PROMENADE

FX TYPE: Filter

Based on the EHX® Bass Balls™

Enclosure Size: 125B

"Softie" compatibility: Softie 3

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Overview

The **Promenade** is an envelope filter based on the EHX® Bass Balls™. I've included some of the mods suggested by Mark Hammer on the DIYSB forum. These mods give the builder more control over how the envelope behaves as well as the bass and treble frequency response.

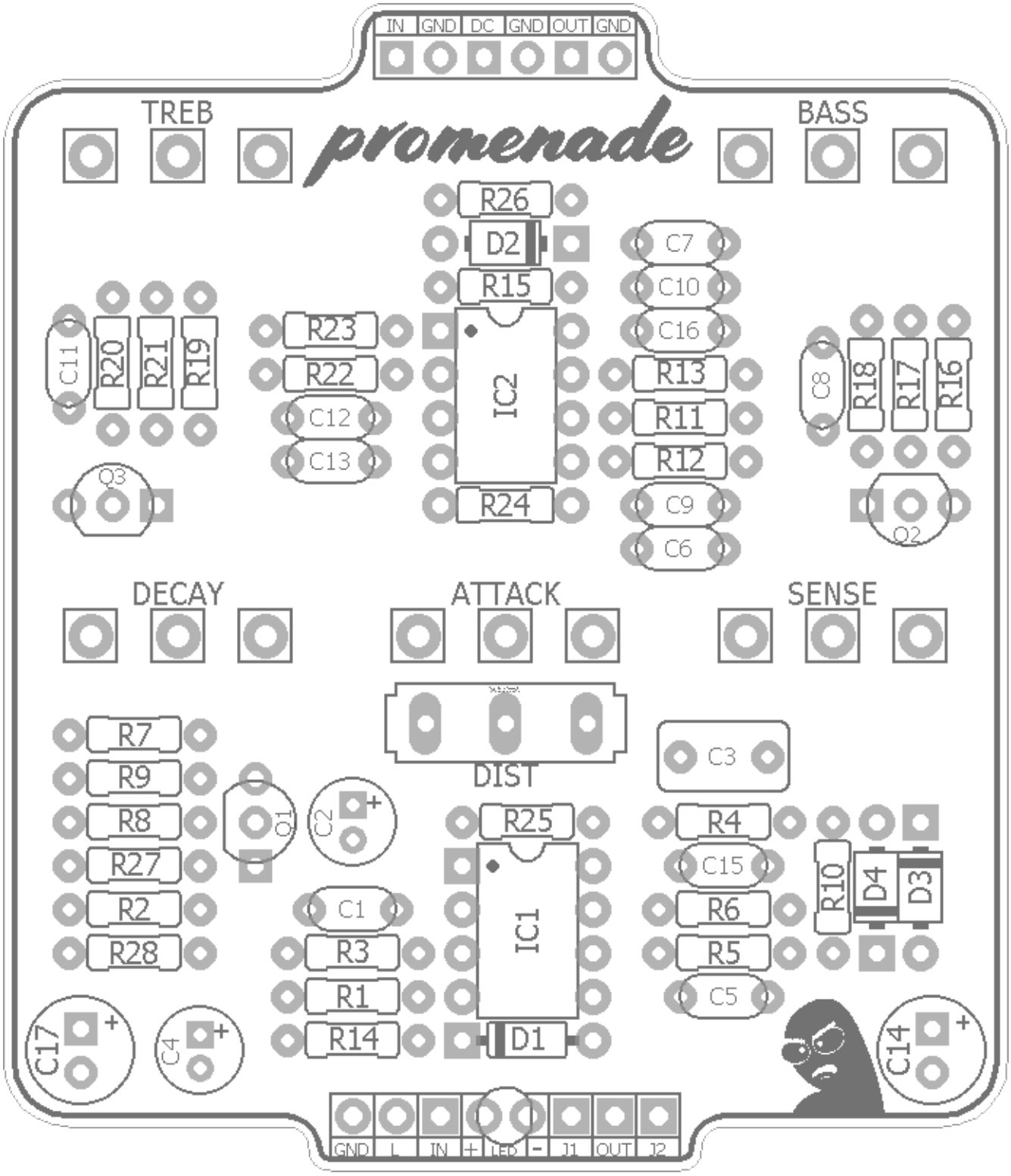
This should be an easy project for most builders. There's nothing tricky, nothing to be tweaked to taste or in need of further modification, IMO. It sounds great on bass, baritone and guitar.

