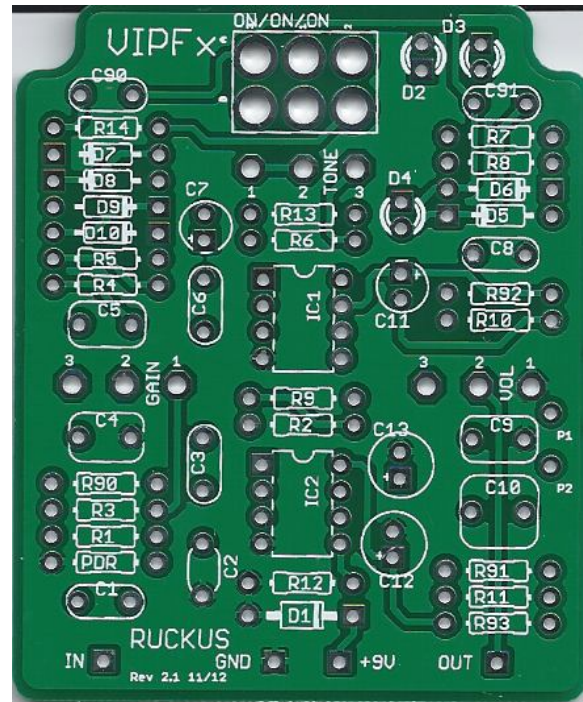
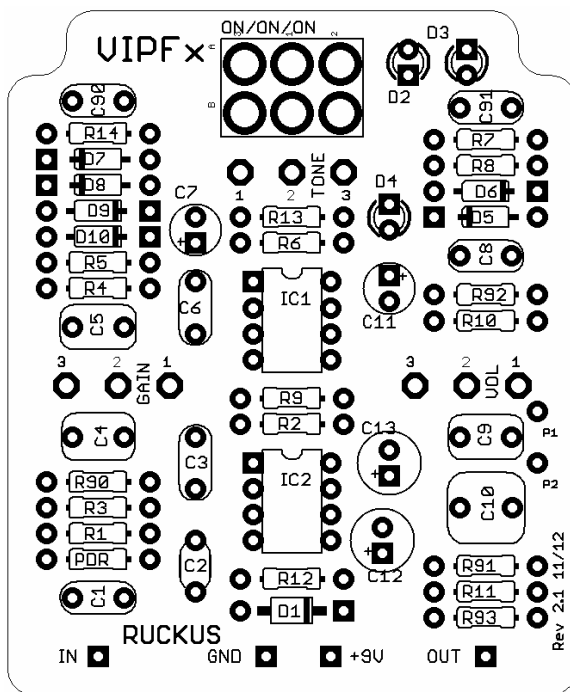


# RUCKUS

## DISTORTION

The Ruckus is a distortion pedal based on the Suhr Riot and heavily modified based on the work and suggestions of jymaze at Frestompboxes. That work is also based Madbean's work on the Uproar and the help and contributions he received from the Frestompboxes community. In short: I take no credit for the schematic, it's modification, or the work that went into reverse engineering the original circuit. That credit goes entirely to the DIY community at Frestompboxes. I did do the Eagle layout, so I guess I can take credit for that.



### 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.

Electrolytic 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		Diodes	
PDR	1M	C1	22n	D1	1N4001
R1	1k	C2	47p	D2	Red Red or
R2	470k	C3	100p	D3	1N4148
R3	1k	C4	220n	D4	Blue
R4	10k	C5	100n	D5-D6	1N4148
R5	1M	C6	470p / 200p	D7-D10	1N34a
R6	470R / 1k	C7	2u2		
R7	11k5 / 1k	C8	36n	<b>IC's</b>	
R8	8k25	C9	36n / 100n	IC1 & IC2	NJM4580D
R9	100k	C10	1u	<b>Switch</b>	
R10	100R	C11	10u	DPDT	On-On-On
R11	20k	C12	47u	<b>Pots</b>	
R12	20k	C13	47u	GAIN	100kB
R13	220R / Jumper	C90	22n	VOL	10kA
R14	470R / Jumper	C91	22n	TONE	10kC / 10kB
R90	10k / 22k				
R91	100k				
R92	180k - 330k				
R93	100R				

Note: Parts with slash or dash values are builders choice. Read below.

## Notes

### Jymaze Mods

Jymaze on Freestompboxes contributed a huge array of mods that were applied to the circuit by multiple people. For many of those people they said that the mods saved the pedal for them when they were considering scrapping their projects. I thought it might be a good idea to incorporate those mods here.

