

Cosmopolitan

FX Type: **FUZZ/OVERDRIVE**

Build Level: Beginner

Based On: Skreddy® Screwdriver™

Last Updated: February 14, 2025 6:15 PM

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Overview

The 2025 version of the **Cosmopolitan** has no circuit changes. The layout has been redesigned to fit the Standard Series of 1590B projects.

The circuit combines a mosfet boost on the front end, followed by fuzz style circuit which mixes NPN silicon and germanium transistors. A very cool combo indeed. It offers anywhere from smooth/creamy overdrive with excellent touch sensitivity to squared up fuzz. A large part of the fun is in dialing in the interactive controls. The Screwdriver™ has been offered as both three knob and five knob versions. The Cosmopolitan corresponds to the five knob one.

One important note: it may be hard to source the AC127 NPN germanium. [smallbear does have one](#) that is a little out of spec for this project but may work okay. Other NPN germaniums may work as subs. See Notes for the spec.

Controls

BRIL: Brilliance is a low pass filter tone control.

GAIN: The gain control is really just a fuzz amount control but less prone to the woofiness you get at lower settings like in a traditional fuzz.

SHARP: Controls how much bass is sent from the pre-amp stage to the fuzz circuit. CCW: lots of subs and pretty wooly sounding. CW: it cleans up, reduces gain and takes out most of the low end.

VOL: Effect output level.

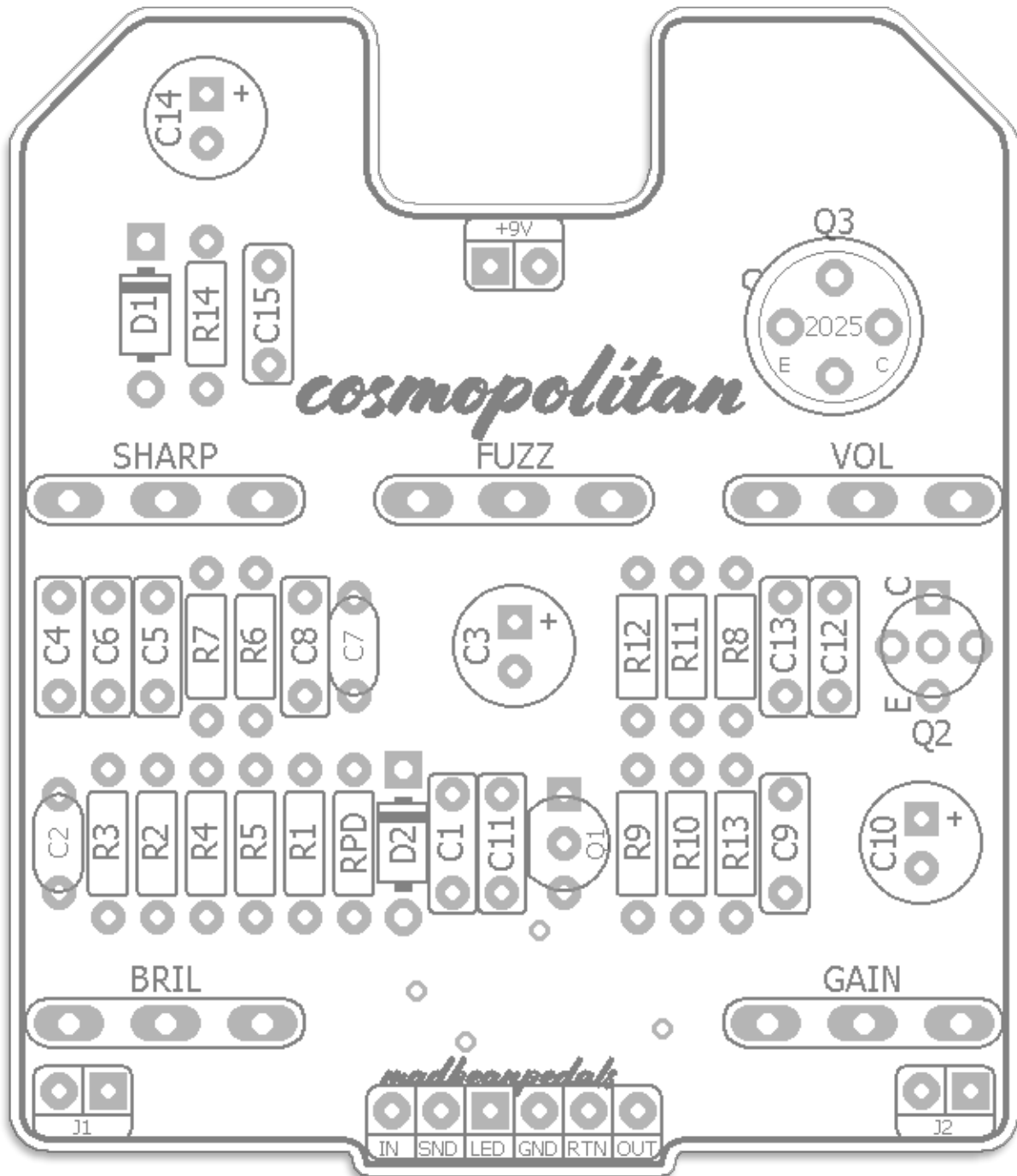
FUZZ: Sets the gain amount of the mosfet pre-amp stage. This is a “crackle ok” type control - you may hear some scratchiness when turned. That’s normal. When turned CW it will slam the front end of the fuzz circuit. I advise re-labeling this to “Pre” (as in pre-gain) to avoid confusion with the actual Gain control.