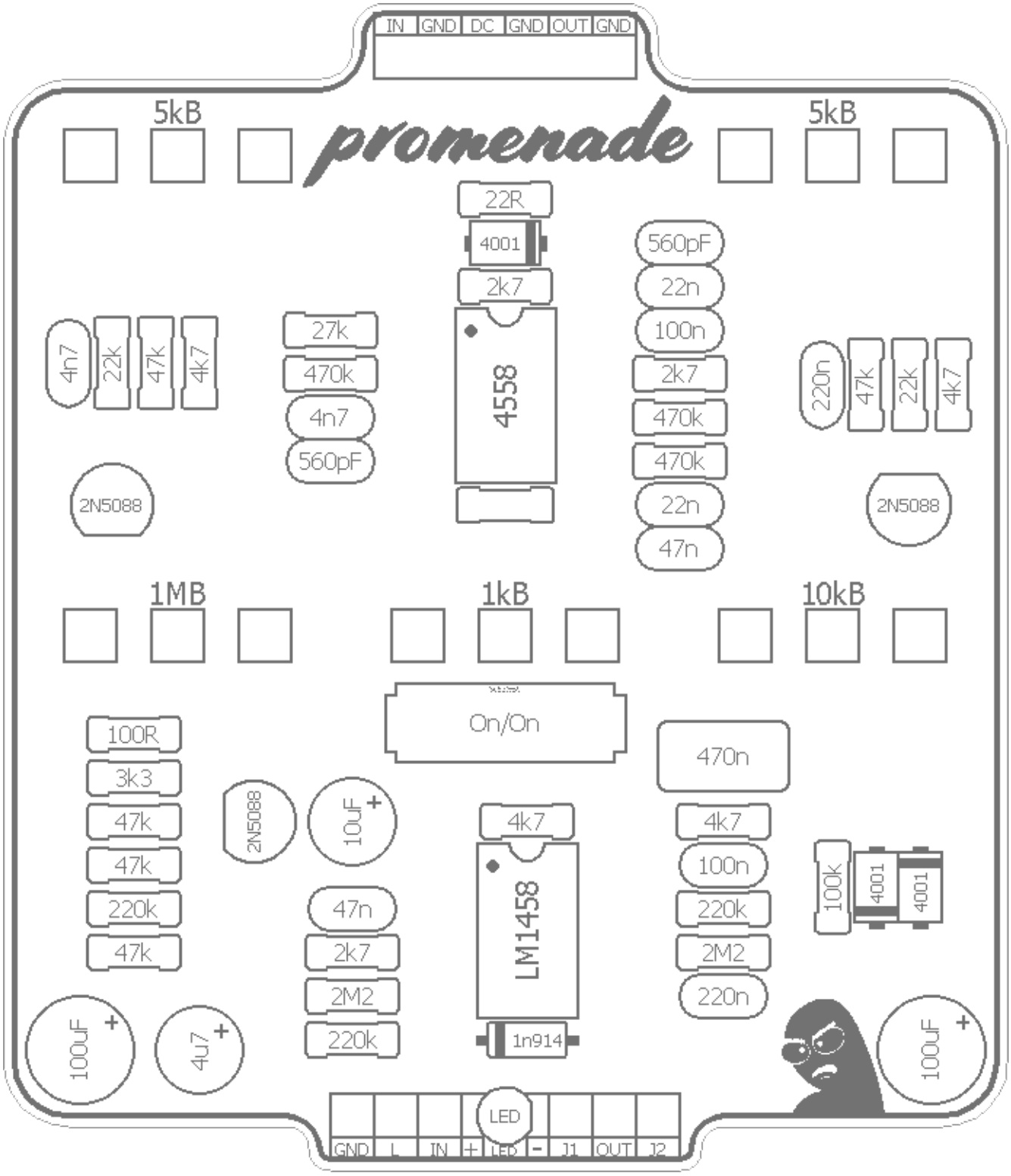
Controls

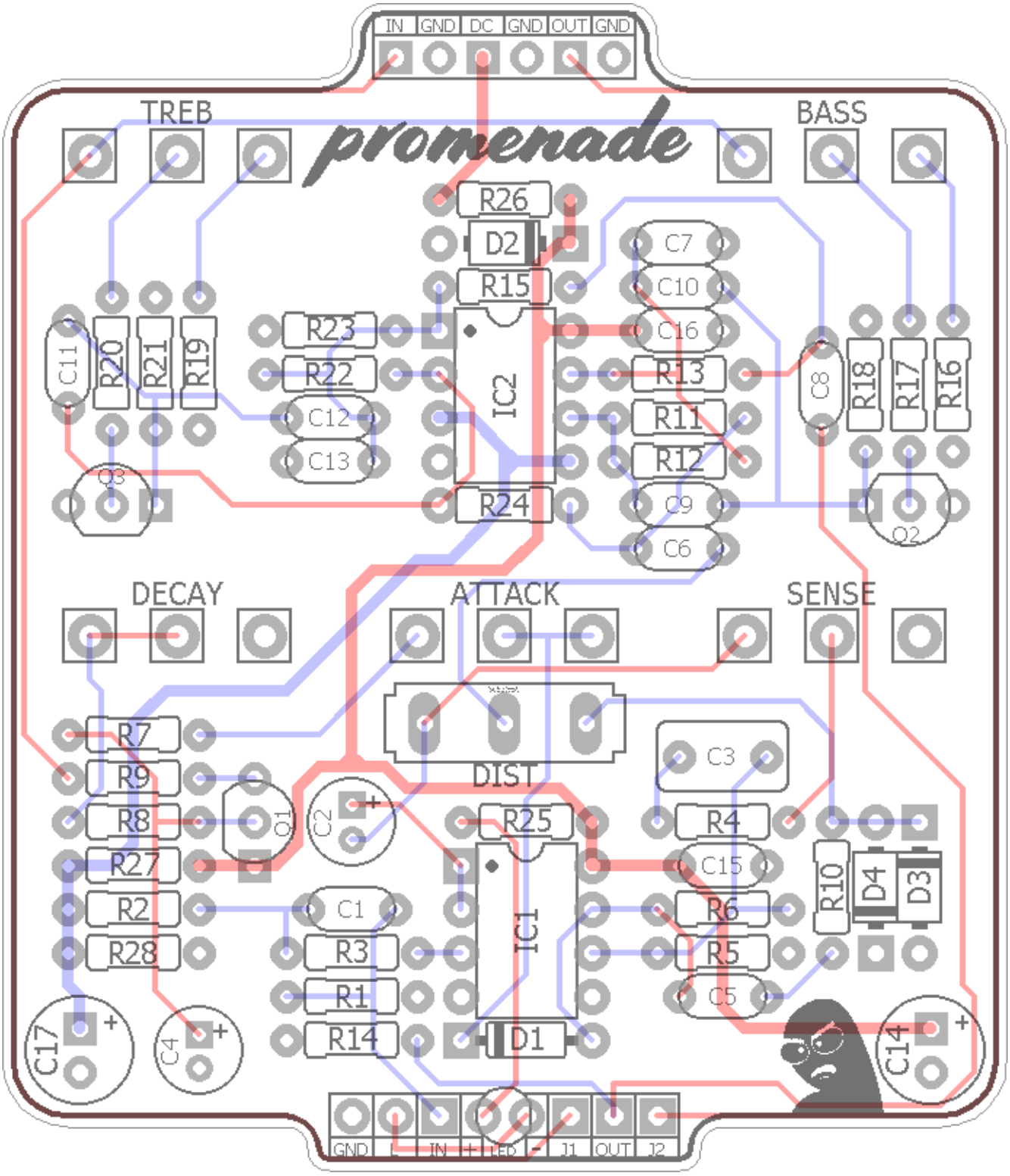
- **BASS, TREB -** Sets the frequency range of the swept filter for the low and high end.
- **SENSE -** The sensitivity of the envelope filter. This controls how much signal is used to trigger the envelope. There will be a couple of "sweet spots" depending on the instrument used (passive/ active bass, etc).
- **ATTACK, DECAY -** These controls determine the overall shape of the envelope note. Turning them up will increase the attack of the envelope and make the decay of the envelope much longer. Attack, Decay and Sense all work together to offer a wide range of envelope control.
- **CLEAN/DIST -** Left position is clean signal out. Right position adds two silicon diodes to ground for some hard clipped distortion.

Terms of Use: *You are free to use purchased **Promenade** circuit boards for both DIY and small commercial operations. You may not offer **Promenade** 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.


IN
GND
DC
GND
OUT
GND
TREB
