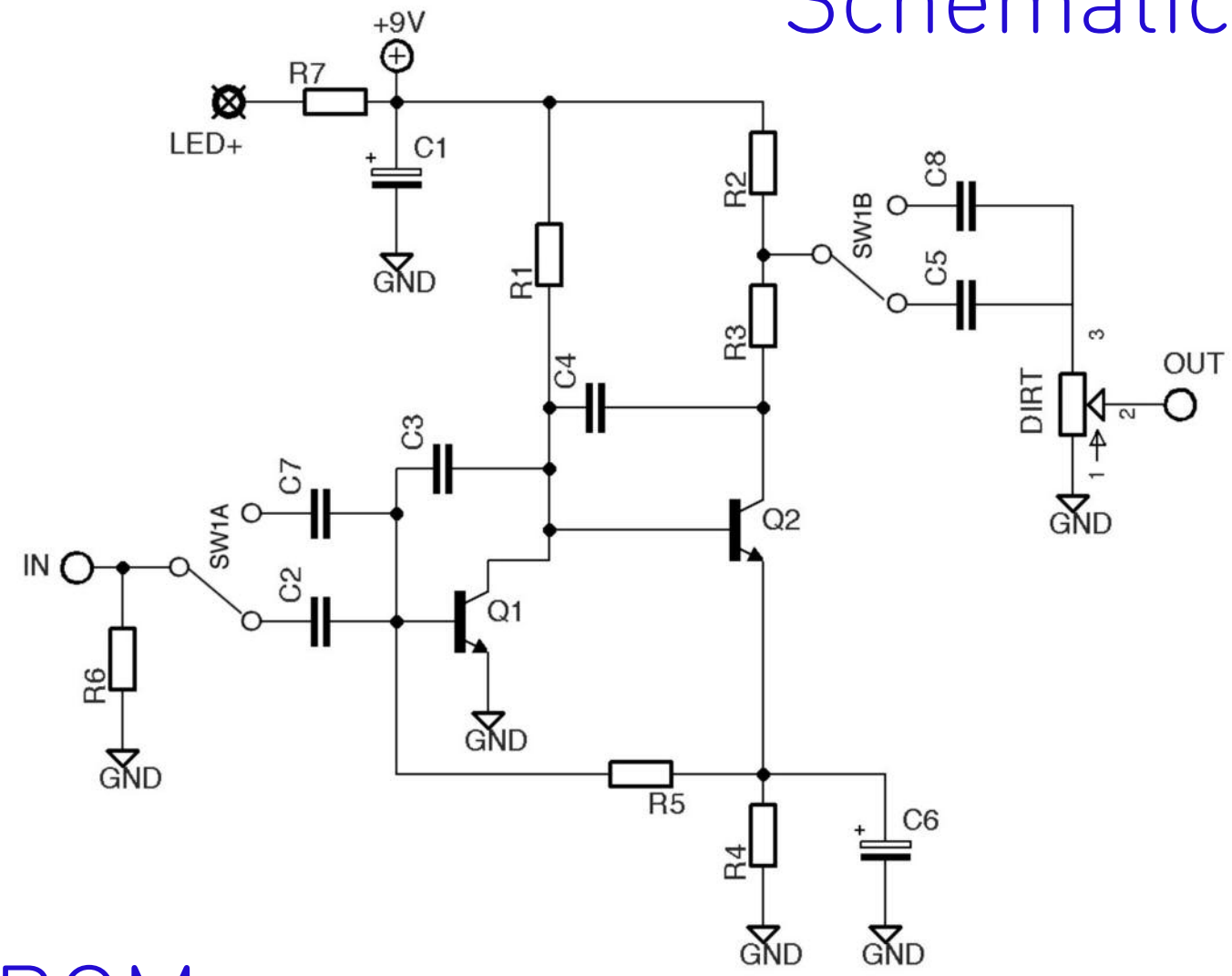
THUG

Meaty boutique fuzz in normal and dark flavours

Schematic



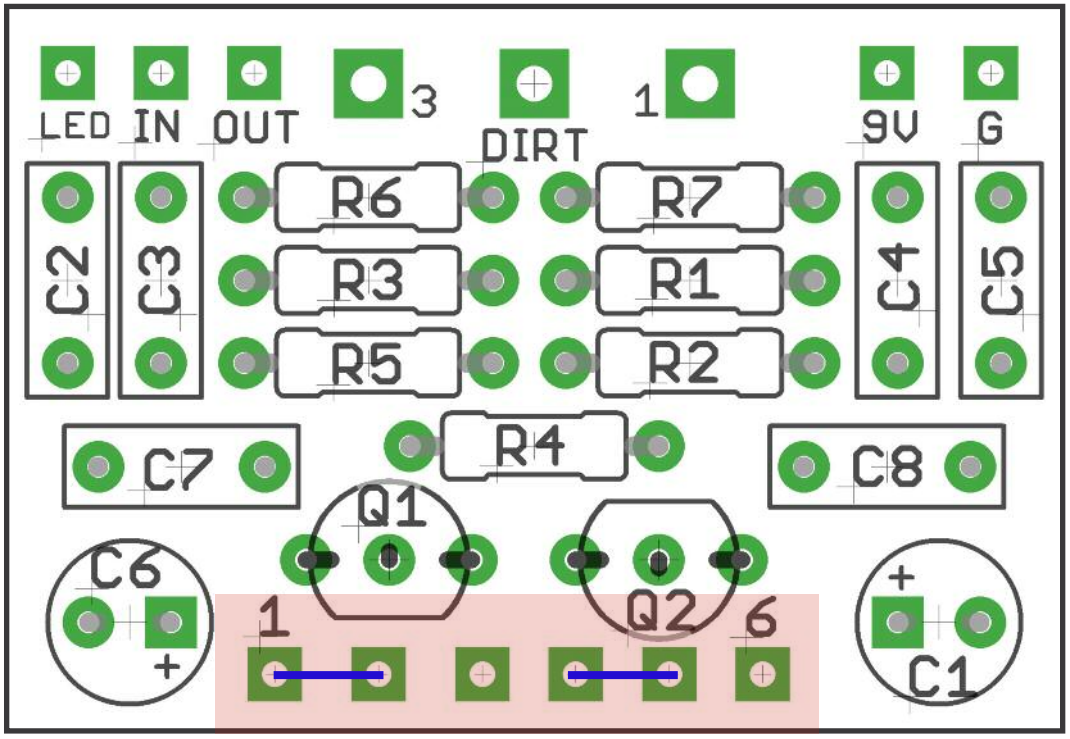
BOM

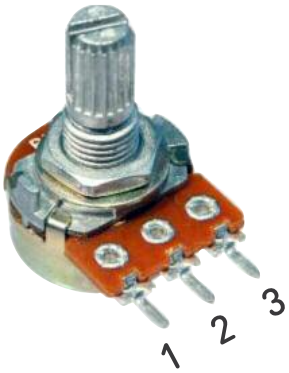
		C1	47u		
R1	18K	C2	10n (47n)		
R2	820R	C3	470p	Q1	2N3904
R3	4K7	C4	47p	Q2	BC182L
R4	1K	C5	22n (100n)		
R5	120K	C6	10u elec	DIRT	500KB
R6	1M (optional)	C7	47n		
R7	2K2 (CLR)	C8	100n	SW1	DPDT ON-ON

R6 is an optional anti-pop resistor, R7 is the LED current limiter. SW1 is only required if you want to be able to switch between 'normal' and 'dark' settings.

If you're making a non-switchable version leave C7 and C8 empty and see note overleaf about the switch pads across the bottom of the PCB.

For 'normal', C2 and C5 are as shown. For 'dark', use the values in shown in blue.





Wiring shown overleaf will disconnect the battery when you remove the jack plug from the input, and also when a DC plug is inserted.

Snap the little metal tag off the pot to mount it flush in the box.

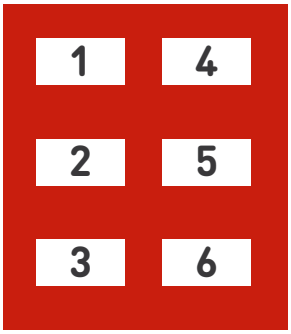
You should use some kind of heat sink on the legs of the transistors when soldering. They aren't keen on heat. Any more than 3-4 seconds of iron and they're toast.

