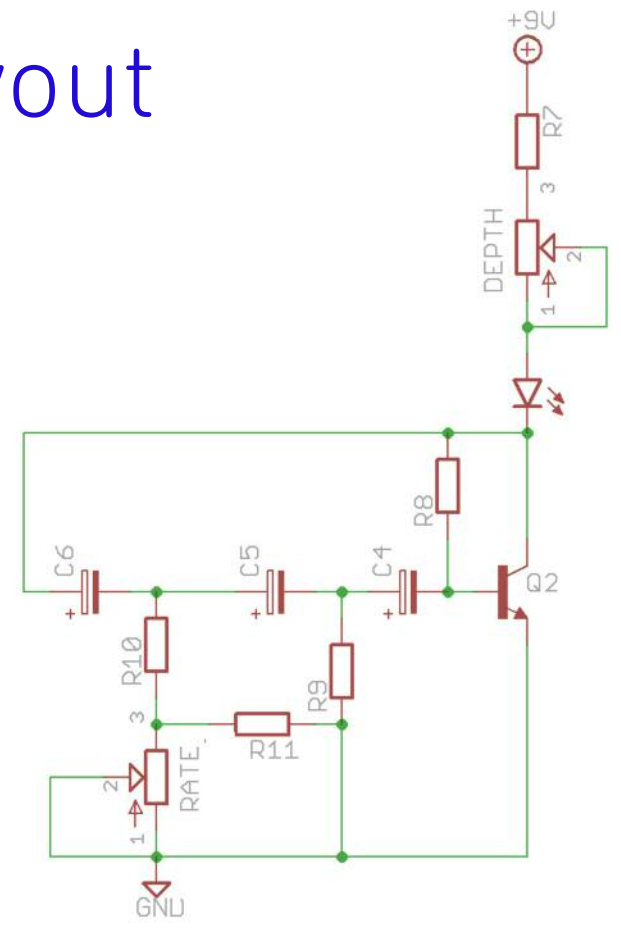
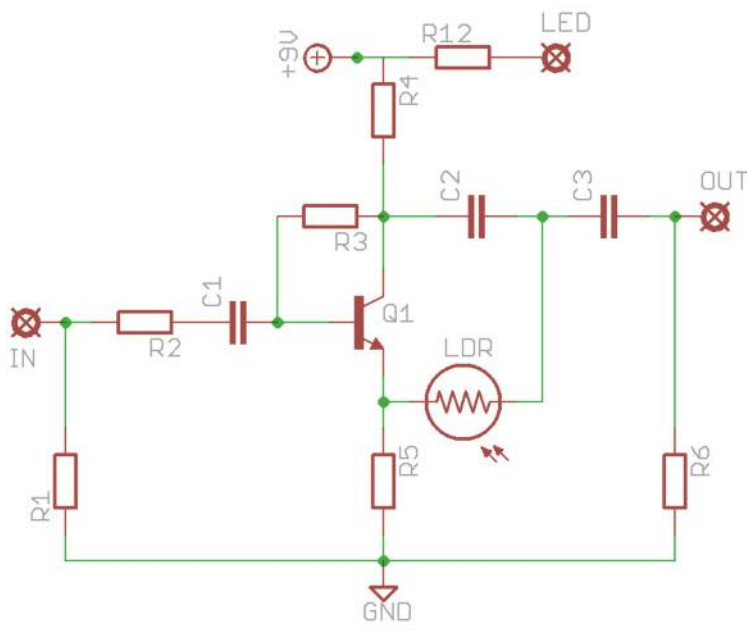


