

L'ill Red Booster

Building instructions

V1.0

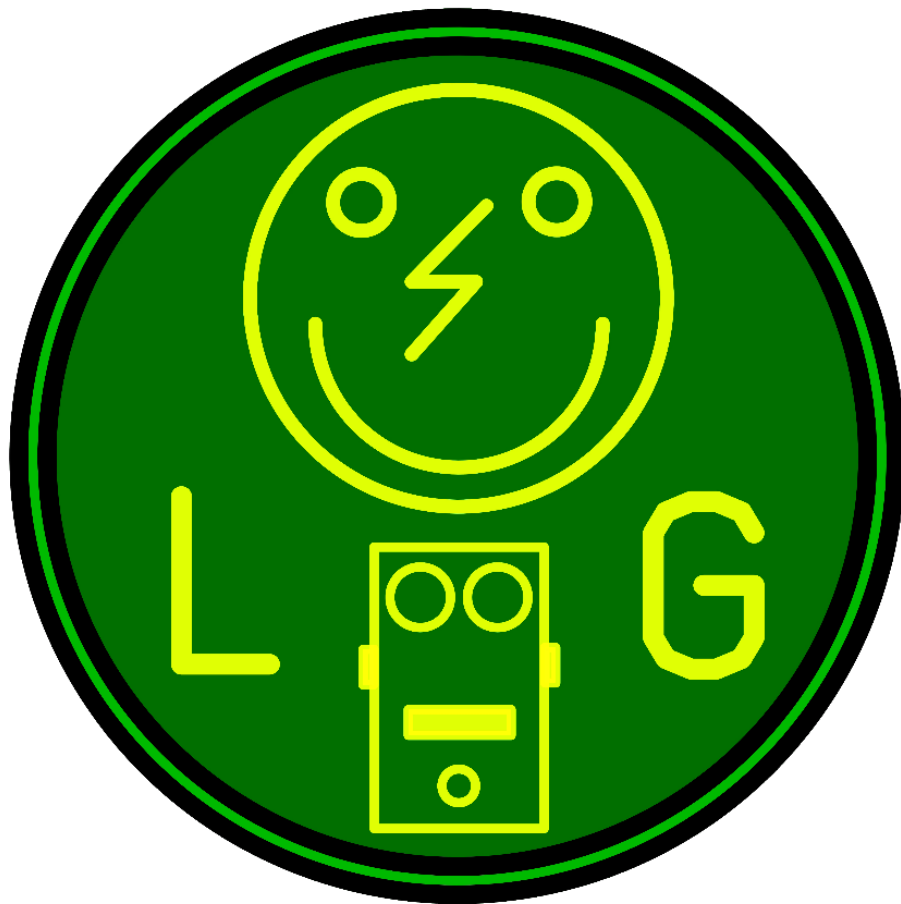


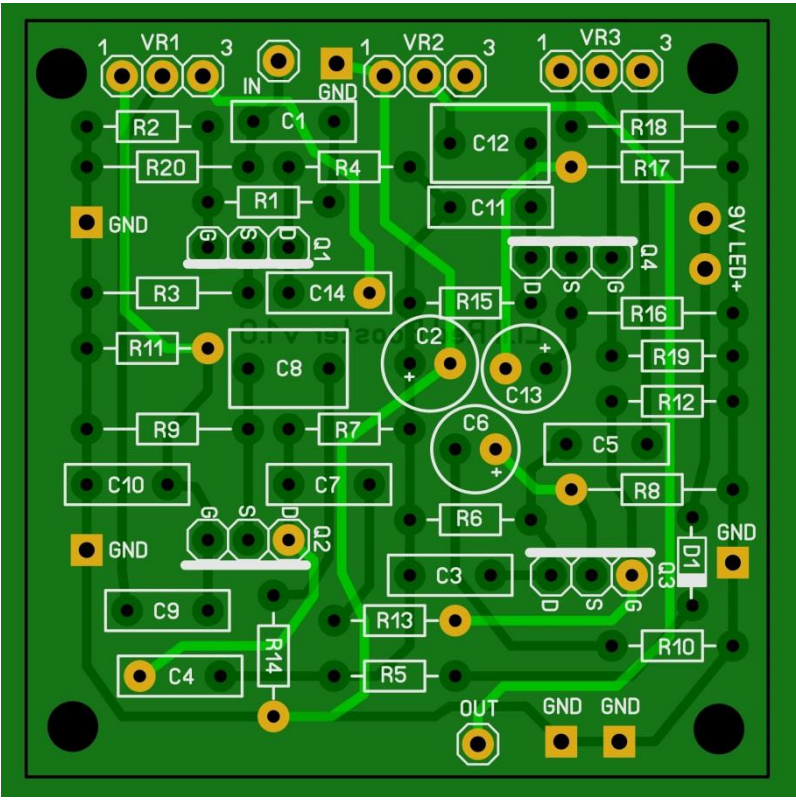
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Components

