Elk Device

Based on:
ELK: Super Fuzz Sustainar and EQD Hizumitas

Effect type:
Muff type fuzz

Build difficult:
Intermediate

Number of parts:
Average, total 54 components

Technology:
NPN silicon transistors

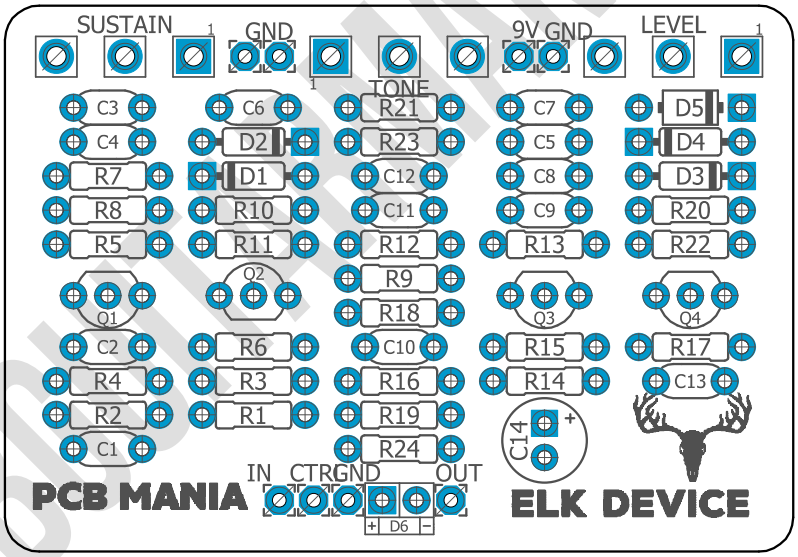
Power consumption:
9V

Enclosure type:
125b

Get your board at:
Elk Device

Get your kit at:
Das Musikding (Europe)

Project overview:
The Elk Device is the perfect choice for guitarists who want to explore the legendary Big Muff sound. This board gives you two amazing builds to choose from, the EQD Hizumitas and the ELK: Super Fuzz Sustainer, each with its unique character and sound.



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Introduction

The Elk device is the perfect way to keep your options open. With this handy board, you can choose between two different pedals to dip you into the Big Muff fuzz sounding.

Let's see which is the perfect option for your style:

On the one hand, is the famous vintage unit, the ELK: Super Fuzz Sustainar, a faithful reproduction of the original 1972 Big Muff, full of all that iconic fuzz and sustain. If you're looking to recreate the classic tones of Hendrix and Led Zeppelin, look no further than the Elk Device.

This pedal is one of the earliest Japanese known copies of the original Electro Harmonix triangle muff. Initially, it used PNP transistors, which are entirely unnecessary now, given the availability of suitable NPN transistors. The tone section is also slightly different from a regular Big Muff and retains more high-end across the range, a change that brings a welcome improvement. This is a monster of a pedal, and no Big Muff aficionado should miss it!

On the other hand, we have the EQD Hizumitas, designed by Wata, the guitarist/keyboardist of the legendary Japanese experimental music band Boris.

Working alongside the EQD team, she made a faithful but unique and modern sonic recreation of the previously mentioned Elk Sustainar. Offering loads of heavy distortion and smooth sustain with an underlying grit, excellent response to different pickup types and playing dynamics, unique Tone, and Sustain controls that significantly impact the distortion's character while also delivering a massive output Volume.

So, which one will you choose? The vintage pedal or its newest reinvention? Whether you pick the Super Fuzz Sustainar or the Hizumitas, you'll love the way this board makes your music sound!

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Controls

Potentiometers

- Level
- Sustain
- Tone

ELK: Super Fuzz Sustainar - Bill of materials

Resistors	
Part	**Value**
R1	1m
R2	33k
R3	82k
R4	390k
R5	18K
R6	100R
R7	1K
R8	10K
R9	100K
R10	470K
R11	12K
R12	390R
R13	10K
R14	100K
R15	470K
R16	12K
R17	390R
R18	10K
R19	56K
R20	470K
R21	100K
R22	10K
R23	2K7
R24	4K7

Capacitors	
Part	**Value**
C1	100n
C2	560pf
C3	100n
C4	100n
C5	100n
C6	470p
C7	100n
C8	100n
C9	470p
C10	33n
C11	47n
C12	100n
C13	100n

