

T.O.C SMD

Based on:

Fulltone's OCD

Effect type:

Hard clipping Overdrive

Build difficult:

Easy

Amount of parts:

Low, total 23 components

Technology:

Dual OpAmp + mosfet clipping

Power consumption:

9V

Enclosure type:

125b

Get your board at:

[T.O.C SMD](#)

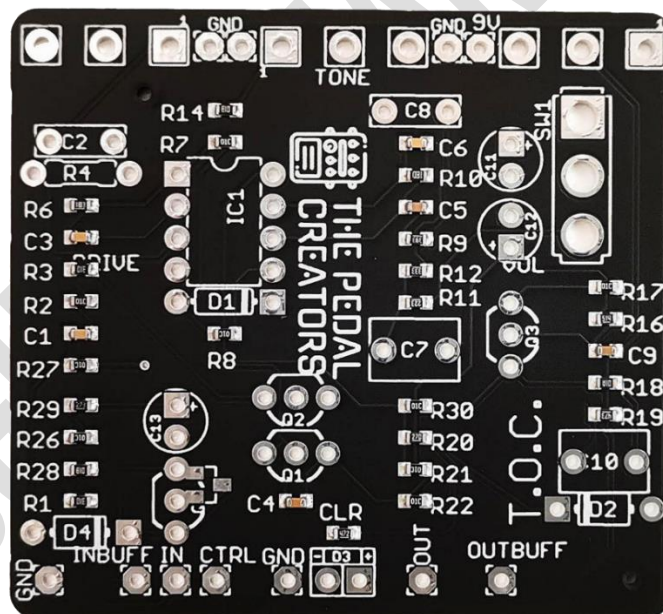
Get your kit at:

[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 4 classic versions of the OCD in this board, plus the JHS mods and our own version!

Like always, you can do some experimentation and come with your own version of this iconic drive.



About The Pedal Creators

Everyone can build excellent boutique guitar **pedals**.

Everything **we do** is to make that **experience** more accessible and **user-friendlier**.

The **Pedal Creators** series are the **best and easiest to build PCBs** ever. Including most **resistors** and **capacitors** already **soldered** on board as SMD components, leaving the key values for you to **experiment** and craft **your own tone**.

Now you can **build** a pedal you are **proud** of in **less than an hour** without any previous experience.

What are you waiting for to **become a Pedal Creator**?

The Pedal creators - key features:

- **Easy to build**, no previous experience required. It's like Lego for musicians.
- **Fast assembly** finish a pedal in less than an hour. Play your favorite record and enjoy the ride along.
- **100% mistake-proof**. Even my grandma can build one while she cooks.
- **Build** your own boutique pedal. Experiment with different values and make the **pedal you always dreamed of**.
- Easy to scale. **Turn your passion into a money-making machine**.

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Introduction

The OCD is a pedal Mike Fuller initially build 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. It has 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 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. When you are sure that you want the buffers always “on” or “off” you can leave the toggles out. 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

- Gain
- Level
- Tone
- Hi-lo Switch
- Input buffer switch (Optional)
- Output buffer switch (Optional)

Bill of materials

Resistors	
Part	Value
R4*	2k2, 4k7 or 3k3

Capacitors	
Part	Value
C2*	68n or 100n
C7	1u
C8*	47n or 22n
C10	1u
C11	220u
C12	220u
C13	10u

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

IC	
Part	Value
IC1	TL082

Diodes	
Part	Value
D1*	Jumper or 1n34A
D2	1n5817
D3	LED3MM
D4	9.1v zener

Potentiometers*	
Part	Value
TONE	25K A or 10K B
VOL	100K B, 500K B, 500K A or 100K A
DRIVE	500K A or 1M A

Switches	
Part	Value
SW1	SPDT On/On
SW2	SPDT On/On
SW3	SPDT On/On

Shopping list

Resistors		
Qty	Value	Parts
1	2k2, 4k7 or 3k3	R4*

Capacitors		
Qty	Value	Parts
2	1u	C7, C10
2	220u	C11, C12
1	68n or 100n	C2*
1	47n or 22n	C8*
1	10u	C13

