Fjord

Based on:
Black Art Toneworks Fnord

Effect type:
Fuzz, Octave & Pitch

Build difficult:
Easy

Amount of parts:
Low, total 28 components

Technology:
Four XOR Gates IC and Darlington Transistor

Power consumption:
9V

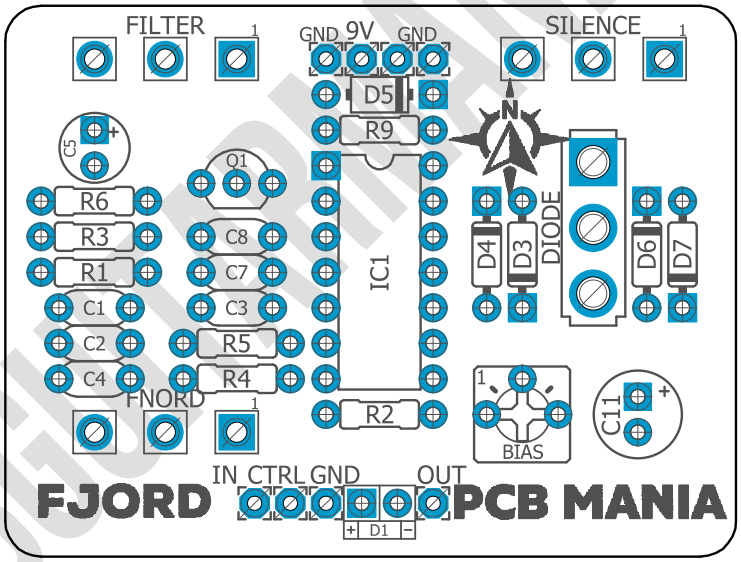
Enclosure type:
125b

Get your board at:
Fjord

Get your kit at:
Das Musikding (Europe)

Project overview:

Fjord is what happens when you mix a scrambler/octaver type fuzz with a more traditional fuzz/distortion. Deal it heavy into a full-throated distortion, make it sing into a soften zipper/velcro tone, or pick the perfect combination of the two; the choice is yours!



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Introduction

Fjord offers all the high tone and incredible dynamic range of a typical Black Arts pedal and a unique blend of fuzz effects types, making it a really cool board. You can dial it in heavy and roll back the volume on your guitar to get a sweet, mellow drive without losing any of your instrument's subtle characteristics.

If you were searching for the iconic octave-fuzz lead tone, you just found it!

Controls

Potentiometers

- Filter
- Silence
- Fnord

Bill of materials

Resistors	
Part	**Value**
R1	1m
R2	4k7
R3	470k
R4	100k
R5	10k
R6	10k
R9	100r

Capacitors	
Part	**Value**
C1	100n
C2	100n
C3	100n
C4	2n2
C7	10n
C8	100n

Electrolytic Capacitors	
Part	**Value**
C5	22u
C11	220u

Potentiometers	
Part	**Value**
FILTER	50K B
FNORD	10K B
SILENCE	100K A

Trimpots	
Part	**Value**
BIAS	200K

Switches	
Part	**Value**
Diode	On/Off/On SPDT

IC	
Part	**Value**
IC1	CD4070

Transistors	
Part	**Value**
Q1	MPSA13

Diodes	
Part	**Value**
D1	3mm red LED
D3	Your Choice
D4	Your Choice
D5	1n5817
D6	1N4148
D7	1N4148

Shopping list

Resistors		
Qty	**Value**	**Parts**
1	1m	R1
1	4k7	R2
1	470k	R3
1	100k	R4
2	10k	R5, R6
1	100r	R9

Capacitors		
Qty	**Value**	**Parts**
4	100n	C1, C2, C3, C8
1	2n2	C4
1	10n	C7

Electrolytic Capacitors		
Qty	**Value**	**Parts**
1	22u	C5
1	220u	C11

Potentiometers		
Qty	**Value**	**Parts**
1	100K A	SILENCE
1	10K B	FNORD
1	50K B	FILTER

