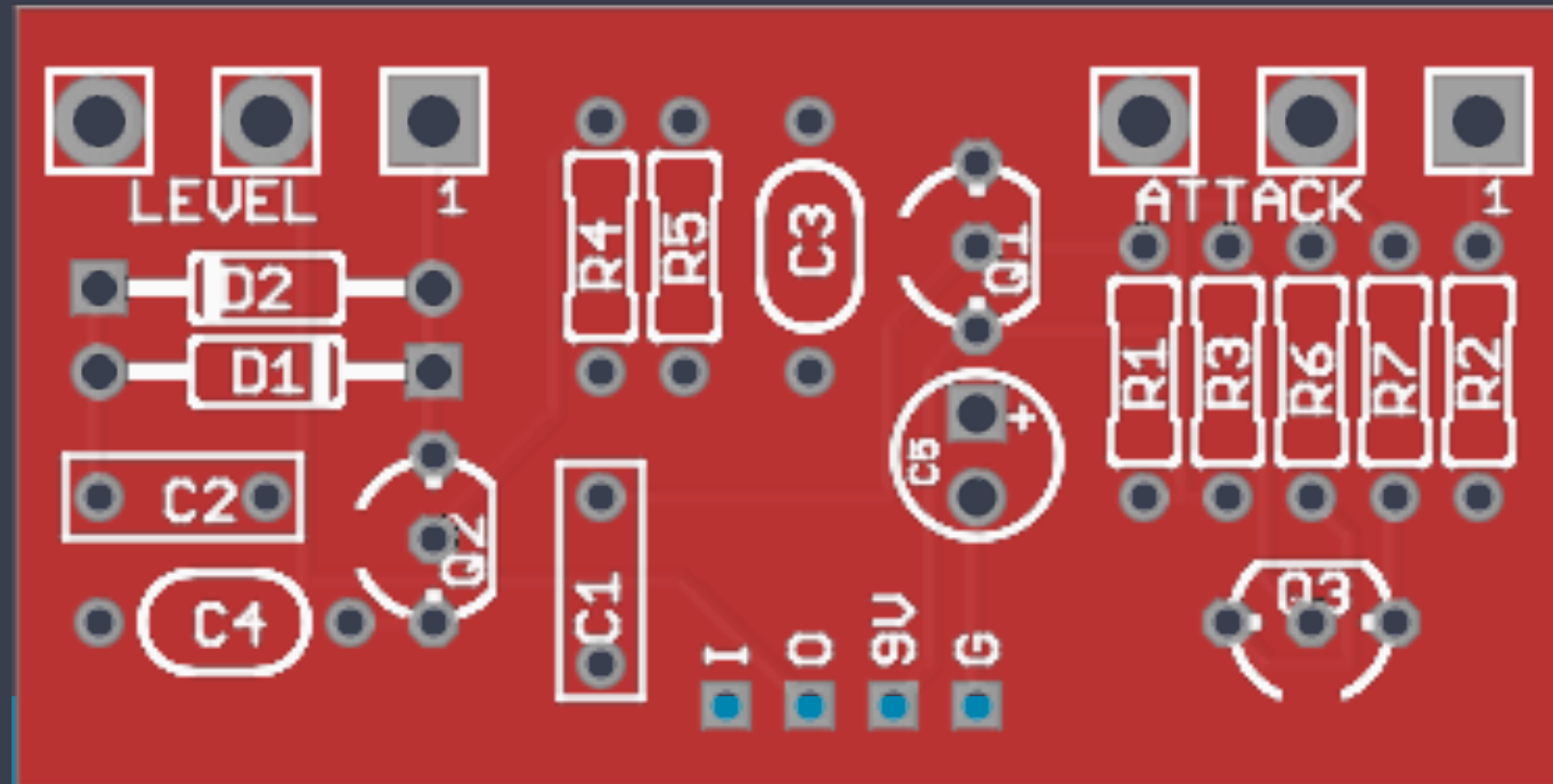


OtalgiaFX

3 TRANSISTOR FUZZ

Build Guide

www.otalgiafx.co.uk



"A fantastic Fuzz based on the
Jen Fuzz III"

BILL OF REQUIREMENTS

PART LIST

** The values in Red shown for Capacitors C1, C2 and C4 are recommended values to make the pedal more stable and less susceptible to oscillation and motor boating.