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

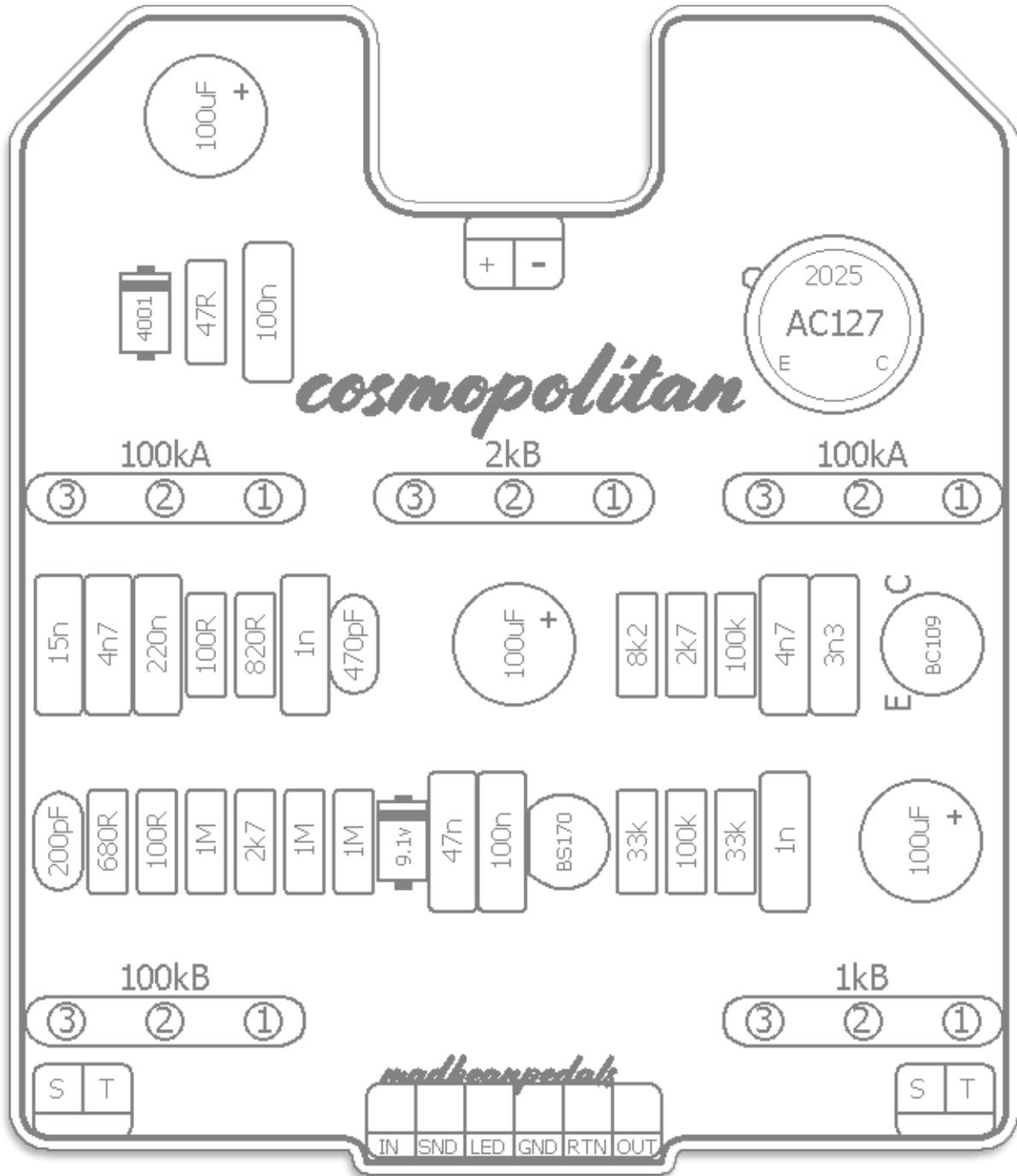
