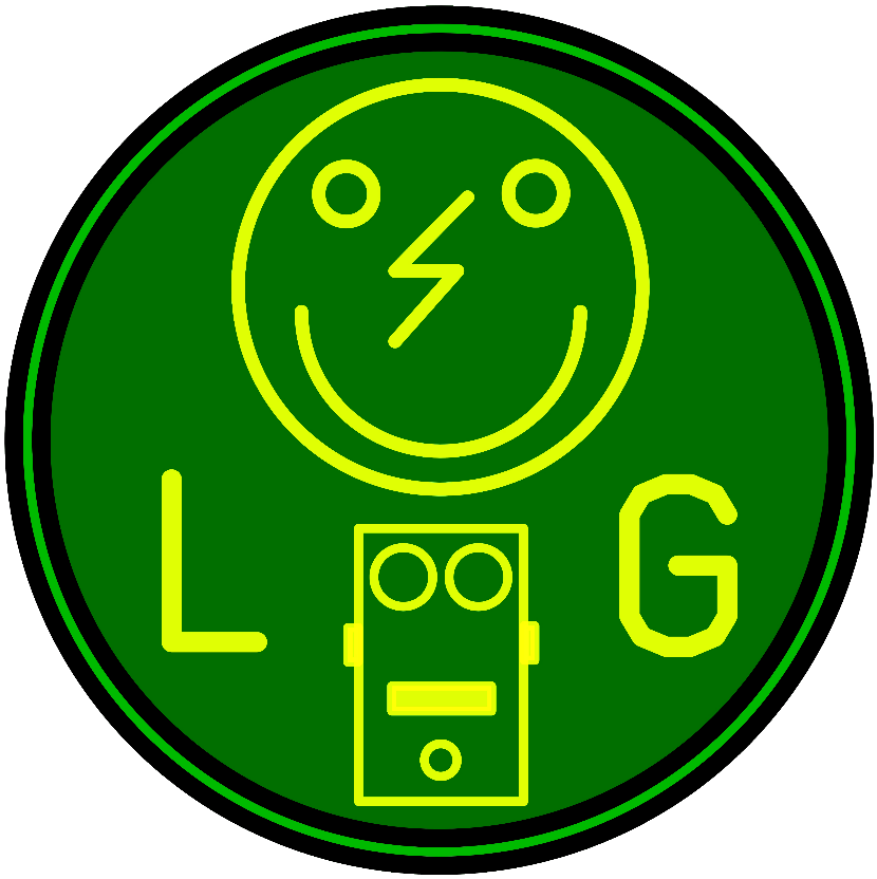
Purple Octave

Building instructions

V1.1



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Read this entire manual thoroughly before you start building the effect!

Last update: 17-12-2016

Components

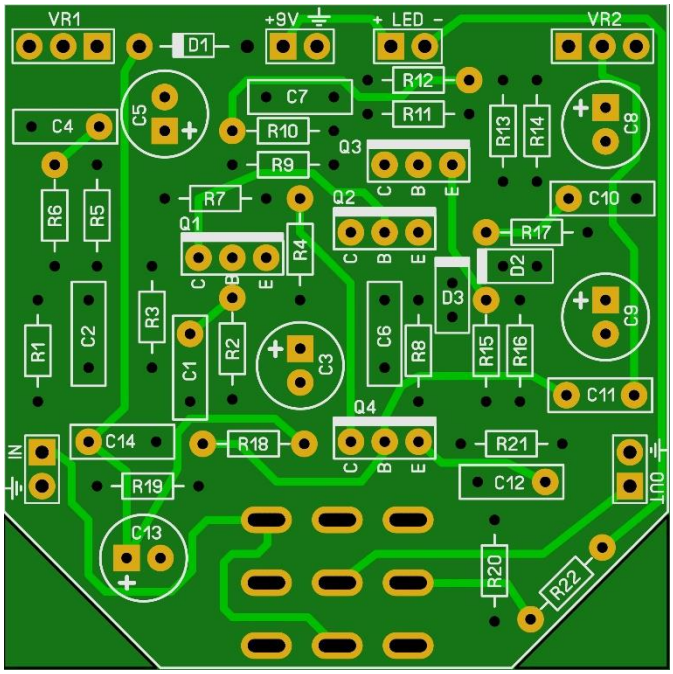
ID	Value	Comment	ID	Value	Comment
C1	10n	SMF/MKT	**R1**	2M2	1% metal film
C2	470p	Ceramic	**R2**	820k	1% metal film
C3	22u	Electrolytic	**R3**	680k	1% metal film
C4	1n	Ceramic	**R4**	180k	1% metal film
C5	22u	Electrolytic	**R5**	100k	1% metal film
C6	100n	SMF/MKT	**R6**	220R	1% metal film
C7	10n	SMF/MKT	**R7**	220R	1% metal film
C8	22u	Electrolytic	**R8**	39k	1% metal film
C9	22u	Electrolytic	**R9**	47k	1% metal film
C10	10n	SMF/MKT	**R10**	39k	1% metal film
C11	10n	SMF/MKT	**R11**	330k	1% metal film
C12	100n	SMF/MKT	**R12**	470k	1% metal film
C13	100u	Electrolytic	**R13**	10k	1% metal film
C14	100n	SMF/MKT	**R14**	2M2	1% metal film
D1	1N5817		**R15**	10k	1% metal film
D2	1N4148		**R16**	820k	1% metal film
D3	1N4148		**R17**	100k	1% metal film
Q1	2N3906		**R18**	2M2	1% metal film
Q2	MPSA13		**R19**	2M2	1% metal film
Q3	MPSA13		**R20**	10k	1% metal film
Q4	MPSA13		**R21**	150k	1% metal film
			R22	4k7	1% metal film
VR1	C10k	Drive			
VR2	A1M	Volume			