** Please note that this some of the parts in this list are interchangeable. For example you can use carbon resistors instead of metal film, however it is possible that changing these components might alter the sound slightly.

PART	VALUE	DEVICE TYPE
CAPACITORS		
C1	10nf (47nf)	5mm Polyester Box, 63v (or higher)
C2	10nf (100nf)	5mm Polyester Box, 63v (or higher)
C3	15nf	5mm Polyester Box, 63v (or higher)
C4	1.2nf (10nf)	5mm Polyester Box, 63v (or higher)
C5	22uf	Polarised Electrolytic 25v (or higher)
TRANSISTORS		
Q1	BC238B	Silicon NPN
Q2	BC238B	Silicon NPN
Q3	BC239C	Silicon NPN
RESISTORS		
R1	1M	1/4W Through Hole, Metal Film
R2	10K	1/4W Through Hole, Metal Film
R3	33K	1/4W Through Hole, Metal Film
R4	4K7	1/4W Through Hole, Metal Film
R5	150K	1/4W Through Hole, Metal Film
R6	22R	1/4W Through Hole, Metal Film
R7	6K8	1/4W Through Hole, Metal Film

BILL OF REQUIREMENTS

PART LIST (CTD)

** Please note that this some of the parts in this list are interchangeable. For example you can use carbon resistors instead of metal film, however it is possible that changing these components might alter the sound slightly.

PART	VALUE	DEVICE TYPE
POTENTIOMETERS		
LEVEL	A50K	16mm (Pin Terminals)
ATTACK	B1K	16mm (Pin Terminals)
DIODES		
D1	1N4148	
D2	1N4148	

BUILDERS NOTES

In the parts list each component has a component number. This number corresponds to the placement number silk screen printed on the top of the PCB. Components should be mounted on the printed side of the PCB and soldered into place on the underside of the board.

To aid in construction and make soldering easier it is suggested that components are soldered to the board in order of their height profile from low to high, starting with resistors, diodes and then progressing on to larger items such as sockets and capacitors. The potentiometer should be soldered last.

Some items may require correct orientation for the circuit to work correctly as documented below -

Polarised Capacitors -

The PCB will have a "+" mark printed. This mark indicates where the positive lead of the capacitor should be soldered. In general the positive lead of a polarised capacitor is longer than the negative. Also in many polarised capacitors the body of the component will be marked to indicate the polarity of each lead.

Resistors -

Resistors are not polarised so can be mounted either way around.

Non Polarised Capacitors-

Non-Polarised capacitors can be mounted either way around.

BUILDERS NOTES (CTD)

Transistor selection -

The circuit has a negative ground and uses NPN transistors.

A transistor has three legs - A collector, base and emitter (CBE) . The order of these legs can vary depending on the transistor selected. The PCB has the pins in the order EBC (see picture below). Ensure that the Pins of the transistor you use (called pinout) matches the pcb order otherwise the circuit will not work.

The transistors will need to be orientated correct and match the placement image marked on the PCB. If you intend to use a transistor that differ from the build list then please be aware than the Collector, Base and Emitter legs may be in a different order. The pinout legs of different transistors can be found by referring to their technical data sheets on the Web.