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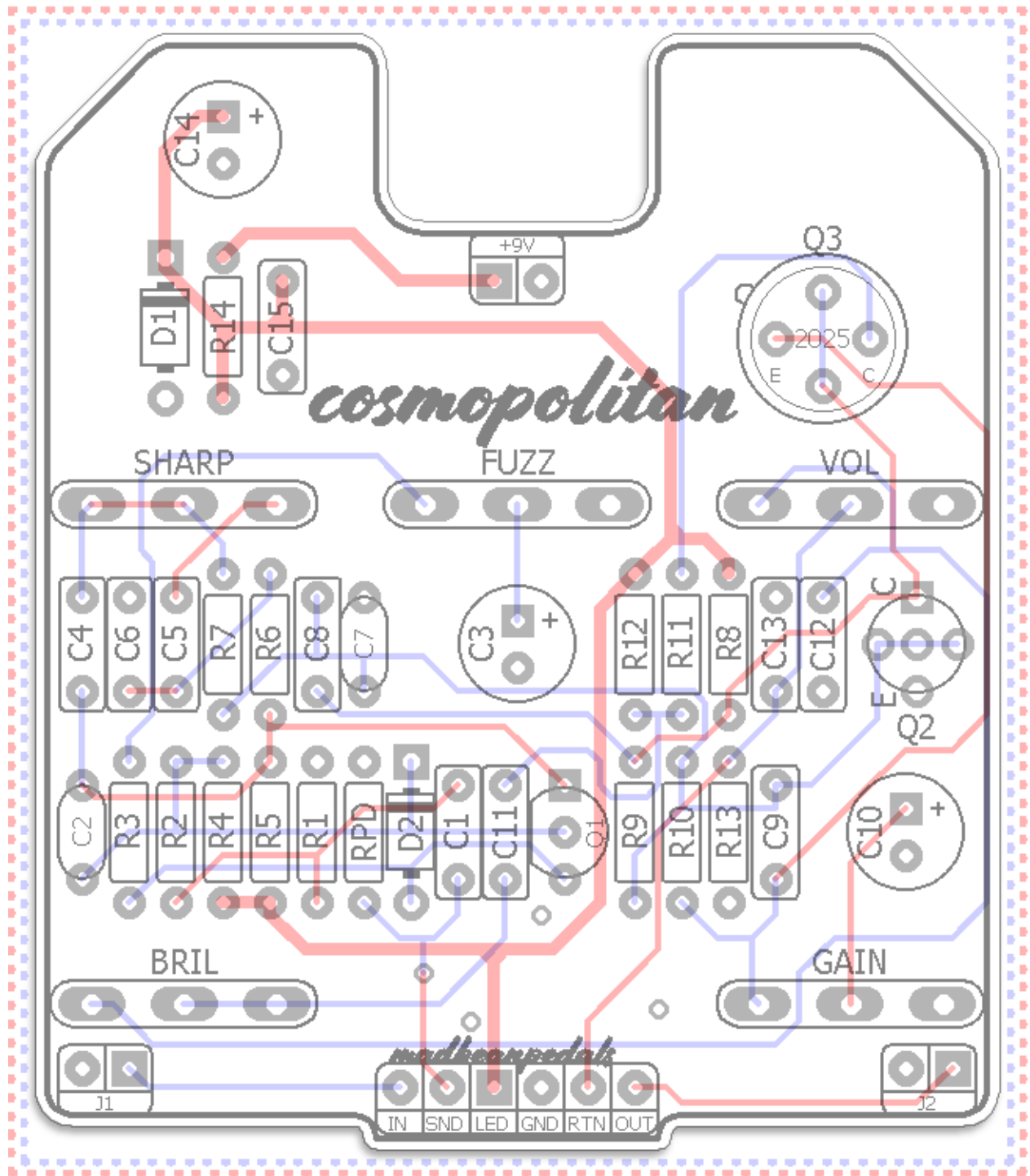
Parts Layout