I've incorporated the Current Limiting Resistor for the LED into the board for your pleasure. If you're wiring using a 3PDT daughterboard leave this out on your Thug pcb and include it on the daughterboard.

If you're making a single version of the circuit without the switch, use the spaces for C2 and C5, and add jumpers as shown in blue above.

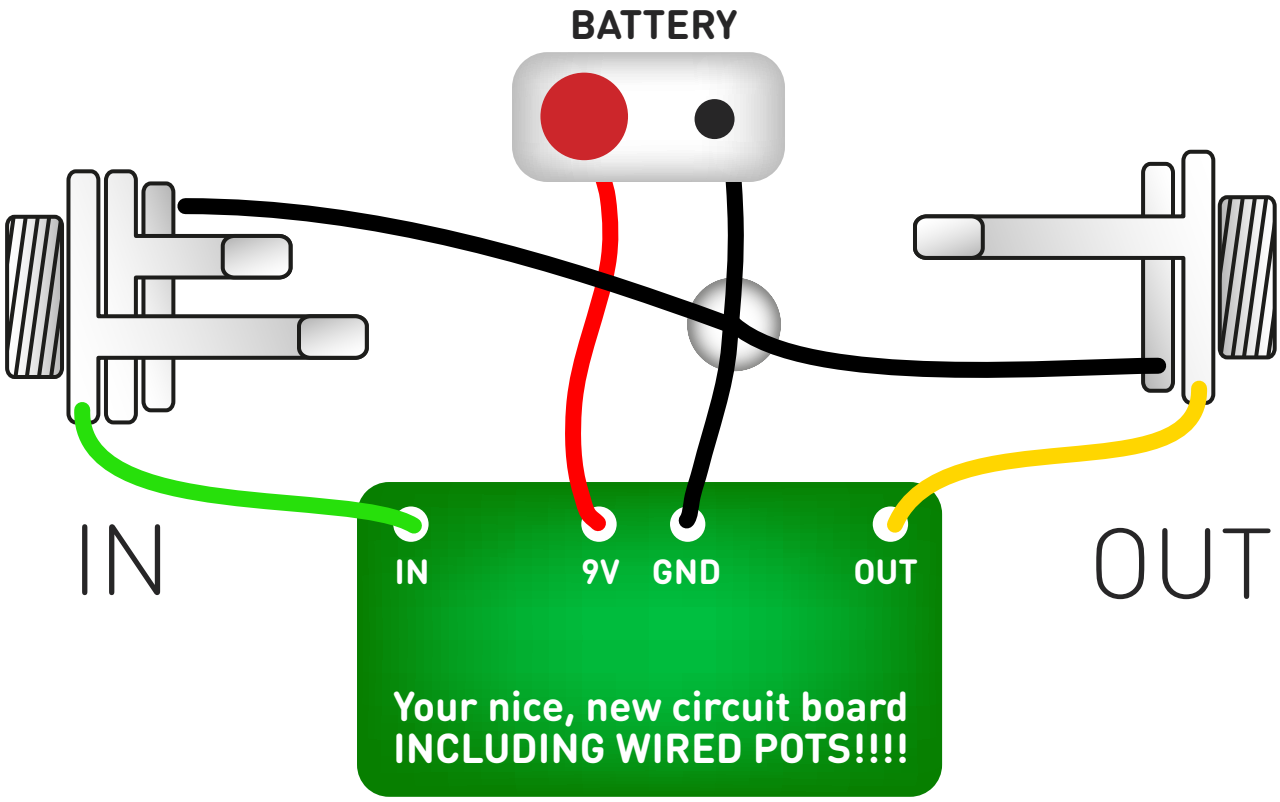
NORMAL or DARK..? Up to you. Dark is a bit thicker and less focussed, what with the extra bass frequencies the caps allow into and out of the circuit.

If you can't decide which to make and want both available at the flick of a switch, just wire in a DPDT ON-ON toggle. The pads shaded above go from 1-6 from left to right. Wire them to the switch tags as shown here. >>>>>>>>



You will get a pop from the circuit when switching between them, so turn it down first.

Test the board!



