Mesa DR.

Based on:
Mesa Boogie Dual Rectifier

Effect type:
High Gain pre-amp

Build difficult:
Average

Amount of parts:
Average, total 58 components

Technology:
OpAmp + Jfet Buffers

Power consumption:
9V

Enclosure type:
125b

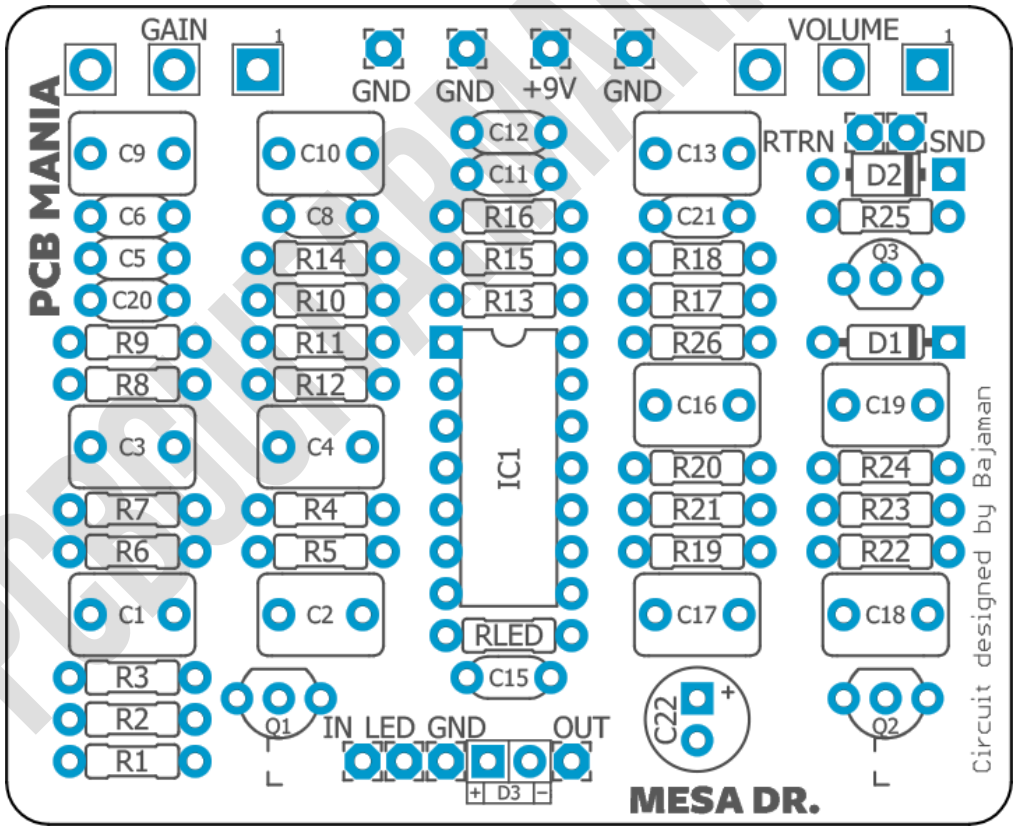
Get your board at:
Mesa DR.

Get your kit at:
Das Musikding (Europe)

Project overview:

This circuit has been designed by Bajaman from Free stomp boxes, recreating the tonal response of the classic Mesa Dual rectifier. High gain, Metal Tones and chugga chugga!

We have included 'Return' and 'Send' pads so you can hook up any EQ section you want from our EQ development series.



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Introduction

The doctor is here to cure you with the chugga chugga you are looking for. This Bajaman circuit is created to give you the most accurate pedal emulation of the Mesa Boogie Dual Rectifier ™ ever captured in a Pedal and dam it does it more than well!

But you might not like the EQ on your amp and think, I want more than just Gain and Volume no matter how well it emulates the Amp. No worries, we added EQ send and return wire pads **(that need to be jumper if you do not use them)** in the perfect spot and also offer plenty EQ boards so you can get the best results for your ears. I personally love that circuit in combination with the **Falcon EQ.**

[You can check more info about other EQS here]

Controls

- Gain
- Volume
- EQ SND
- EQ RETURN

Bill of materials

Resistors	
Part	**Value**
R1	1M5
R2	1M
R3	10K
R4	1M
R5	8K2
R6	1K2
R7	1K
R8	68K
R9	47K
R10	2K7
R11	1K2
R12	1K
R13	22K
R14	10K
R15	2K7
R16	1K
R17	33K
R18	22K
R19	2K7
R20	3K3
R21	3K9
R22	2K2
R23	1M
R24	10K
R25	10K
R26	10K
RLED	4K7

