	IC1	TL071
R4	100k	C4	470pF	Pots	
R5	10k	C5	22n	DRIVE	50kC
R6	220R	C6	56n	LVL	50kA
R7	1k	C7	47uF	PRES	25kB
R8	10k	C8	100n		
R9	220R	C9	10uF		
R10	4k7				
R11	82k				
R12	100k				

This BOM and Shopping List is for the Stock version. Refer to the schematic on the last page for the values used in the “mbp” version. Note: C10 is omitted in the stock version.

Value	QTY	Type	Rating
220R	2	Metal / Carbon Film	1/4W
1k	1	Metal / Carbon Film	1/4W
4k7	1	Metal / Carbon Film	1/4W
10k	3	Metal / Carbon Film	1/4W
82k	1	Metal / Carbon Film	1/4W
100k	2	Metal / Carbon Film	1/4W
1M	2	Metal / Carbon Film	1/4W
470pF	1	Ceramic / MLCC	16v min.
10n	1	Film	16v min.
22n	1	Film	16v min.
56n	1	Film	16v min.
82n	1	Film	16v min.
100n	1	Film	16v min.
10uF	2	Electrolytic	16v min.
47uF	1	Electrolytic	16v min.
Zener	1	8.2v	
TL071	1		
50kC	1	9mm PC Mount	
50kA	1	9mm PC Mount	
25kB	1	9mm PC Mount	

Low profile Electrolytic caps:
http://smallbear-electronics.mybigcommerce.com/electrolytic-radial-low-profile-16v-1-f-100-f/

8.2v Zener:
http://smallbear-electronics.mybigcommerce.com/diode-zener-1n4738a/

TL071:
http://smallbear-electronics.mybigcommerce.com/ic-tl071cp/

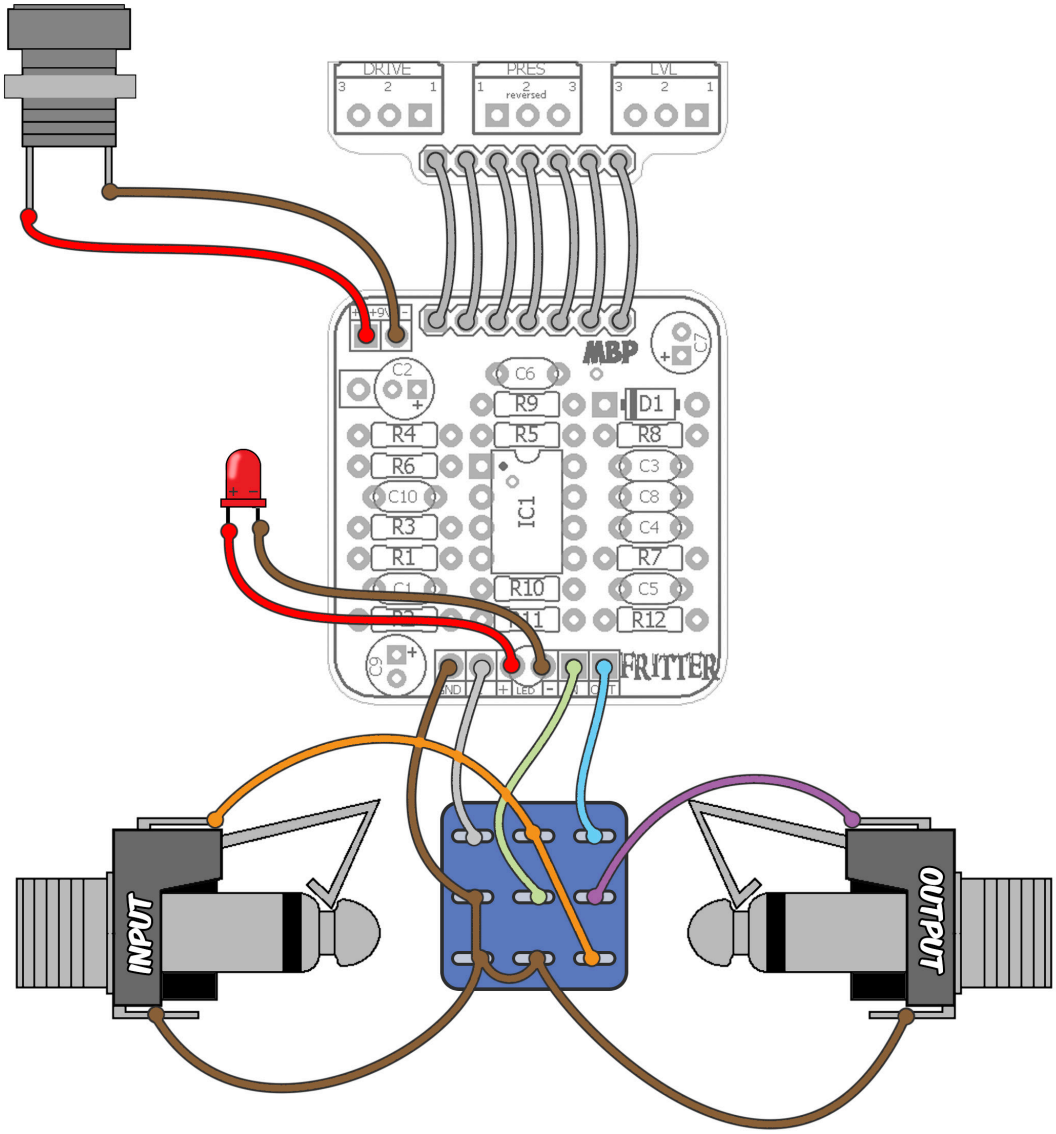
9mm PC Mount:
http://smallbear-electronics.mybigcommerce.com/alpha-single-gang-9mm-pc-mount/