MagicVibes

Optical tremelo with a
Magnatone Amp feel



Schematic + Layout



BOM

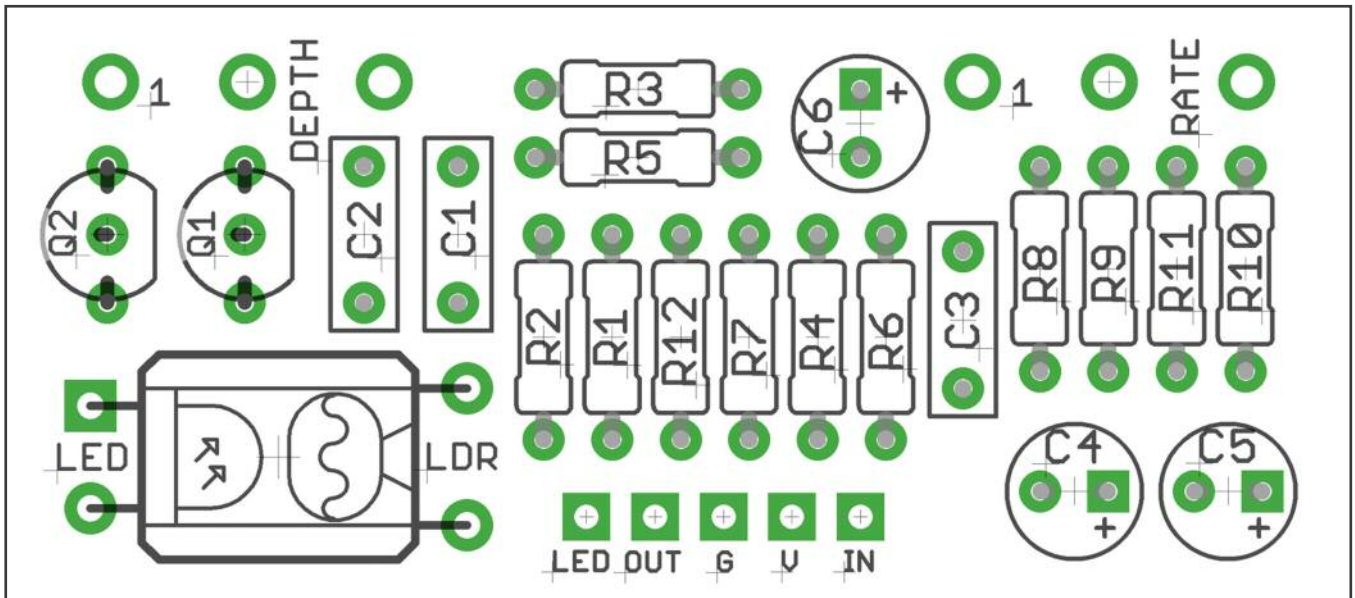
R1	2M2	C1	220n	Q1,2	MPSA18
R2	2K2	C2	100n	RATE	20KB
R3	4M7	C3	220n	DEPTH	20KB
R4	7K5	C4	1u elec		
R5	7K5	C5	1u elec		
R6	1M5	C6	1u elec		
R7	1K8				
R8	1M5				
R9	10K				
R10	2K2 (1K5)				
R11	27K (10K)				
R12	2K2 (CLR)				

The blue values for R10-11 are recommended by Madbean, and who is anyone to argue? We agree they're better, but both lots are supplied.

A Vactrol can be used for LED/LDR, and the circuit has been tested with NSL32 and VTL5C3 with reasonable results. However, the right combo of LDR (Light Dependent Resistor) and LED give better depth. Experiments at FuzzDog HQ found that a LDR with very high Dark resistance (10M+) and a high-intensity 5mm red LED worked very well.

Note: The Vactrol part on the PCB has a square pad to indicate the + leg of the LED. If using a normal LED place the + (long) leg into the square pad. If using a NSL32, the dot on the body indicates the - leg of the LED side.

PCB Layout



PCB Layout ©2014 Pedal Parts Ltd.

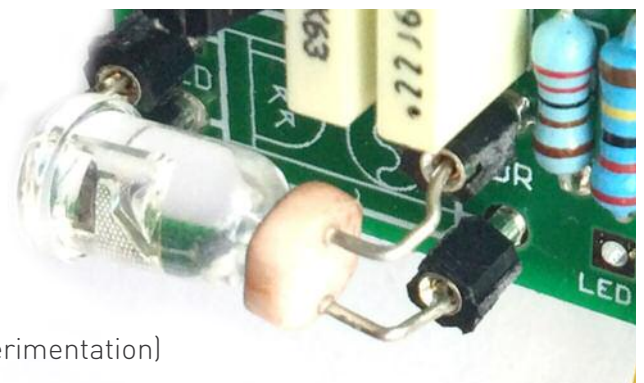
The power and signal pads on the PCB conform to the FuzzDog Direct Connection format, so can be paired with the appropriate daughterboard for quick and easy offboard wiring.