Part	Value	Comment	Part	Value	Comment
R1	14k7		C1	47n	
R2	1M		C2	100u	
R3	2k		C3	1n	
R4	2k61		C4	1n	
R5	470R		C5	470n	
R6	14k7		C6	22u	
R7	14k7		C7	47n	
R8	14k7		C8	1u	
R9	14k7		C9	4n7	
R10	470R		C10	100p	
R11	14k7		C11	1n	
R12	470k		C12	1u	
R13	14k7		C13	22u	
R14	1k5		C14	470n	
R15	14k7		Q1	2N5952	matched
R16	14k7		Q2	2N5952	matched
R17	470R		Q3	2N5952	matched
R18	4k7		Q4	2N5952	matched
R19	1M		VR1	B50K	Treble
R20	1M		VR2	A50K	Master
D1	1N4007		VR3	A500K	Boost

* Parts marked in red are specialty parts



General guideline for components

- Capacitors: All values under 1nF should be ceramic disks. From 1nF up to 1uF should be MKT (foil/metal film capacitors) and over 1uF use electrolyte caps (or tantalum) 16V+ rated and watch out for polarity!
- Resistors: use 1% metal film for the best results.
- Socket all transistors. This way you can easily mod them or replace them if they brake.
- Orientation of the transistors: the white stripe on the PCB indicates where the flat side of the transistor should be.

General building tips

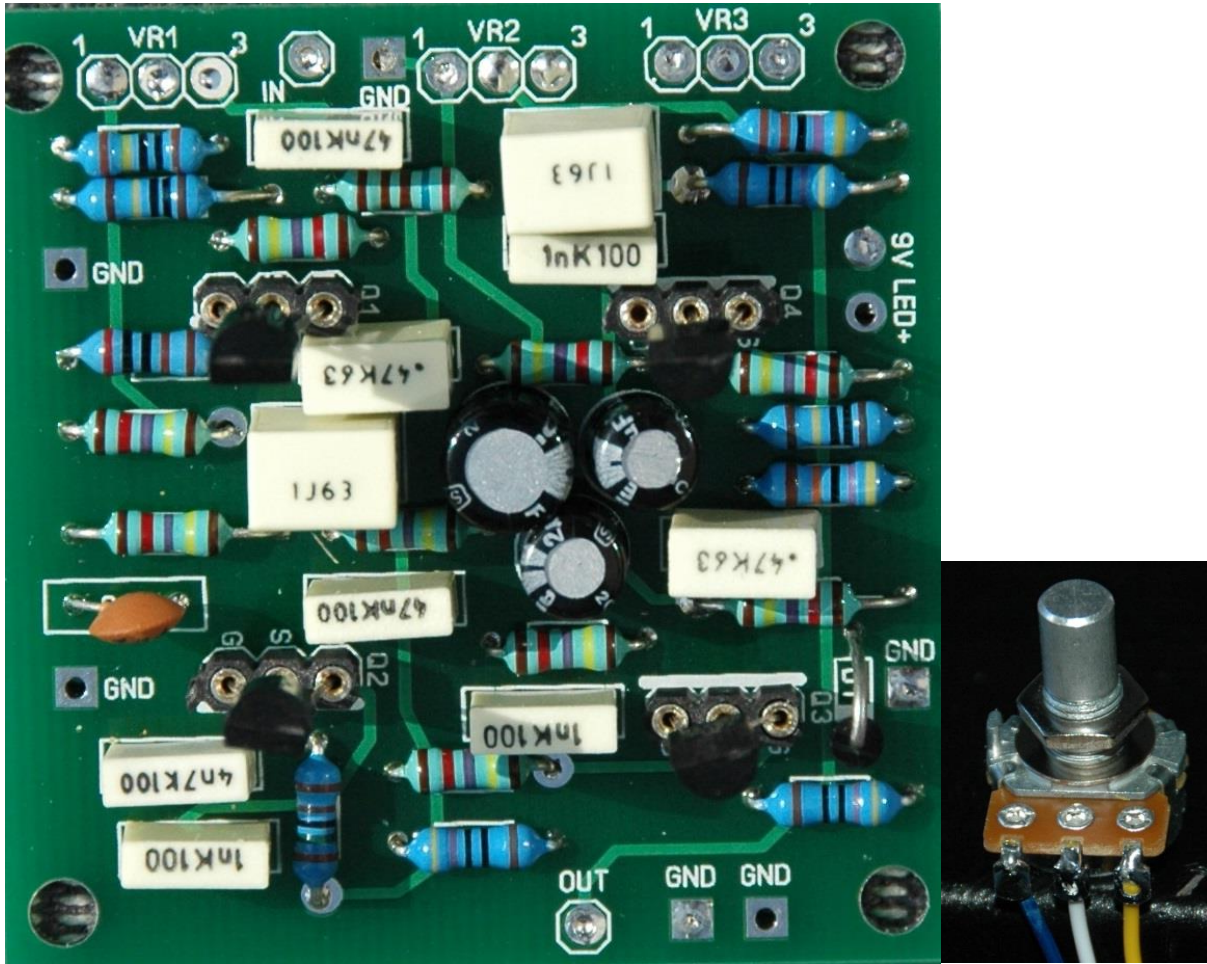
Soldering this board can be complicated for some people since the solder pads can be very close together. Use a magnifying glass to make the job easier.

