

# Freek Fuzz

Boutique take on the  
Regulus VIII Os Mutantes Fuzz



# Important notes

## If you're using any of our footswitch daughterboards, DOWNLOAD THE DAUGHTERBOARD DOCUMENT

- Download and read the appropriate build document for the daughterboard as well as this one BEFORE you start.
- DO NOT solder the supplied Current Limiting Resistor (CLR) to the main circuit board even if there is a place for it. This should be soldered to the footswitch daughterboard.

## POWER SUPPLY

Unless otherwise stated in this document this circuit is designed to be powered with 9V DC.

## COMPONENT SPECS

Unless otherwise stated in this document:

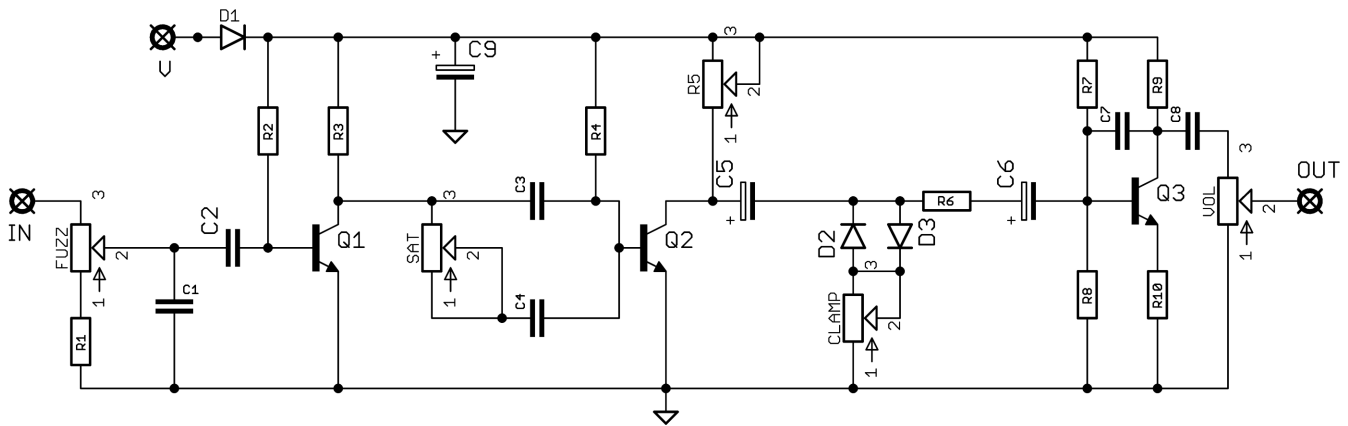
- Resistors should be 0.25W. You can use those with higher ratings but check the physical size of them.
- Electrolytics caps should be at least 25V for 9V circuits, 35V for 18V circuits. Again, check physical size if using higher ratings.

## LAYOUT CONVENTIONS

Unless otherwise stated in this document, the following are used:

- **Electrolytic capacitors:**  
Long leg (anode) to square pad.
- **Diodes/LEDs:**  
Striped leg (cathode) to square pad. Short leg to square pad for LEDs.
- **ICs:**  
Square pad indicates pin 1.

