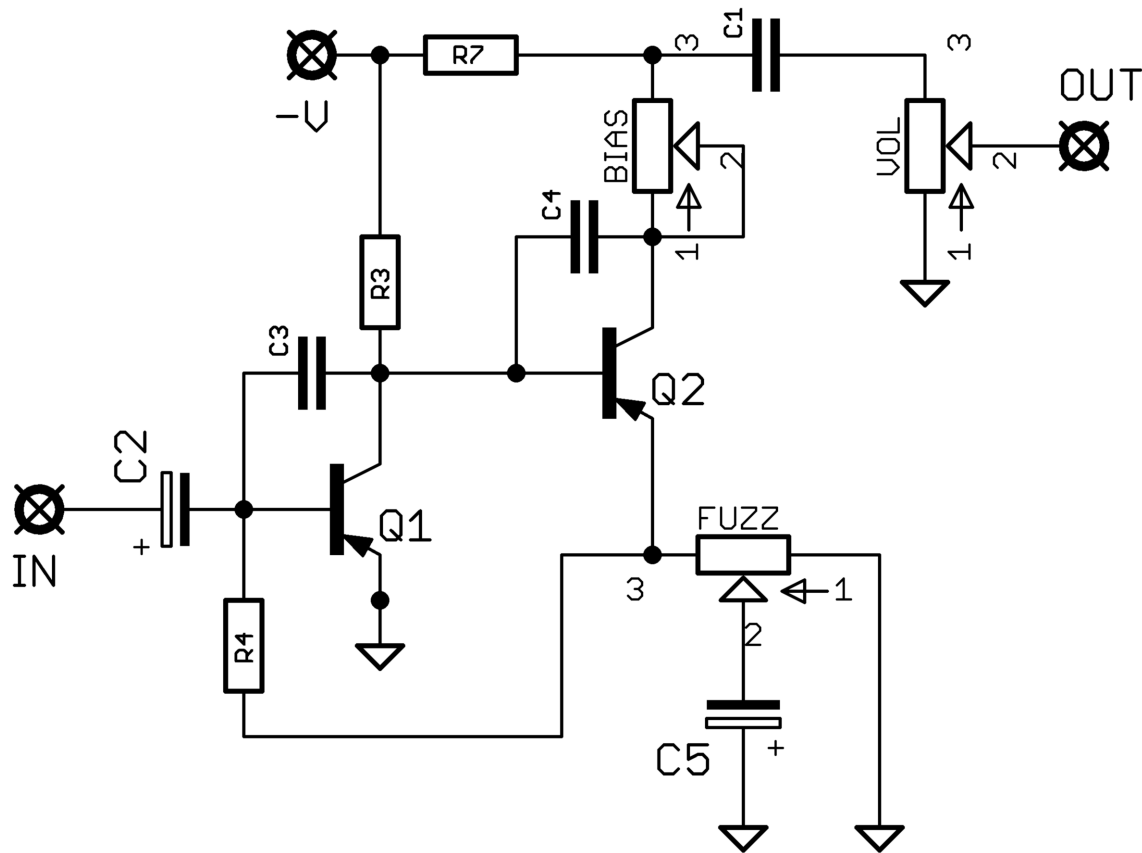


Before you dig in, ensure you download and read the **General Build Guide**.

It contains all the information you need for a successful outcome.



Schematic - PNP (posi ground) Ge



R3	33K	C1	10n	Q1	PNP Germanium <>70hFE
R4	100K	C2	2u2 elec	Q2	PNP Germanium <>120hFE
R7	470R (1K)	C3	Empty	FUZZ	1KB (2KB) C-taper is better
BIAS	47K trim	C4	Empty	VOL	500KA
		C5	22u elec		

