

Mad Stone

Based on:

Mad professor Stone Grey

Effect type:

Modern High Gain

Build difficult:

Beginner

Amount of parts:

Low, total 26 components

Technology:

OpAmp + hex inverter + Jfet clipping

Power consumption:

9V(8mA) 15v max

Enclosure type:

1590b

Get your board at:

[Mad Stone](#)

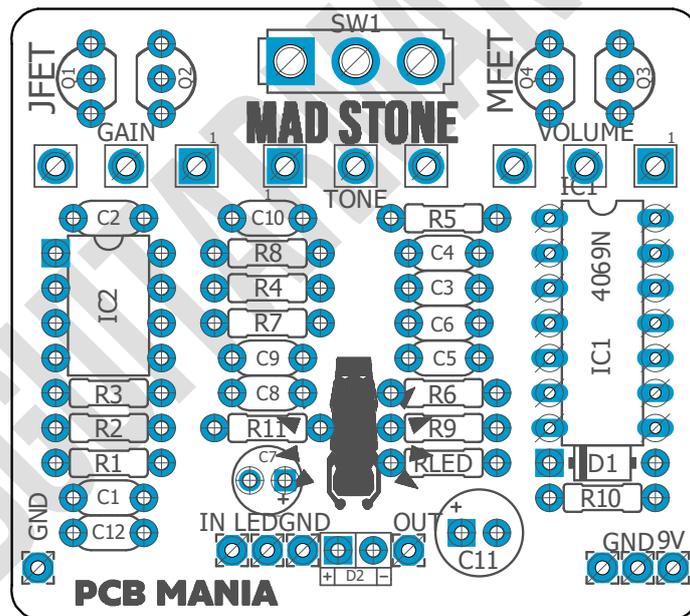
Get your kit at:

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

Project overview:

Razor sharp dynamic high gain drive, designed for modern extreme players seeking for a high gain drive with string to string definition without sounding muddy or mushy.

Versatile enough to deliver overdrive like textures and responsive to capture the players touch and dynamics like most of the designs of this Finish scientist!



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Introduction

Mad professors stone grey distortion™ is there take on putting modern metal tones and heavy distortion in a pedal without simply cloning an existing circuit. A very powerful one knob tone control, outstanding sting to string definition, tight low end and a gain control that's not losing crucial definition when dimmed out will stand right in front of you in any fight you and your axe may could have. As a mod, and to make this beast even better we added a toggle where you can switch between different FETs and MOSFET. I highly recommend using sockets and experiment with different types. 2n7000 for instance. But take your time with that, you probably would dial it in different. Just cranked all the way the differences can be very subtle.

***You could try replacing 2N3819 with a J201 or 2n547, just bear in mind the different pin out of those (Gate and source are reversed, Drain stills the same) They are acting as clipping diodes of the feedback loop at the opamp.**

Because of its low amount of components and it's wide range of distortion I can recommend this as a beginner project.

Bill of materials

Resistors	
Part	Value
R1	1M
R2	14K7
R3	470K
R4	200K
R5	470K
R6	1M
R7	10K
R8	4K7
R9	100R
R10	1M
R11	1M
RLED	4K7

Capacitors	
Part	Value
C1	2n2
C2	100p
C3	10n
C4	100p
C5	47n
C6	100p
C8	22n
C9	15p
C10	47n
C12	100n

Electrolytics Capacitors	
Part	Value
C7	4.7u
C11	100u

Potentiometers	
Part	Value
GAIN	A1M
TONE	A50K
VOLUME	A50K

ICs	
Part	Value
IC1	4069N
IC2	TL051

Transistors	
Part	Value
Q1	2N3819*
Q2	2N3819*
Q3	2N7000
Q4	2N7000

Switches	
Part	Value
SW1	SPDT ON/ON

Diodes	
Part	Value
D1	1N5817
D2	LEDSTATUS- LED

Shopping list

Resistors		
Qty	Value	Parts
1	100R	R9
1	10K	R7
1	14K7	R2
4	1M	R1, R6, R10, R11
1	200K	R4
2	470K	R3, R5
2	4K7	R8, RLED

Capacitors		
Qty	Value	Parts
1	100n	C12
3	100p	C2, C4, C6
1	10n	C3
1	15p	C9
1	22n	C8
1	2n2	C1
2	47n	C5, C10