The biggest change was making the final op-amp inverting. I didn't build in any way to undo that change, so it's there to stay. The rest of the mods are detailed in the notes shown on the schematic and in the BOM and require that the builder decide whether or not to include the mod. To help with the choice, start reading here:

<http://www.freestompboxes.org/viewtopic.php?f=7&t=10133&start=200#p174401>

There also seems to be some debate about C8 and C9. The original values and the suggested changes by Jymaze are shown in the BOM and schematic. Madbean also has a different variation for the Uproar and recommends socketing those two caps. Sounds like good advice.

The rest of the suggested mods are included in the schematic shown below and in the multiple notes shown in the schematic. I opted to include all of the recommended mods in my own build and thought the result was outstanding. Still playing with the clipping section though.

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## Clipping Section

I couldn't decide which mods to the clipping section were worthy of inclusion without hearing them so I included all of the components and the builder can socket and build to taste.

Obviously you can and will do whatever you want for the diodes. And don't overlook the option to stand a diode on end in place of an LED if desired. I also included R13 and R14. Some say to include, some not. It's builders choice, but if you exclude, add the jumper.

C90 and C91 are also included in the clipping section and are also a builders choice option depending on what diodes you choose to use. If you choose to leave them off, do NOT jumper that position.

There are a lot of options for the clipping section and you can clearly tune it to whatever voice you desire. As long as you use the switch specified below, you will have 3 distinct voices to choose from.

## Switch

The switch for this project is a DPDT (On-On-On) type switch. The problem with this type of switch is that there are two different varieties that are both classified as On-On-On. They are not interchangeable and one specific variety must be used here.

The flavor I picked was the switch available at Smallbear in the following part number:

Switch - DPDT Toggle (On-On-On) Taiway 1MD6T1B1M1QE SB SKU: 0221C

The exact switch you use or where you get it doesn't matter, as long as it functions the same way and as shown in the image below. No other switch will provide the 3 positions to select the 3 different clipping sections shown in the schematic.



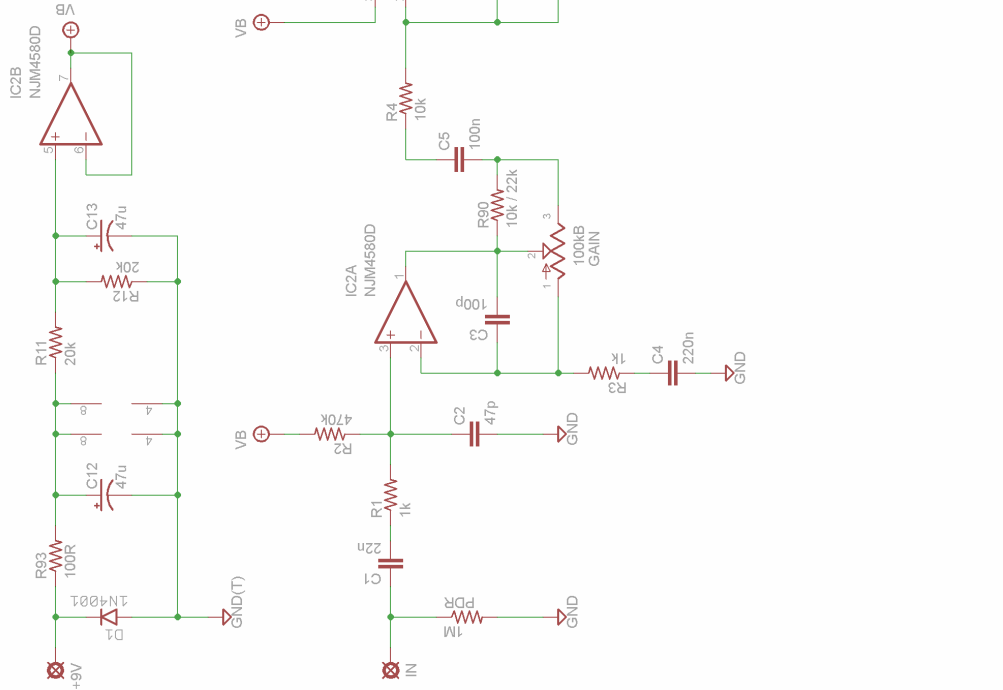
## Madbean Presence Mod

Pads P1 and P2 are included for the Madbean presence mod. The "CP" cap is not included in this board, but can easily be incorporated onto a DPDT On-On switch. Any of the other mods shown on Madbean's Uproar build doc can also be incorporated here.