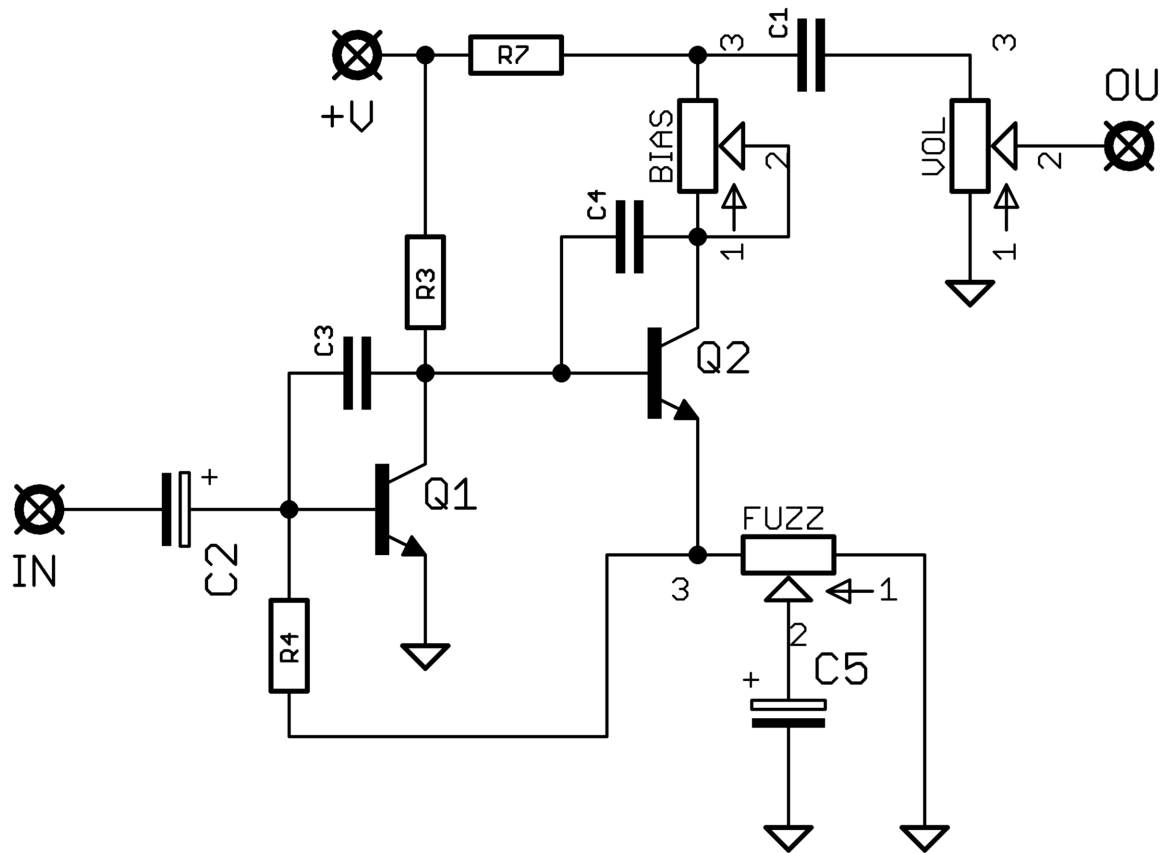
This is the original Fuzz Face design, along with a couple of value swaps (brackets) for the Mayer modified version which is a bit louder and has a better range on the Fuzz control.

This requires positive ground wiring, so can't be daisy chained with standard polarity effects unless you use a voltage inverter.

The parts on the PCB are laid out for this version.

Example transistors: AC128, 2N404

Schematic - NPN (standard ground) Ge (inc Texas Square Face)



R3	33K	C1	10n	Q1	NPN Germanium <>70hFE
R4	100K	C2	2u2 elec*	Q2	NPN Germanium <>120hFE
R7	470R [1K]	C3	Empty	FUZZ	1KB [2KB] C-taper is better
BIAS	47K trim	C4	Empty	VOL	500KA
		C5	22u elec*		