Electrolytics Capacitors	
Part	**Value**
C22	220u

Potentiometers	
Part	**Value**
GAIN	B100K
VOLUME	B100K

Capacitors	
Part	**Value**
C1	1u
C2	1u
C3	1u
C4	1u
C5	22n
C6	10n
C8	22n
C9	1u
C10	1u
C11	3n9
C12	33n
C13	1u
C15	10n
C16	1u
C17	1u
C18	1u
C19	1u
C20	180p
C21	390p

Trimpots	
Part	**Value**
IC1	TL074

Transistors	
Part	**Value**
Q1	J201
Q2	J201
Q3	BC547B

Diodes	
Part	**Value**
D1	1n4148
D2	1N5817
D3	LEDSTATUS-LED

Shopping list

Resistors		
Qty	**Value**	**Parts**
5	10K	R3, R14, R24, R25, R26
3	1K	R7, R12, R16
2	1K2	R6, R11
3	1M	R2, R4, R23
1	1M5	R1
2	22K	R13, R18
1	2K2	R22
3	2K7	R10, R15, R19
1	33K	R17
1	3K3	R20
1	3K9	R21
1	47K	R9
1	4K7	RLED
1	68K	R8
1	8K2	R5

Capacitors		
Qty	**Value**	**Parts**
2	10n	C6, C15
1	180p	C20
11	1u	C1, C2, C3, C4, C9, C10, C13, C16, C17, C18, C19
2	22n	C5, C8
1	33n	C12
1	390p	C21
1	3n9	C11

Electrolytics Capacitors		
Qty	**Value**	**Parts**
1	220u	C22

Potentiometers		
Qty	**Value**	**Parts**
2	B100K	GAIN, VOLUME

IC		
Qty	**Value**	**Parts**
1	TL074	IC1

Transistors		
Qty	**Value**	**Parts**
1	BC547B	Q3
2	J201	Q1, Q2

Diodes		
Qty	**Value**	**Parts**
1	1N5817	D2
1	1n4148	D1
1	LEDSTATUS-LED	D3

Components Recommendations

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

This board has been tested using Film box capacitors for most of the values over 1nf, and ceramics discs for the ones 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 exclusively regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

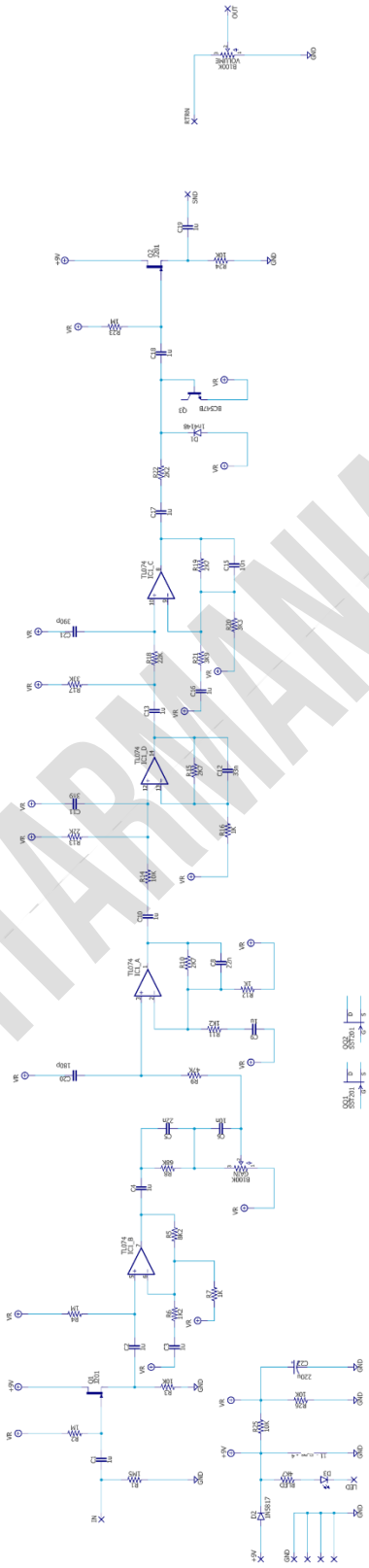
Build Notes

If this is one of your first projects I recommend you to take a look on 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

Schematic



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 control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB check it here to access to 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 in an A4 page.

Licensing and Usage

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

We try to reply to every question we receive on our email or in our social media, but we try to encourage all our customers to join our PCB Guitar Mania – Builders Group on Facebook, in order to post all your doubts, issues, suggestions or request, as well to share your builds and have some feedback from us and other fellow builders!

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

These boards may be used for commercial endeavors in any quantity unless specifically noted. No attribution is necessary, though accreditation or a link back is always greatly 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 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 silk screen, 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 own designs, with your brand and logo we could certainly reach an agreement.

Follow us on Instagram and Facebook to stay in tune with the latest projects!