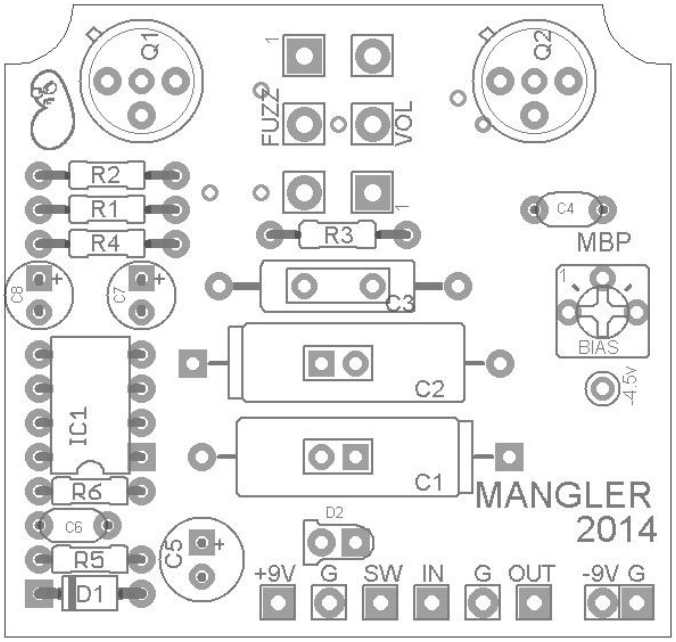
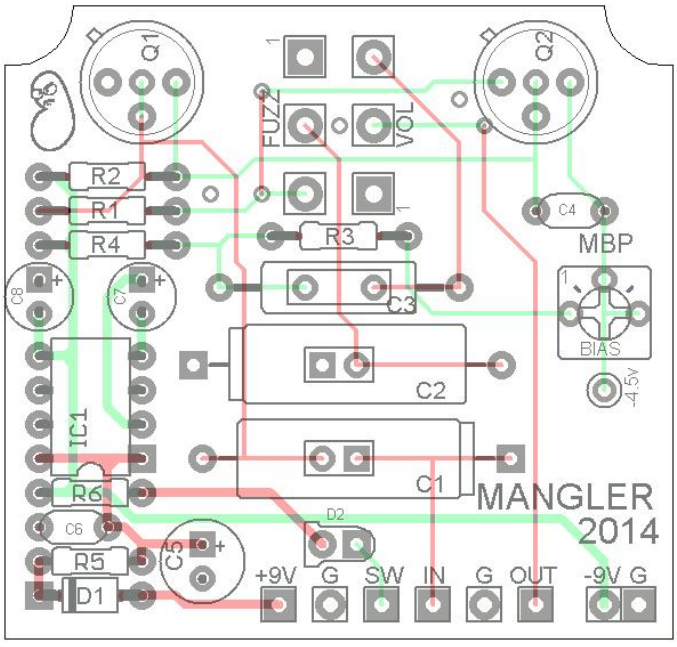
MANGLER