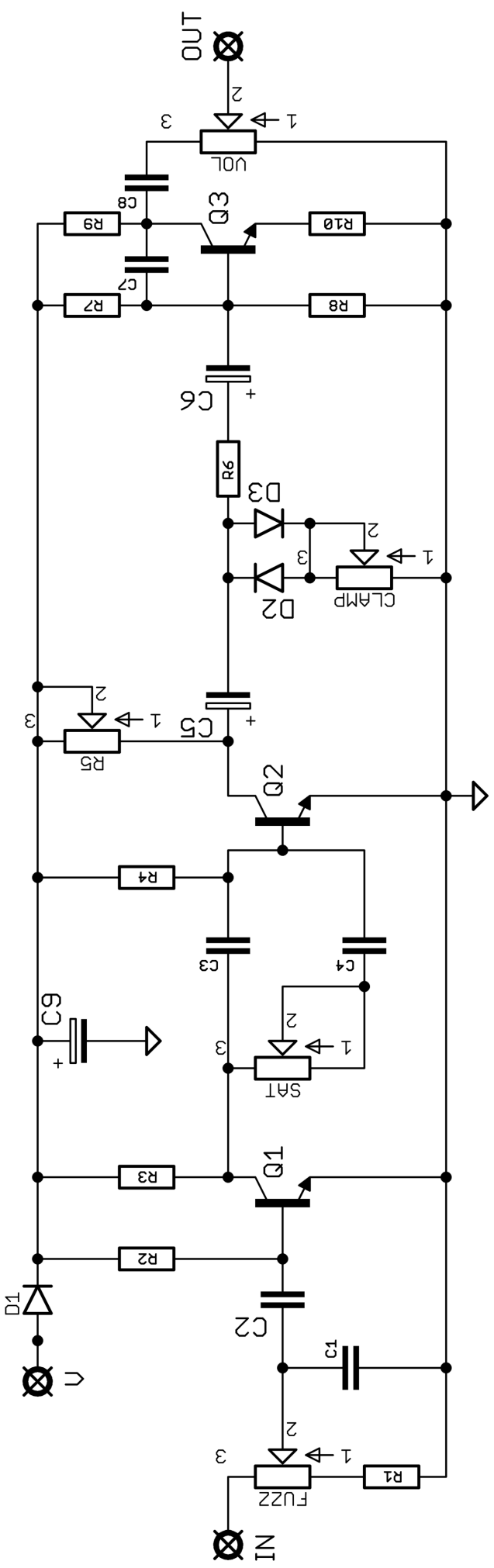
# Schematic + BOM

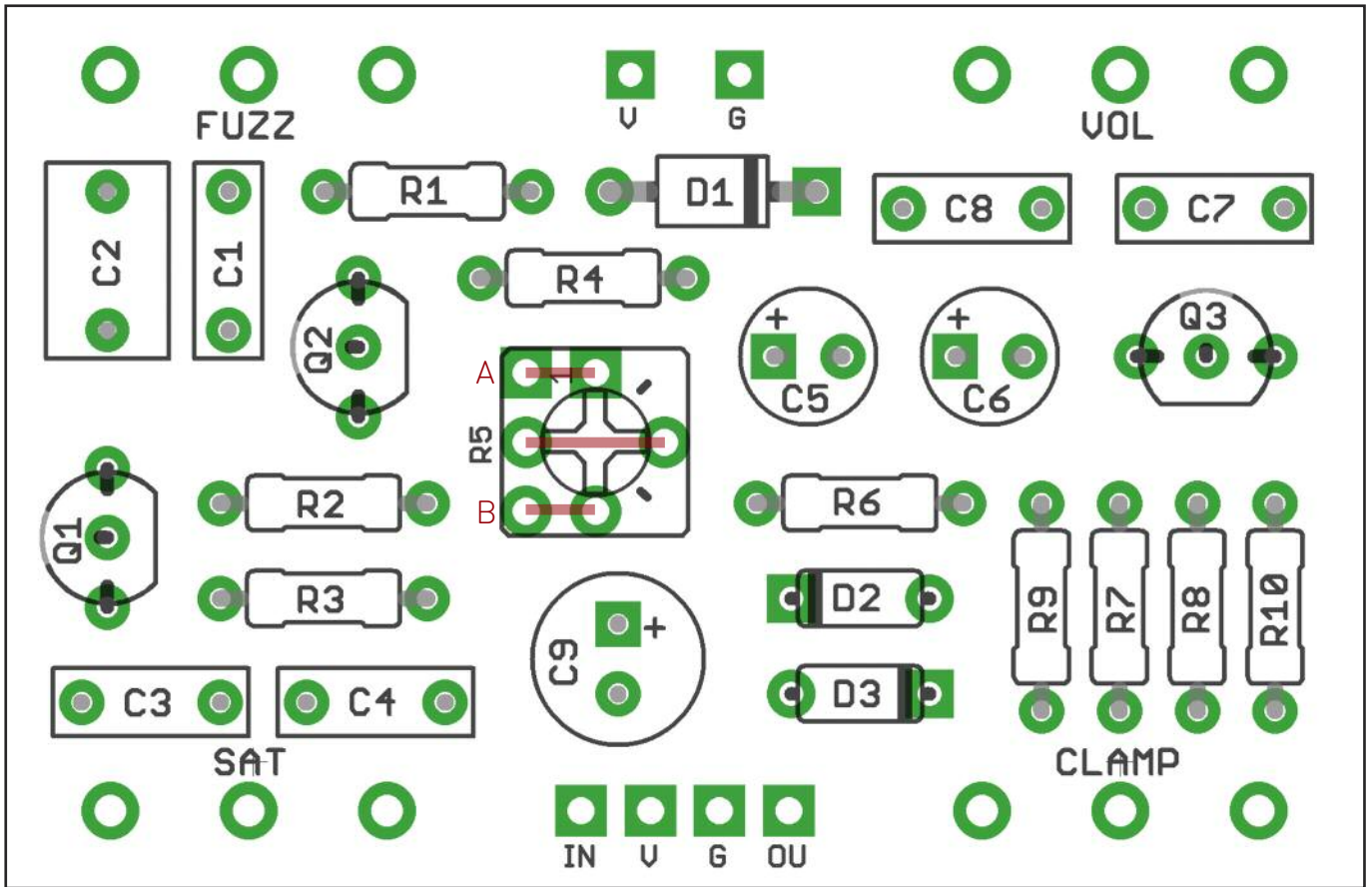


R1	2K2	C1	4n7	D1	1N5817
R2	3M3	C2	1u	D2-3	1N4148
R3	2K7	C3	4n7	Q1-3	BC549B**
R4	1M2	C4	100n	FUZZ	100KA
R5	4K7 / 10K Trim*	C5	10u elec	CLAMP	1KB
R6	22K	C6	10u elec	SAT	100KB
R7	470K	C7	470p	VOL	100KA
R8	100K	C8	100n		
R9	12K	C9	100u elec		
R10	2K7				

\*R5 is a fixed 4K7 resistor in the original, but the circuit benefits from some tweaking of the Q2 bias. We recommend putting a 10K trimmer in here, positioned in the centre of the turn. Give it little tweaks either way until you get the best results. There's no right or wrong.