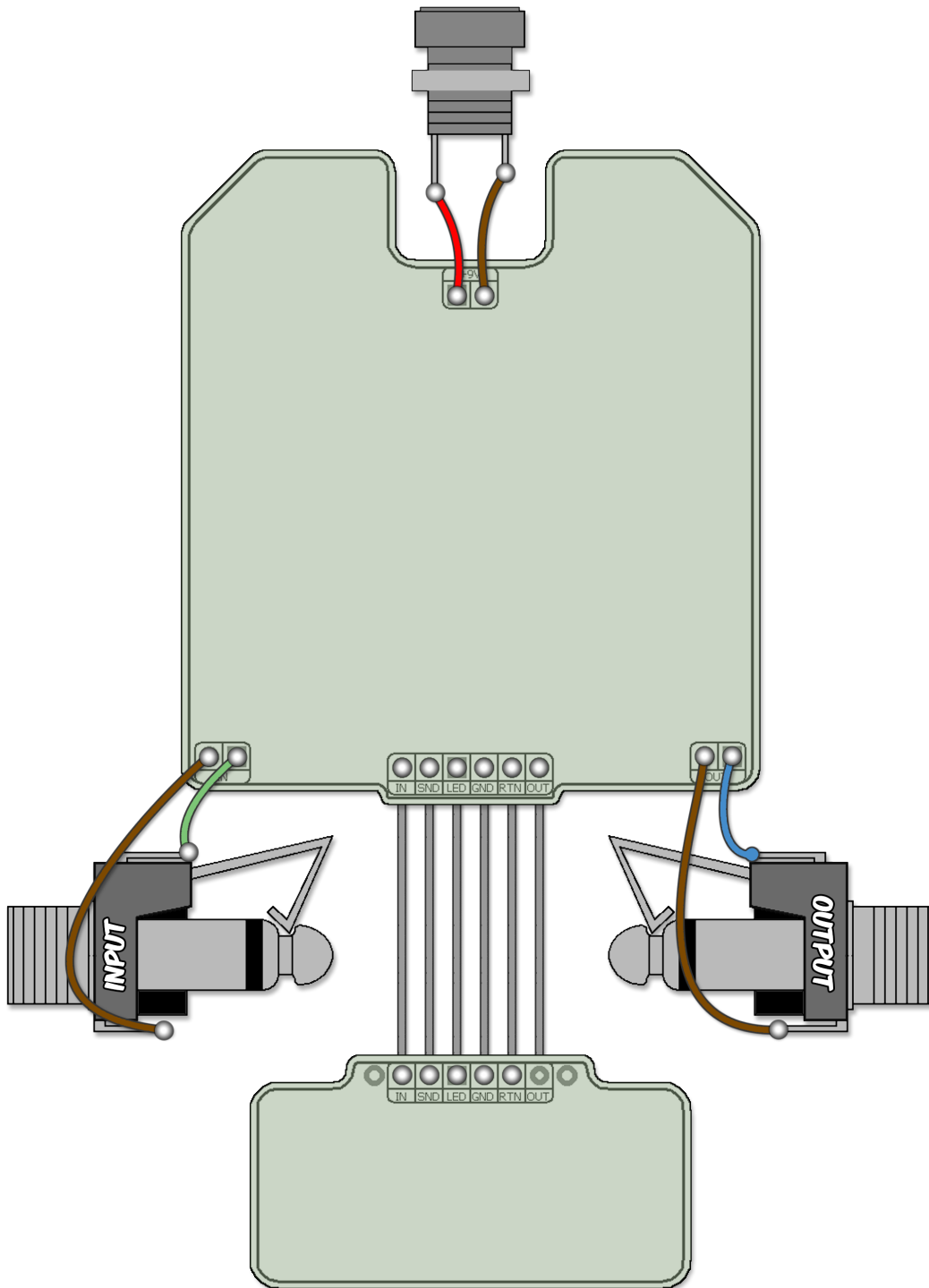
Component Values



Trace Layout



Wiring



Unless otherwise noted, all Standard Series projects have the same wiring regardless of which 3PDT bypass board is used. A 6-pin, 2" ribbon cable is recommended for soldering the connections between the two PCBs.

B.O.M.

Resistors		Caps		Diodes	
R1	1M	C1	47n	D1	1N4001
R2	100R	C2	200pF	D2	9.1v Zener
R3	680R	C3	100uF	Transistors	
R4	1M	C4	15n	Q1	BS170
R5	2k7	C5	220n	Q2	BC109
R6	820R	C6	4n7	Q3	AC127
R7	100R	C7	470pF	Pots	
R8	100k	C8	1n	GAIN	1kB
R9	33k	C9	1n	FUZZ	2kB
R10	100k	C10	100uF	SHARP	100kA
R11	2k7	C11	100n	VOL	100kA
R12	8k2	C12	3n3	BRIL	100kB
R13	33k	C13	4n7		
R14	47R	C14	100uF		
R15	4k7	C15	100n		
RPD	1M				

Shopping List

Values	QTY	Type	Rating
47R	1	Metal / Carbon Film	1/4W
100R	2	Metal / Carbon Film	1/4W
680R	1	Metal / Carbon Film	1/4W
820R	1	Metal / Carbon Film	1/4W
2k7	2	Metal / Carbon Film	1/4W
4k7	1	Metal / Carbon Film	1/4W
8k2	1	Metal / Carbon Film	1/4W
33k	2	Metal / Carbon Film	1/4W
100k	2	Metal / Carbon Film	1/4W
1M	3	Metal / Carbon Film	1/4W
200pF	1	Ceramic / MLCC	16v min.
470pF	1	Ceramic / MLCC	16v min.
1n	2	Film	16v min.
3n3	1	Film	16v min.
4n7	2	Film	16v min.
15n	1	Film	16v min.
47n	1	Film	16v min.
100n	2	Film	16v min.
220n	1	Film	16v min.
100uF	3	Electrolytic	16v min.
1N4001	1		
9.1v	1	1W Zener	
BS170	1		
BC109	1		
AC127	1		
1kB	1	PCB Right Angle	16mm
2kB	1	PCB Right Angle	16mm
100kA	2	PCB Right Angle	16mm
100kB	1	PCB Right Angle	16mm

Additional Hardware

