

Mr. Boogie

Based on:

Mesa Boogie Dual Rectifier Solo
Head

Effect type:

High gain distortion

Build difficult:

Intermediate

Number of parts:

Average, total 56 components

Technology:

Jfet transistors

Power consumption:

9V

Enclosure type:

125b

Get your board at:

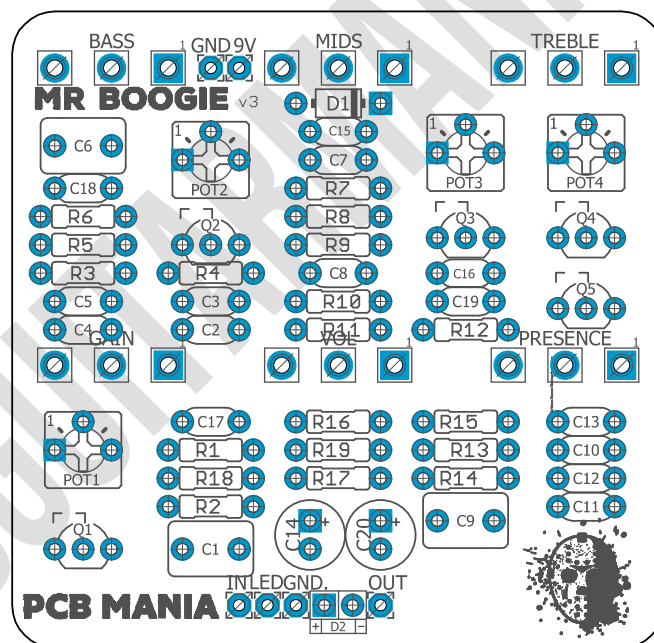
[Mr. Boogie](#)

Get your kit at:

[Das Musikding \(Europe\)](#)

Project overview:

A pre-amp type of distortion that emulates the tone of the classic Mesa Boogie's Dual Rectifier. Capture the essence of one of the widest and iconic amps out there!



Index

- | | |
|-----------------------------------|--|
| 1. Project overview | 5. Schematic |
| 2. Index, Introduction & Controls | 6. Components, Build Notes, Wiring Diagram |
| 3. Bills of Materials, BOM | 7. Drill Template, Licensing and Usage |
| 4. Shopping Lists | |

Introduction

It's been more than 20 years since the Dual Rectifier® first unleashed its rock icon; in the present, the Recto was once again re-worked, re-tuned, and refined, gaining more versatility in the process while maintaining all of its robust original characteristics. That's why many consider the Mesa Boogie Dual Rectifier as the best rectifier ever built, eclipsing its predecessors.

Plug into this Jfet Emulator and get ready for a massive tone. This true firebreather has all the power of the legendary amp compressed in a tiny box!

Controls

Potentiometers

- Bass: EQ for the bass frequencies.
- Mids: EQ for the mids frequencies.
- Treble: EQ for the treble frequencies.
- Presence: Controls the upper mid-range frequencies.
- Volume: Controls the output volume.
- Gain: Controls the amount of gain.

Bill of materials

Resistors	
Part	Value
R1	1m
R2	1.8k
R3	2.2m
R4	680k
R5	470k
R6	1.8k
R7	470k
R8	1m
R9	3.9k
R10	10k
R11	220k
R12	1.8k
R13	10k
R14	47k
R15	220k
R16	100r
R17	100r
R18	68k
R19	4.7k

Capacitors	
Part	Value
C1	1uf
C2	22nf
C3	2.2nf
C4	1nf
C5	20pf
C6	1uf

C7	22nf
C8	22nf
C9	1uf
C10	680pf
C11	22nf
C12	22nf
C13	3nf
C15	5nf
C16	1nf
C17	220pf
C18	220pf
C19	220pf

Electrolytics Capacitors	
Part	Value
C14	100uf
C20	100uf

Potentiometers	
Part	Value
BASS	100K A
PRESENCE	10K B
MIDS	2.5K B
GAIN	1M A
TREBLE	25K A
VOL	100k A

