

# TOC (OCD)

## Based on:

Fulltone's OCD

## Effect type:

Hard clipping Overdrive

## Build difficult:

Average

## Number of parts:

Average, total 58 components

## Technology:

Dual OpAmp + mosfet clipping

## Power consumption:

9V

## Enclosure type:

125b

## Get your board at:

[TOC \(OCD\)](#)

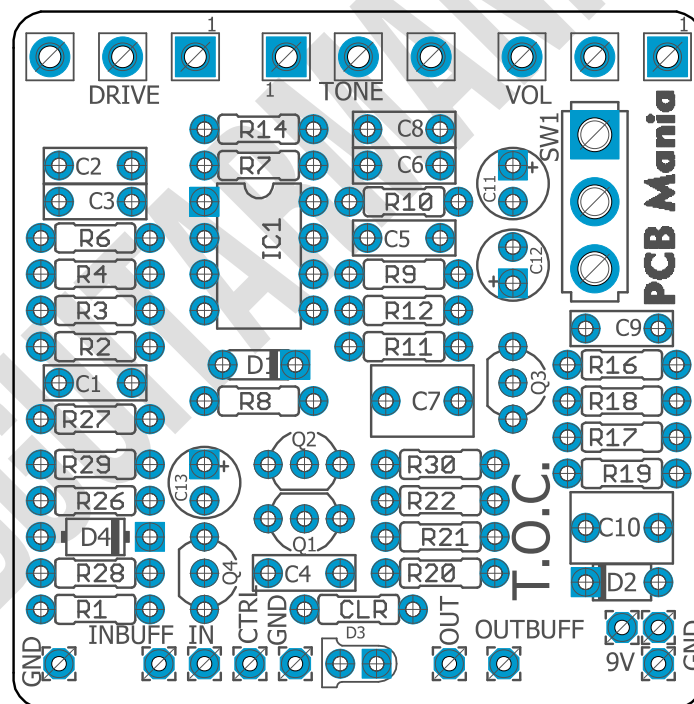
## Get your kit at:

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

## Project overview:

Self-claimed as the first overdrive featuring hard Mosfet clipping, the OCD has been for sure and standard for everyone in love with gain and singing guitar leads.

We covered all the 4 classic versions of the OCD in this board, plus the JHS mods and our own version! Also, like always, you can do some experimentation and come up with your version of this iconic drive.



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## Introduction

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The OCD is a pedal Mike Fuller initially built for himself. His thought was that other overdrive pedals manufactured at this time just keep pronouncing things amps already deliver. He was looking for a circuit that adds JTM45-like overtones to any setup allowing you to crank the volume to create singing leads from every amplifier. Over the years, he did plenty of versions, so we matched the PCB and the documents to give you the option to build one of four versions.

If your amp already delivers quite some high-end, I recommend building V3. Got more gain on top but a tone control that adds less high end (this could sound a little harsh and is one of the biggest complaints some guys have with the circuit)

Also, you can experiment with moding the key highlighted values and design your own version! In this model, we have also included the possibility to add toggles that enable-disable the input and output buffers individually. You can leave the toggles out when you are sure that you want the buffers always “on” or “off.” Using in and out for no buffer and buffer in and out for buffers. You also can mix that up or experiment with different combinations. I recommend alligator clips for that or a test box.

## Controls

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### *Potentiometers*

- Gain
- Level
- Tone

### *Switches*

- Hi-lo Switch
- Input buffer switch (Optional)
- Output buffer switch (Optional)

# Bill of materials (based on OCD version 3)

Resistors	
Part	Value
R1	1M
R2	10K
R3	1M
R4*	2K2
R6	18K
R7	10K
R8	10K
R9	39K
R10	150K
R11	22K
R12	33K
R14	1K
R16	510K
R17	10K
R18	100r
R19	47K
R20	27r
R21	10K
R22	10K
R26	10K
R27	10K
R28	1K
R29	27K
R30	10K

Capacitors	
Part	Value

C1	22n
C2*	68n
C3	220p
C4	1n
C5	100n
C6	220p
C7	1u
C8*	47n
C9	100n
C10	1u

Electrolytic Capacitors	
Part	Value
C11	220u
C12	220u
C13	10u

Transistors	
Part	Value
Q1	2N7000
Q2	2N7000
Q3	2N5088
Q4	2N5457

IC	
Part	Value
IC1	TL082

Pots*	
Part	Value
TONE	B10K
VOL	A100K
DRIVE	A1M

Switches	
Part	Value
SW1	SPDT On-On
SW2	SPDT On-On
SW3	SPDT On-On
-	3PDT Stomp foot

Diodes	
Part	Value
D1	Jumper*
D2	1n5817
D3	3mm red LED
D4	9.1v zener

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

# Shopping list

This list has extra components so you could build different versions with this unique shopping list, just take special notice of the potentiometers for the version you want to build.