promenade
BASS
R26
D2
R15
C7
C10
C16
R13
R11
R12
C9
C6
R23
R22
C12
C13
IC2
R24
C11
R20
R21
R19
Q3
C8
R18
R17
R16
Q2
DECAY
ATTACK
SENSE
DIST
R7
R9
R8
R27
R2
R28
Q1
C2
C1
R3
R1
R14
R25
IC1
D1
C3
R4
C15
R6
R5
C5
R10
D4
D3
C17
C4
C14
GND
L
IN
+
LED
-
J1
OUT
J2


IN
GND
DC
GND
OUT
GND
5kB
promenade
5kB
22R
4001
2k7
560pF
22n
100n
2k7
470k
470k
22n
47n
4n7
22k
47k
4k7
27k
470k
4n7
560pF
4558
220n
47k
22k
4k7
2N5088
2N5088
1MB
1kB
10kB
On/On
100R
3k3
47k
47k
220k
47k
2N5088
10uF
47n
2k7
2M2
220k
4k7
LM1458
1n914
470n
4k7
100n
220k
2M2
220n
100k
4001
4001
100uF
4u7
100uF
LED
GND
L
IN
+
LED
-
J1
OUT
J2


IN
GND
DC
GND
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promenade
BASS
R26
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C16
R13
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R12
C9
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R23
R22
C12
C13
IC2
R24
C11
R20
R21
R19
Q3
C8
R18
R17
R16
Q2
DECAY
ATTACK
SENSE
DIST
R7
R9
R8
R27
R2
R28
Q1
C2
C1
R3
R1
R14
R25
IC1
D1
C3
R4
C15
R6
R5
C5
R10
D4
D3
C17
C4
C14
GND
IN
LED
J1
OUT
J2