Transistors	
Part	Value

Q1	J201
Q2	J201
Q3	J201
Q4	J201
Q5	J201

Transistors	
Part	Value
TRIM1	100K
TRIM2	100K
TRIM3	100K
TRIM4	100K

Switches	
Part	Value
-	3PDT Stomp foot

Diodes	
Part	Value
D1	1N4001
D2	3mm red LED

Jacks	
Part	Value
-	DC JACK
-	AUDIO JACK
-	AUDIO JACK

Shopping list

Resistors		
Qty	Value	Parts
2	1m	R1, R8
3	1.8k	R2, R6, R12
1	2.2m	R3
1	680k	R4
2	470k	R5, R7
2	100r	R16, R17
1	3.9k	R9
2	10k	R10, R13
2	220k	R11, R15
1	47k	R14
1	68k	R18
1	4.7k	R19

Capacitors		
Qty	Value	Parts
3	1uf	C1, C6, C9
5	22nf	C2, C7, C8, C11, C12
1	2.2nf	C3
2	1nf	C4, C16
1	20pf	C5
1	680pf	C10
1	3nf	C13
1	5nf	C15
3	220pf	C17, C18, C19

Electrolytics Capacitors		
Qty	Value	Parts
2	100uf	C14, C20

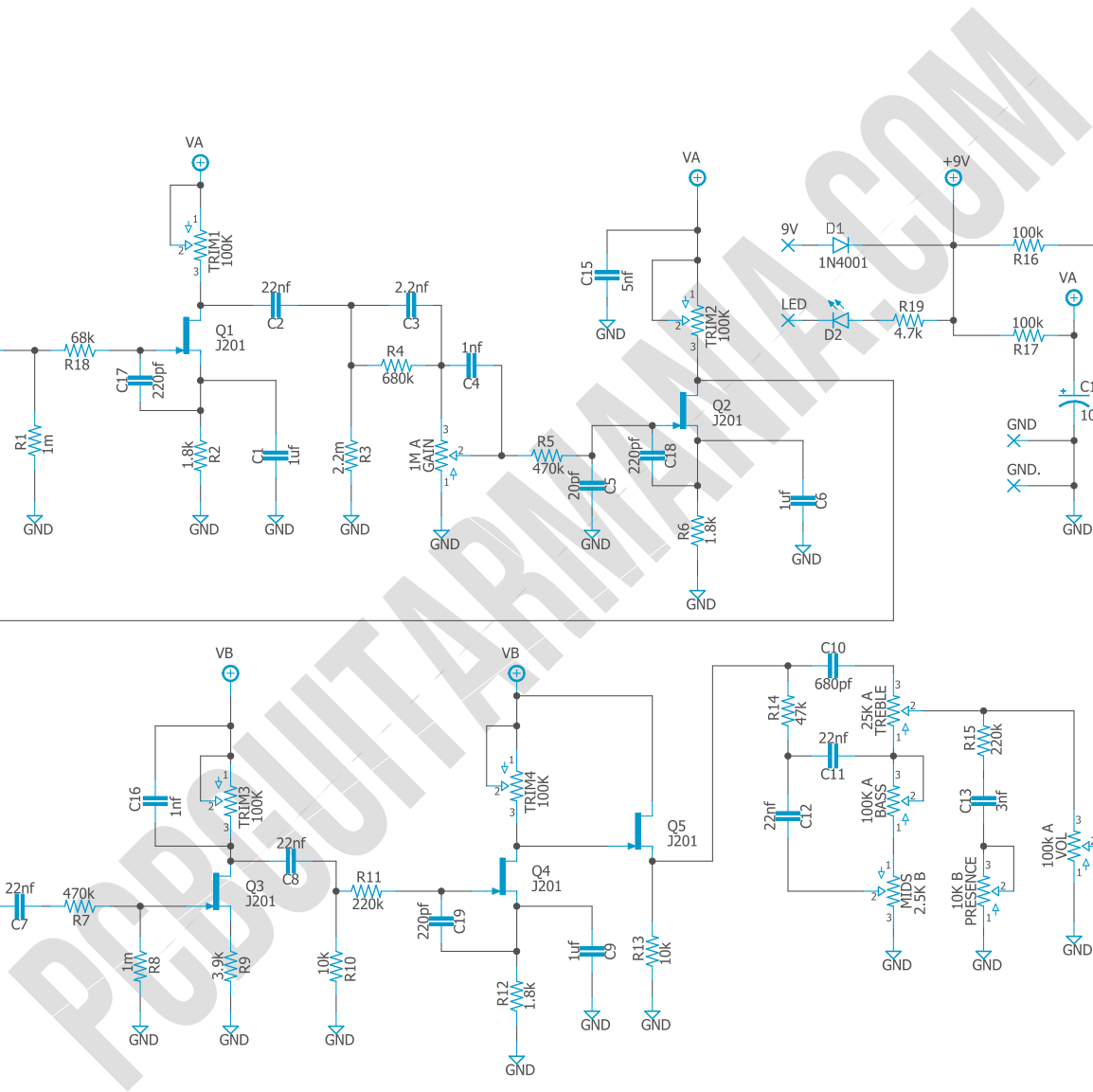
Potentiometers		
Qty	Value	Parts
2	100K A	BASS, VOL
1	10K B	PRESENCE
1	2.5K B	MIDS
1	1M A	GAIN
1	25K A	TREBLE