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

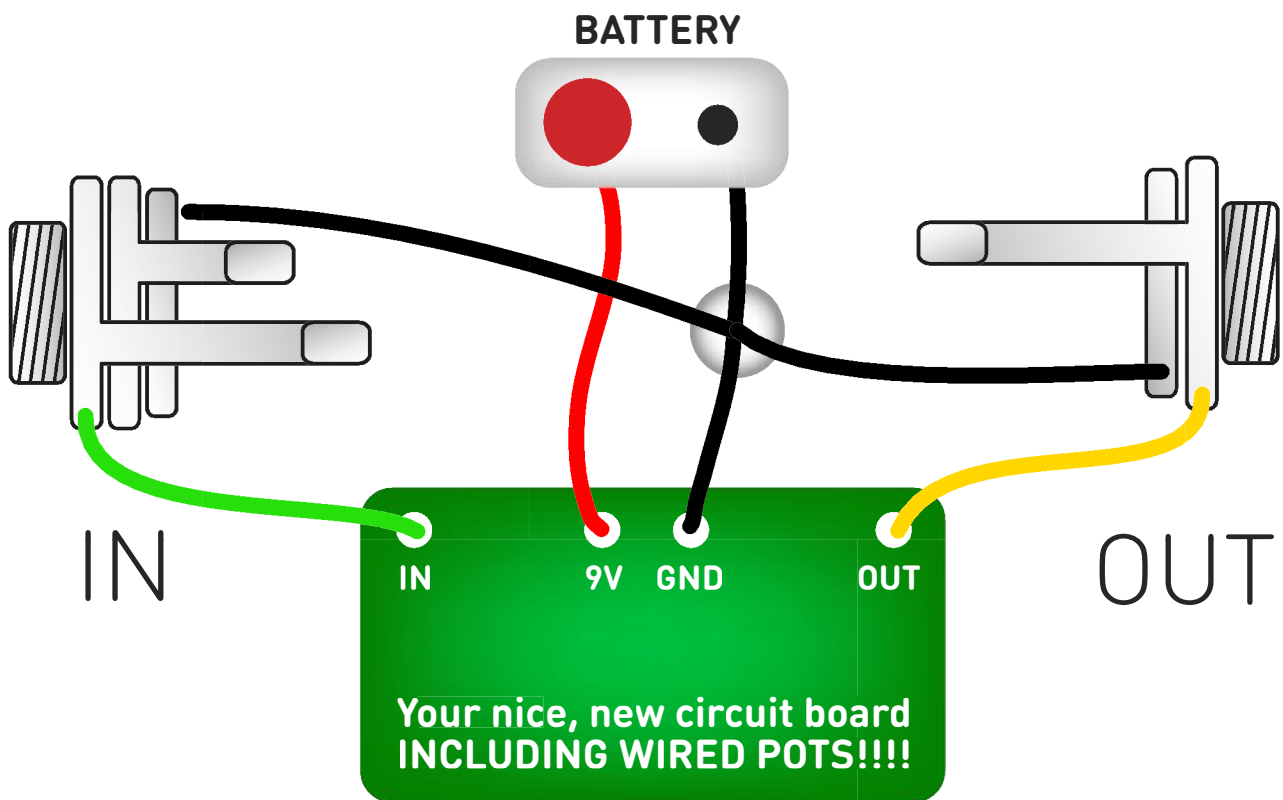
Pots mount on the opposite side of the board to the other components.

If using LED/LDR rather than a Vactrol they should be mounted to face each other very closely, even touching. Wrap some electrical tape around them, or put them in some shrinkwrap to keep the light out. This isn't strictly necessary when the circuit is boxed up, but for testing you need to keep them out of the light.

(Sockets shown aren't provided - they were used for experimentation)



Test the board!



