

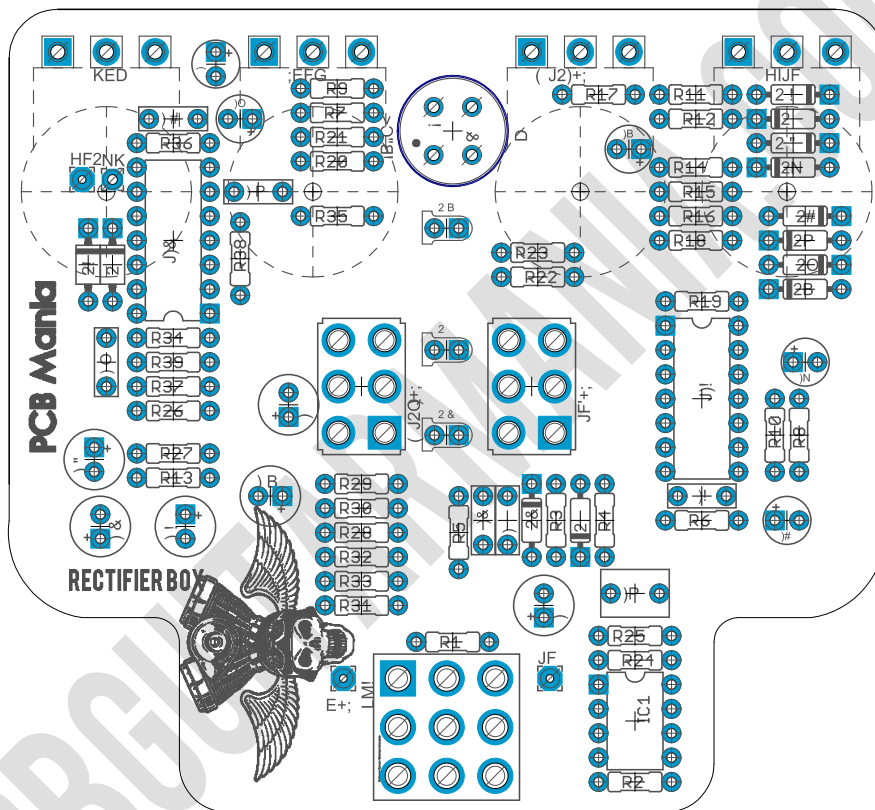
Rectifier Box v1.0

Based Mesa boogie's Throttle Box

High Gain Distortion.

By PCB Guitar mania Mania

[Project link](#)



This is my first attempt to capture the essence of the mesa boogie Throttle box, one of the best High gain distortions I ever heard, with a really interesting Mid cut section.

- 3pdt Switch on board
- 2 DPDT, Input selector and Mid-cut EQ.

BOM

Capacitors				
C1	680nf	tantalum	Resistors	
C2	82n		R1	1M
C3	82n		R2	470k
C4	47p		R3	390k
C5	220nf	tantalum	R4	47k
C6	1u	tantalum	R5	4k7
C7	1uf		R6	1k5
C8	220nf	tantalum	R7	1k5
C9	220nf	tantalum	R8	330r
C10	47u	electrolytic	R9	220r
C11	47u	electrolytic	R10	1k5
C12	10u	electrolytic	R11	2m34
C13	2u2	tantalum	R12	100k
C14	2u2	tantalum	R13	4k7
C15	470nf	tantalum	R14	3k3
C16	47n		R15	1k
C17	47n		R16	56k
C18	100n		R17	100r
			R18	10k
Diodes			R19	jumper
D1	1n4007		R20	10k
D2	9v1 zener	optional*	R21	10k
D3	1n4448		R22	1k5
D4	1n4448		R23	100r
D5	1n4448		R24	10k
D6	1n4448		R25	10k
D7	1n4448		R26	10k
D8	1n4448		R27	10k
D9	1n4448		R28	1k
D10	1n4448		R29	47k
D11	1n4448		R30	47k
D12	1n4448		R31	20k
D13	LED3MM		R32	47k
D14	LED3MM		R33	4k7
D15	LED3MM		R34	470r
			R35	470r
Ics			R36	470r
IC1	JRC4558		R37	100k

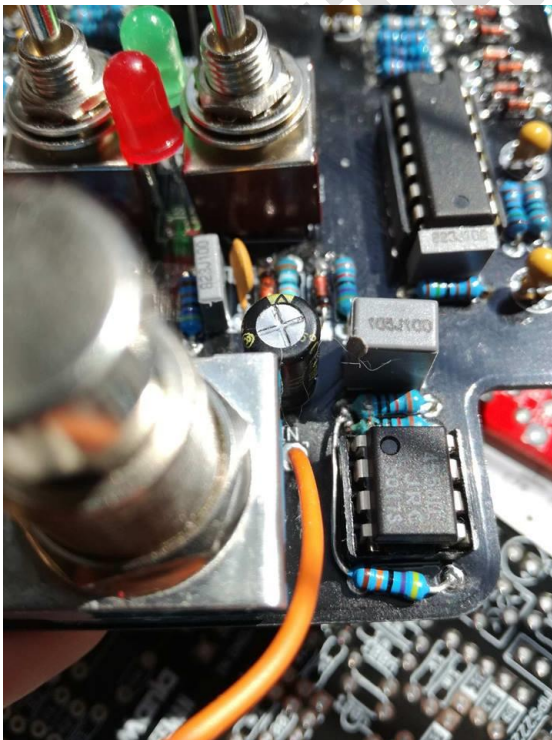
IC2	TL074	R38	470r
IC3	TL074	R39	15k
Pots		L1	Inductor 220uH
GAIN	10m a		
MIDCUT	10k a		
TONE	20k b		
VOL	10kb		

General Building notes

To populate the PCB it's recommended to follow this order.

1. Resistors & diodes
2. IC Sockets (set up the proper IC at last)
3. Capacitors, starting with the smaller ones and the ceramic ones.
4. Electrolytic capacitors (always check the polarity)
5. Transistors
6. Wires
7. Potentiometers
8. Off board wiring

In this projects are few things to take in mind. First there was a mistake on the layout on R2, and it should be connected as in the picture bellow.



As you can see R2 is NOT connected straight to the pad, it's soldered to R24 and R25. This should be done exactly as in the picture, otherwise the effect won't work.

The gain pot on the layout is Backwards. So you can flip it over, or invert the wires 1 and 3.

The layout was originally concived to have on board pots, but due the dimensions, it will be hard to fit. I recommend to wire them of board. I'll attach on the website some alternatives for the drilling templates.

The Inductor is 220uH, micro henry, not mh, NOT those small ones that looks like resistors that you could find on Tayda, is the big one on the picture over the led. I got mine at Mauser. For about 1.20USD I guess

Also take notice that most of inductors of this value has 4 legs, two are actually the ones of the inductor, and the other ones are just to bring extra support on the build. Find which one is which before soldering it.

This project use mostly tantalum capacitors as I was following the original one schematic.

D2 is power supply protection diode, I believe is a 9v1, but I never tried it. I left it unpopulated on my build.

Drilling the enclosure

This Project has been planned to fit into a 1590BB enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print in a A4 page.

PCBGUITARMANIA.COM

Schematic