Resistors		Caps		Diodes	
R1	2M2	C1	47n	D1	1n914
R2	220k	C2	10uF	D2	1n4001
R3	2k7	C3	470n	D3	1n4001
R4	4k7	C4	4u7	D4	1n4001
R5	2M2	C5	220n	Transistors	
R6	220k	C6	47n	Q1	2N5088
R7	100R	C7	560pF	Q2	2N5088
R8	47k	C8	220n	Q3	2N5088
R9	3k3	C9	22n	ICs	
R10	100k	C10	22n	IC1	LM1458
R11	470k	C11	4n7	IC2	4558
R12	470k	C12	4n7	Switches	
R13	2k7	C13	560pF	DIST	On/On
R14	220k	C14	100uF	Pots	
R15	2k7	C15	100n	ATTACK	1kB
R16	4k7	C16	100n	BASS	5kB
R17	22k	C17	100uF	TREB	5kB
R18	47k			SENSE	10kB
R19	4k7			DECAY	1MB
R20	22k				
R21	47k				
R22	470k				
R23	27k				
R24	470k				
R25	4k7				
R26	22R				
R27	47k				
R28	47k				

Value	QTY	Type	Rating
22R	1	Carbon / Metal Film	1/4W
100R	1	Carbon / Metal Film	1/4W
2k7	3	Carbon / Metal Film	1/4W
3k3	1	Carbon / Metal Film	1/4W
4k7	4	Carbon / Metal Film	1/4W
22k	2	Carbon / Metal Film	1/4W
27k	1	Carbon / Metal Film	1/4W
47k	5	Carbon / Metal Film	1/4W
100k	1	Carbon / Metal Film	1/4W
220k	3	Carbon / Metal Film	1/4W
470k	4	Carbon / Metal Film	1/4W
2M2	2	Carbon / Metal Film	1/4W
560pF	2	Ceramic / MLCC	16v min.
4n7	2	Film	16v min.
22n	2	Film	16v min.
47n	2	Film	16v min.
100n	2	Film	16v min.
220n	2	Film	16v min.
470n	1	Film	16v min.
4u7	1	Electrolytic	16v min.
10uF	1	Electrolytic	16v min.
100uF	2	Electrolytic	16v min.
1n914	1		
1n4001	3		
2N5088	3		
LM1458	1		
4558	1		
SPDT	1	On/On, Solder Lug or Pin Mount	
1kB	1	PCB Right Angle	16mm
5kB	2	PCB Right Angle	16mm
10kB	1	PCB Right Angle	16mm
1MB	1	PCB Right Angle	16mm

LM1458:
https://stompboxparts.com/semiconductors/lm1458n-dual-op-amp-ic/
https://www.mouser.com/ProductDetail/595-MC1458P

SPDT (On/On):
https://smallbear-electronics.mybigcommerce.com/spdt-on-on-short-lever/
https://stompboxparts.com/switches/spdt-toggle-switch-on-on-solder-lug-short-bat/
https://lovemyswitches.com/spdt-on-on-switch-solder-lug-short-shaft/

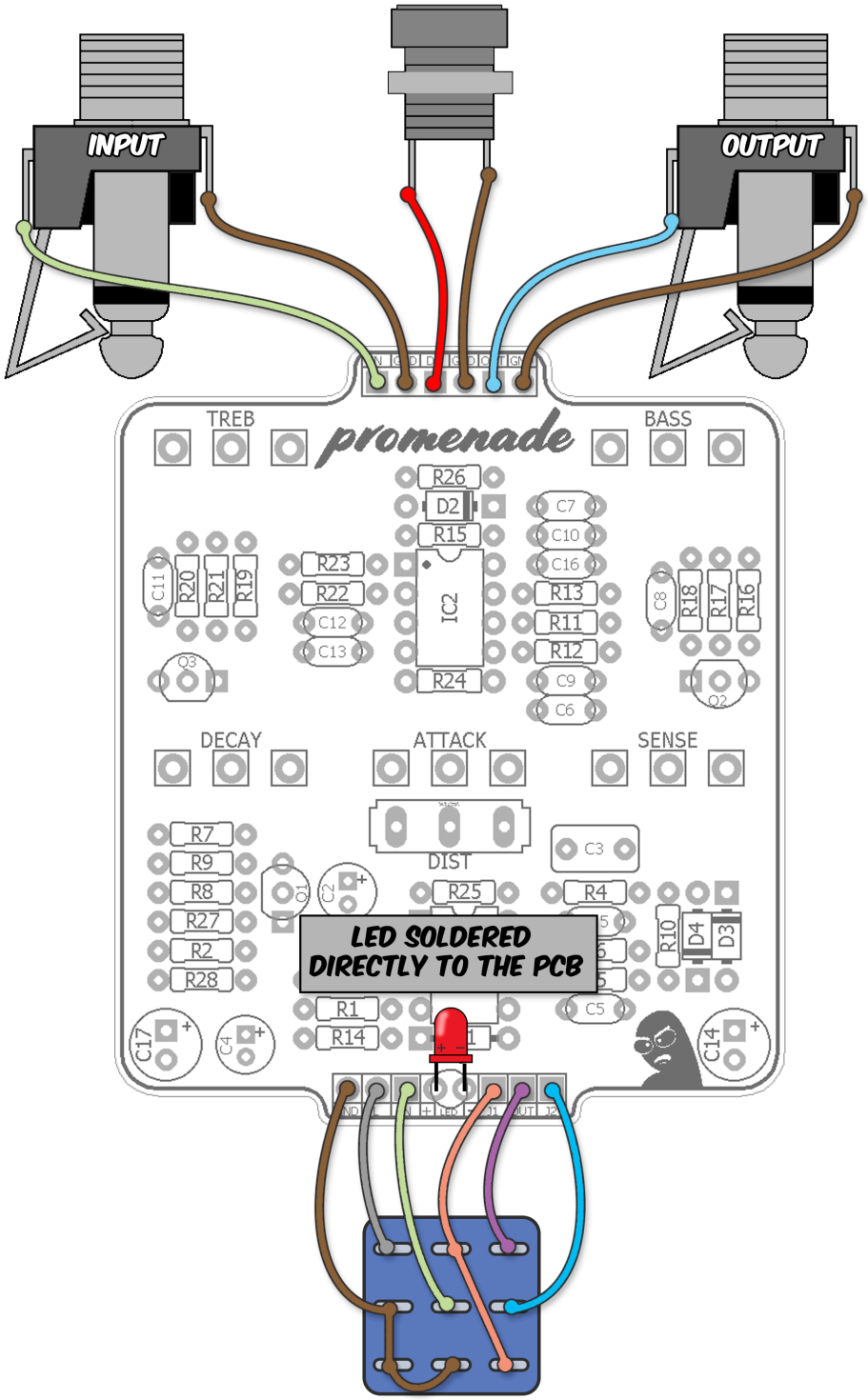
16mm pots:
https://smallbear-electronics.mybigcommerce.com/alpha-single-gang-16mm-right-angle-pc-mount/
https://stompboxparts.com/pots/16mm-potentiometer-short-pcb-leg/
https://lovemyswitches.com/16mm-potentiometers-1-4-smooth-shaft-right-angle-pcb-mount/