2014 edition

FX TYPE: FUZZ

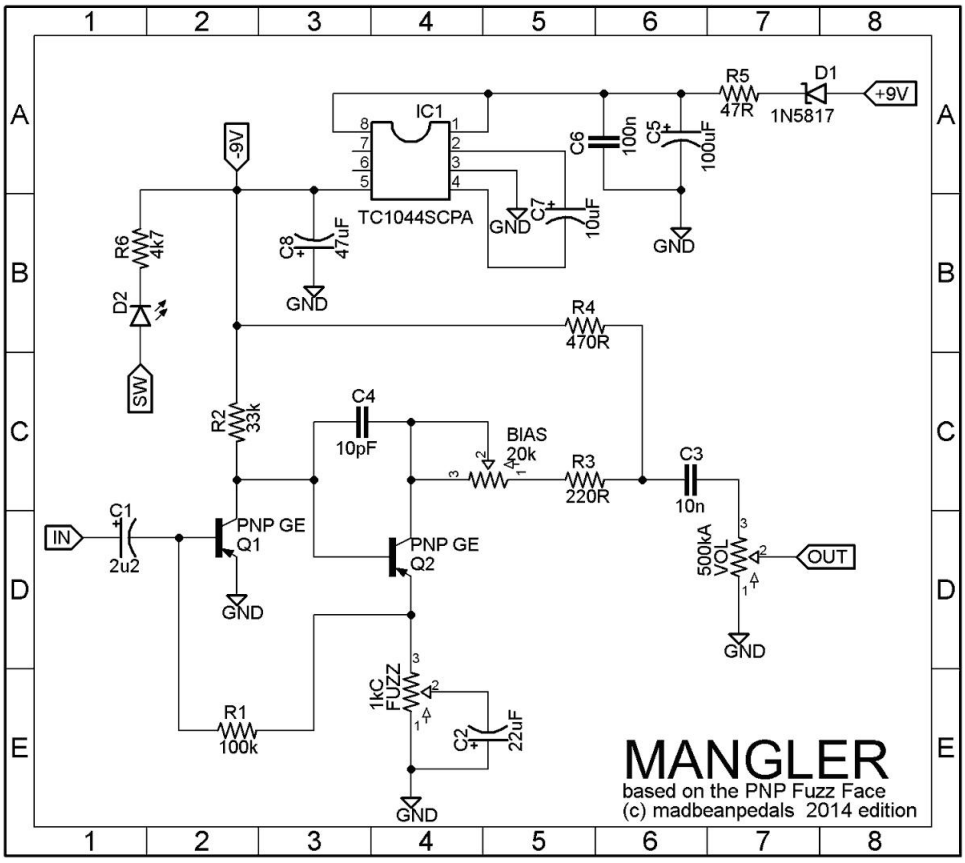
1.95" W x 1.85"H





Resistors		Caps		Diodes	
R1	100k	C1	2u2	D1	1N5817
R2	33k	C2	22uF	D2	LED
R3	220R	C3	10n	Transistors	
R4	470R	C4	10pF	Q1, Q2	PNP GE
R5	47R	C5	100uF	IC	
R6	4k7	C6	100n	IC1	TC1044SCPA
		C7	10uF	Trimpot	
		C8	47uF	BIAS	20k
				Pots	
				FUZZ	1kC
				VOL	500kA

Value	QTY	Type	Rating
47R	1	Carbon or Metal Film	1/4W
220R	1	Carbon Comp or Film	1/4W
470R	1	Carbon Comp or Film	1/4W
4k7	1	Carbon or Metal Film	1/4W
33k	1	Carbon Comp or Film	1/4W
100k	1	Carbon Comp or Film	1/4W
10pF	1	Ceramic	16v or more
10n	1	Film	16v or more
100n	1	Film	16v or more
2u2	1	Electrolytic	16v or more
22uF	1	Electrolytic	16v or more
47uF	1	Electrolytic	16v or more
100uF	1	Electrolytic	16v or more
1N5817	1		
LED	1	3mm or 5mm	
PNP GE	2	PNP Germanium	
TC1044SCPA	1	or, MAX1044CPA	
20k	1	Bourns 2262	
1kC	1	16mm PCB Mount	
500kA	1	16mm PCB Mount	



Either you love fuzz, or hate fuzz. There is no in-between. Fuzz for life! That said, the Mangler is ½ classic Fuzz Face and 2/3rd other stuff. I double-checked my math on that and it's solid.

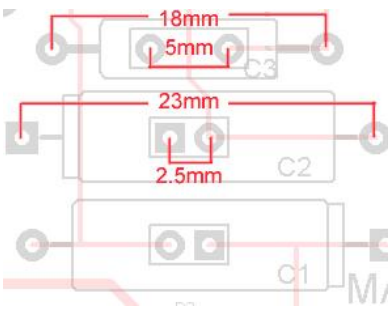
The 2014 edition of the **Mangler** now includes a voltage inverter on the PCB. You can use your standard center-tip negative 9v power supply to power this positive ground effect without having to use a Road Rage board or other trickery. This takes out all the guess work for newer builders who have not dealt with positive ground effects before: everything is hooked up and wired like a normal negative ground effect!

If you have never purchased PNP germanium transistors before, you can find several variations and offerings at www.smallbearelec.com. These transistors are tested for gain and leakage beforehand. Smallbear also provides resistor values to properly bias the pair of transistors you purchase. Please feel free to use those values instead of the ones listed in the BOM of the Mangler. The tabs on the silk screen of the Mangler PCB indicated the emitter of **Q1** and **Q2**.

