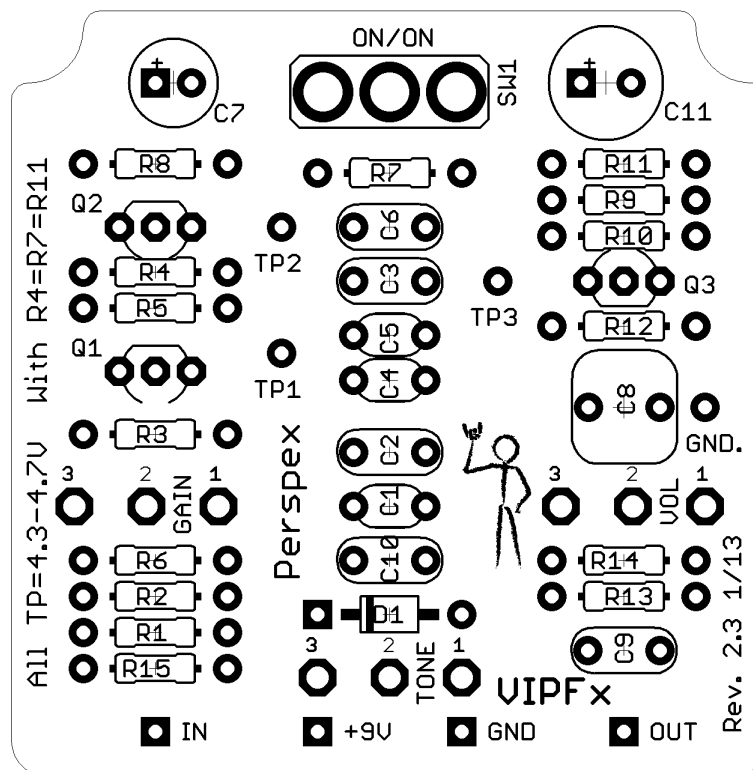


Perspex

Overdrive

REVISED BUILD DOC V2

The Perspex (a clear acrylic plastic) is an overdrive pedal based on an overdrive that was reverse engineered and posted at Freestompboxes.com. All credit for that work goes entirely to the outstanding DIY community at Freestompboxes.com.



Parts Guide

Resistors: 1/4 watt metal film

Film Caps: The board is laid out for Panasonic ECQ-V caps, but any standard 5mm caps will fit.

Eletrolytic Caps: 16v or better

pF Caps: Ceramic or other 5mm caps.

Pots: Layout is for Alpha PCB mount pots, RV16AF-41-15R1-Value, but any pots will work.

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BOM

Resistors		Caps		Diode	
R1	2M2	C1	47p	D1	1N4001
R2	10k	C2	22n		
R3	1M	C3	2n2	Switch	
R4	8k2-22k	C4	220p	SPDT	On/On
R5	1k	C5	470p		
R6	1k	C6	22n	Transistors	
R7	8k2-22k	C7	47u	Q1-Q3	J201
R8	1k	C8	1u		
R9	10k	C9	2n2	Pots	
R10	100k	C10	10n	VOL	100kA
R11	8k2-22k	C11	470u	GAIN	500kA
R12	1k			TONE	25kB
R13	15k				
R14	15k				
R15	10R				

Note: The value for R3, R7 and R11 must be determined when biasing the JFET's

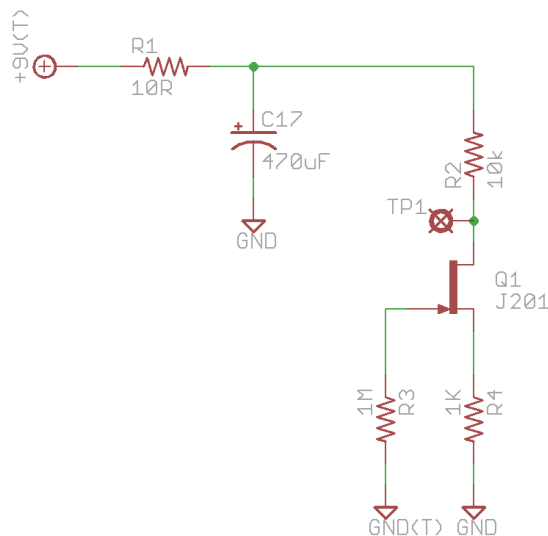
Notes**Transistors**

The success and ultimate sound of this project is entirely based on the proper selection and biasing of the J201 JFET's in positions Q1 through Q3. There are different strategies for matching and biasing and while I don't have much of a real opinion on the topic, something still had to be done to make this thing work. I took what I learned on the forums and came up with what I have shown below. If you know or use a better way, feel free to use it, but this worked very well for me. The goal here is to find 3 J201's that are pretty much the same so that they can be biased with the same value resistor.