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/

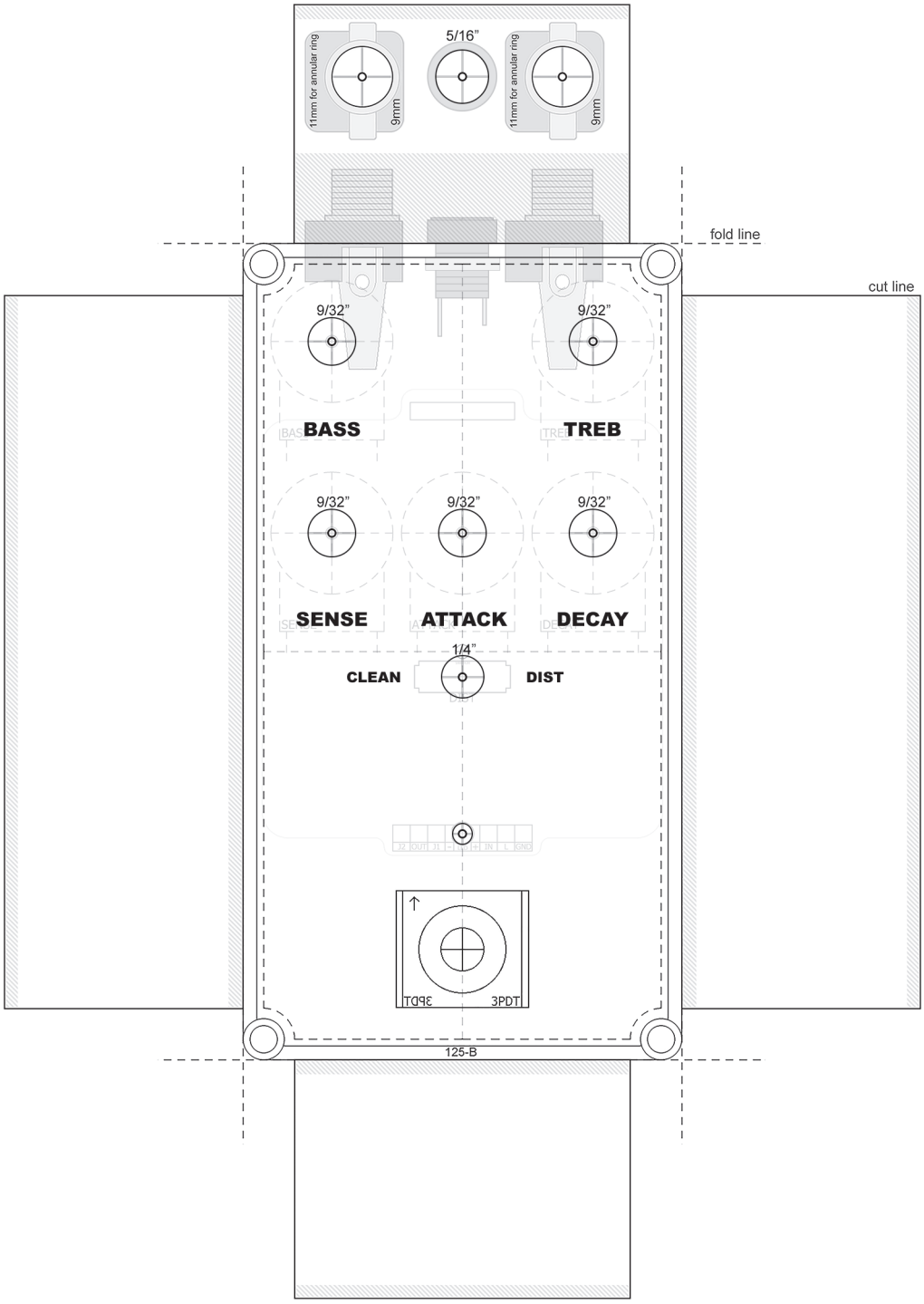
My preferred 3PDT switch:
https://lovemyswitches.com/pro-3pdt-latched-foot-switch-solder-lugs-feather-soft-click/