Electrolytics Capacitors		
Qty	Value	Parts
1	100u	C11
1	4.7u	C7

Potentiometers		
Qty	Value	Parts
1	A1M	GAIN
2	A50K	TONE, VOLUME

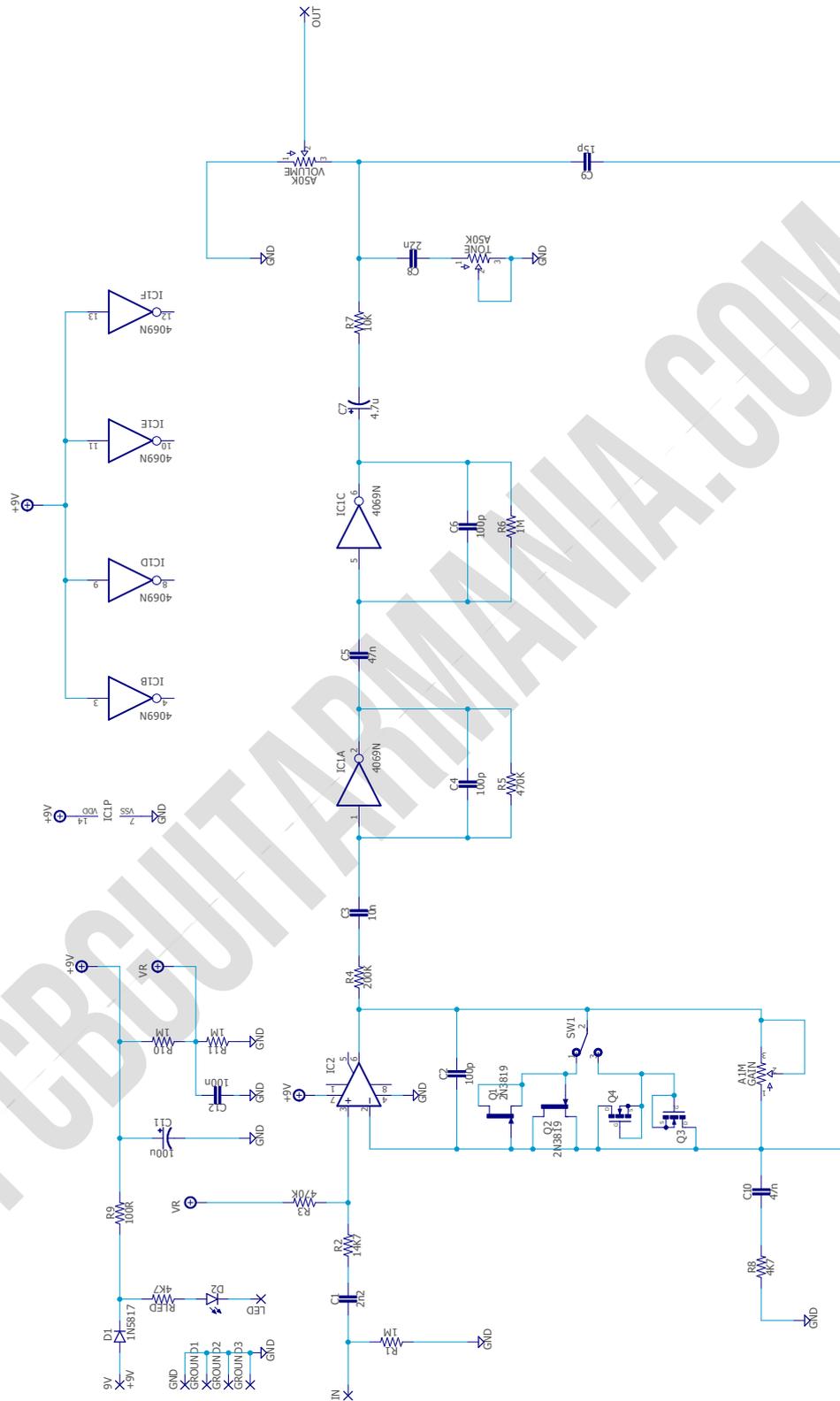
IC		
Qty	Value	Parts
1	4069N	IC1
1	TL051	IC2

Transistors		
Qty	Value	Parts
2	2N3819*	Q1, Q2
2	2N7000	Q3, Q4

Switches		
Qty	Value	Parts
1	SPDT on/on	SW1

Diodes		
Qty	Value	Parts
1	1N5817	D1
1	LEDSTATUS-LED	D2

Schematic



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

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 1590b 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!