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The procedure I used is as follows:

- 1) Locate a pile of J201's. I bought a pack of 100 Fairchild's on eBay and they worked out fine.
- 2) Breadboard the following test circuit:

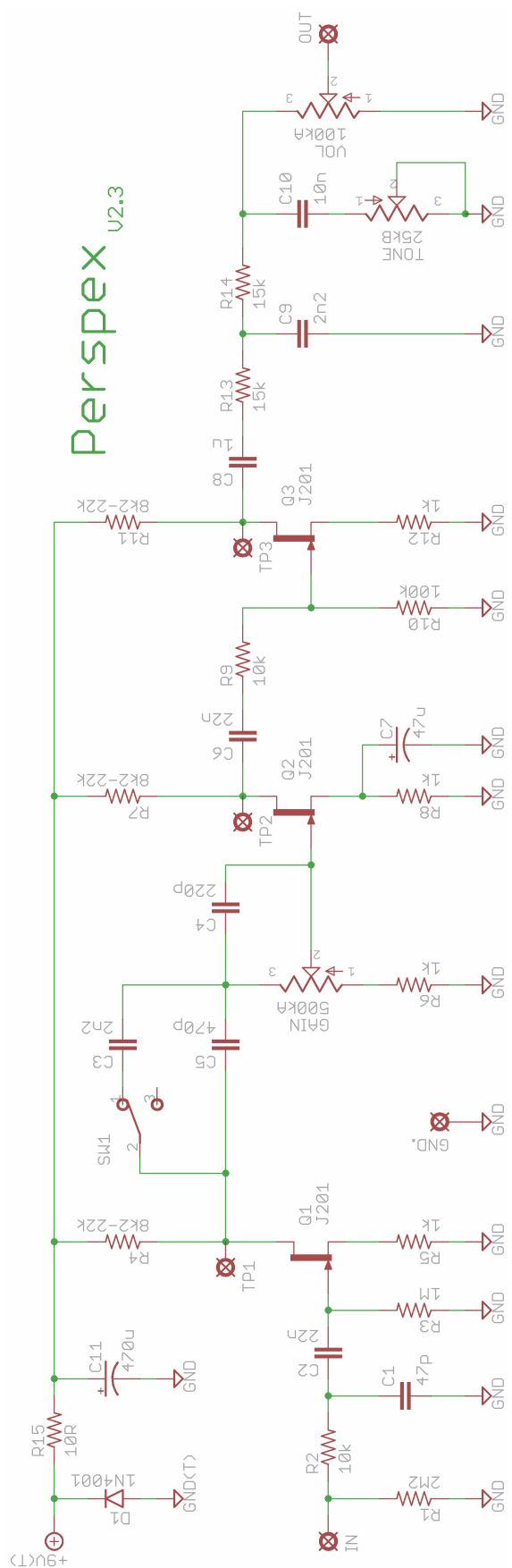


Test Circuit 1

- 3) Connect your DMM to TP1 and ground.
- 4) Start testing each J201 and record the TP1 voltage for each one. I used an egg carton and first did a rough sort in 0.25V increments. The actual voltage you see at this stage is unimportant. It won't be 4.5V and we don't care. This is just the sorting stage.
- 5) After the rough sort, find the pile that has the most J201's.
- 6) From that pile, all should be within 0.25V of each other. Repeat the sort on that smaller population, but this time try matching them as closely as possible. From the group I had I was able to find sets that matched within 0.1V without too much effort.
- 7) You will need 3 that are well matched.
- 8) From your set of 3, select 1 J201 and put it back into Test Circuit 1. Remove R2 and sub in other values until the voltage at TP1 is 4.5V to 5.0V. The idea is to aim for 4.5V.
- 9) When you are satisfied with the voltage try the other J201's you matched and make sure the voltage at TP1 is the same or similar for all members of the set.
- 10) Your J201's should be matched well enough so that regardless of which one is placed in Test Circuit 1, the voltage at TP1 remains pretty much the same with the SAME value for R2.
- 11) Use those 3 J201's for Q1-Q3, and the final value you found for R2 in the test circuit for R3, R7 and R11 on the board.