- None.



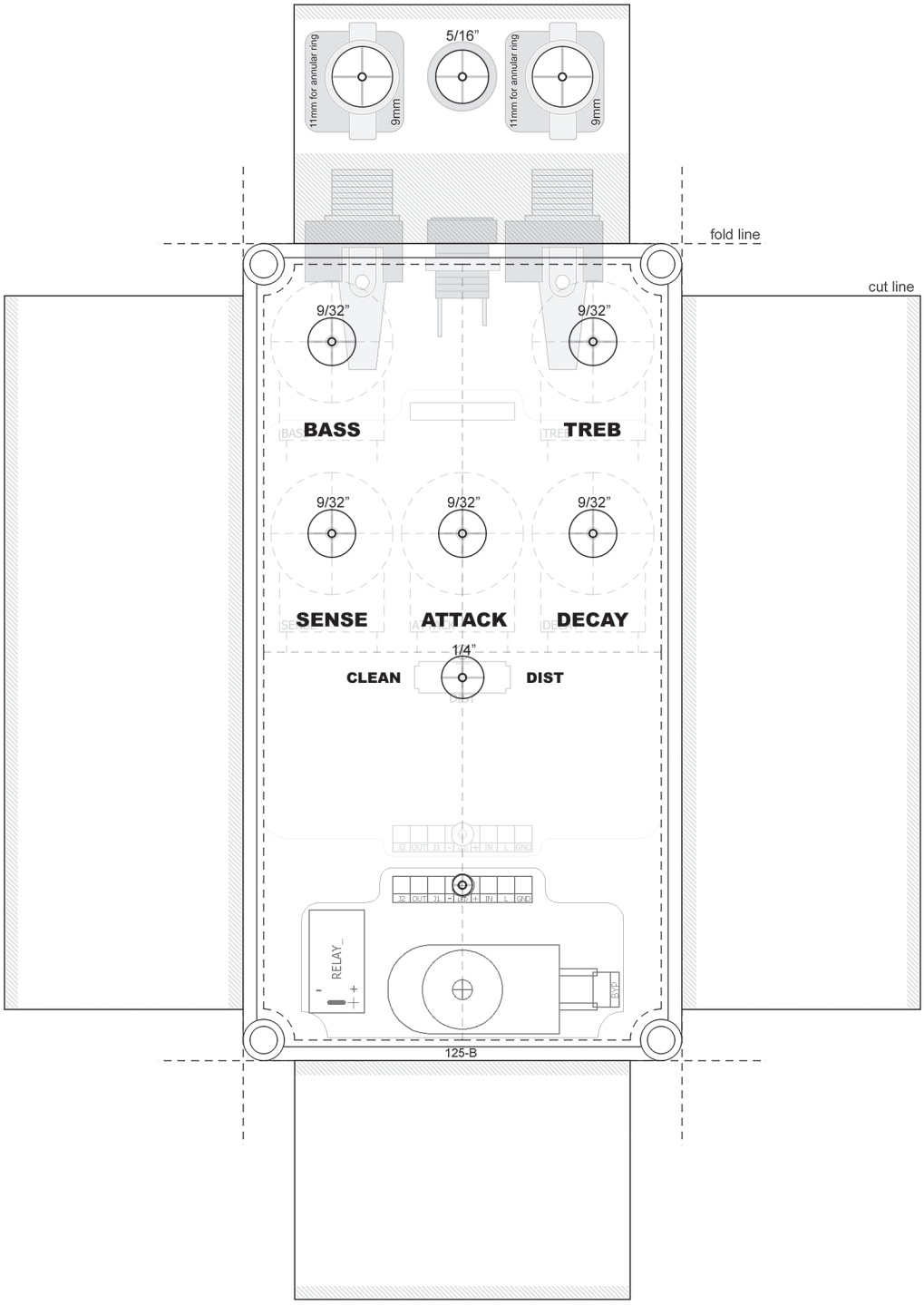
The LED is soldered directly to the PCB. You should do this as a “last step” after the PCB is mounted to your enclosure.

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



With 3PDT bypass. LED soldered directly to the Promenade PCB.

