

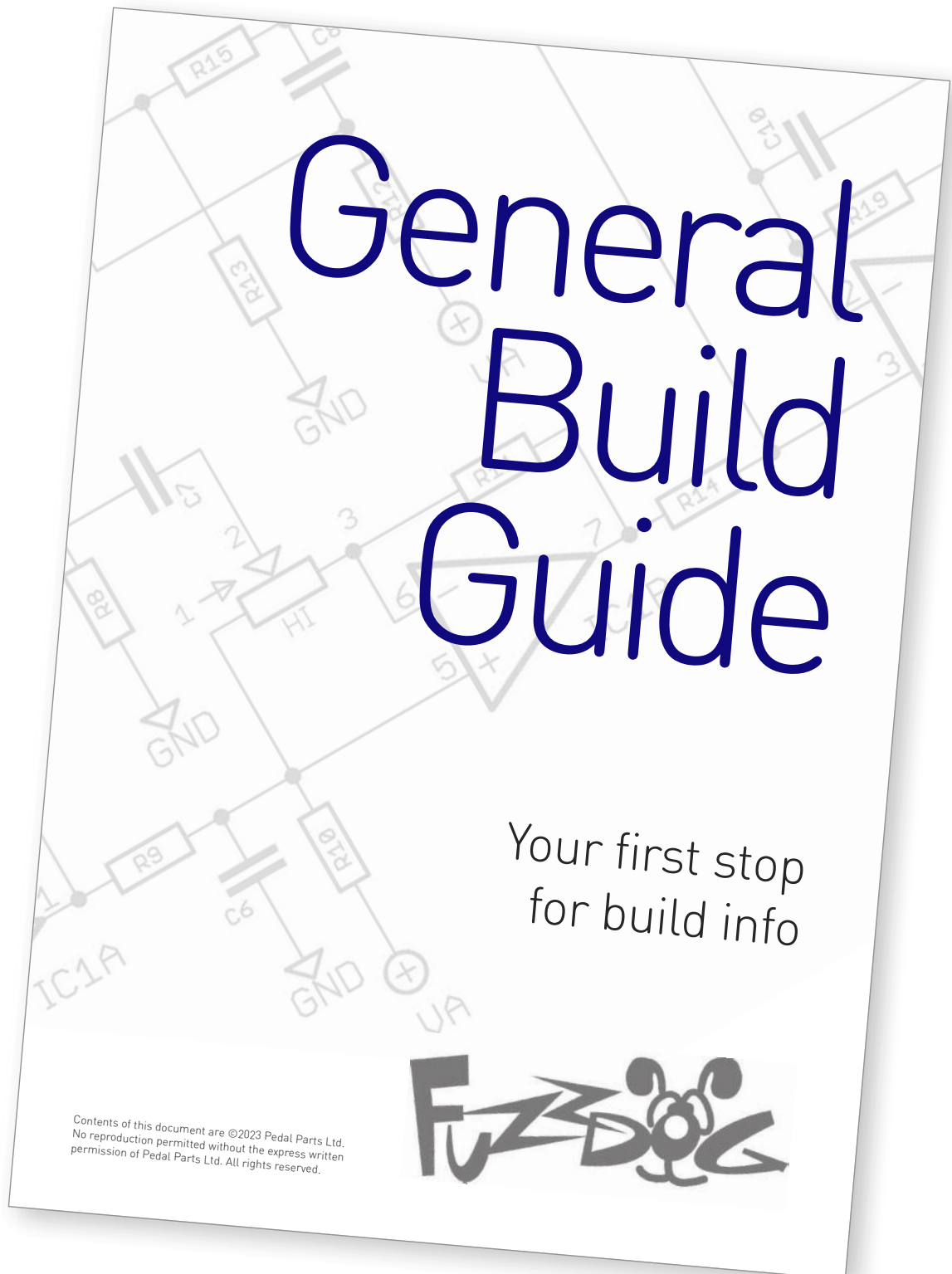
Bax Rat

Classic roar (gnaw?) with
super tweakable EQ



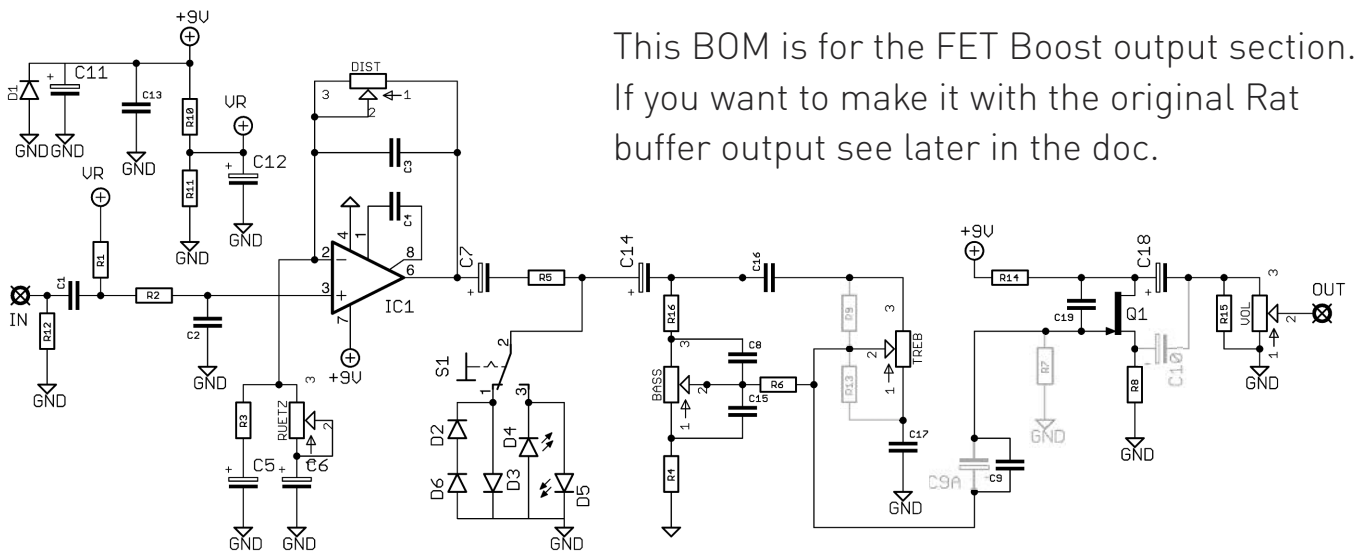
Before you dig in, ensure you download and read the **General Build Guide**.

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



Schematic + BOM

Guitar



This BOM is for the FET Boost output section. If you want to make it with the original Rat buffer output see later in the doc.

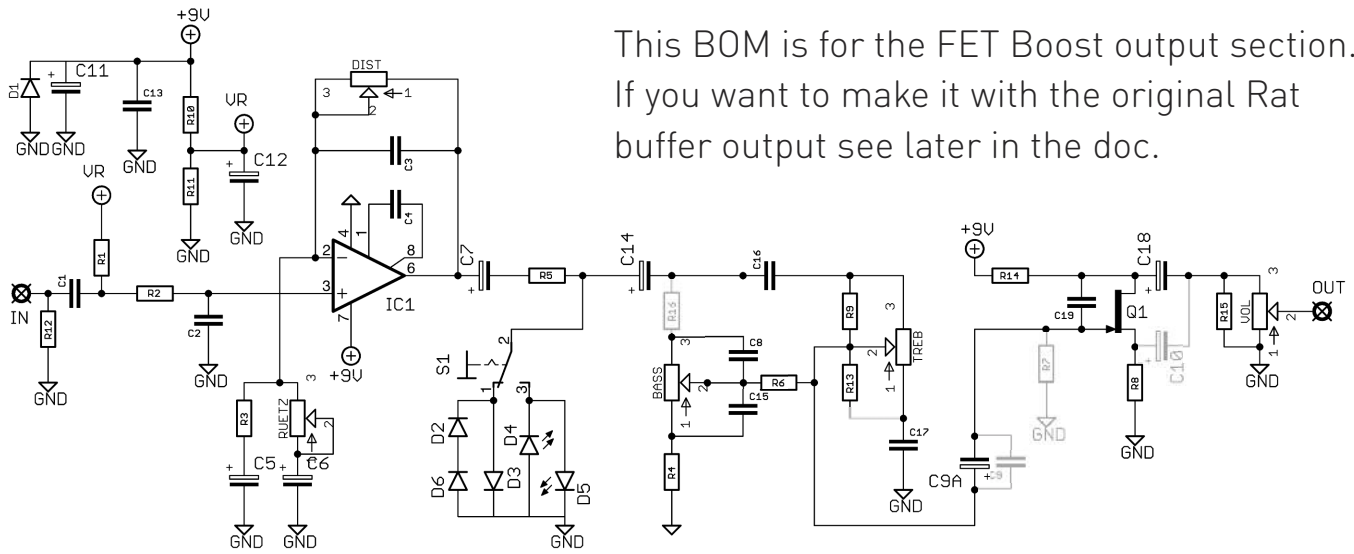
R1	1M	C1	22n	D1	1N4001
R2	1K	C2	1n	D2-3	1N4148
R3	560R	C3	100p	D4-5	3mm red LEDs*
R4	2K2	C4	33p	D6	Jumper*
R5	1K	C5	4u7 elec	Q1	2N5457 / J201** (SMT - MMBF5457 / MMBFJ201)
R6	100K	C6	2u2 elec	IC1	LM388N / OP-07
R7	Empty	C7	4u7 elec	BASS	500KB
R8	1K5	C8	470p†	TREB	500KB
R9	Empty	C9	22n	DIST	100KA
R10	10K	C9A	Empty	VOL	100KA
R11	10K	C10	Empty	RUEZ	1K TRIM or 47R resistor
R12	1M	C11	100u elec		
R13	Empty	C12	47u elec		
R14	10K	C13	47n		
R15	1M	C14	4u7 elec		
R16	100K	C15	10n		
		C16	470p		
		C17	4n7		
		C18	1u elec		
		C19	100p		