Thinline DC Jack:
http://smallbear-electronics.mybigcommerce.com/dc-power-jack-all-plastic-unswitched-2-1-mm/

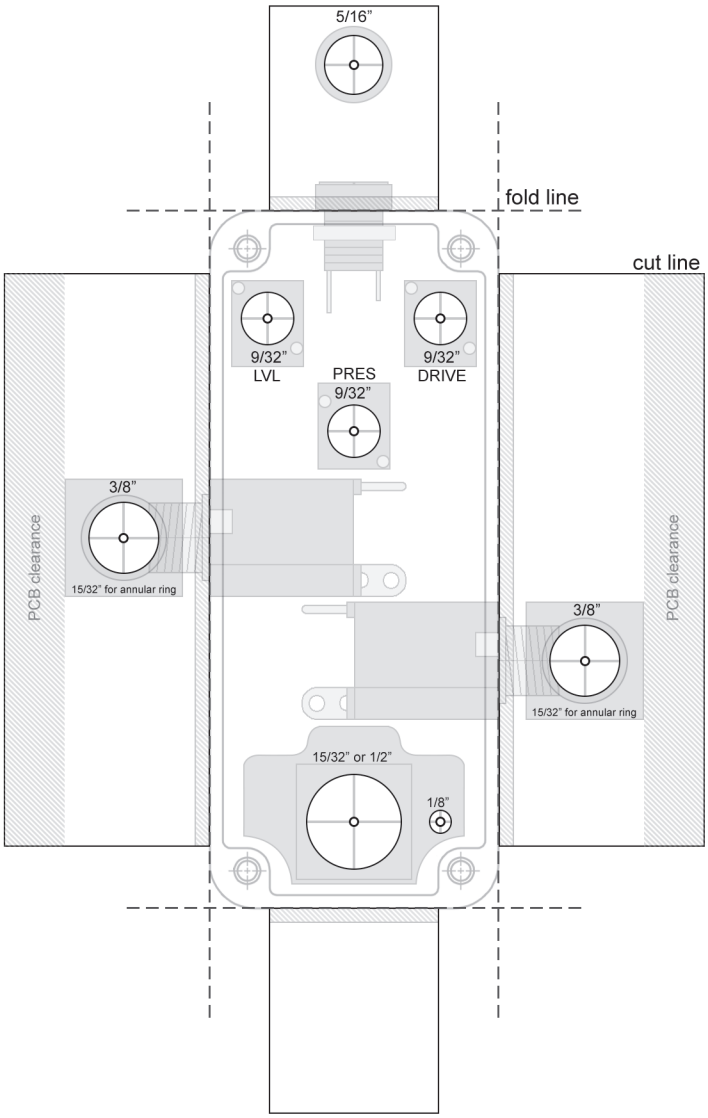
Enclosed Mono:
http://smallbear-electronics.mybigcommerce.com/1-4-in-mono-enclosed-jack/
http://smallbear-electronics.mybigcommerce.com/1-4-in-mono-enclosed-switchcraft-111x/

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

- None.


