

Muff Malo

Based on:

Fulltone Mas Malo

Effect type:

Muff style fuzz/distortion

Build difficult:

Average

Amount of parts:

Average, total 59 components

Technology:

Silicon NPN transistor

Power consumption:

9V

Enclosure type:

125b

Get your board at:

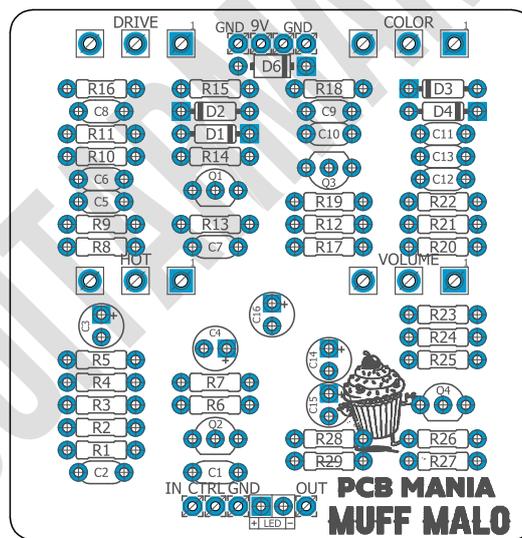
[Muff Malo](#)

Get your kit at:

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

Project overview:

Inspired by Fulltone's Mas Malo, this circuit delivers the spiciest, vicious, and massive muff style distortion/fuzz sound waves.



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Introduction

Muff Malo delivers thick distortion tones with plenty of hair and some massive fuzz sounds with lots of saturation - even at low volumes. With this versatile board, you will craft a pedal that can fit in all your muff desires. It comes with top-mounted jacks, High Impedance input, ultra-Low Impedance output, with an ability to match flawlessly with any guitar, effect, or amp. Part of this circuit magic resides on the 3 BC184C transistors that make all the difference.

Use the Drive knob to control the amount of distortion and get more saturation and harshness by increasing the Hot knob. If you turn Hot (which re-biases the first transistor in the circuit) to about 8 o'clock and the Drive knob to 11 o'clock, you will get a guitar sound very close to that of Badfinger's 1970 rocker "No Matter What." Dial them back and nail many Jimmy Page studio sounds and Pink Floyd waves.

Controls

- Color
- Drive
- Hot
- Volume

Bill of materials

Resistors	
Part	Value
R1	1m
R2	33k
R3	510k
R4	10k
R5	15k
R6	10k
R7	470r
R8	10k
R9	1k
R10	10k
R11	100k
R12	220r
R13	470k
R14	10k
R15	8k2
R16	100k
R17	680r
R18	470k
R19	15k
R20	39k
R21	10n capacitor (C17*)
R22	39k
R23	33k
R24	3k3
R25	3k3
R26	100r
R27	47k
R28	10k
R29	4k7

Capacitors	
Part	Value
C1	10p
C2	20n
C5	100n
C6	100n
C7	330p
C8	100n

C9	100n
C10	330p
C11	100n
C12	100n
C13	3n3
C17*	10n

Electrolytics Capacitors	
Part	Value
C3	10u
C4	10u
C14	10u
C15	1u
C16	100u

Potentiometers	
Part	Value
COLOR	100k A
DRIVE	100k A
HOT	25k W
VOLUME	100k B

Transistors	
Part	Value
Q1	BC184C
Q2	BC184C
Q3	BC184C
Q4	2N5457

Diodes	
Part	Value
D1	1n4148
D2	1n4148
D3	1n4148
D4	1n4148
D6	1n5817
LED	3mm red LED

Shopping list

Resistors		
Qty	Value	Parts
2	100k	R11, R16
1	100r	R26
6	10k	R4, R6, R8, R10, R14, R28
2	15k	R5, R19
1	1k	R9
1	1m	R1
1	220r	R12
2	33k	R2, R23
2	39k	R20, R22
2	3k3	R24, R25
1	470r	R7
2	470k	R13, R18
1	47k	R27
1	4k7	R29
1	510k	R3
1	680r	R17
1	8k2	R15

Capacitors		
Qty	Value	Parts
6	100n	C5, C6, C8, C9, C11, C12
1	10p	C1
1	20n	C2
2	330p	C7, C10
1	10n	C17*
1	3n3	C13