- (1) 1590B enclosure
- (2) Lumberg 1/4" Compact mono jacks
- (1) Slim 2.1mm DC jack
- (1) Standard 3PDT footswitch
- (1) 5mm LED

Build Notes

- The input pulldown resistor (RPD) is optional. It is not used in the stock circuit. You only need to use it if you have a noticeable “pop” when using a 3PDT bypass switch. Otherwise I advise leaving it off.
- For the BC109C, the small tab on the transistor casing indicates the emitter. Make sure you put the transistor in the right way!
- The flexibility of the Cosmopolitan is in the control interaction. The Fuzz (PRE), Sharp and Gain controls are interdependent and different settings on each can produce a wide variety of tones from creamy OD to a pretty squared up fuzz.
- We are now in a time where supply of many parts has dwindled dramatically and especially for old technology. If you cannot get the AC127, there may be other NPN germaniums that will work. For subs, just stick to the typical low leakage devices and under 100 hFE, if possible. Socketing the transistor will give you the option to test out alternatives, should we see greater supply in the future.
- One other possibility is to just *sub another NPN silicon transistor in place of the AC127*. Another BC109C, perhaps. It may require slight adjustments on R11/R12 to achieve the same bias but there's no reason for it not to work when done properly. Will it sound the same? Probably not. But, that doesn't mean it will sound bad, either. Caveat: I have not tried this.