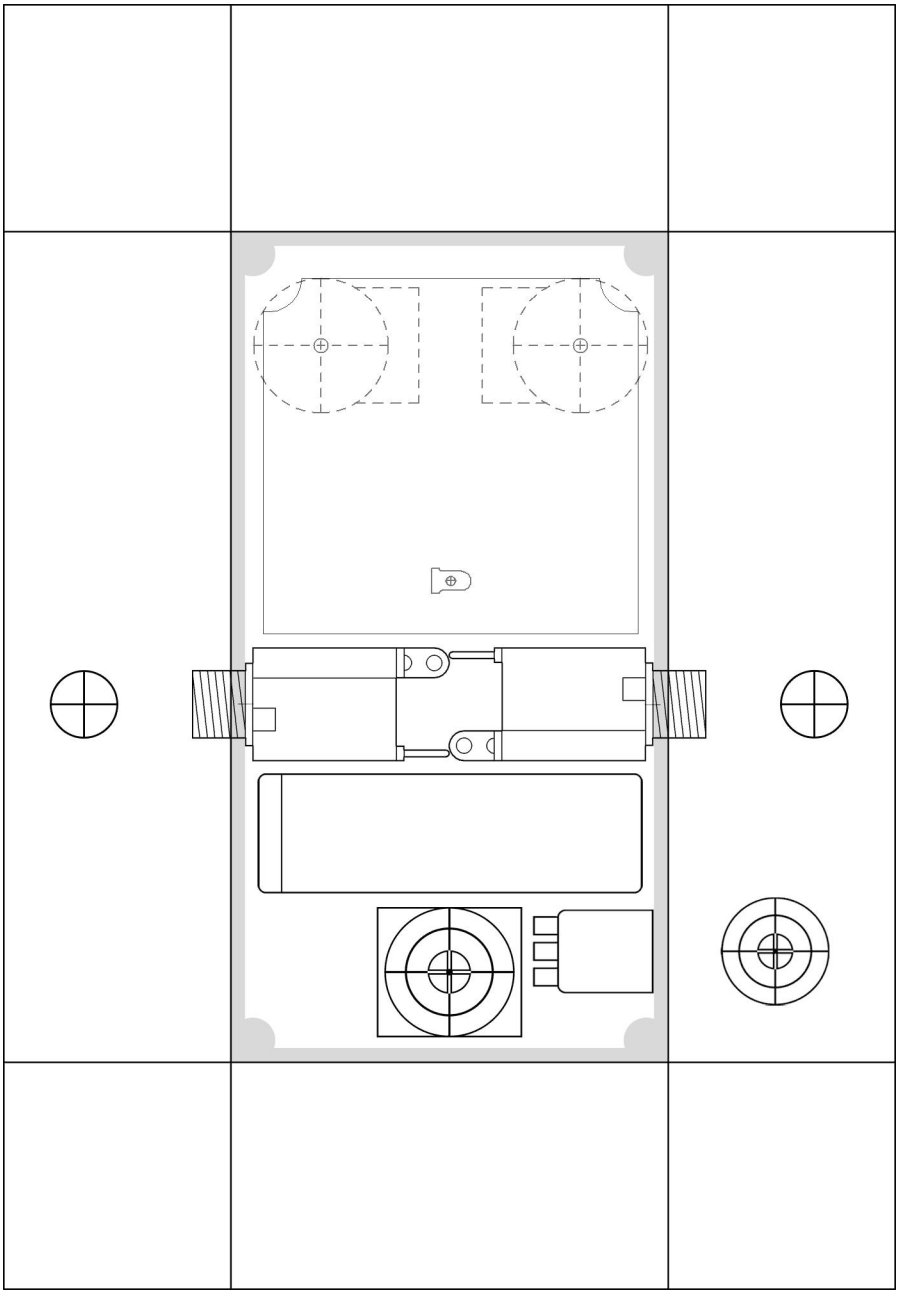
To bias the Mangler, connect the black lead from your DMM to the test point pad next to the **BIAS** trimmer on the PCB and the red lead to ground. Adjust the trimmer until it reads approximately -4.5v.

The Mangler does not have a pulldown resistor. If you wish to add a pulldown, place it between the effect input and one of the grounded lugs on your 3PDT (where the orange and red wires connect on the wiring diagram below). Most likely this will not be necessary.

C1, C2 and C3 can be either axial or radial caps. The radial spacing is standard (5mm for C3, 2.5mm for C1 and C2). The axial spacing is 18mm for C3 and 23mm for C1 and C2. It doesn't matter with type you use…the axial caps are for pure mojo.