For my build Q1-Q3 all matched within 0.1V when in Test Circuit 1.

Schematic

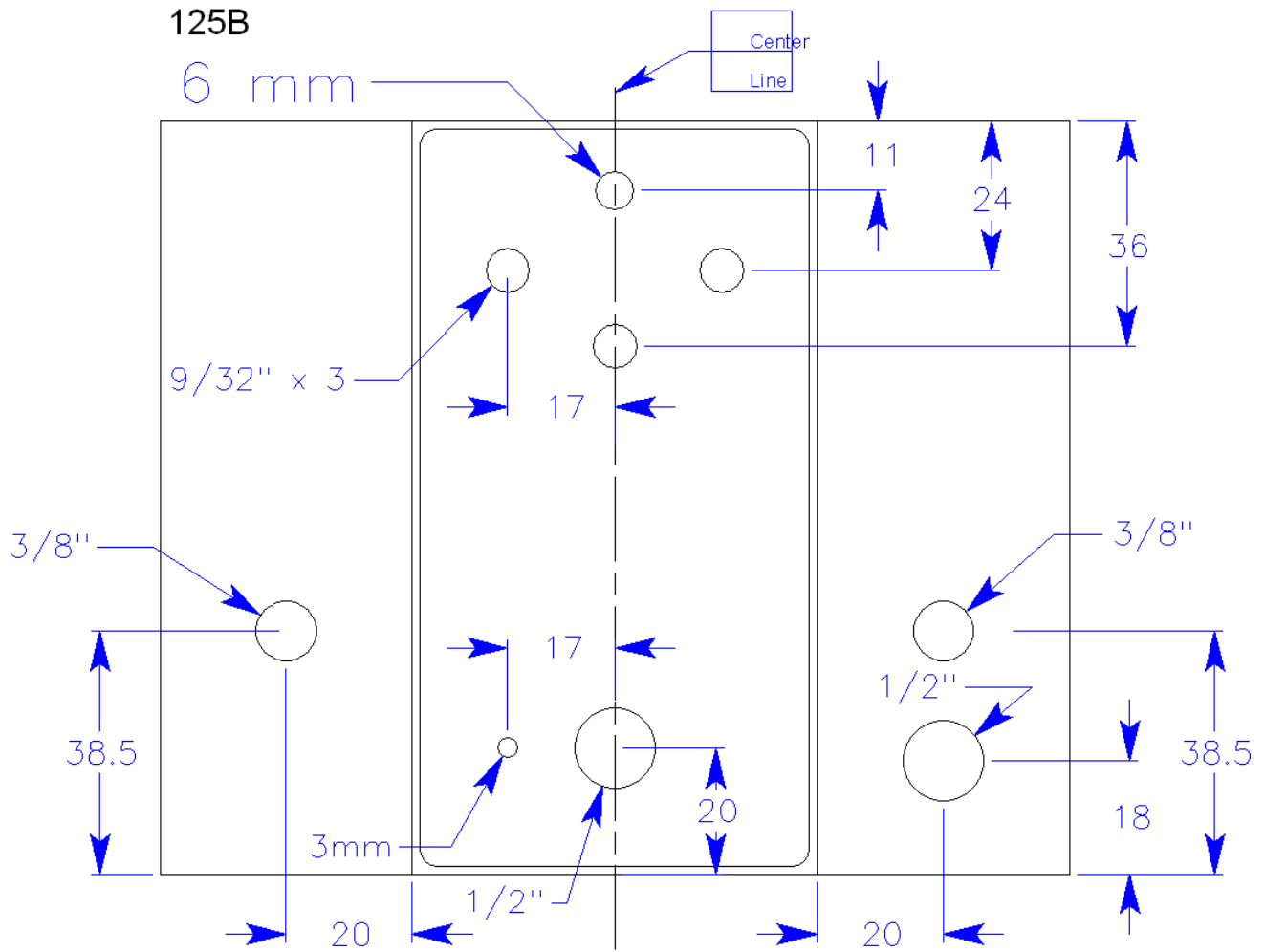


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Drill Template

This is the drill template I used to order my box from Pedal Parts Plus. The box I specified was their standard 125B, code 1400.



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