Circuit Voltages

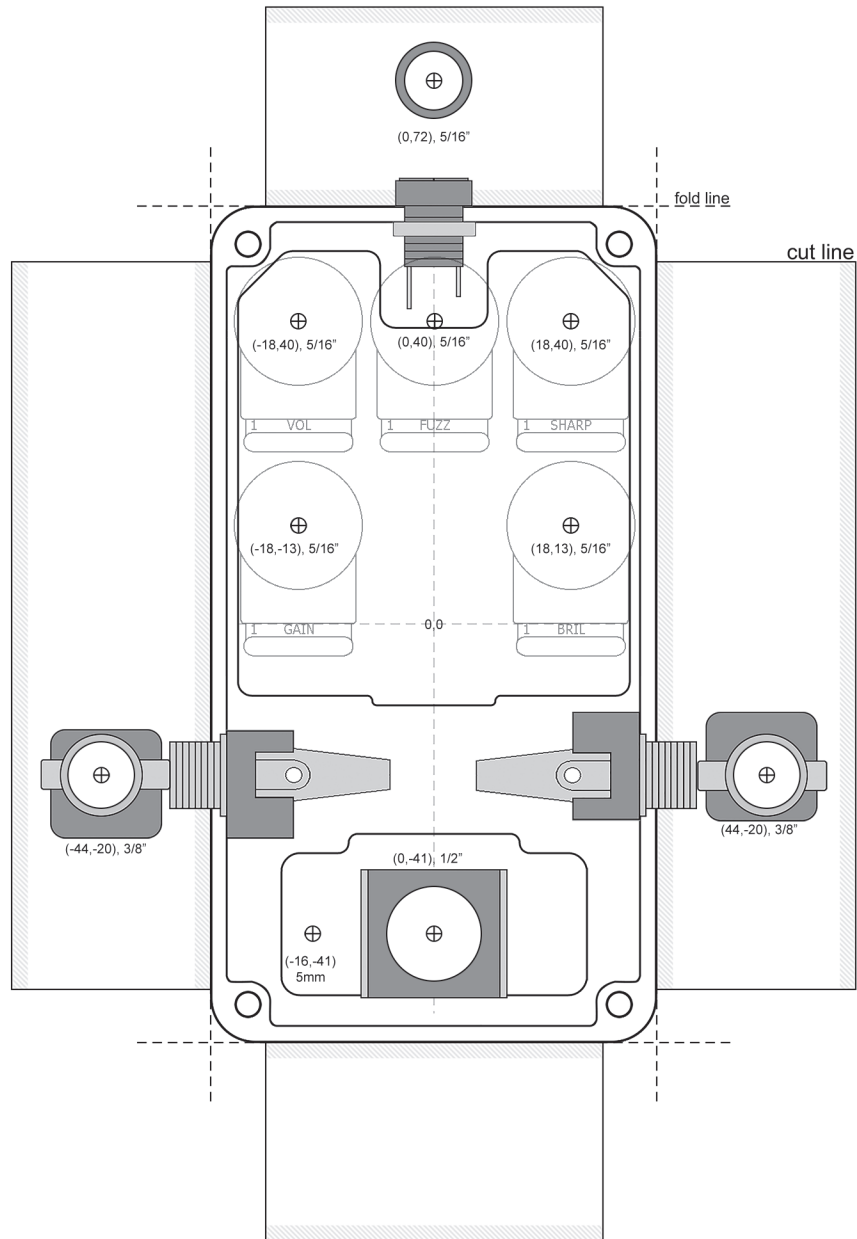
Q1	BS170
D	7.02
S	4.51
G	2.46
Q1	BC109C
C	595mV
B	570mV
E	0
Q1	AC127
C	3.997
B	594mV
E	516mV

9.52vDC One Spot supply
Current Draw: ~1mA

1590B Drill Template

Coordinates are denoted in (X,Y), drill size format starting from the center (0,0) location of the enclosure.