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# Schematic

- Notes:
- 1) Based on Madbean's Uproot schematic
  - 2) All additional mods credit to Jymaze @ freestompboxes.org
  - 3) R90 - (IC2A) Not in original schematic - values are optional, can jumper or omit - Jymaze mod
  - 4) IC1B modified to inverting w/ 2x gain - Cannot bypass - Jymaze mod
  - 5) R91 - (IC1B) Not in original schematic - must not omit
  - 6) R92 - (IC1B) Not in original schematic - Values shown are suggested range - must not omit
  - 7) R93 - (Power Supply) Not in original schematic - jumper to omit
  - 8) R6 original 470R - Jymaze mod to 1k
  - 9) R7 original 11k5 - Jymaze mod to 1k
  - 10) R14 original 470R - Jymaze mod to Jumper
  - 11) C9 Original value 36n, Jymaze mod to 100n
  - 12) C8 Original value 470p, Jymaze mod to 200p
  - 13) C90 & C91 (Clipping) not in original - Omit (DO NOT JUMPER) or tune to taste
  - 14) Switch must be ON/ON/ON
  - 15) Pad P1 and P2 are for the MadBean Presence mod



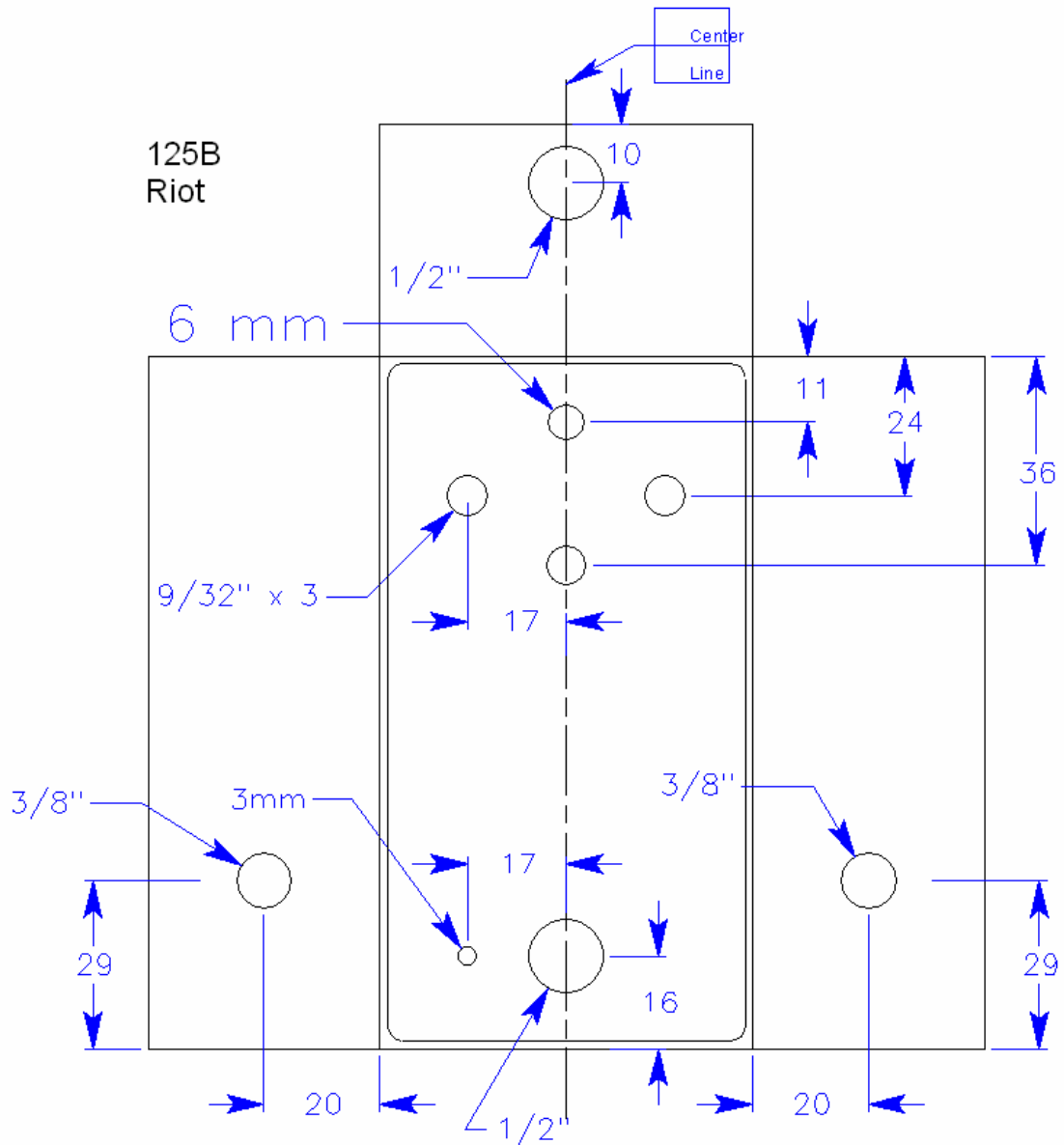
Ruckus  
V2.1

Switch - DPDT Toggle (On-On-On) Taiway 1MD6T1B1M1QE SB SKU: 0221C

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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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