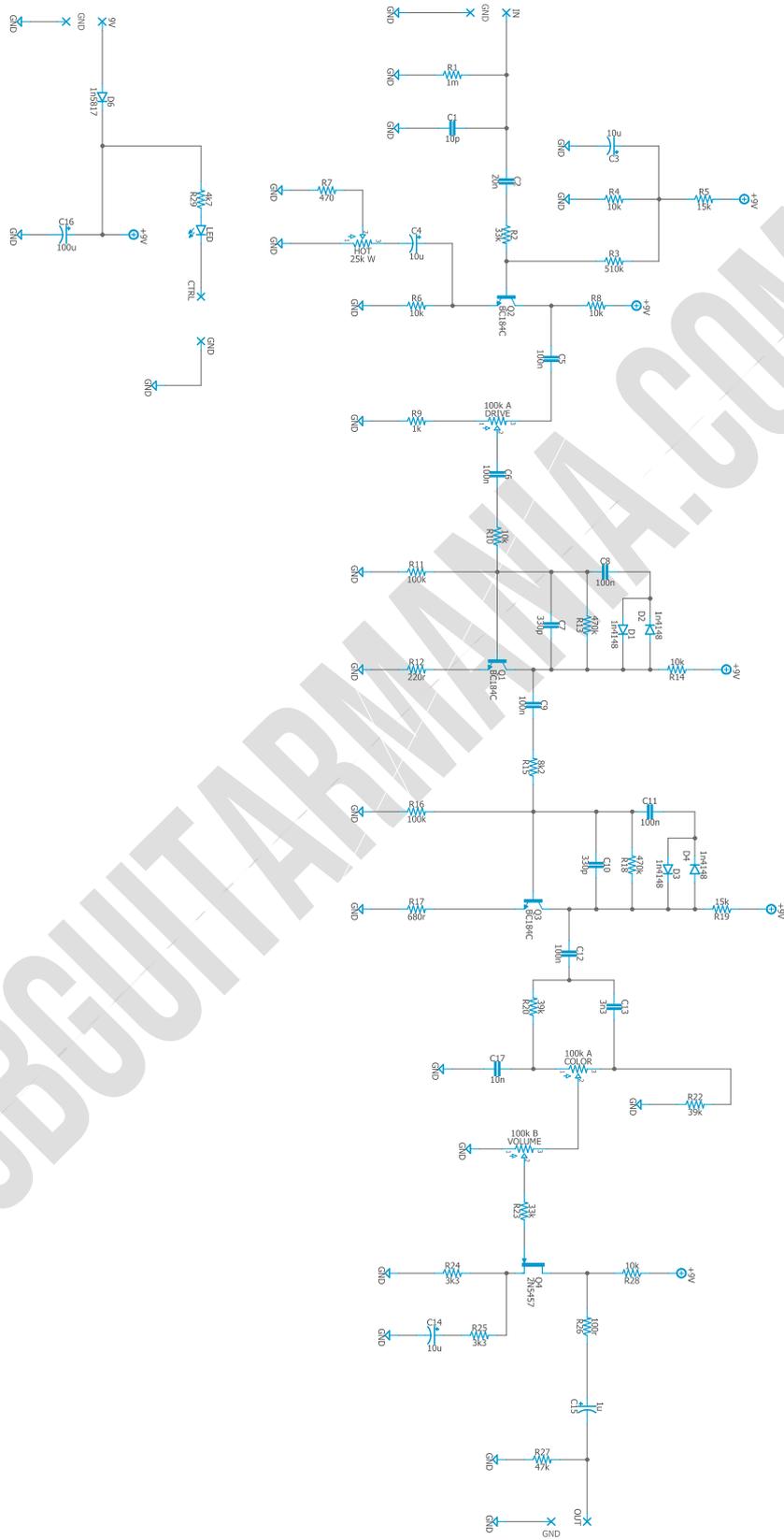
Electrolytics Capacitors		
Qty	Value	Parts
1	100u	C16
3	10u	C3, C4, C14
1	1u	C15

Potentiometers		
Qty	Value	Parts
2	100k A	COLOR, DRIVE
1	100k B	VOLUME
1	25k W	HOT

Transistors		
Qty	Value	Parts
1	2N5457	Q4
3	BC184C	Q1, Q2, Q3

Diodes		
Qty	Value	Parts
4	1n4148	D1, D2, D3, D4
1	1n5817	D6
1	3mm red LED	LED

Schematic



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

C17*

In this version, the resistor R21 that appears on the silk-screen is actually the C17 - 10n capacitor.

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.

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