DRIVE
PRES
reversed
LVL
MBP
C2
C6
R9
D1
R4
R5
R8
R6
C3
C10
C8
IC1
R3
C4
R1
R7
C1
R10
C5
R11
R12
C9
FRITTER
GND
LED
INPUT
OUTPUT

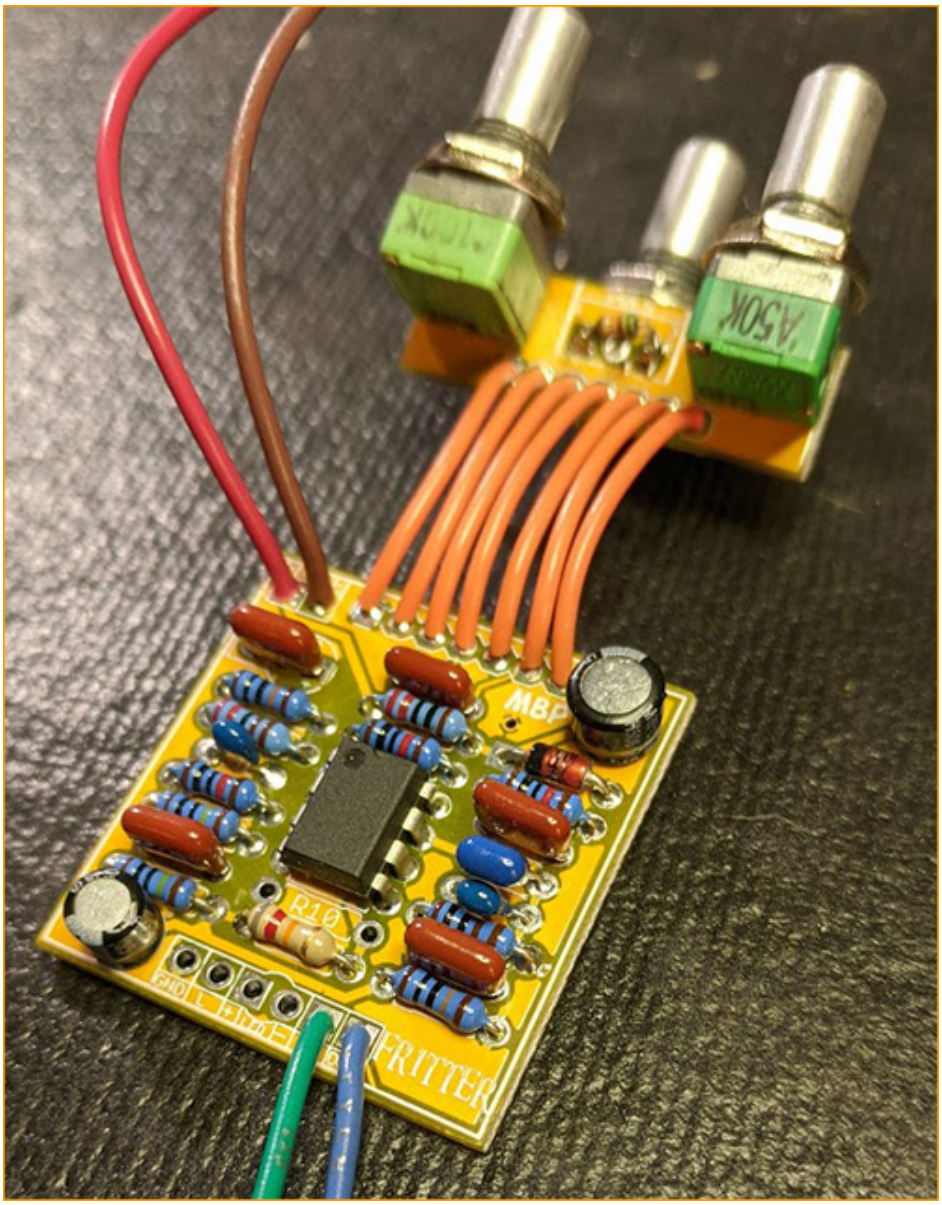
Note: *Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.*