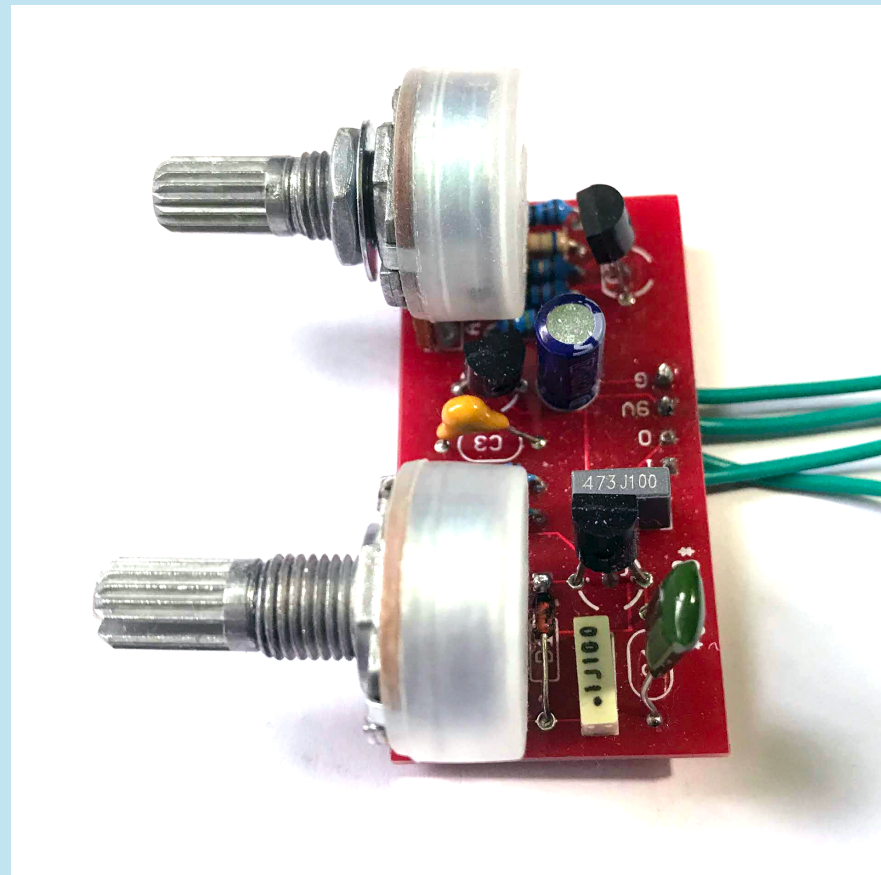
It is also worth noting that transistors are susceptible to heat damage so take care when soldering.

Alternatively use a transistor socket and insert the transistor after the sockets have been soldered into place.

BUILDERS NOTES (CTD)

Potentiometer Mounting -

The pcb has been designed so that the potentiometers can be directly mounted to the boards. Please see the picture below to illustrate how the potentiometers should be mounted.



TESTING THE CIRCUIT

Before proceeding to the off board wiring of switches and LED's it is advised to test that the circuit is working as expected. To do this you need to solder four wires from the connectors on the PCB, marked I,O,9V & G.

The connectors are sized to accommodate AWG24 Single Strand Wire. If using this wire be careful not over bend it as it may snap. If you are not comfortable with handling single core wire then stranded may also be used.

To test your circuit -

1. Unplug the power supply
2. Plug a mono guitar cable into your guitar and a second mono guitar cable into your amplifier
3. Connect the wire from I (This is the input wire) to the tip of your guitar cable
4. Connect the wire from O (This is the output wire) to tip of your amp cable
5. Connect the wire from 9V (This is the Voltage wire) to the +9V of your power supply
6. Connect the wire from G (This is the Ground wire) to the sleeve of your guitar cable, the sleeve of the amp cable and to the Ground wire of your power supply.
7. Plug in the power supply and test the circuit is working. If it is then you can proceed to off board wiring.

The easiest way to perform off board wiring is to use a 3PDT switch daughterboard -

<https://www.otalgiafx.co.uk/wp-content/uploads/2017/09/3PDT-Instructions.pdf>

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