Bulgarian Fuzz

Based on:
Vintage Bulgarian schematic, redesigned/renewed

Effect type:
Vintage germanium fuzz

Build difficult:
Easy

Amount of parts:
Low, total 34 components

Technology:
NPN Bipolar Transistors

Power consumption:
9V

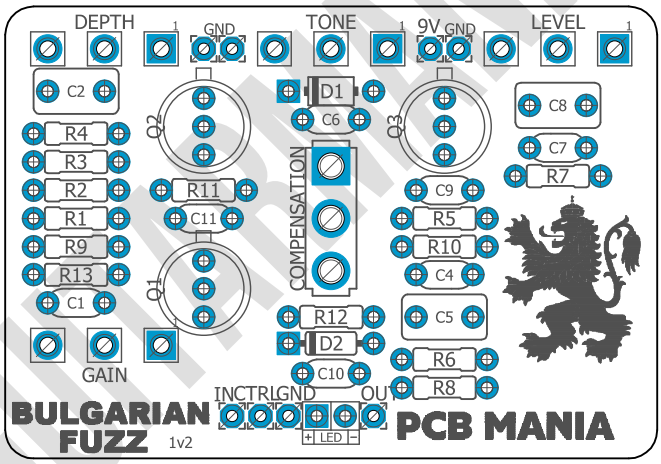
Enclosure type:
125b

Get your board at:
Bulgarian Fuzz

Get your kit at:
Das Musikding (Europe)

Project overview:

Originally from a Bulgarian electronics magazine from the 80s and never produced as far as we know. This circuit needed a lot of rework and experimentation. The end result: a great touch sensitive unique mellow-sounding Germanium fuzz.



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Introduction

Looking for something different in a fuzz pedal? Check out the Bulgarian Fuzz – it's only available at our store!

The original schematic comes from a Bulgarian electronics magazine from the 80s, and there is no record of a pedal after it.

We had to do some deep work over the original source—Readapting and modernizing the schematic without losing the soul of its roots took us some fair struggle, but it was worth it! The final result is a distinctive two-mode old-school germanium fuzz with harmonics compensation.

With its unique tone, this pedal is sure to stand out from the crowd. If you're looking for something vintage and special, Bulgarian Fuzz is the perfect build for you.

Controls

Potentiometers

- Depth
- Level
- Tone
- Gain

Switches

- Compensation

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Bill of materials

Resistors	
Part	**Value**
R1	10M
R2	68k
R3	82k
R4	560r
R5	10k
R6	100k
R7	27k
R8	6k8
R9	1M
R10	2M
R11	2M
R12	100r
R13	470k

Capacitors	
Part	**Value**
C1	220n
C2	220n
C4	1n
C5	220n
C6	39n
C7	150n
C8	470n
C9	100p
C10	100p
C11	100p

Potentiometers	
Part	**Value**
DEPTH	B25k
GAIN	B1M
LEVEL	A50k
TONE	A25k

Transistors	
Part	**Value**
Q1	**NPN Germanium***
Q2	**NPN Germanium***
Q3	**NPN Germanium***

Switches	
Part	**Value**
COMPENSATION	SPDT On/On

Diodes	
Part	**Value**
D1	1N5819
D2	1N4148
LED	3mm red LED

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Shopping list

Resistors		
Qty	**Value**	**Parts**
1	100k	R6
1	100r	R12
1	10M	R1
1	10k	R5
1	1M	R9
1	27k	R7
2	2M	R10, R11
1	470k	R13
1	560r	R4
1	68k	R2
1	6k8	R8
1	82k	R3

Capacitors		
Qty	**Value**	**Parts**
3	100p	C9, C10, C11
1	150n	C7
1	1n	C4
3	220n	C1, C2, C5
1	39n	C6
1	470n	C8

Potentiometers		
Qty	**Value**	**Parts**
1	A25k	TONE
1	A50k	LEVEL
1	B1M	GAIN
1	B25k	DEPTH