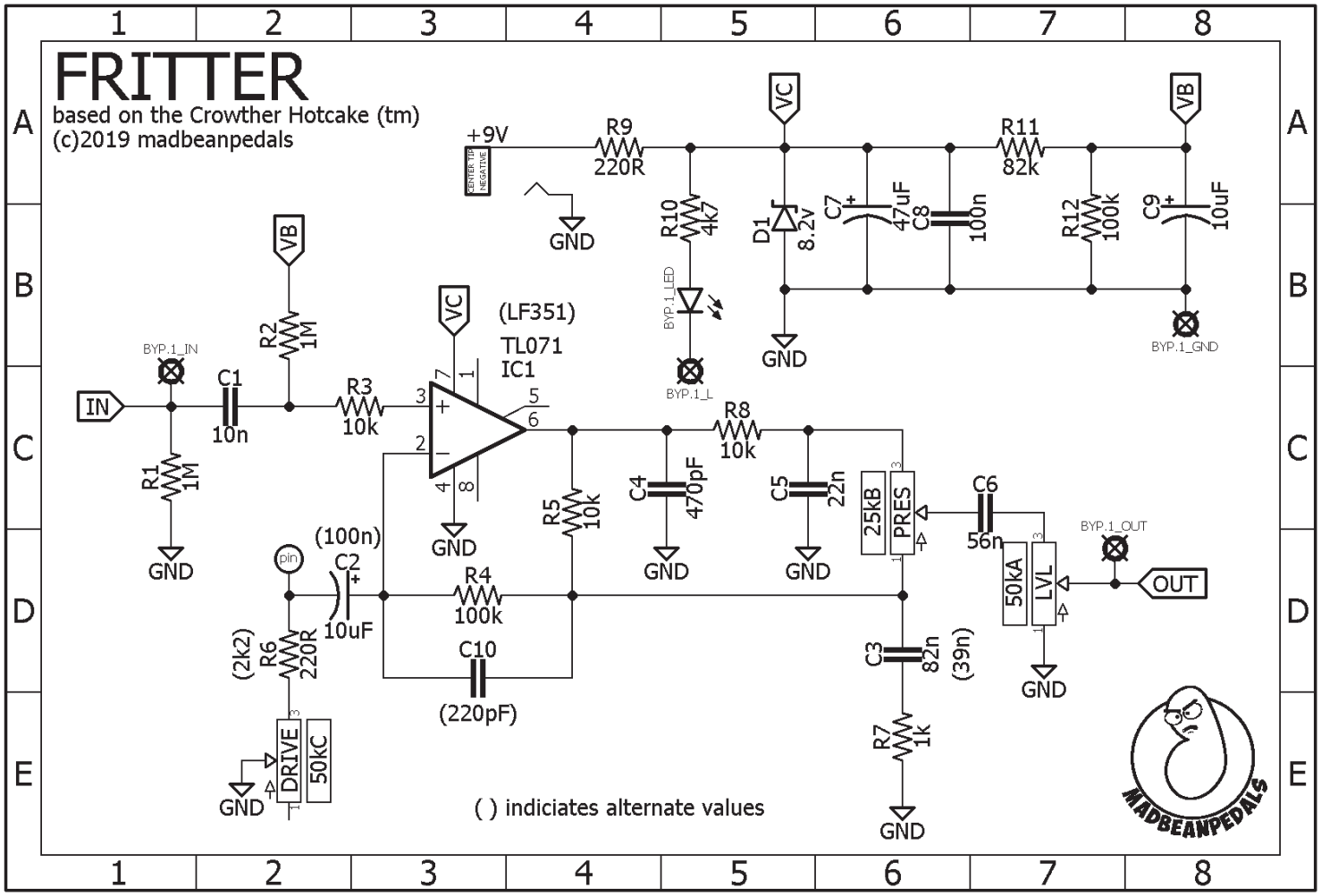
- This template will work for either mono enclosed jacks or the “Lumberg” style.
- It uses the “Thinline” style DC Jack but you should be able to fit other styles in there (different drill size req’d).
- It also shows the 3PDT02 bypass PCB but this is not required. If you are wiring straight to a 3PDT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

IC1	DC
1	140mV
2	4.47
3	4.05
4	0
5	134mV
6	4.46
7	8.14
8	ignore

- 9.42vDC One Spot
- Current Draw ~ 6mA
- Taken from the “mbp version” of this circuit



- mbp version built on the original giveaway Fritter PCB.
- I didn’t have correct values for two of the pots so I had to improvise with resistors in parallel. DIY foEvr.


FRITTER
based on the Crowther Hotcake (tm)
(c)2019 madbeanpedals
+9V
R9
220R
VC
VB
R11
82k
R10
4k7
D1
8.2V
C7
47uF
C8
100n
R12
100k
C9
10uF
GND
BYP.1_LED
BYP.1_L
BYP.1_GND
BYP.1_IN
IN
C1
10n
R2
1M
R3
10k
(LF351)
TL071
IC1
R1
1M
R8
10k
C4
470pF
C5
22n
R5
10k
25kB
PRES
C6
56n
BYP.1_OUT
OUT
50kA
LVL
(100n)
C2
10uF
R4
100k
C10
(220pF)
C3
82n
(39n)
R7
1k
(2k2)
R6
220R
DRIVE
50kC
( ) indiciates alternate values
MADBEANPEDALS