Fuzz Maker II

Based on:
Zvex Fuzz Factory

Effect type:
Fuzz creator

Build difficult:
Easy

Amount of parts:
Low, total 26 components

Technology:
Germanium Transistors

Power consumption:
9V(9mA)

Enclosure type:
125b

Get your board at:
Fuzz Maker II

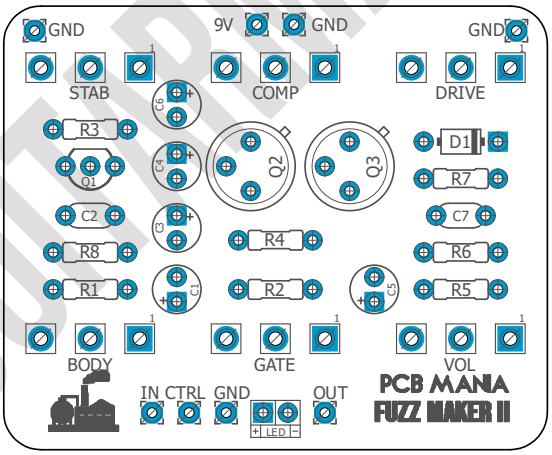
Get your kit at:
Das Musikding (Europe)

PCBGUITARMANIA.COM

Project overview:

The Fuzz maker is one of the most iconic pedals in the DIY community, almost every pedal builder tried at least once to build this classic versatile fuzz!

The Fuzz maker is a great starting point for everyone who want to start building pedals, as well as it's a must on each player pedalboard. The Fuzz maker is Easy to build and fun to play with!



Index

Introduction

Since Zvex released the original Fuzz factory we have seen this pedal dissected and traced among every website and forum dedicated to DIY pedals. T

Zachary Vex did a really interesting work designing the Fuzz Factory, basically he took the classic design of the Germanium fuzz face and tweak every possible fixed resistor that have any possible musical effect and turn into a potentiometer (Stab, gate, comp).

Since then we have seen many different versions of this classic, people making even 9 knobs version and more! Fat switches, compression diodes, etc.

For this project we want to keep pretty loyal to the original design just with one additional Body control that replaces the Fat switch from the previous version for a much versatile potentiometer to play around in between all the range of the capacitors. Also we made this layout friendly for a 125b enclosure, instead of the classic 1590b horizontal layout.

Controls

- Body: Replacing the fat switch from the Zvex into a more versatile pot that allows you to thick your tone.
- Gate: From a noisy fuzz to a cut chocked fuzz.
- Volume: Controls overall output of the circuit.
- Drive (Fuzz): Set how much fuzz you want in the signal
- Compression: Compress the signal.
- Stab: Controls the amount of voltage fed into the circuit. We all love starving fuzzes!

Take in mind that in this pedal all the controls are interactive in between them. Specially the Stab-Fuzz-Compression control.

You can take a look on the schematic for further reference.

PCBGUITARMANIA.COM

Bill of materials

Resistors	
Part	**Value**
R1	2m2
R2	470r
R3	10k
R4	47k
R5	5k1
R6	220k
R7	4k7
R8	220k

Capacitors	
Part	**Value**
C2	100n
C7	100n

Electrolytics Capacitors	
Part	**Value**
C1	10u
C3	10u
C4	10u
C5	10u
C6	47u

Potentiometers	
Part	**Value**
BODY	100k B
COMP	10k B
DRIVE	10k B
GATE	10k B
STAB	10k B
VOL	5k B

Transistors	
Part	**Value**
Q1	2N3904
Q2	GE PNP
Q3	GE PNP

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

PCBGUITARMANIA.COM

Shopping list

Resistors		
Qty	**Value**	**Parts**
1	10k	R3
2	220k	R6, R8
1	2m2	R1
1	470r	R2
1	47k	R4
1	4k7	R7
1	5k1	R5

Capacitors		
Qty	**Value**	**Parts**
2	100n	C2, C7

Electrolytics Capacitors		
Qty	**Value**	**Parts**
4	10u	C1, C3, C4, C5
1	47u	C6

Potentiometers		
Qty	**Value**	**Parts**
1	100k B	BODY
4	10k B	COMP, DRIVE, GATE, STAB
1	5k B	VOL

Transistors		
Qty	**Value**	**Parts**
1	2N3904	Q1
2	**GE PNP***	Q2, Q3

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

PCBGUITARMANIA.COM

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.