\*\*Feel free to use other BJTs for Q1-3, but watch your pinout. The board is designed for BC549B which have the reverse pinout to others such as 2N5088, 2N3904 etc, so you'll need to reverse those if you want to play around.





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 diodes and transistors. 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.

There are extra pads for the trimmer. They are connected within the PCB traces as shown in red above. As long as one pin of your trimmer goes in each row you're good. If you want to use a fixed resistor for R5 place it upright with the legs going into pads A and B.



# Test the board!

**Check the relevant daughterboard document for more info before you undertake this stage.**

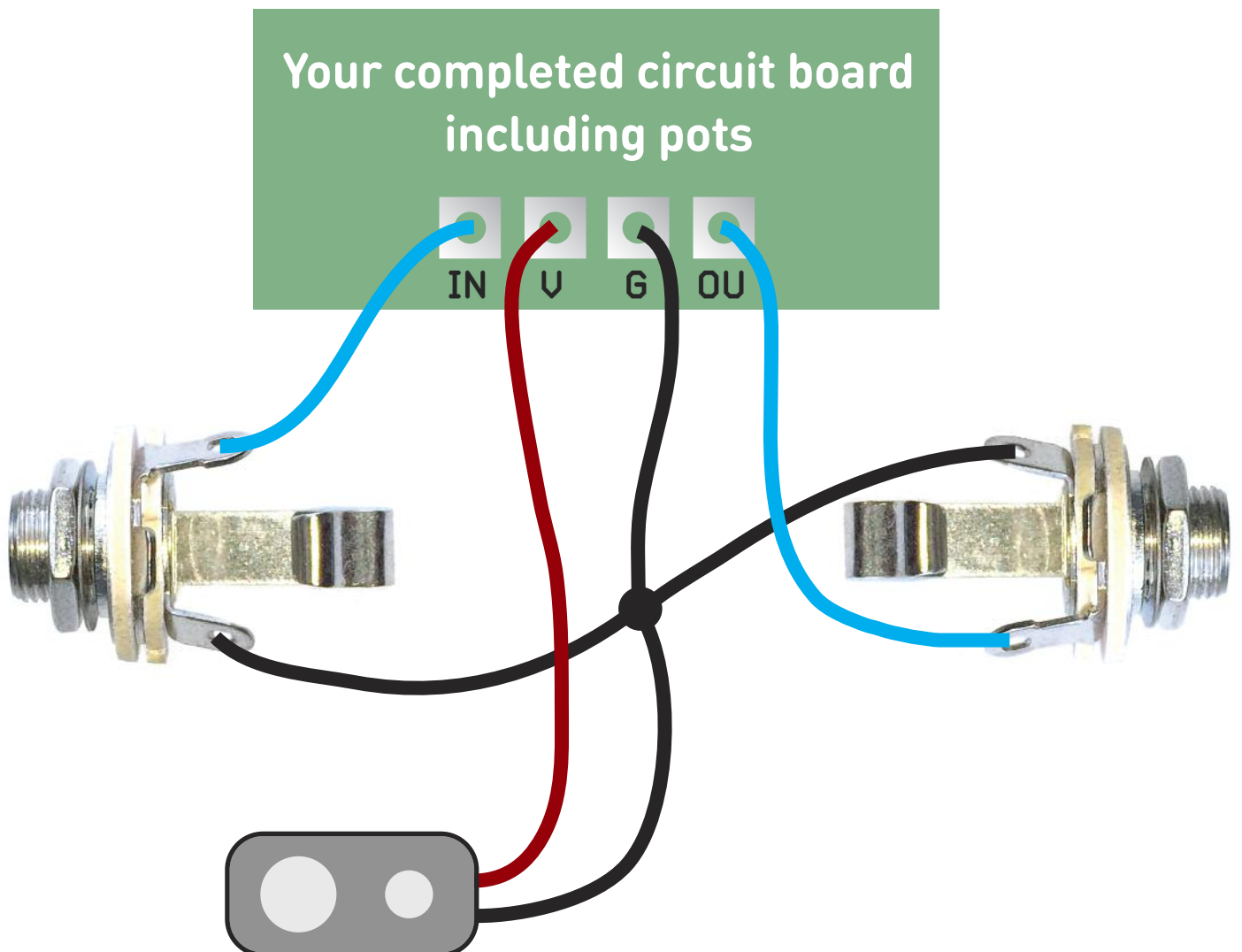
**UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.**

Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

If you're using a ribbon cable you can tack the wires to the ends of that. It's a lot easier to take them off there than it is do desolder wires from the PCB pads.

If it works, carry on and do your switch wiring. If not... aw man. At least you know the problem is with the circuit. Find out why, get it working, THEN worry about the switch etc.



Now's the time  
to refer to the  
daughterboard  
document for  
your chosen  
bypass method.

Enjoy your pedal!

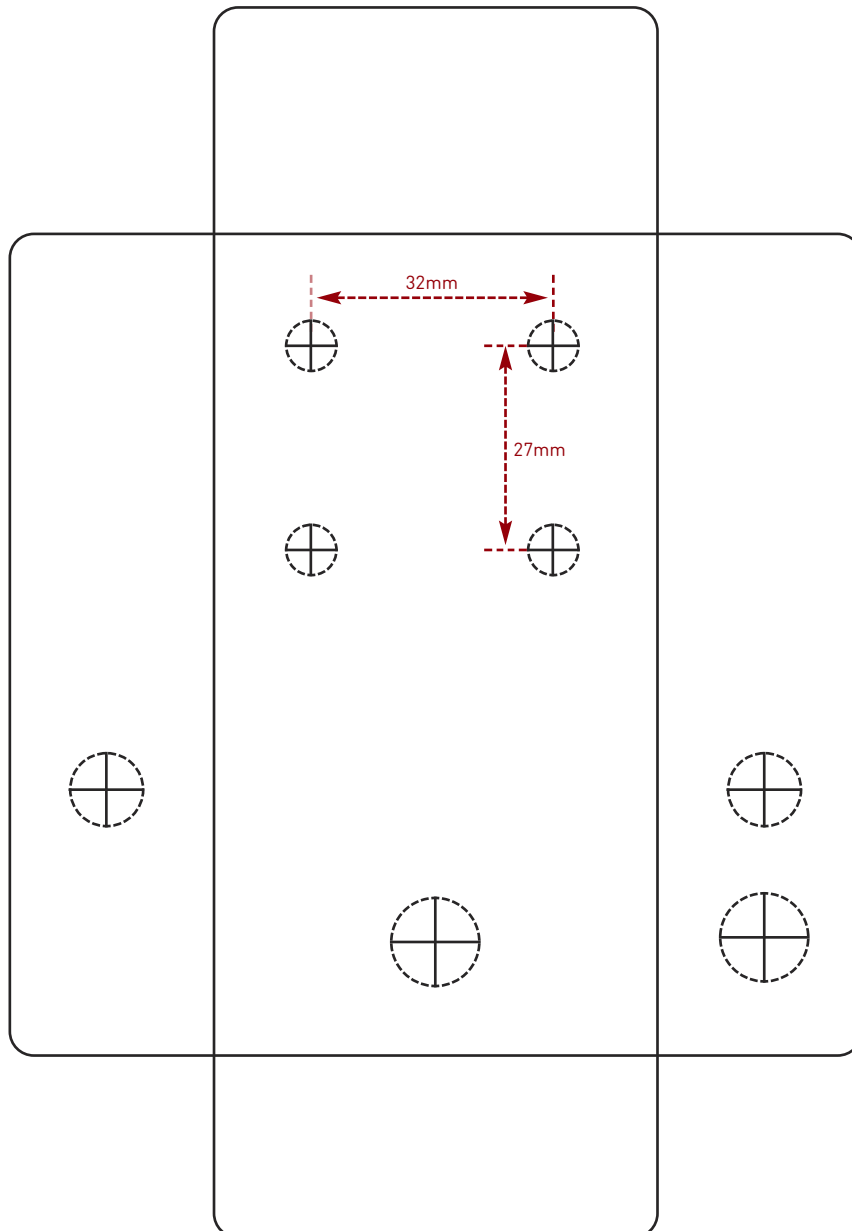
# Drilling template without battery

Hammond 1590B - 60 x 111 x 31mm

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

Recommended drill sizes:

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



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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