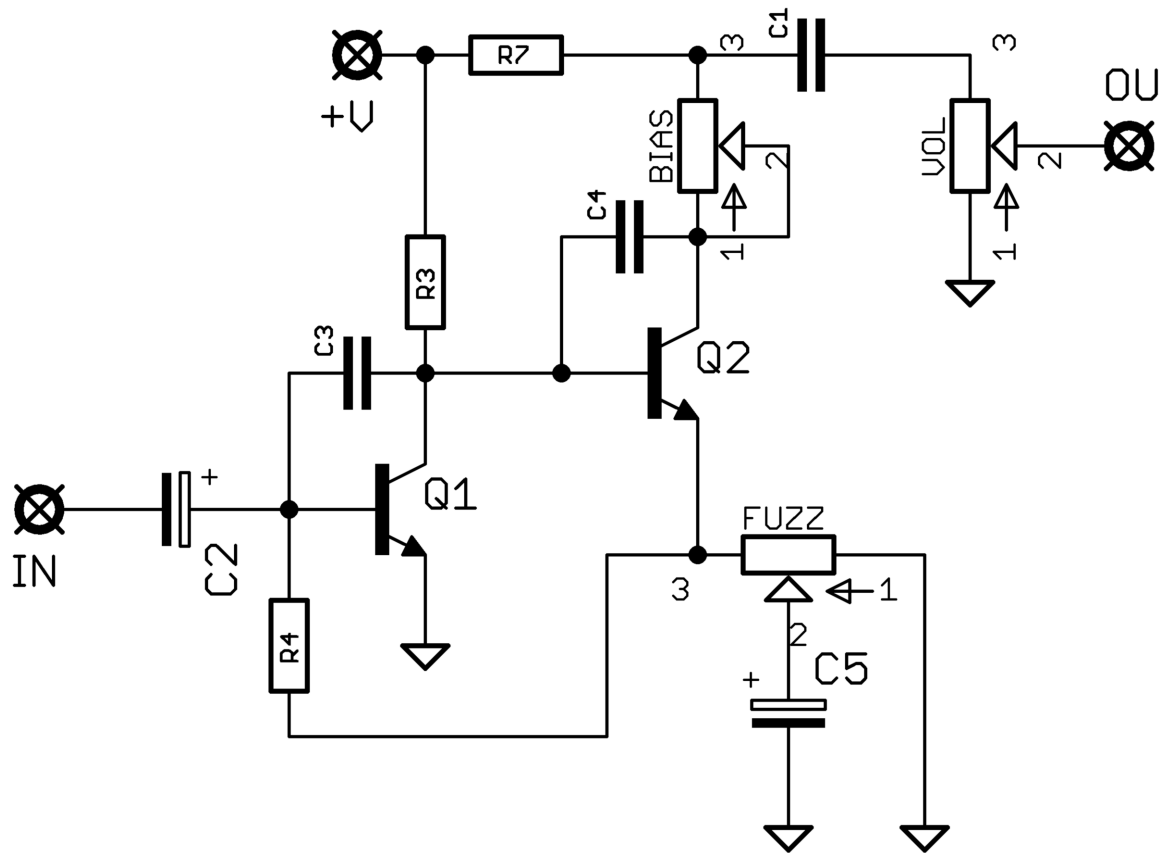
A more pedalboard friendly version, along with a couple of value swaps (brackets) for the Mayer modified version which is a bit louder and has a better range on the Fuzz control.

This requires standard negative ground, so can be daisy chained with no issues.

*You must reverse C2 and C5 for this build, i.e. positive leg into round pad.