Electrolytic Capacitors	
Part	**Value**
C14	100u

Potentiometers	
Part	**Value**
LEVEL	A100K
SUSTAIN	A100K
TONE	B250K

Transistors	
Part	**Value**
Q1	2N5089
Q2	2N5089
Q3	2N5089
Q4	2N5089

Switches	
Part	**Value**
-	3PDT Stomp foot

Diodes	
Part	**Value**
D1	1n914
D2	1n914
D3	1n914
D4	1n914
D5	1N5817
D6	3mm red LED

Jacks	
Part	**Value**
-	DC JACK
-	AUDIO JACK
-	AUDIO JACK

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ELK: Super Fuzz Sustainer - Shopping list

Resistors		
Qty	**Value**	**Parts**
3	100K	R9, R14, R21
1	100R	R6
4	10K	R8, R13, R18, R22
2	12K	R11, R16
1	18K	R5
1	1K	R7
1	1m	R1
1	2K7	R23
1	33k	R2
2	390R	R12, R17
1	390K	R4
3	470K	R10, R15, R20
1	4K7	R24
1	56K	R19
1	82k	R3

Capacitors		
Qty	**Value**	**Parts**
8	100n	C1, C3, C4, C5, C7, C8, C12, C13
1	33n	C10
2	470p	C6, C9
1	47n	C11
1	560pf	C2

Electrolytic Capacitors		
Qty	**Value**	**Parts**
1	100u	C14

Potentiometers		
Qty	**Value**	**Parts**
2	A100K	LEVEL, SUSTAIN
1	B250K	TONE

Transistors		
Qty	**Value**	**Parts**
4	2N5089	Q1, Q2, Q3, Q4

Switches		
Qty	**Value**	**Parts**
1	3PDT Stomp foot	-

Diodes		
Qty	**Value**	**Parts**
1	1N5817	D5
4	1n914	D1, D2, D3, D4
1	3mm red LED	D6

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

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EQD Hizumitas - Bill of materials

Resistors	
Part	**Value**
R1	1m
R2	33k
R3	82k
R4	390k
R5	18K
R6	100R
R7	820R
R8	8K2
R9	82k
R10	390K
R11	12K
R12	150R
R13	8K2
R14	82K
R15	390K
R16	18K
R17	100R
R18	39K
R19	39K
R20	390K
R21	47K
R22	12K
R23	1K
R24	4K7

Capacitors	
Part	**Value**
C1	100n
C2	560p
C3	100n
C4	100n
C5	47n
C6	560p
C7	100n
C8	47n
C9	560n
C10	33n
C11	10n
C12	100n
C13	100n

Electrolytic Capacitors	
Part	**Value**
C14	100u

Potentiometers	
Part	**Value**
LEVEL	B50K
SUSTAIN	B50K
TONE	B50K

Transistors	
Part	**Value**
Q1	2N3904
Q2	2N3904
Q3	2N3904
Q4	2N3904

Switches	
Part	**Value**
-	3PDT Stomp foot

Diodes	
Part	**Value**
D1	1N4148
D2	1N4148
D3	1N4148
D4	1N4148
D5	1N5817
D6	3mm red LED

Jacks	
Part	**Value**
-	DC JACK
-	AUDIO JACK
-	AUDIO JACK

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EQD Hizumitas - Shopping list

Resistors		
Qty	**Value**	**Parts**
2	100R	R6, R17
1	12K	R11
2	18K	R5, R16
1	1K	R23
1	1m	R1
1	33k	R2
4	390K	R4, R10, R15, R20
1	4K7	R24
3	82k	R3, R9, R14
1	820R	R7
2	8K2	R8, R13
1	150R	R12
2	39K	R18, R19
1	47K	R21
1	12K	R22

Capacitors		
Qty	**Value**	**Parts**
6	100n	C1, C3, C4, C7, C12, C13
1	33n	C10
2	47n	C5, C8
1	560n	C9
3	560pf	C2, C6
1	10n	C11