Transistors		
Qty	Value	Parts
5	J201*	Q1, Q2, Q3, Q4, Q5

Switches		
Qty	Value	Parts
1	3PDT Stomp foot	-

Diodes		
Qty	Value	Parts
1	1n4001	D1
1	3mm red LED	LED

Jacks		
Qty	Value	Parts
1	DC JACK	-
2	AUDIO JACK	-



Components Recommendations

As many people like to experiment with some pedals with higher voltage, always ensure your **electrolytic capacitors'** max tolerance is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those under 1nf. However, high-quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

Build Notes

If this is one of your first projects, I recommend you to take a look at our [Pedal Building Guide](#).

For a successful and tidy build, it's recommended the following order:

1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

J201*

This project uses five J201 Jfet transistors, that might be hard to find. I personally recommend buying them from specialized and reliable sources, not eBay nor Chinese suppliers, there has been a lot of reports of counterfeit J201.

Wiring Diagram

All our projects include a free 3PDT Board to make the wiring easier and tidier. Also, all of our PCBs feature the status LED on board.

The pad named "Ctrl" or "LED" is the one that controls the status of the led; wire it to the "LED" pad on the 3PDT board or in the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it [here](#) to access our [Pedal Wiring Guide](#).

Drill Template

This Project has been planned to fit into a 125b enclosure type.

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

Licensing and Usage

We really appreciate your trust and support in buying this PCB, as well as your will to dive into the DIY electronics world. For us, that's why you can make this project work properly and enjoy not only the building process but also experiment and play with it on your rig.

We try to reply to every question we receive on our email or our social media. Still, we try to encourage all our customers to join our [PCB Guitar Mania – Builders Group](#) on Facebook to post all your doubts, issues, suggestions, or requests, share your builds, and have some feedback from other fellow builders and us!

We tested all our projects following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been checked. These are suggestions based on the schematic analysis and the experiences and opinions of others. Feel free to share with us your views and recommendations regarding the mods your personal experimentation.

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much appreciated.

If you are a builder planning to make your own run of pedals, we also offer the service of custom-made boards with your brand and logo, design according to your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silkscreen or other way of trying to hide our logos and the source of the PCBs. Like it's written above, if you want to have your designs with your brand and logo, we could undoubtedly reach an agreement.

Follow us on [Instagram](#) and [Facebook](#) to stay in tune with the latest projects!