Example transistors: AC176, CV7351

Schematic - NPN (standard ground) Si



R3	33K	C1	10n	Q1	NPN Silicon
R4	100K	C2	2u2 elec*	Q2	NPN Silicon
R7	470R (1K)	C3	47-470pf**	FUZZ	1KB (2KB) C-taper is better
BIAS	47K trim	C4	47-470pf**	VOL	500KA
		C5	22u elec*		

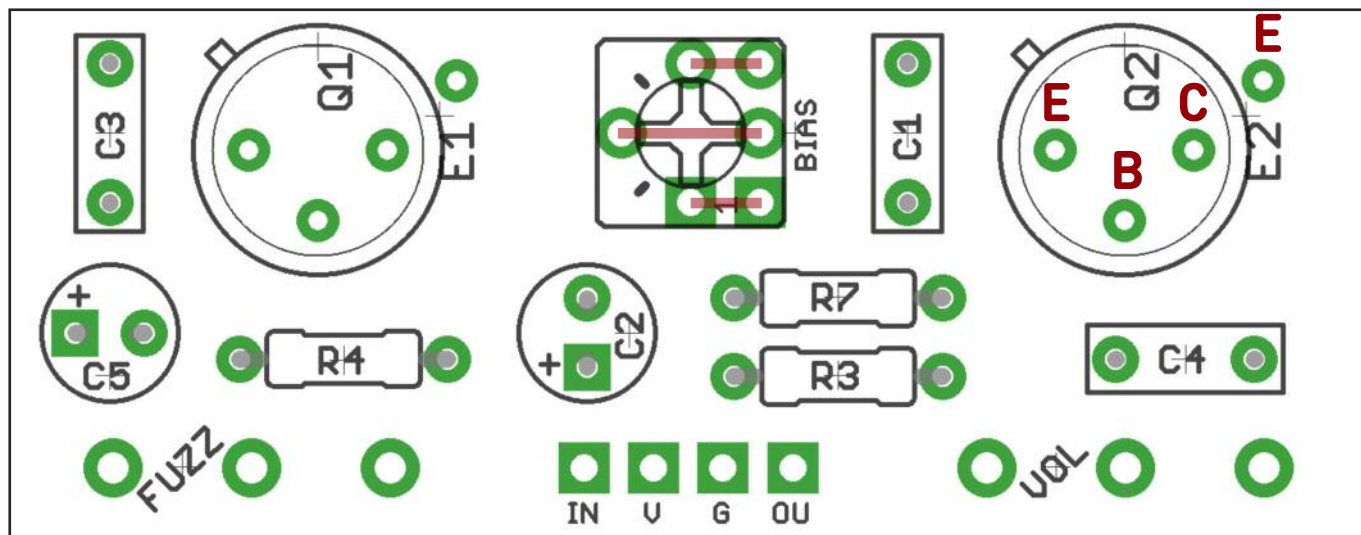
Silicon version, along with a couple of value swaps (brackets) for the Mayer modified version which is a bit louder and has a better range on the Fuzz control.

This requires standard negative ground, so can be daisy chained with no issues.

Any low-medium gain BJTs can be experimented with. BC108 and 2N2222 are FDHQ favourites.

*You must reverse C2 and C5 for this build, i.e. positive leg into round pad.

**C3-C4 remove some high frequency from each gain stage in the form of negative feedback. The higher the value, the more noticeable it'll be as lower frequencies are added to the range.



PCB layout ©2021 Pedal Parts Ltd.

The power and signal pads on the PCB conform to the FuzzDog Direct Connection format, so can be paired with the appropriate daughterboard for quick and easy offboard wiring. Check the separate daughterboard document for details.

Be very careful when soldering the transistor. They're very sensitive to heat. You should use some kind of heat sink (crocodile clip or reverse action tweezers) on each leg as you solder them. Keep exposure to heat to a minimum (under 2 seconds).

Snap the small metal tag off the pots so they can be mounted flush in the box.

You should solder all other board-mounted components before you solder the pots. Once they're in place you'll have no access to much of the board. Make sure your pots all line up nicely.

The best way to do that is to solder a single pin of each pot in place then melt and adjust if necessary before soldering in the other two pins. If your pots don't have protective plastic jackets ensure you leave a decent gap between the pot body and the PCB otherwise you risk shorting out the circuit.

BIAS TRIMMER

You'll notice there are six pads on the board for the trimmer, but you only have three legs. The extras are to allow different formats to be used. The pads are connected within the PCB as shown above in red. You need one leg in one pad of each of the connected pairs.