*See later for more details of the clipping section.

**Either will work fine. You can also use the SMT version of either if you're happy soldering tiny parts.

Schematic + BOM

Bass/Drop

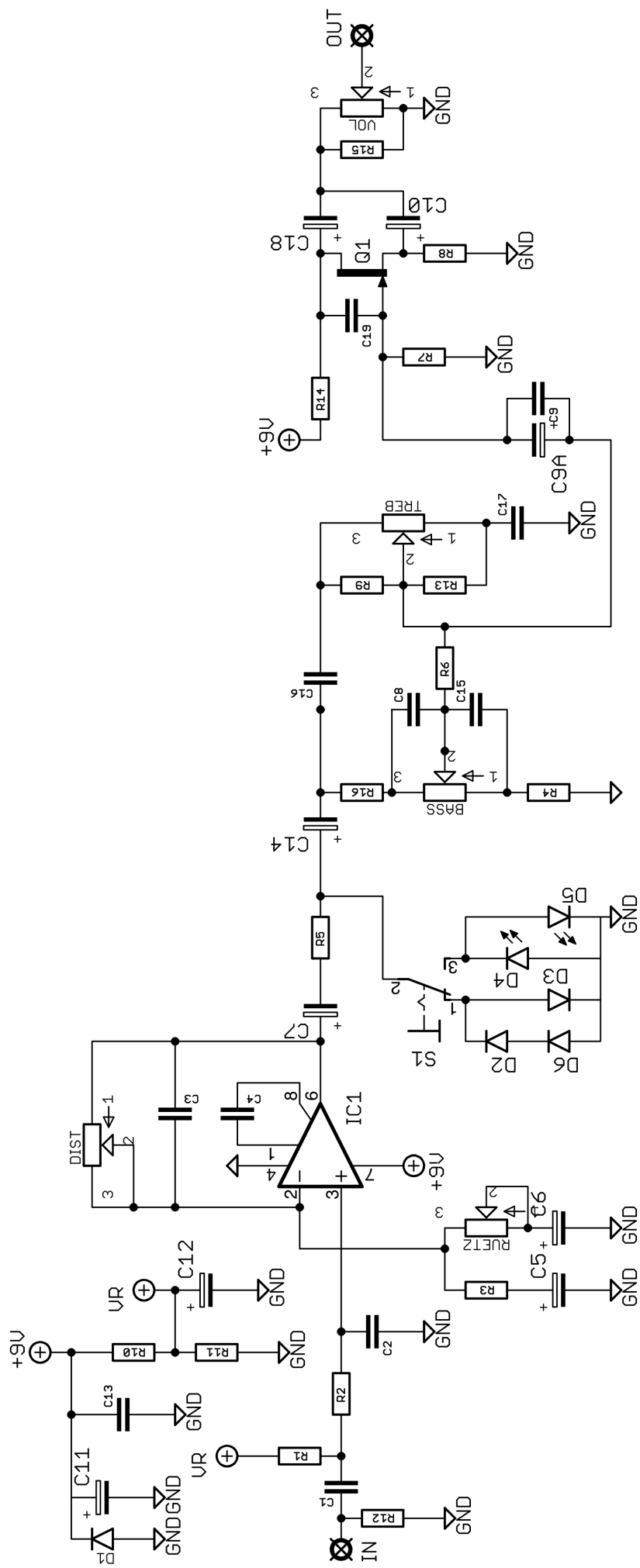


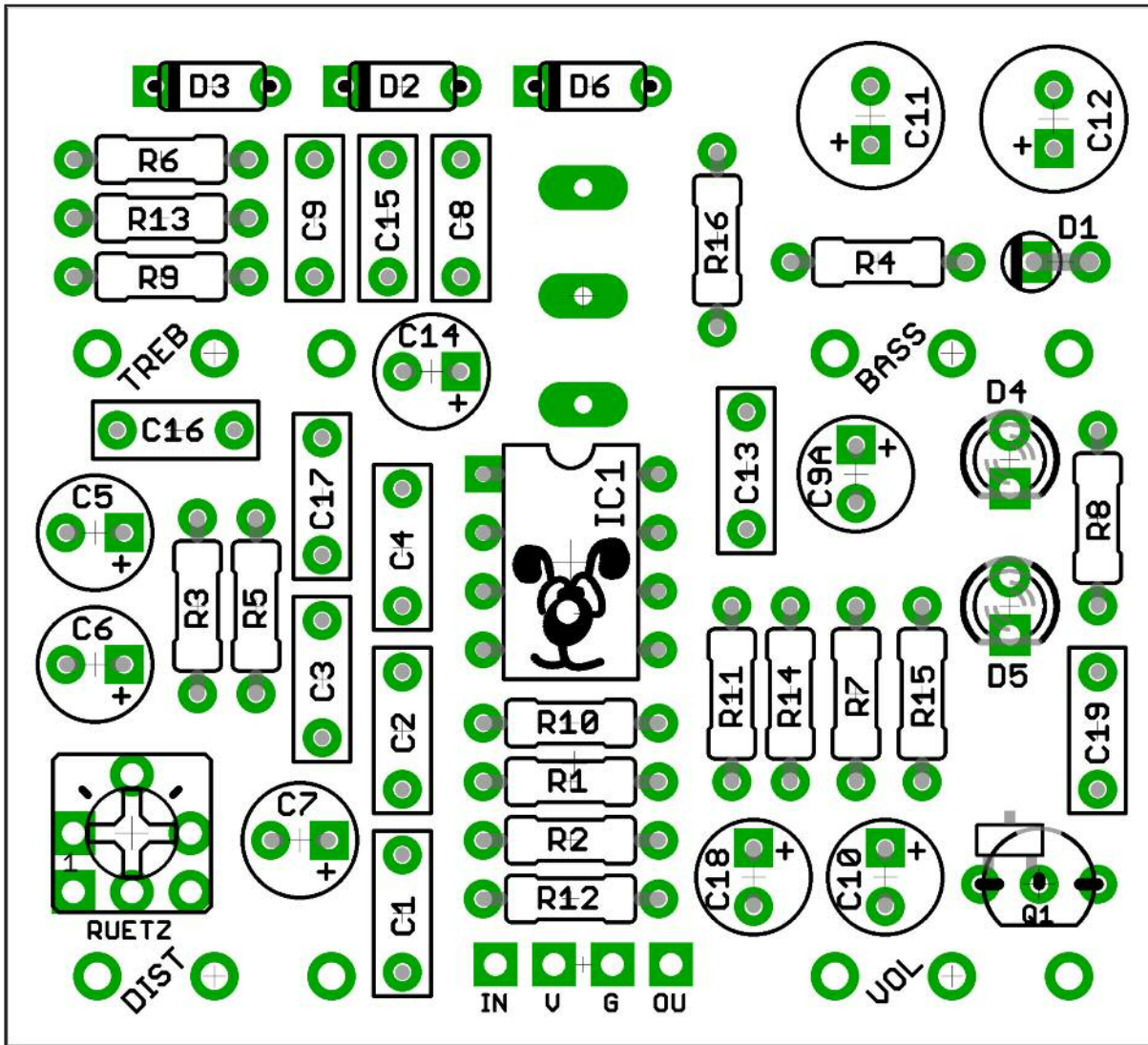
This BOM is for the FET Boost output section. If you want to make it with the original Rat buffer output see later in the doc.