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

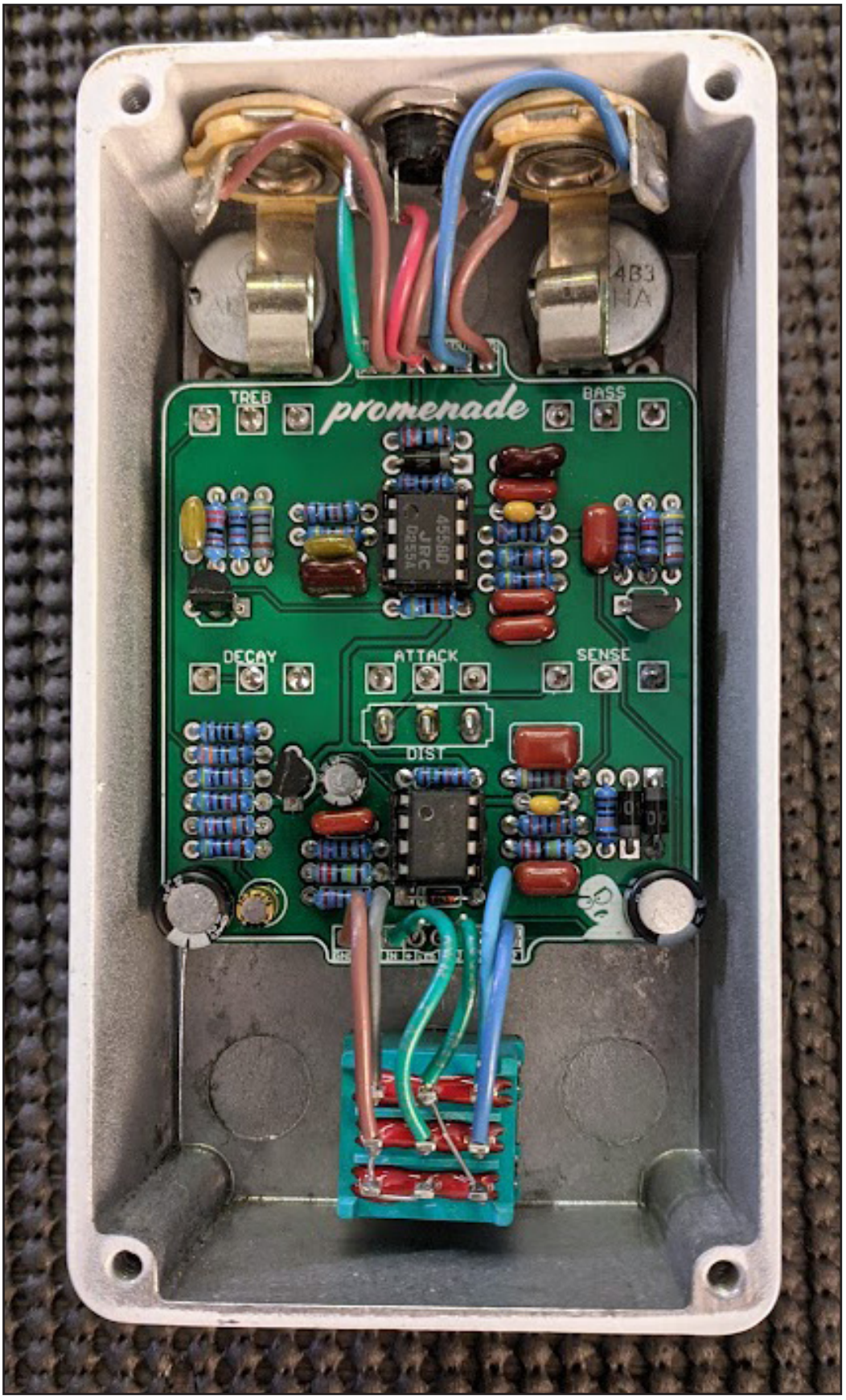


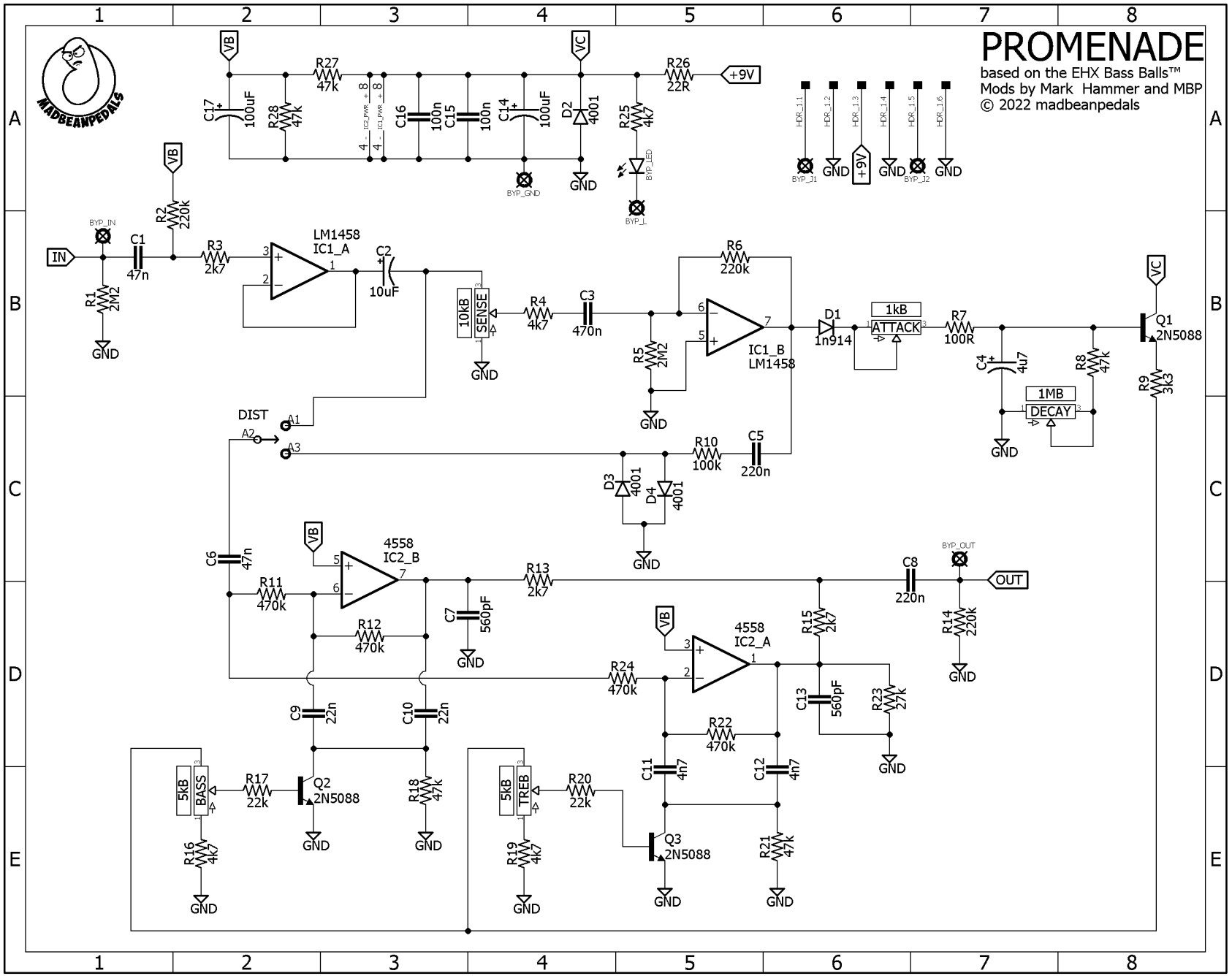
With Softie3 bypass. LED soldered to the Softie3 PCB.
NOTE: You can move the footswitch location further up if you prefer.

IC1	LM1458
1	4.69
2	4.69
3	4.59
4	0
5	0
6	1.89
7	2
8	9.4
IC2	**4558**
1	4.69
2	4.7
3	4.69
4	0
5	4.69
6	4.69
7	4.68
8	9.4

Q1	2n5088
C	9.4
B	1.71
E	1.14
Q2	**2n5088**
C	4mV
B	425mV
E	0
Q3	**2n5088**
C	4mV
B	475mV
E	0

- 9.42vDC One Spot
- Current Draw: 4mA
- Testing Conditions: All knobs about 1/2 up


TREB
promenade
BASS
DECAY
ATTACK
SENSE
DIST


PROMENADE
based on the EHX Bass Balls™
Mods by Mark Hammer and MBP