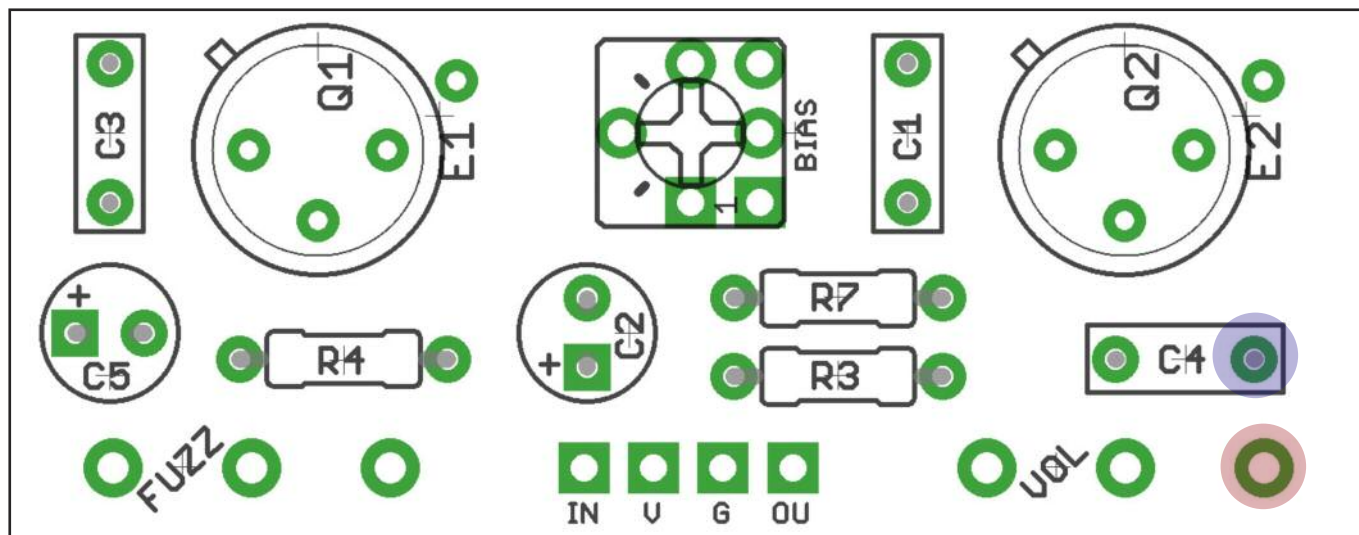
TRANSISTOR PINOUTS

We've added an extra pad for each transistor to make it easier to use cans without the standard EBC pinout, like some Russians models.

So, for instance... a standard pinout germanium 2N404 or silicon BC108 would sit neatly within the transistor outline shown on the silkscreen, utilising the triangular formation of EBC. This can be seen on the cover image.

A Russian GT308B has the pinout BCE, so would mount into the holes in a diagonal line, like this:





BIASING

Once everything's soldered into place you need to adjust the voltage going to the collector of Q2, which sets the bias - the base voltage point from which the transistor will operate. Setting this correctly will give you the best balance of fuzz vs gating. You should set this to around 4.5V, or half your supply voltage.

To do this, set your multimeter to DC voltage with the range (if not auto-ranging) to the nearest voltage above 9 that is available, normally 20V.

Place your Common probe on any ground point, the most accessible being pin 1 of the Volume pot marked in red above.

The + probe should go onto the collector of Q2. If this isn't easily accessible you can use the empty pad, or the leg if you have a cap in there, of C4 marked in blue.

The above applies to NPN circuits. If you're building PNP reverse the probes, or you can just read the voltage as negative. It's all good.

NUMBERS AREN'T EVERYTHING...

Finding the correct bias by measuring is fine, but you may find you prefer the voltage adjusted a little one way or the other. Tweak by ear until you're happy. If you aren't, just get the meter back on and measure it again.

