

# Boogie Fuchs

## Based on:

Mesa Boogie - Flux-drive

## Effect type:

Overdrive

## Build difficult:

Intermediate

## Amount of parts:

Average, total 57 components

## Technology:

Dual OpAmp, Baxandall EQ

## Power consumption:

9V (**DO NOT TRY HIGHER VOLTAGES**)

## Enclosure type:

125b

## Get your board at:

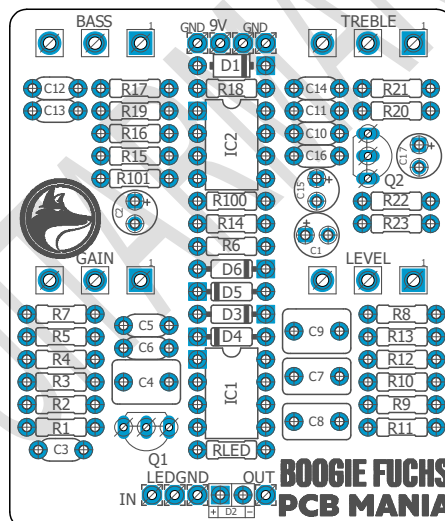
[Boogie Fuchs](#)

## Get your kit at:

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

## Project overview:

Mesa Boogie's transparent overdrive, full of sustain and rich in harmonics that delivers +20db of clean boost great for pushing your high gain amplifier or as a standalone overdrive in front of a clean channel. This circuit features a Baxendall eq and its architecture reminds of TS808.



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# Introduction

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As a general rule, every great high gain amplifier needs a nice overdrive in front of it to push it up and tight the tone. Mesa Boogie is not an exception to the rule; that's why they developed their own TS-inspired overdrive to plug it, whether into a clean amp channel as a stand-alone overdrive or especially to enhance a crunch or higher gain channel.

This mid-gain overdrive is a highly flexible and adjustable overdrive with sufficient gain for fluent leads that will enhance rich harmonics and overtones, all featuring the distinctive Mesa character.

Even though this pedal is labeled as transparent overdrive, it has enough Mesa flavor to pump up your Marshall or fender amps. Also, it matches perfectly with other Mesa amps or pedals, like with the [Mr boogie](#) and [Rectifier Box](#). We tried them and loved them both.

One of this circuit's high lights is its Baxandall EQ that allows you to shape your tone by the treble and bass controls, an incremental improvement over the classic tone control of the TS808 models.

This circuit includes a Baxandall eq with Bass and Treble controls, making out of this pedal a truly tone-shaping device, being this a great improvement over most TS808 tone stacks.

These circuits initially call for 2SC1815 NPN silicon transistors for the input and output buffer, which might be a bit hard to source. However, you can easily replace them for more common 2n3904, 2n5088; don't forget that this PCB has been designed for 2SC1815 transistors with ECB pinout replacements such as 2n5088 are normally EBC.

We have attached a pic below of how to place a replacement transistor.

## Controls

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- BASS
- GAIN
- LEVEL
- TREMBLE

# Bill of materials

Resistors	
Part	Value
R1	1M
R2	1K
R3	510K
R4	10K
R5	10K
R6	10K
R7	4K7
R8	1K
R9	19K
R10	1K8
R11	220R
R12	10K
R13	1K
R14	43K
R15	47K
R16	4K7
R17	33K
R18	10K
R19	4K7
R20	510K
R21	10K
R22	470R
R23	100K
R100	10K

R101	10K
RLED	4K7

Capacitors	
Part	Value
C3	22n
C4	1u
C5	51p
C6	47n
C7	220n
C8	220N
C9	1u
C10	180p
C11	4n7
C12	33n
C13	33n
C14	4n7
C16	100n

Electrolytics Capacitors	
Part	Value
C1	47u
C2	47u
C15	10u
C17	10u

Potentiometers	
Part	Value
BASS	B50K
GAIN	B1M
LEVEL	B100K
TREBLE	B50K

IC	
Part	Value
IC1	JRC4558
IC2	JRC4558

Transistors	
Part	Value
Q1	2SC1815*
Q2	2SC1815*

Diodes	
Part	Value
D1	1N5817
D2	3mm LED
D3	1N4148
D4	1N4148
D5	1N4148
D6	1N4148

# Shopping list

Resistors		
Qty	Value	Parts
1	100K	R23
8	10K	R4, R5, R6, R12, R18, R21, R100, R101
1	19K	R9
3	1K	R2, R8, R13
1	1K8	R10
1	1M	R1
1	220R	R11
1	33K	R17
1	43K	R14
1	470R	R22
1	47K	R15
4	4K7	R7, R16, R19, RLED
2	510K	R3, R20

Capacitors		
Qty	Value	Parts
1	100n	C16
1	180p	C10
2	1u	C4, C9
1	220N	C8
1	220n	C7
1	22n	C3
2	33n	C12, C13
1	47n	C6
2	4n7	C11, C14
1	51p	C5

Electrolytics Capacitors		
Qty	Value	Parts
2	10u	C15, C17
2	47u	C1, C2

Potentiometers		
Qty	Value	Parts
1	B100K	LEVEL
1	B1M	GAIN
2	B50K	BASS, TREBLE

IC		
Qty	Value	Parts
2	JRC4558	IC1, IC2

Transistors		
Qty	Value	Parts
2	2SC1815*	Q1, Q2

Diodes		
Qty	Value	Parts
4	1N4148	D3, D4, D5, D6
1	1N5817	D1
1	3mm LED	D2



# Components Recommendations

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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.

**2SC1815\***: Transistors 2SC1815\* is NPN with ECB pinout, It could be replaced by a 2n3904 or a 2n5088 but bear in mind those are EBC and you will have to match the pinout accordingly.

## Build Notes

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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

## Wiring Diagram

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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

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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

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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!