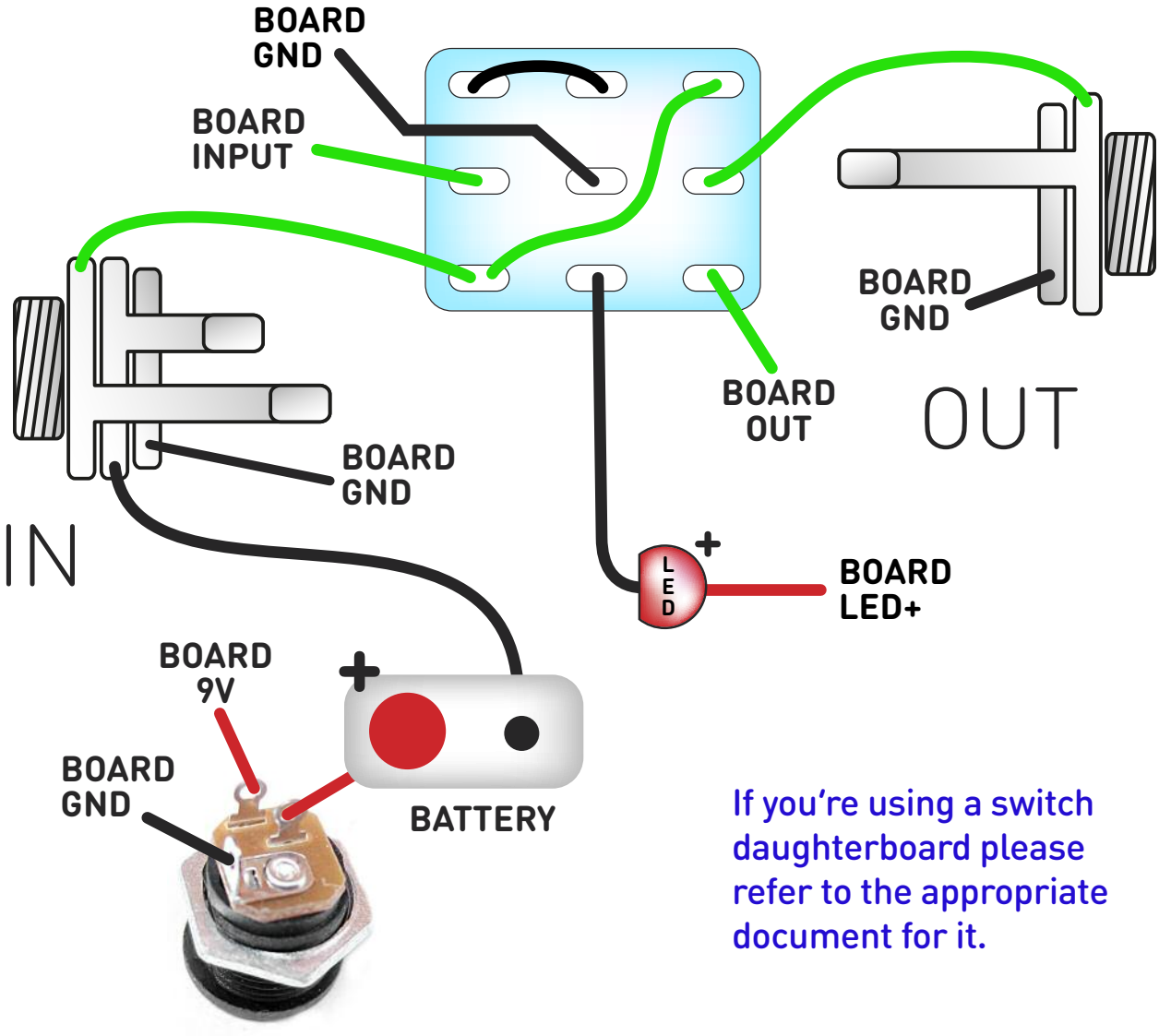
UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.

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 it works, crack 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.

Wire it up



If you're using a switch daughterboard please refer to the appropriate document for it.

Wiring shown above will disconnect the battery when you remove the jack plug from the input, and also when a DC plug is inserted.

The Board GND connections don't all have to directly attach to the board. You can run a couple of wires from the DC connector, one to the board, another to the IN jack, then daisy chain that over to the OUT jack.

It doesn't matter how they all connect, as long as they do.

This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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