PCB layout

A=Log, B=Lin, C=Rev. Log

50 mm x 50 mm

1.97 in x 1.97 in



Bill of Materials

Capacitors			
Value	**Amount**	**Type**	**Rating**
470p	1	Ceramic	16V +
1n	1	SMF/MKT	16V +
10n	4	SMF/MKT	16V +
100n	3	SMF/MKT	16V +
22u	4	Electrolytic	16V +
100u	1	Electrolytic	
Diode		**Transistors**	
Value	**Amount**	**Value**	**Amount**
1N5817	1	2N3906	1
1N4148	2	MPSA13	3
Resistors (1% metal film)			
Value	**Amount**	**Value**	**Amount**
220R	2	330k	1
4k7	1	470k	1
10k	3	680k	1
39k	2	820k	2
47k	1	2M2	4
100k	2		
150k	1	C10k reverse logarithmic	1
180k	1	A1M logaritmic	1

Introduction

The Purple Fuzz is a personal take on the classic Octave Fuzzes. It has been specially adapted so it will fit on a small pcb with integrated 3PDT footswitch. If you want it as original as possible you can leave out **D1** and jumper it with a spare piece of lead wire. Be warned that you will not have polarity protection anymore if you leave out D1. If you want to leave out the LED than do not solder **R22** and the LED.

Building sequence

Soldering this board can be very complicated for some people since the solder pads are very close together. Use a magnifying glass to make the job easier. If you want to experiment with other transistors then you could socket them instead of soldering them to the board. You'll need a 20 SIL, break off the sockets and solder them to the board.

Start by soldering the jumpers (if needed) and the resistors and then **D1**. If you want to socket the transistors then solder the sockets now. **Note:** Do not blow on your solder in an attempt to cool it down. That will possibly result in a bad join that might corrode!

Solder the ceramic capacitors **D2**, **D3** and then the small SMF/MKT capacitators, then the electrolytes, finish by soldering the 3PDT footswitch to the board. You are free to choose on which side of the board you will solder the footswitch, just be sure to test if it fits your enclosure before you solder it! To fit a 1590B, you must solder the Electrolytes on the bottom side of the PCB as shown in the photo.

Place the transistors and you are almost ready to rock.

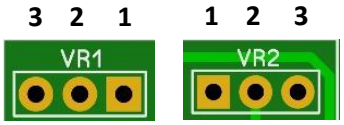
Besides the components mentioned in the Bill Of Materials table, you will need:

- **2 input jacks**. 2 mono jacks if you are not going to use a battery but only the 9V adapter. 1 mono (for output) and 1 stereo jack (for input) if you will be using both a 9V battery and the 9V adapter.
- **1 x 3PDT footswitch** (9 pins)
- **2,1mm DC jack** (isolated).
- **9v battery clip** (optional).
- **22 gage stranded hook-up wire.**
- **1 x LED for status**
- **Hammond 1590B** case (or similar) in your favorite color if you make sure to use the smallest possible components. A **1590N1** (or **125B**) will give you more space to work with so I advise that is you have some bigger components.