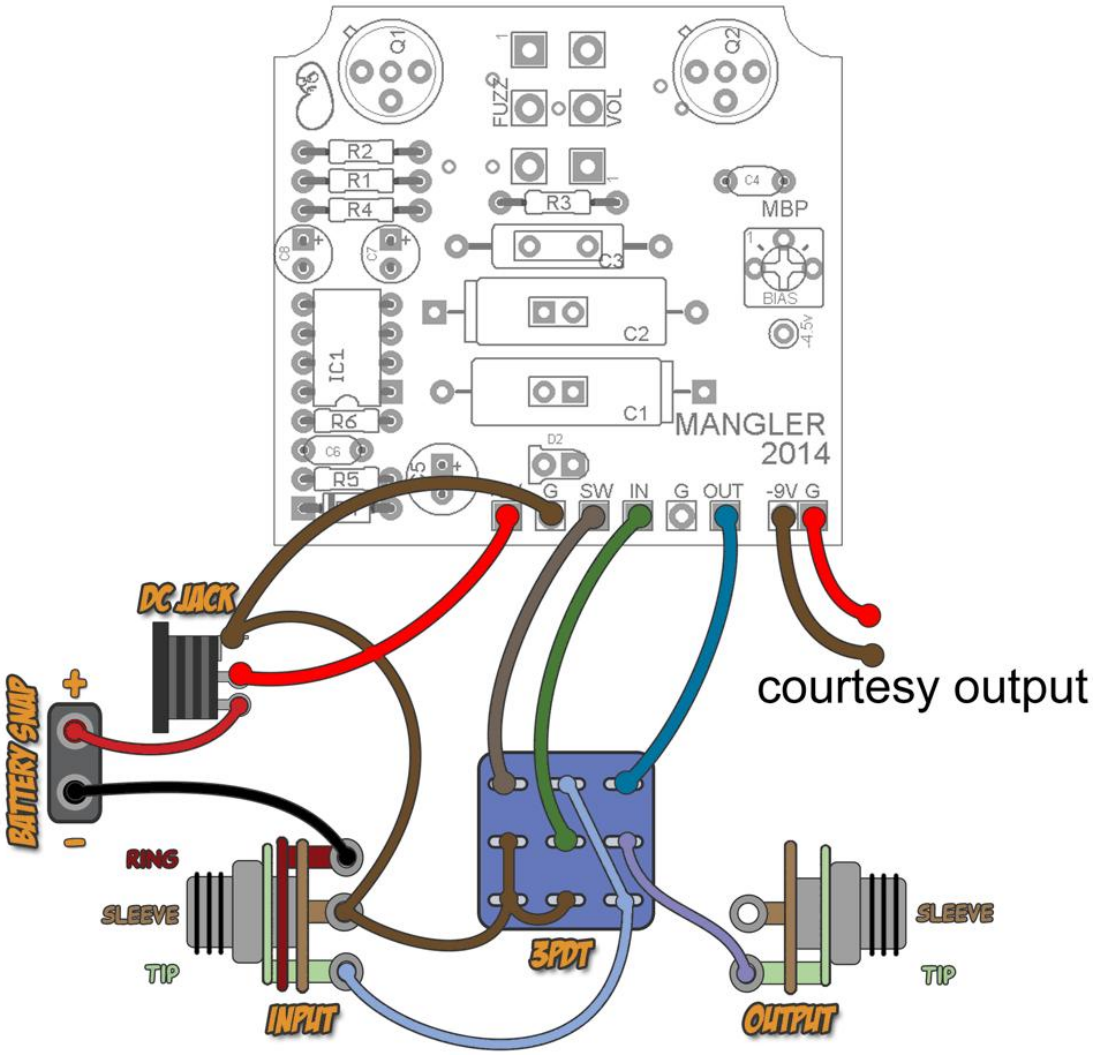
4.64” W x 6.68” H
1590b Enclosure



Download the Photoshop template for this guide here:
http://www.madbeanpedals.com/projects/Mangler/docs/Mangler2014_Drill.zip

Download the PREVIOUS version of the Mangler documentation:
http://www.madbeanpedals.com/projects/Mangler/docs/Mangler.zip

Wiring Diagram



There is a courtesy output on the lower right side of the PCB. If you are building two PNP type circuits in one enclosure, such as the Mangler with another PNP fuzz or boost, you can use the -9v and ground pads to power the second positive ground PCB.