Volcano Device

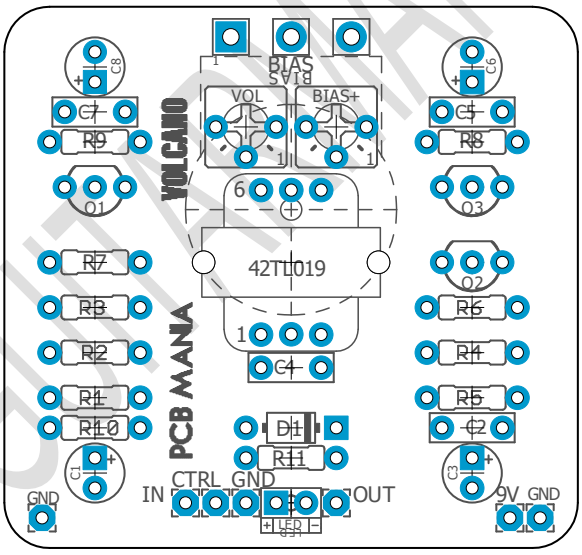
Based on:
EQD Erupter
Effect type:
Ultimate Fuzz tone
Build difficult:
Average

Amount of parts:
Low, total 26 components
Technology:
Jfet Buffer + pickup simulator in front of a fuzz Silicon Fuzz face
Power consumption:
9V(9mA)

Enclosure type:
1590b
Get your board at:
Volcano Device
Get your kit at:
Das Musikding (Europe)

Project overview:

The perfect fuzz! According to the people from EQD at Akron, Ohio. This circuit has been designed to have the ultimate classic fuzz tone with a big low end, a biting top end without being too harsh. Inspired on the classic fuzz face face featuring an input buffer and a pickup emulator (transformer).
For this project we have included an internal volume trimpot as well as an additional Bias to have more control on the main Bias control outside the box.



Index

1. Project overview
2. Index, Introduction & Controls
3. Bills of Materials, BOM
4. Shopping Lists
5. Components Recommendations
6. Build Notes
7. Schematic
8. Wiring Diagram
9. Drill Template
10. Licensing and Usage

Introduction

The Volcano device is a little one knob wonder inspired on EQD Erupter, with roots on the all time classic Fuzz Face.

The people from EQD had a pretty interesting approach on the conception of this fuzz, first of all their idea of having one single Bias knob, leaving the standard 'Fuzz' and 'Volume' as it was cranked at 11 as most of guitar players like to use, but having the chance to dial it at taste by controlling how much voltage you are feeding into the transistors by the Bias knob.

Another interesting thing of this pedal is the first section, the buffer and the pickup simulator. The goal of this is to make this circuit 'Pedal board friendly', especially with wahs.

On this circuit we have included two internal trimpots, one acts as a volume to set up the max output you'd like to get out of this box, the other one 'Bias+' allows you to do some fine tuning on the behavior of the main bias knob.

Controls

- Bias
- Bias+ (trimpot)
- Volume (trimpot)

Bill of materials

Resistors	
Part	**Value**
R1	1m
R2	1m
R3	4k7
R4	1k
R5	100k
R6	1k5
R7	100k
R8	470r
R9	470r
R10	1m
R11	2k7

Capacitors	
Part	**Value**
C2	1n
C3	1u
C4	47p
C5	100p
C7	68n

Electrolytics	
Part	**Value**
C1	1u
C6	22u
C8	100u

Diodes	
Part	**Value**
D1	1n4001
LED	3mm LED

Potentiometers	
Part	**Value**
BIAS	10k C

Trimpots	
Part	**Value**
VOL	100k
BIAS+	5k

Transistors	
Part	**Value**
Q1	**PF5102***
Q2	**2n3904****
Q3	**2n3904****

Transformers	
Part	**Value**
XFM1	42TL019

Shopping list

Resistors		
Qty	**Value**	**Parts**
3	1m	R1, R2, R10
1	2k7	R11
1	4k7	R3
1	1k	R4
1	100k	R5
1	1k5	R6
1	100k	R7
2	470r	R8, R9

Capacitors		
Qty	**Value**	**Parts**
1	1n	C2
1	47p	C4
1	100p	C5
1	68n	C7
1	100u	C8

Electrolytics		
Qty	**Value**	**Parts**
2	1u	C1, C3
1	22u	C6

Transistors		
Qty	**Value**	**Parts**
1	**PF5102***	**Q1**
2	**2n3904****	**Q2, Q3**

Diodes		
Qty	**Value**	**Parts**
1	1n4001	D1
1	3mm LED	LED

Potentiometers		
Qty	**Value**	**Parts**
1	10k C	BIAS

Trimpots		
Qty	**Value**	**Parts**
1	5k	BIAS+
1	100k	VOL

Transformer		
Qty	**Value**	**Parts**
1	42TL019	XFM1

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.