Resistors		
Qty	Value	Parts
1	100r	R18
9	10K	R2, R7, R8, R17, R21, R22, R26, R27, R30
1	150K	R10
1	18K	R6
2	1K	R14, R28
2	1M	R1, R3
1	22K	R11
1	33K	R12
1	39K	R9
1	3K3	R4
1	47K	R19
1	510K	R16
1	27K	R29
1	27r	R20
1	2K2	R4
1	4K7	R4

Capacitors		
Qty	Value	Parts
1	1n	C4
2	1u	C7, C10
2	220p	C3, C6
2	22n	C1, C8
3	100n	C2, C5, C9
1	47n	C8
1	68n	C2

Electrolytic Capacitors		
Qty	Value	Parts
2	220u 25v	C11, C12
1	10u 25v	C13

Transistors		
Qty	Value	Parts
2	2N7000	Q1, Q2
1	2N5088	Q3
1	2N5457	Q4

IC		
Qty	Value	Parts
1	TL082	IC1

Switches		
Qty	Value	Parts
3	SPDT On-On	SW1, SW2, SW3
1	3PDT Stomp foot	-

Didoes		
Qty	Value	Parts
1	1n34a	
1	1n5817	D2
1	3mm red LED	D3
1	9.1v zener	D4

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

Potentiometers		
Choose Below*		

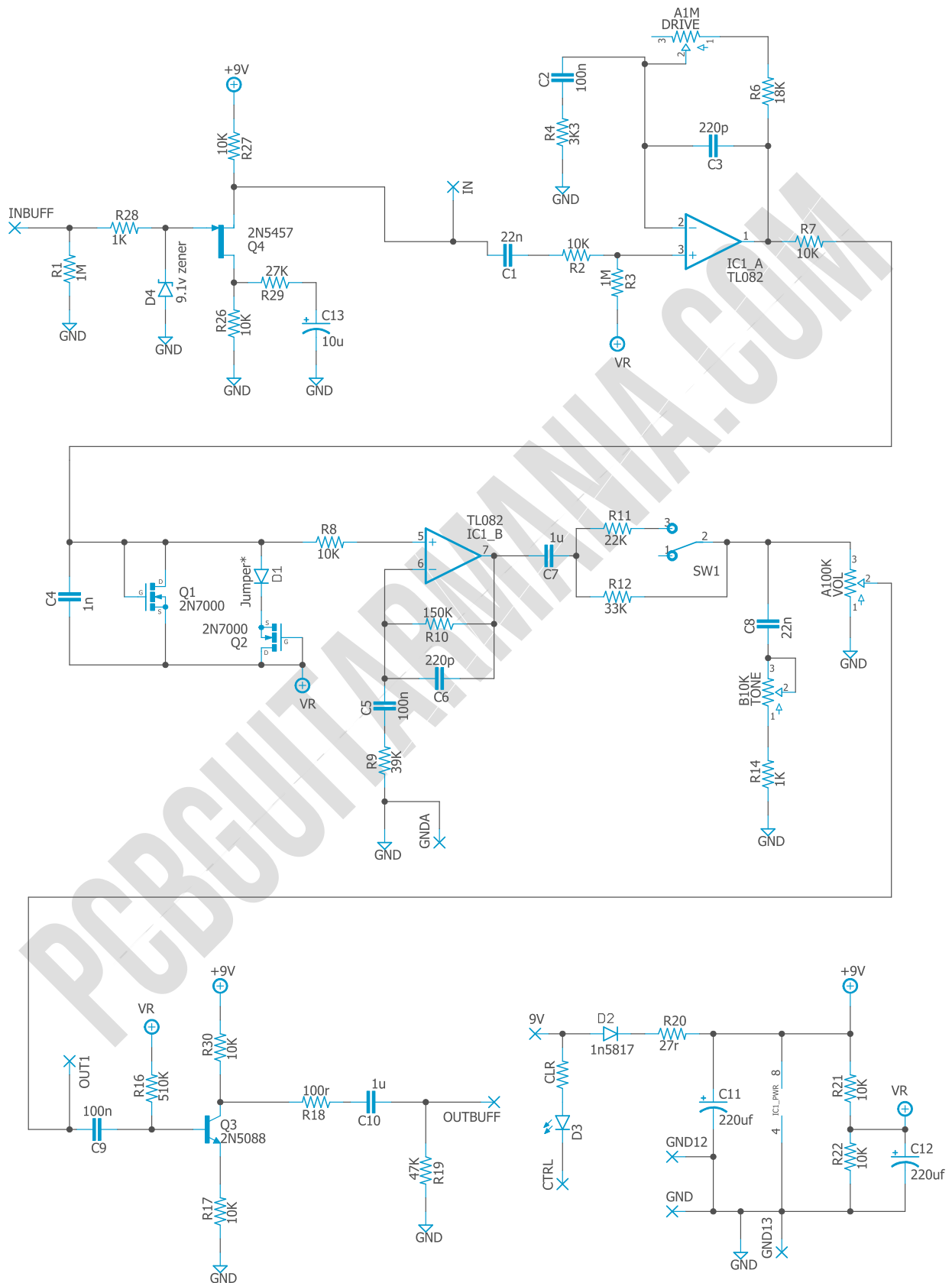
## Alternative values and versions

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	V1	V2	V3	V4	JHS	PCB MANIA
<b>R4*</b>	2k2	2k2	2k2	2k2	4k7	3k3
<b>C2*</b>	68n	68n	68n	68n	100n	100n
<b>C8*</b>	47n	47n	47n	47n	47n	22n
<b>D1*</b>	Jumper	Jumper	Jumper	1N34a	Jumper	Jumper

	V1	V2	V3	V4	JHS	PCB MANIA
<b>DRIVE</b>	A500K	A500K	A1M	A1M	A1M	A1M
<b>TONE</b>	A25K	A25K	B10K	B10K	B10K	B10K
<b>VOL</b>	B100k	B500k	B500k	A500k	A500k	A100k

# Schematic



# Components Recommendations

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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

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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 and 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, designed 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!