R1	1M	C1	100n	D1	1N4001
R2	1K	C2	1n	D2-3	1N4148
R3	560R	C3	100p	D4-5	3mm red LEDs*
R4	1K	C4	33p	D6	Jumper*
R5	1K	C5	4u7 elec	Q1	2N5457 / J201** (SMT - MMBF5457 / MMBFJ201)
R6	10K	C6	2u2 elec	IC1	LM308N / OP-07
R7	Empty	C7	10 elec	BASS	100KC
R8	1K5	C8	33n	TREB	100KC
R9	10K	C9	Empty	DIST	100KA
R10	10K	C9A	10u elec	VOL	100KA
R11	10K	C10	Empty	RUEZ	1K TRIM or 47R resistor
R12	1M	C11	100u elec		
R13	1K	C12	47u elec		
R14	10K	C13	47n		
R15	1M	C14	10u elec		
R16	Jumper	C15	330n		
		C16	15n		
		C17	150n		
		C18	10u elec		
		C19	100p		

*See later for more details of the clipping section.

**Either will work fine. You can also use the SMT version of either if you're happy soldering tiny parts.



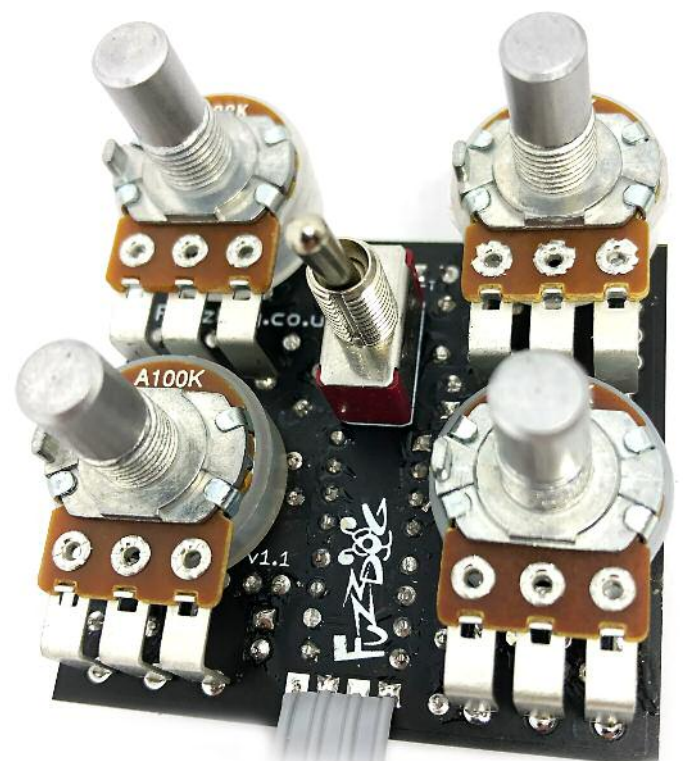


PCB layout ©2020 Pedal Parts Ltd.

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.