Trimpots		
Qty	**Value**	**Parts**
1	200K	BIAS

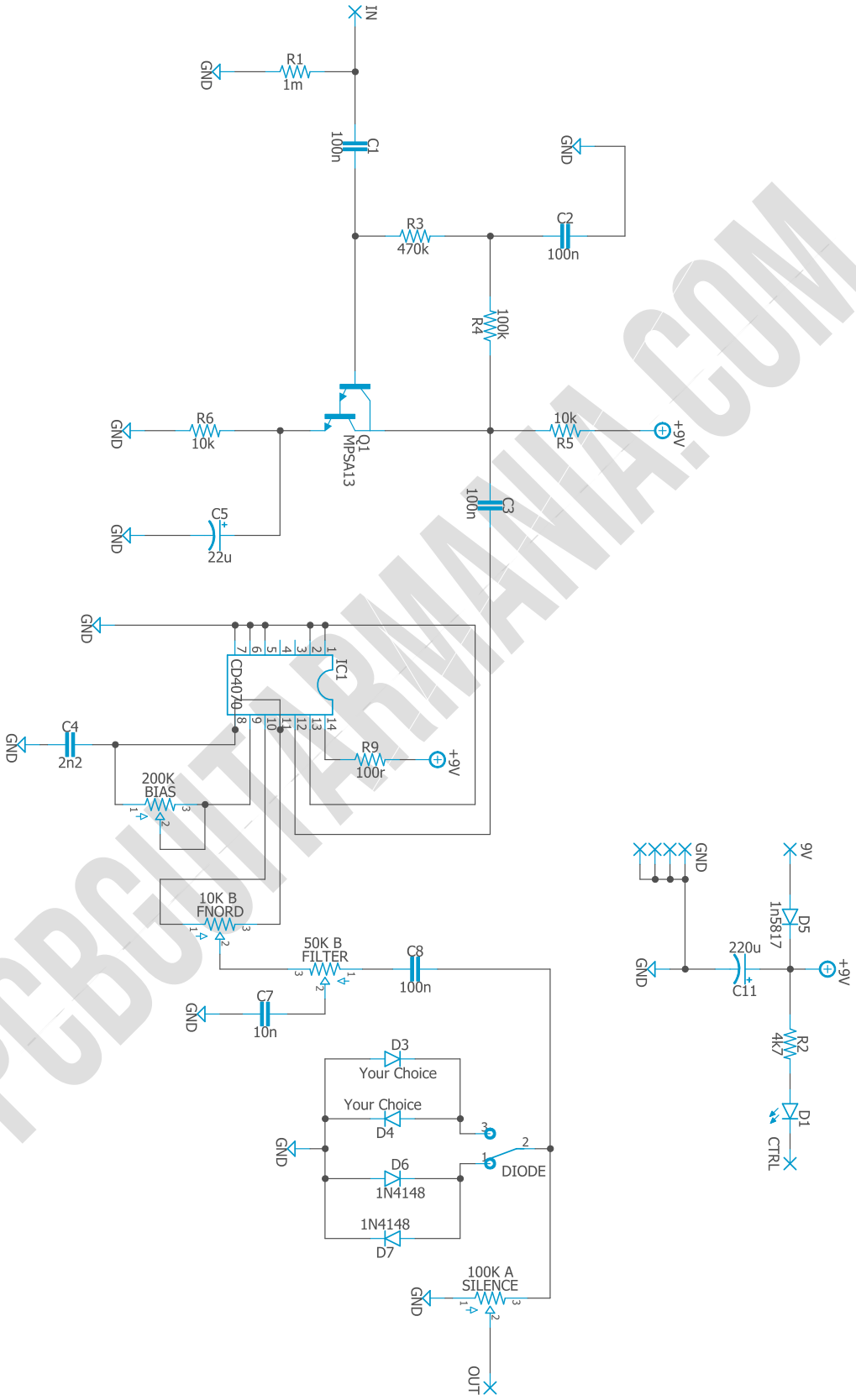
Switches		
Qty	**Value**	**Parts**
1	On/Off/On SPDT	Diode

IC		
Qty	**Value**	**Parts**
1	CD4070	IC1

Transistors		
Qty	**Value**	**Parts**
1	MPSA13	Q1

Diodes		
Qty	**Value**	**Parts**
2	1N4148	D6, D7
1	1n5817	D5
1	3mm red LED	D1
2	Your Choice	D3, D4

Schematic



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

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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