PF5102* is a JFET that shares the same pinout and functionality as a 2n5457 or J201. Either of them could work for as a replacement.

2n3904** On the original EQD unit this transistor is actually a 2n497. The footprint of this layout has been optimized for the more common 2N3904. Other Low-medium gain NPN silicons will work just fine. 2N2222A, 2N2369, 2N5550, just take in mind the pinout of each of the compared to the one on the layout.

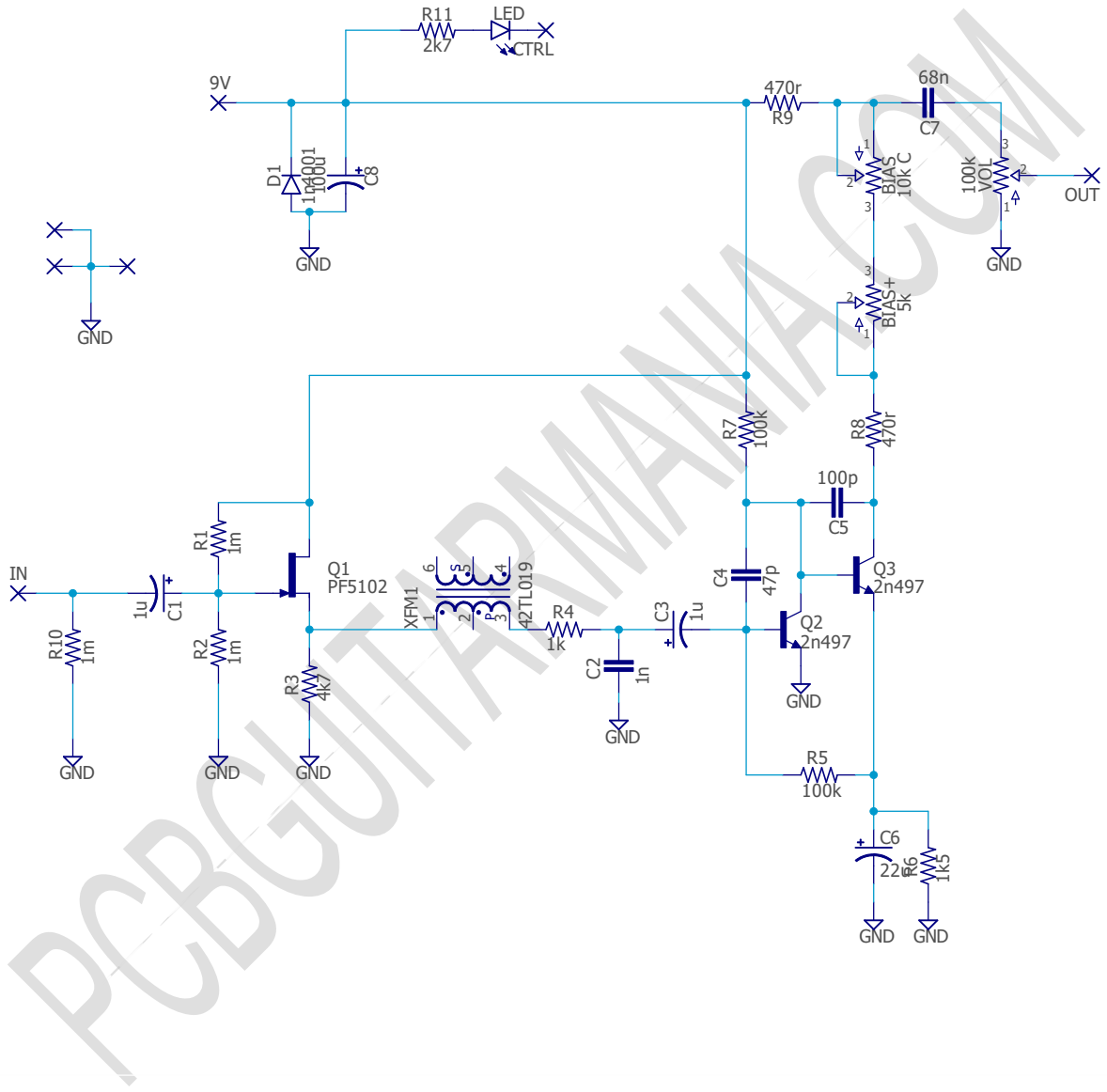
Build Notes

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

Schematic



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 1590bb 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!