Electrolytic Capacitors		
Qty	**Value**	**Parts**
1	100u	C14

Potentiometers		
Qty	**Value**	**Parts**
3	B50K	LEVEL, SUSTAIN, TONE

Transistors		
Qty	**Value**	**Parts**
4	2N3904	Q1, Q2, Q3, Q4

Switches		
Qty	**Value**	**Parts**
1	3PDT Stomp foot	-

Diodes		
Qty	**Value**	**Parts**
1	1N5817	D5
4	1N4148	D1, D2, D3, D4
1	3mm red LED	D6

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

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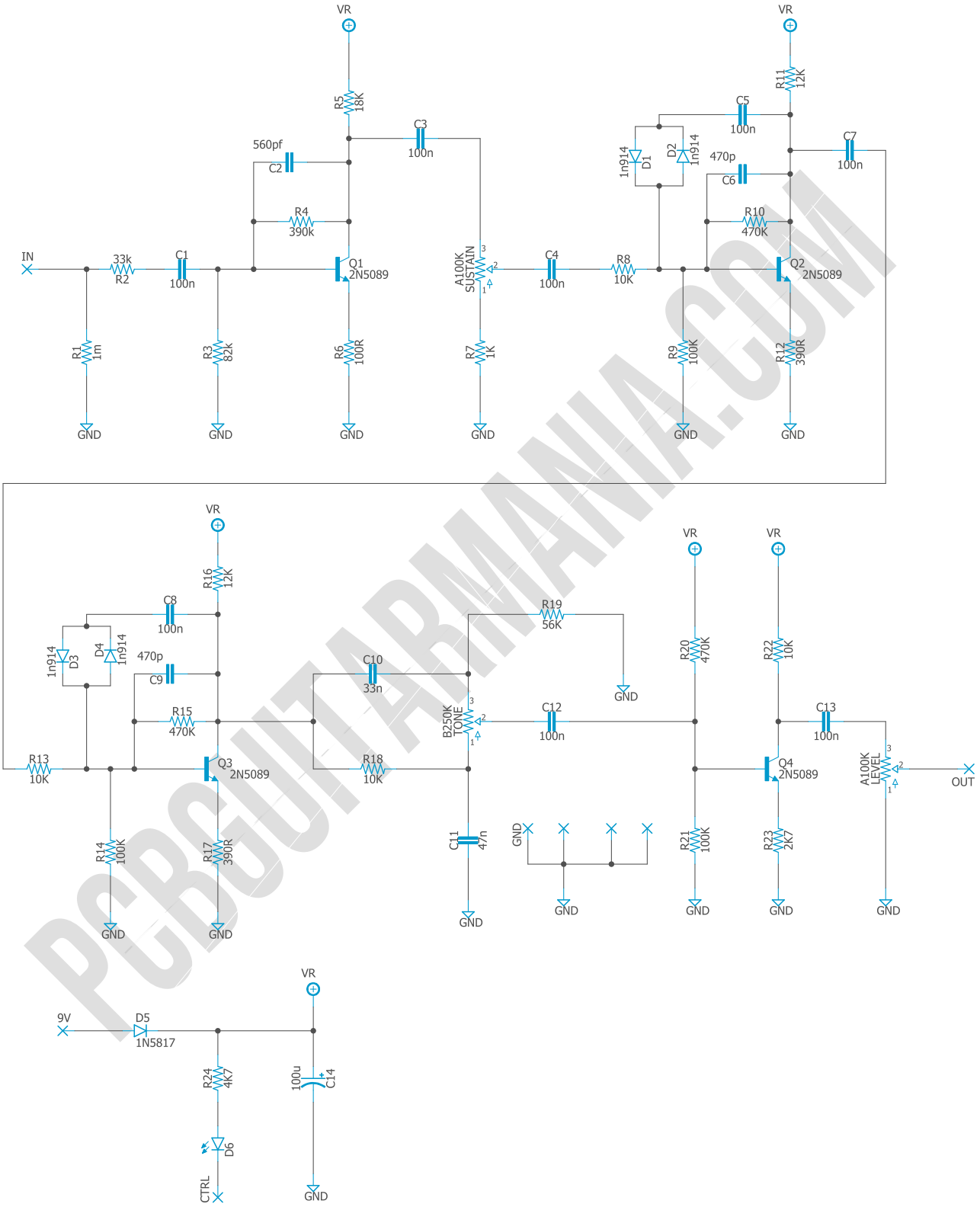
Schematic



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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 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

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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.

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