Transistors		
Qty	Value	Parts
4	2N7000	Q1, Q2, Q3, Q4

IC		
Qty	Value	Parts
1	TL082	IC1

Diodes		
Qty	Value	Parts
1	D1*	Jumper or 1n34A
1	D2	1n5817
1	D3	LED3MM
1	D4	9.1v zener

Potentiometers*		
Qty	Value	Parts
1	25K A or 10K B	TONE
1	100K B, 500K B, 500K A or 100K A	VOL
1	500K A or 1M A	DRIVE

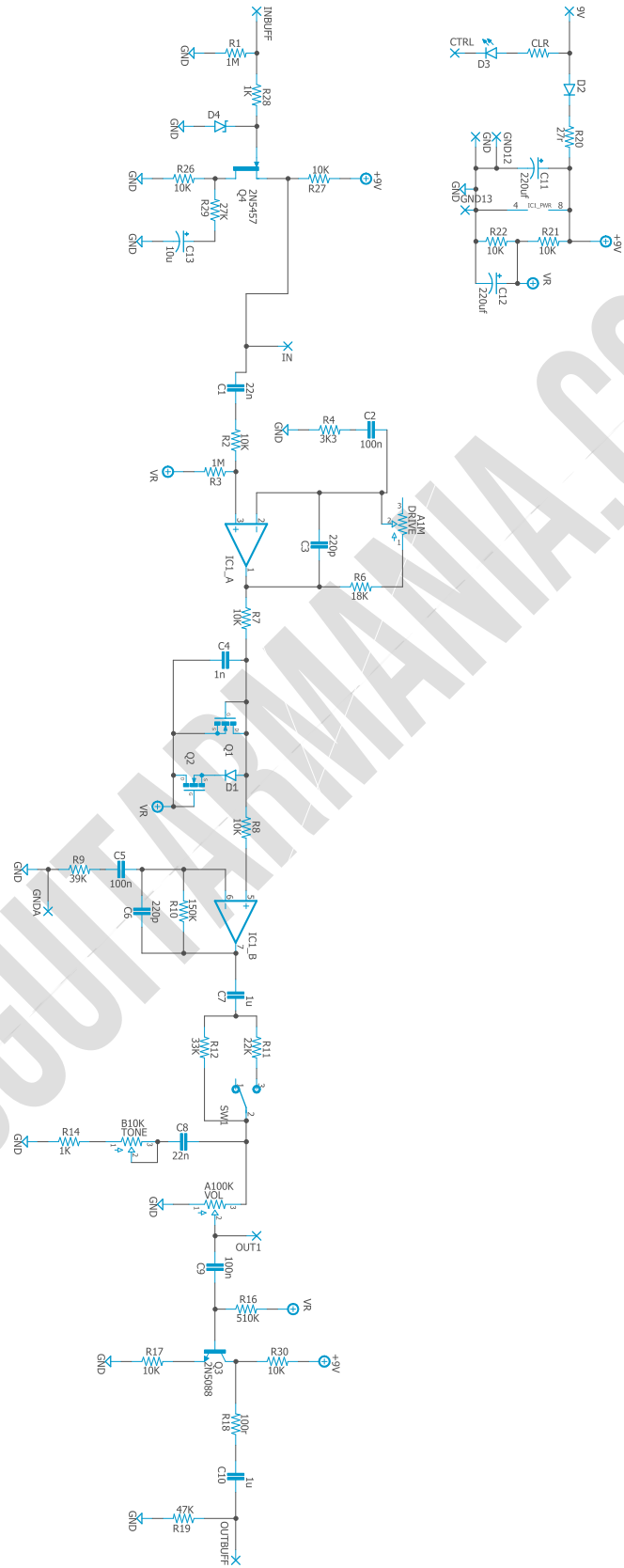
Switches		
Qty	Value	Parts
3	SPDT On/On	SW1, SW2, SW3

Shopping list

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

Pot. *	V1	V2	V3	V4	JHS	PCB MANIA
DRIVE	A500K	A500K	A1M	A1M	A1M	A1M
TONE	A25K	A25K	B10K	B10K	B10K	B10K
VOL	B100k	B500k	B500k	A500k	A500k	A100k

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

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!