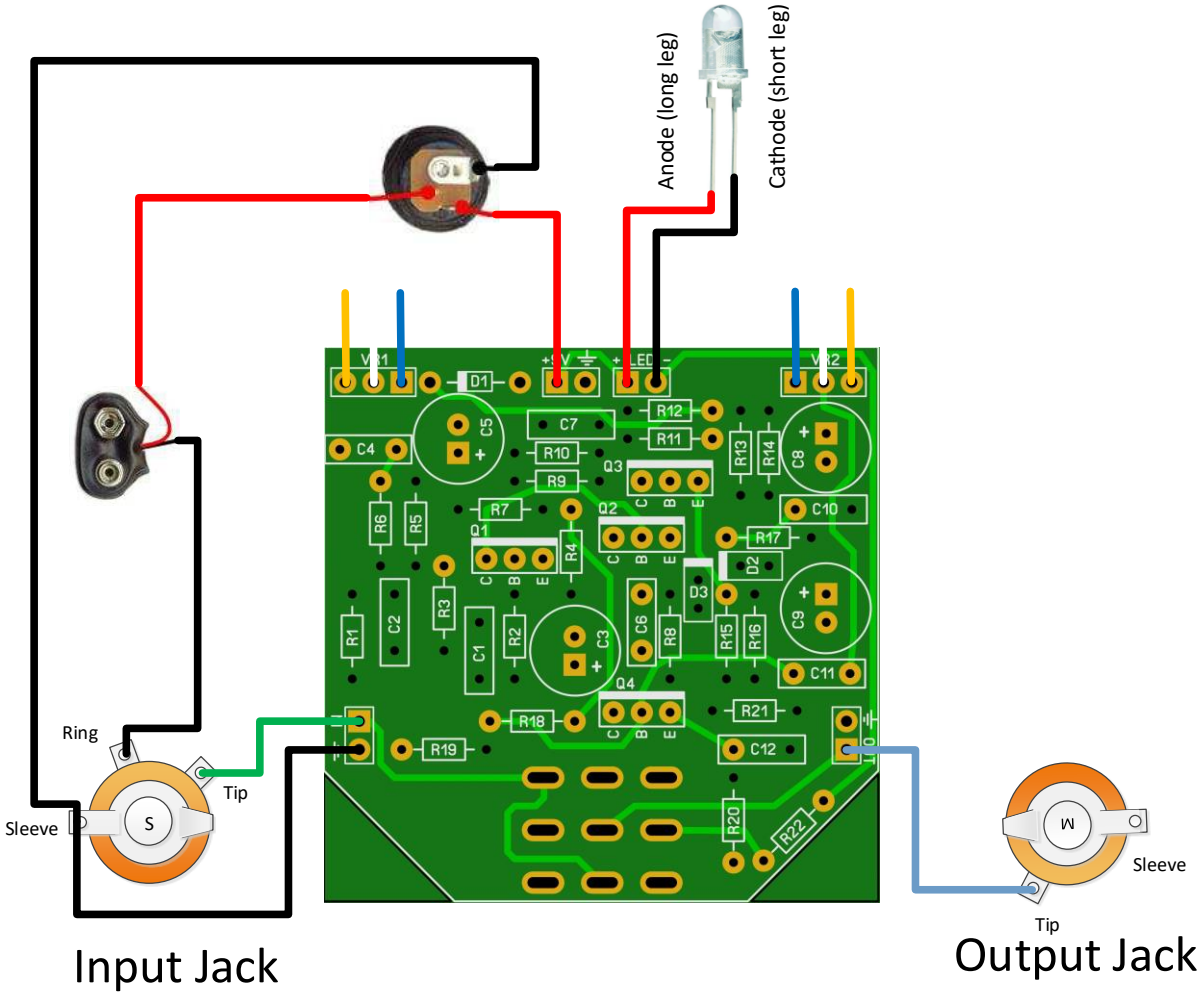
Off board wiring

Wiring the pots **VR1**-**VR2** is very simple. The rectangle pad marks pin 1 of a potentiometer. The images below show how you can recognize which pin is which on a potentiometer.

Blue = pin 1
White = pin 2
Yellow = pin 3



After wiring the potentiometers you will need to wire the input, output and LED :



Note: The wiring is based on star wiring and it requires a good conductivity between the input jack sleeve, output jack sleeve and the enclosure. If this is not the case then please connect a ground wire between the input jack sleeve and the output jack sleeve.

Troubleshooting

All PCB's have been 100% factory e-tested and out of every batch I receive I build an effect to double check, so there should not be a connection problem on the PCB itself.

The board is not working (at all), what now?

- Check if your 9V is plugged in correctly (and/or soldered correctly on the board).
- Check that you oriented the capacitors, IC's ,transistors and diodes the right way. SMF, MKT and ceramic capacitors as well as resistors do not need to be oriented.
- Check if you used the correct values of the components. For resistors you can look here: http://www.diyaudioandvideo.com/Electronics/Color/
- Double and triple check your soldering! A loose or cold solder can be really bad for your board.
- Replace the IC, it might be defective. Before doing that first unplug the 9V and wait for 5 seconds.
- Check that you have good/high grade components. A lot of Chinese sourced parts are fakes (especially high end opamps, vintage diodes and transistors) so be careful that you source your parts from reliable suppliers.

Schematic