GE PNP* Many transistors could fit for this project, even Zvex has been experimenting with different types through the years. You can try almost any Germanium PNP transitor, even you can try with silicon ones,

AC122 and AC128 are the more common used ones. However take in mind that the gain of each transistor is crucial for having the best results. We recommend to you to buy already selected transistors on the following range of gain (HFE):

- For Q2 use a transistor in between 60-90hfe.
- For Q3 use a transistor in between110-140hfe.

If you have a batch of old unsorted germanium transistors we recommend you to socket and experiment with the best combination to your ears, Also you can sort them on your own with a transistor tester like this one HERE.

Build Notes

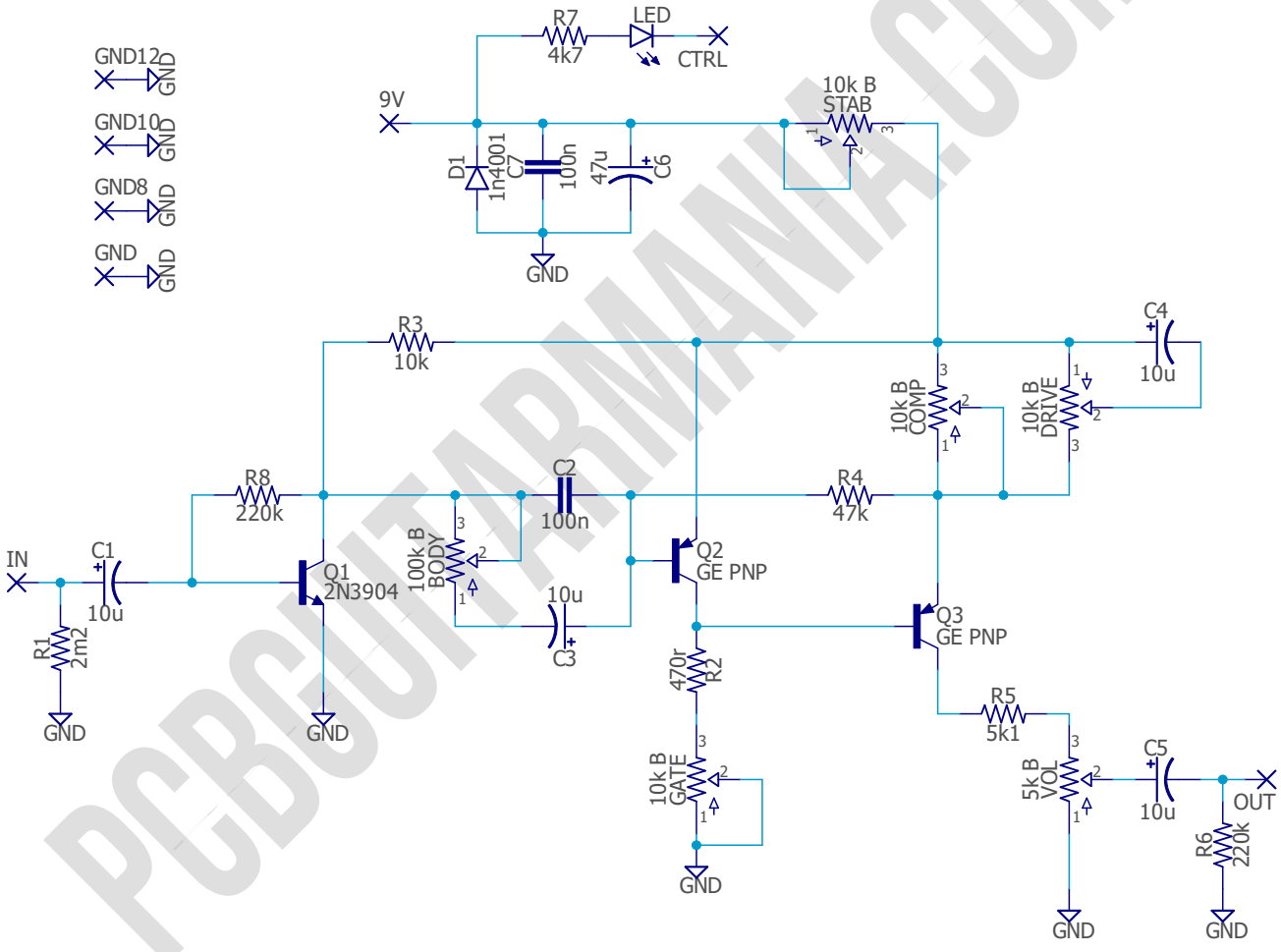
If this is one of your first projects I recommend you to take a look on our Pedal Building Guide

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

PCBGUITARMANIA.COM

Schematic



PCBGUITARMANIA.COM

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!

PCBGUITARMANIA.COM