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MADBEANPEDALS
VB
VC
+9V
GND
R27 47k
R26 22R
C17 100uF
R28 47k
C16 100n
C15 100n
C14 100uF
D2 4001
R25 4k7
BYP_LED
BYP_GND
BYP_J1
BYP_J2
HDR_1:1
HDR_1:2
HDR_1:3
HDR_1:4
HDR_1:5
HDR_1:6
BYP_IN
IN
C1 47n
R1 2M2
R2 220k
R3 2k7
LM1458
IC1_A
C2 10uF
10kB
SENSE
R4 4k7
C3 470n
R6 220k
R5 2M2
IC1_B
LM1458
D1 1n914
1kB
ATTACK
R7 100R
C4 4u7
1MB
DECAY
R8 47k
Q1 2N5088
R9 3k3
DIST
A1
A2
A3
R10 100k
C5 220n
D3 4001
D4 4001
C6 47n
4558
IC2_B
R11 470k
R12 470k
C7 560pF
R13 2k7
C8 220n
BYP_OUT
OUT
4558
IC2_A
R15 2k7
R14 220k
R24 470k
C13 560pF
R23 27k
R22 470k
C9 22n
C10 22n
C11 4n7
C12 4n7
5kB
BASS
R17 22k
Q2 2N5088
R18 47k
R16 4k7
5kB
TREB
R20 22k
Q3 2N5088
R19 4k7
R21 47k