Drilling template

Hammond 1590B

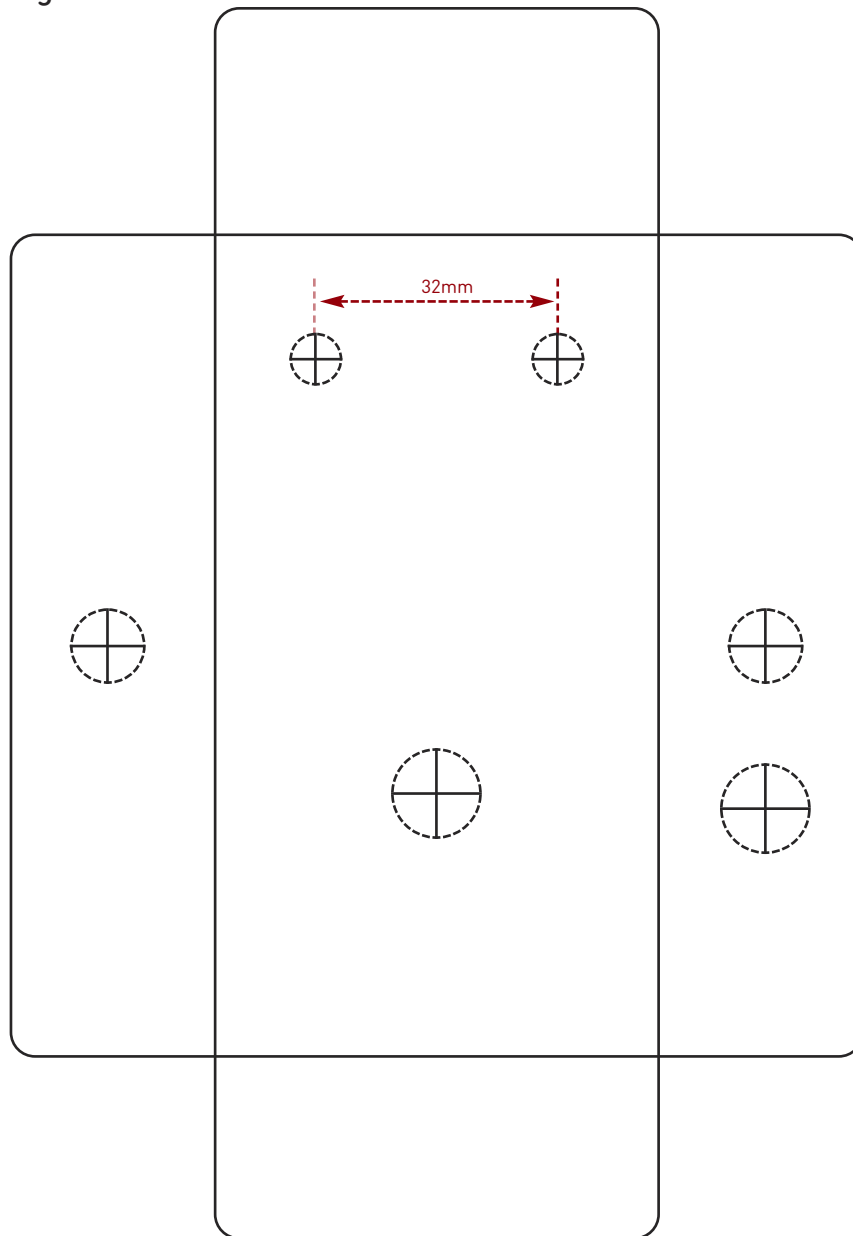
60 x 111 x 31mm

Recommended drill sizes:

Pots	7mm
Jacks	10mm
Footswitch	12mm
DC Socket	12mm
Toggle switches	6mm

It's a good idea to drill the pot and toggle switch holes 1mm bigger if you're board-mounting them.

Wiggle room = good!



This template is a rough guide only. You should ensure correct marking of your enclosure before drilling. You use this template at your own risk.

Pedal Parts Ltd can accept no responsibility for incorrect drilling of enclosures.

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