Transistors		
Qty	**Value**	**Parts**
3	**NPN Germanium***	Q1, Q2, Q3

Switches		
Qty	**Value**	**Parts**
1	SPDT On/On	COMPENSATION
1	3PDT Stomp foot	-

Diodes		
Qty	**Value**	**Parts**
1	1N4148	D2
1	1N5819	D1
1	3mm red LED	LED

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

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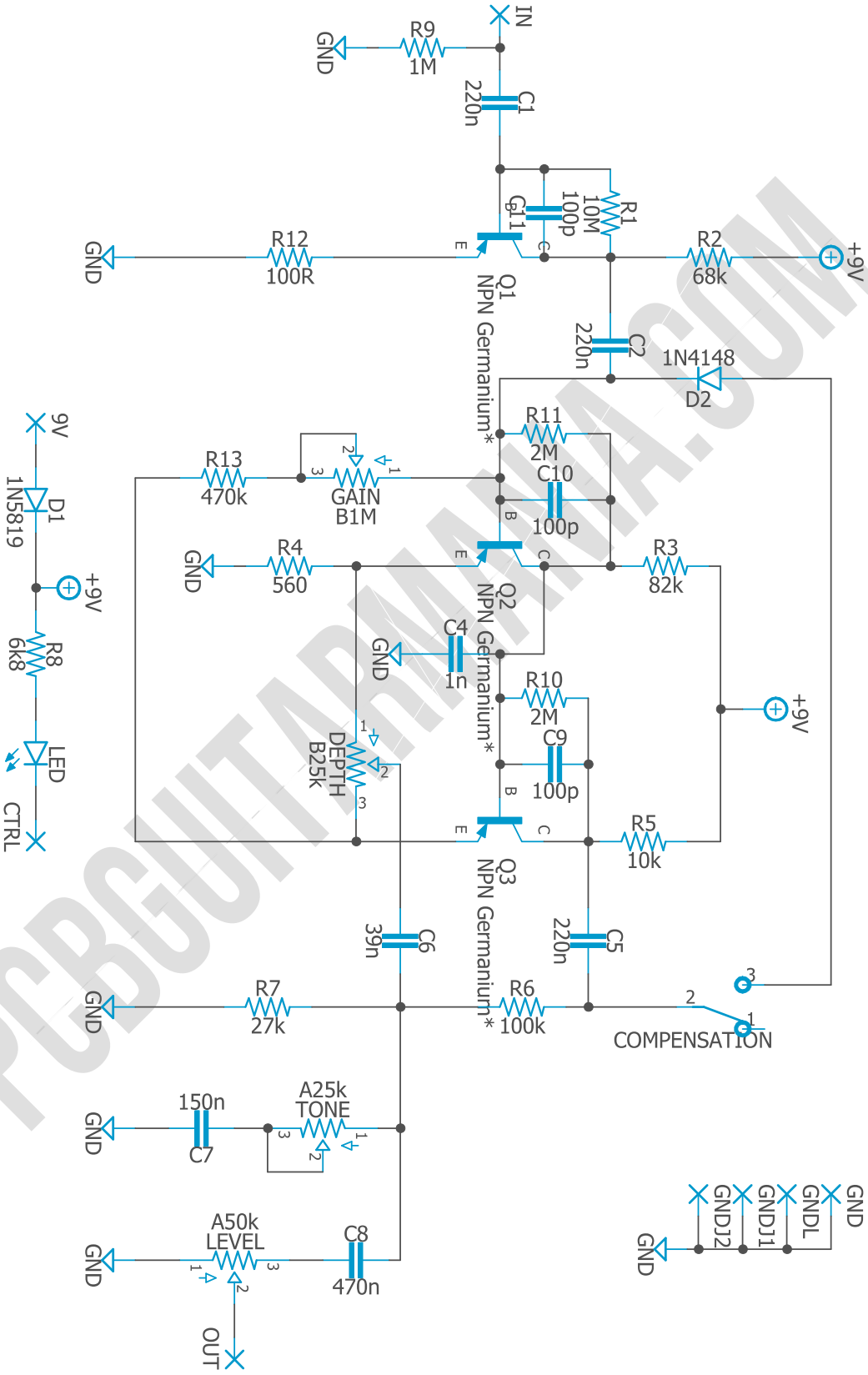
Schematic



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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

NPN Germanium*

You can use any type of NPN germanium transistor. Another alternative is any silicon transistor with low HfeLM. Experiment and choose according to your taste.

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.

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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.

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