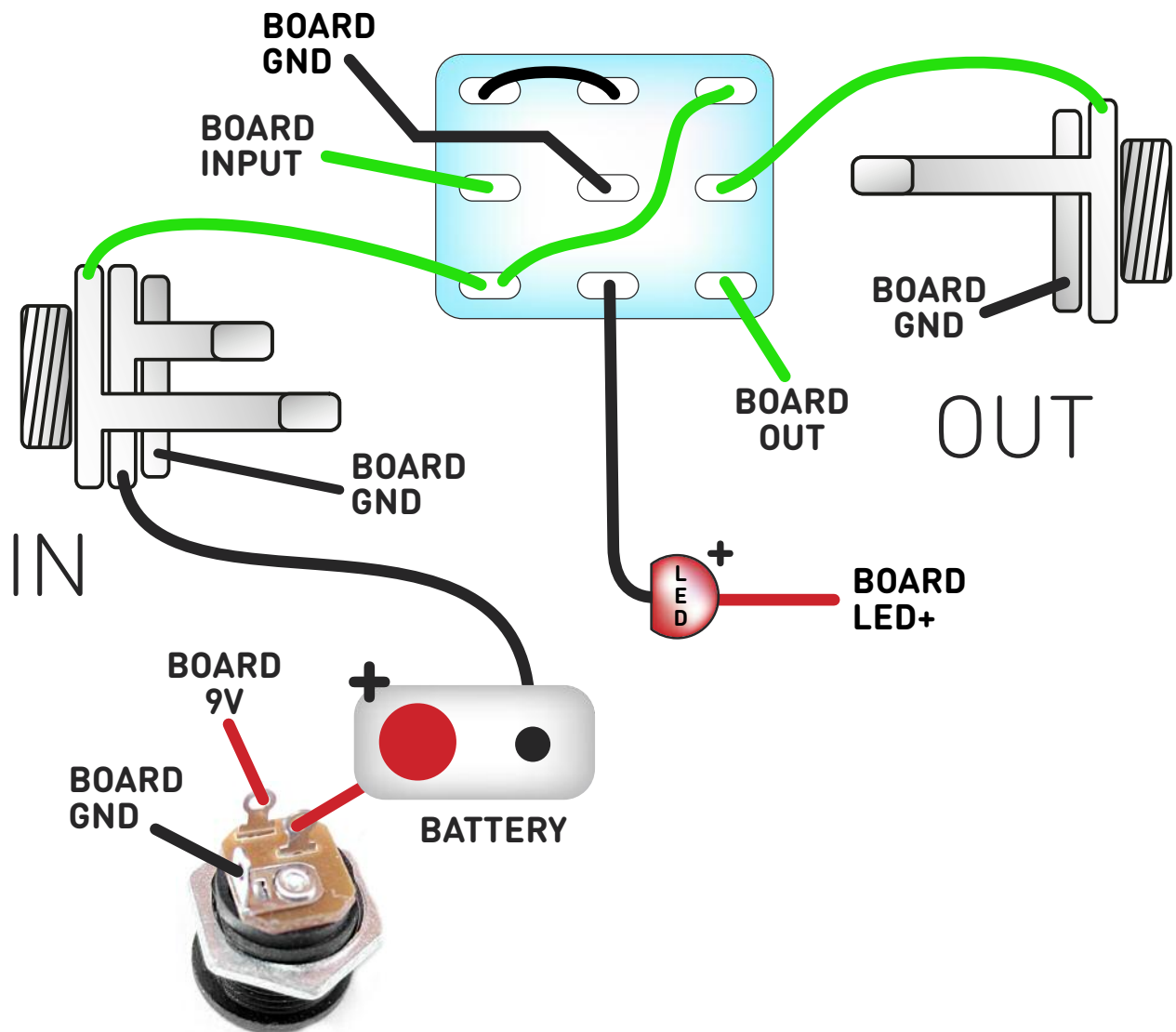
UNDER NO CIRCUMSTANCES will troubleshooting help be offered if you have skipped this stage. No exceptions.

Once you've finished the circuit it makes sense to test it 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 using a daughterboard please refer to the relevant document)



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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