Clipping

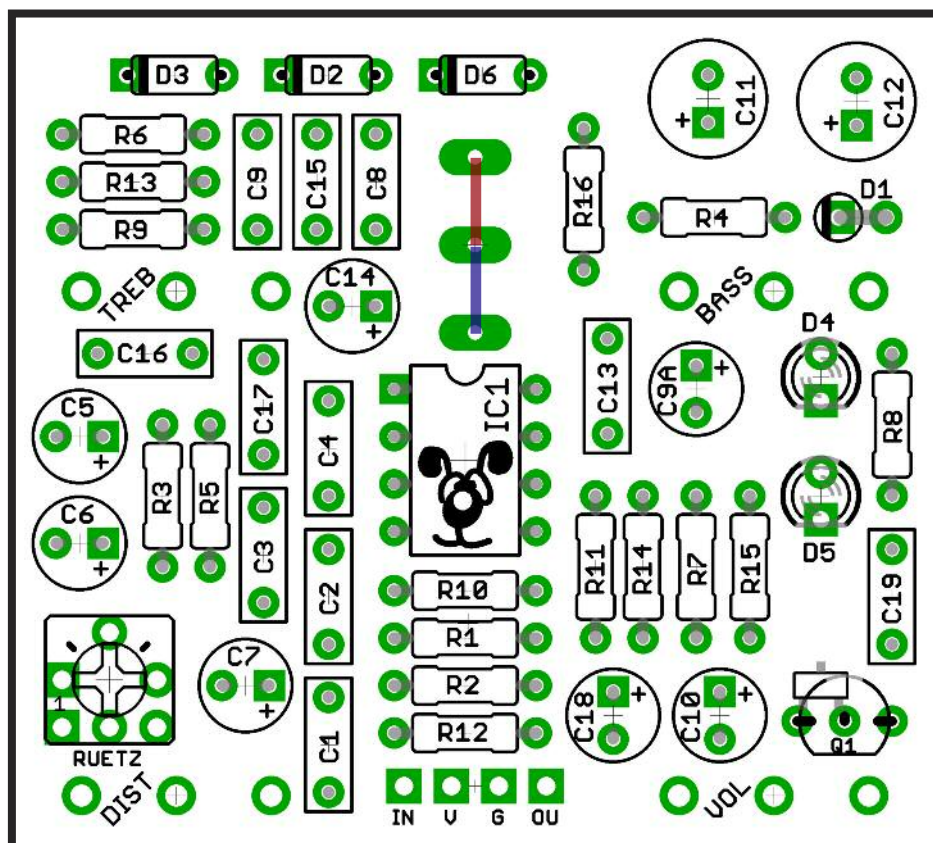
No rules here. Go for typical Rat clipping options or experiment with your own. Here's a starting point using the different Rat models:

- Standard 2 x 1N4148
- Turbo 2 x 3mm red LEDs
- You Dirty 2 x 1N34A germanium

Use either D2-3 or D4-5 for these, depending on which fits better. You'll have to stand germanium diodes in D07 cases on end.

D6 is optional and is in series with D2. Adding a diode here will give you asymmetrical clipping. If you want symmetrical clipping you should jumper D6 when using D2-3.

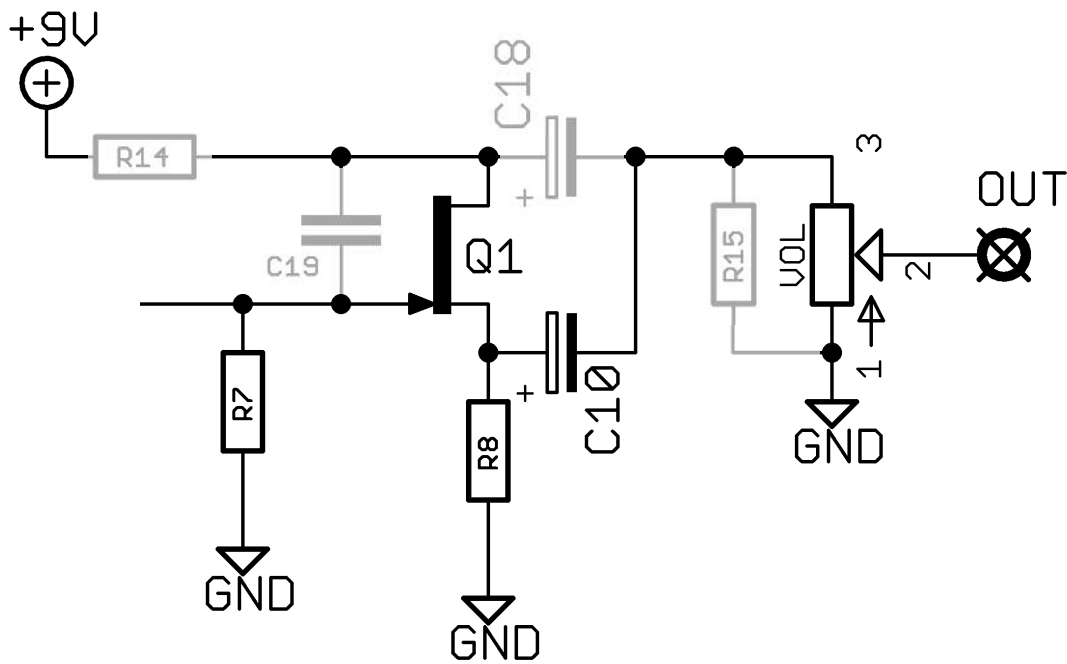
The toggle switch will engage D2-3 and D6 when down, D4-5 when up. If you're only using one set of diodes you should jumper the switch pads. Red jumper for D2-3 and D6, blue for D4-5



Output buffer

We've included spots for the parts to make the normal Rat output buffer section rather than the boosted output. We'd advise going for the boost, as the standard buffer version will hit unity pretty late in the volume sweep, but if you really want to...