[Tayda drill template for the Cosmopolitan](#)

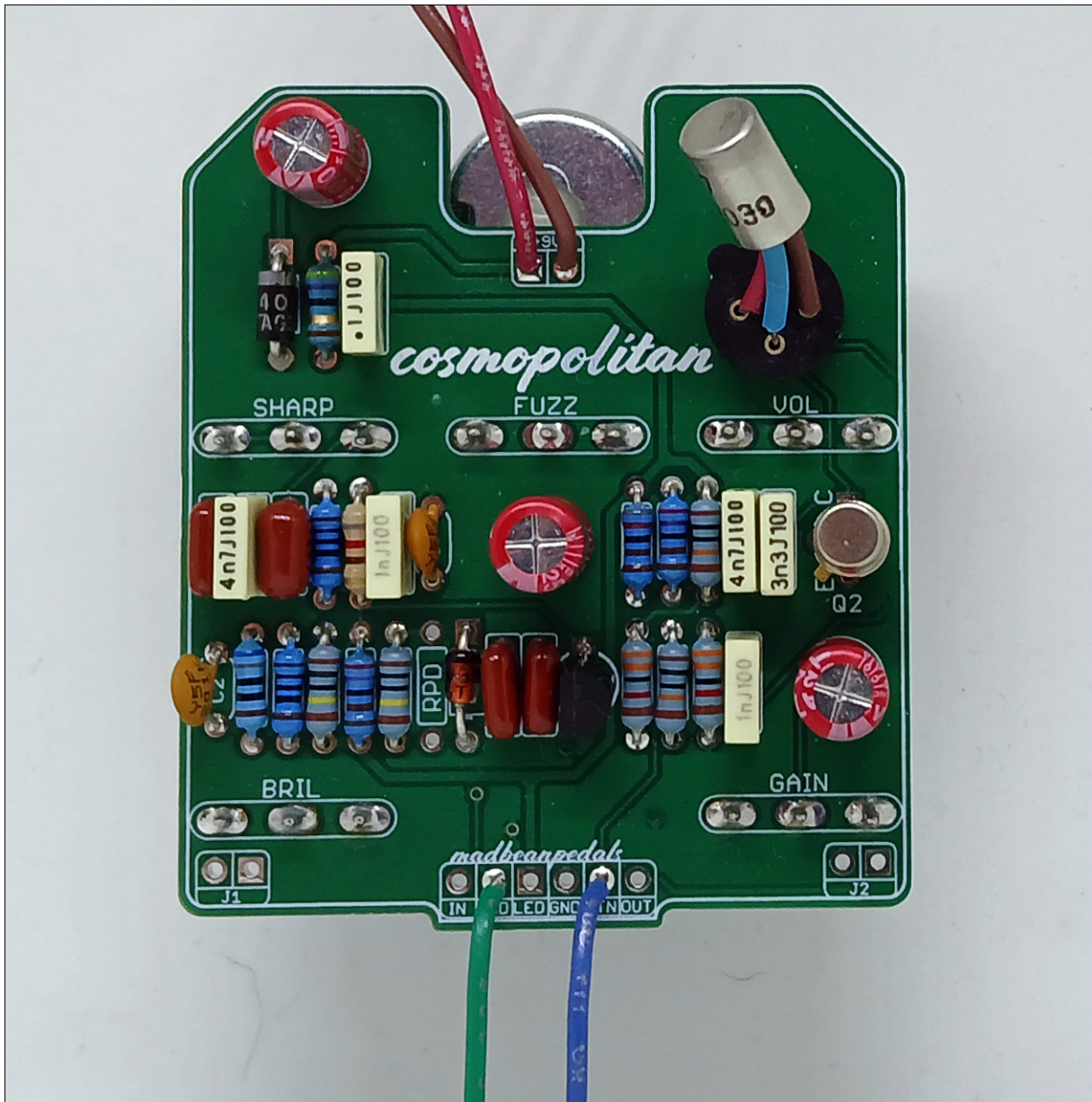


Hardware

1590B enclosure
Lumberg 1/4" Compact mono jacks
Slim 2.1mm DC jack
Standard 3PDT footswitch
5mm LED

NOTE: Different 1/4" and DC jack styles may require different sized drill holes.

Build Pic



Schematic