- | | | | |
|-----|--------|-----|--------------------|
| R7 | 1M | C10 | 1u guit / 10u bass |
| R8 | 10K | C18 | Empty |
| R14 | Jumper | C19 | Empty |
| R15 | Empty | | |



Drilling template

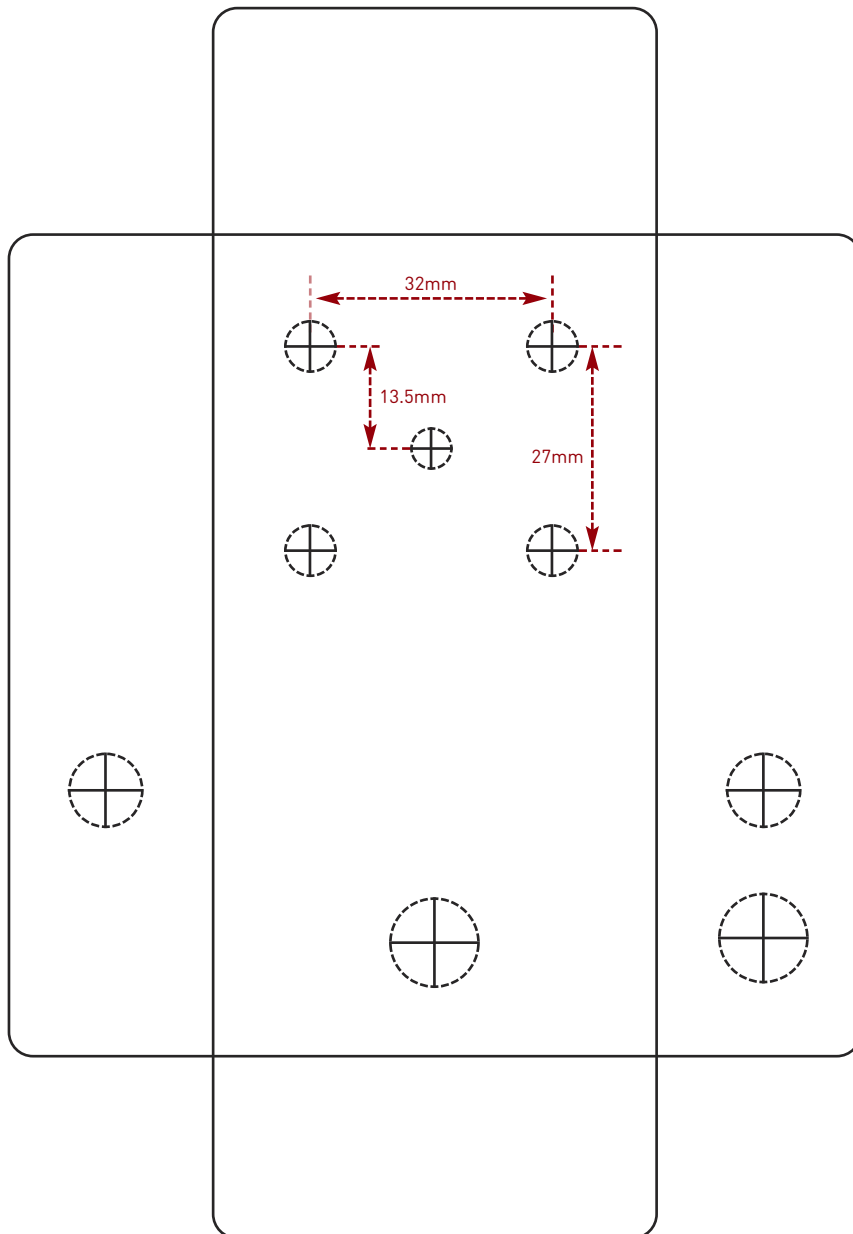
Hammond 1590B - 60 x 111 x 31mm

Drill sizes listed are minimum.

It's a good idea to add 1mm to anything mounted on the PCB that'll poke through the front of the enclosure.

Drill sizes:

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



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.

FuzzDog.co.uk