Start by soldering the resistors. It is best to solder diode D1 in an upright position (remember the polarity) so do not solder it yet. Next, solder the sockets for the transistors. For the transistors you can buy a 20 pin SIL socket and cut of the pins you need. Now solder the ceramic capacitors, the diode D1, then you can solder the MKT capacitors (not the 1u ones!) and the electrolyte capacitors. Now finish by soldering the 1u MKT capacitors. Place the transistors and you are almost ready to go.

Besides the components mentioned in the table on the previous page, you will need:

- **2 input jacks.** 2 mono jacks if you are not going to use a battery but only the 9V adapter. 1 mono (for output) and 1 stereo jack (for input) if you will be using both a 9V battery and the 9V adapter.
- **3PDT footswitch** (9 pins). I also carry an easy off board circuit for this.
- **2,1mm DC jack** (isolated).
- **9v battery clip** (optional).
- **22 gage stranded hook-up wire.**
- **Hammond 1590B** case (or similar) in your favourite colour. A 1590BB will give you more room to experiment with.

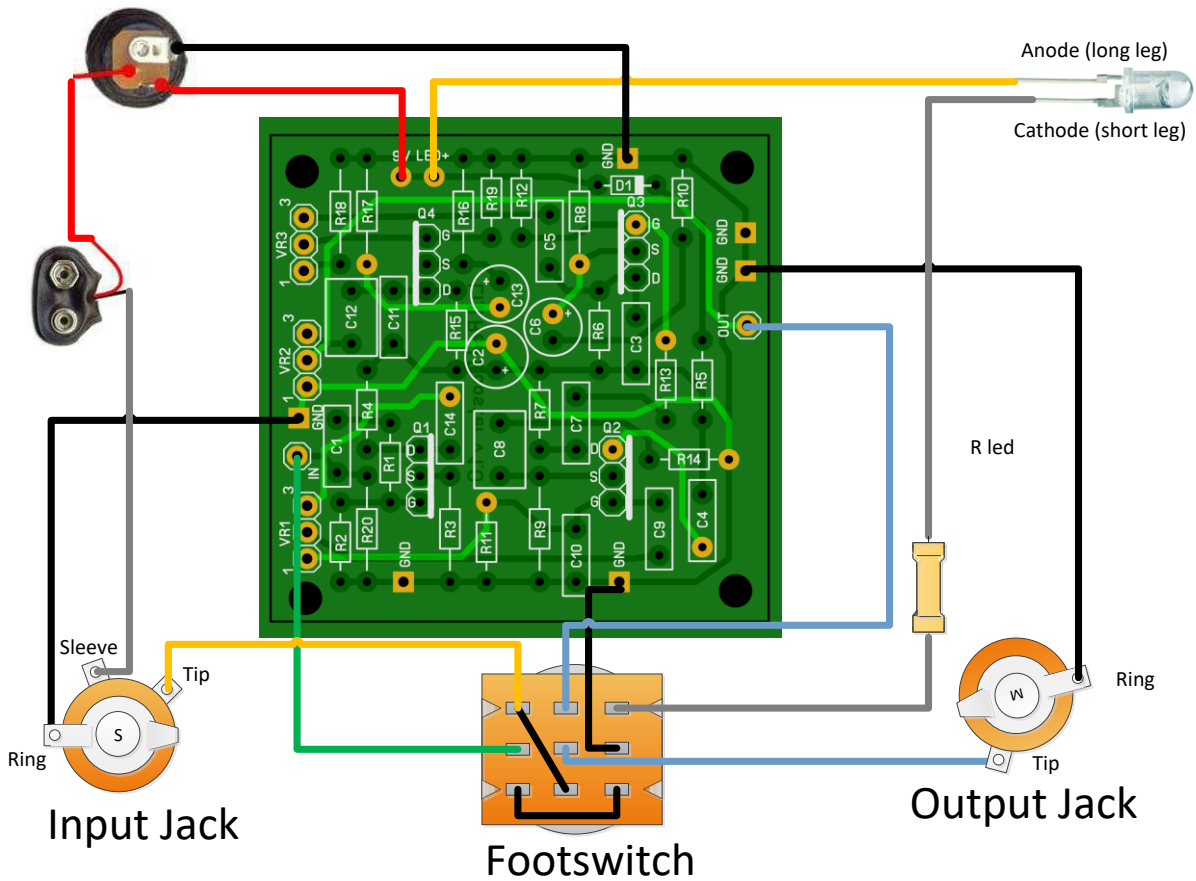
The finished board



On the picture of the pot you can make out the pin sequence on the board.

- Blue = pin 1
- White = pin 2
- Yellow = pin 3

Offboard wiring

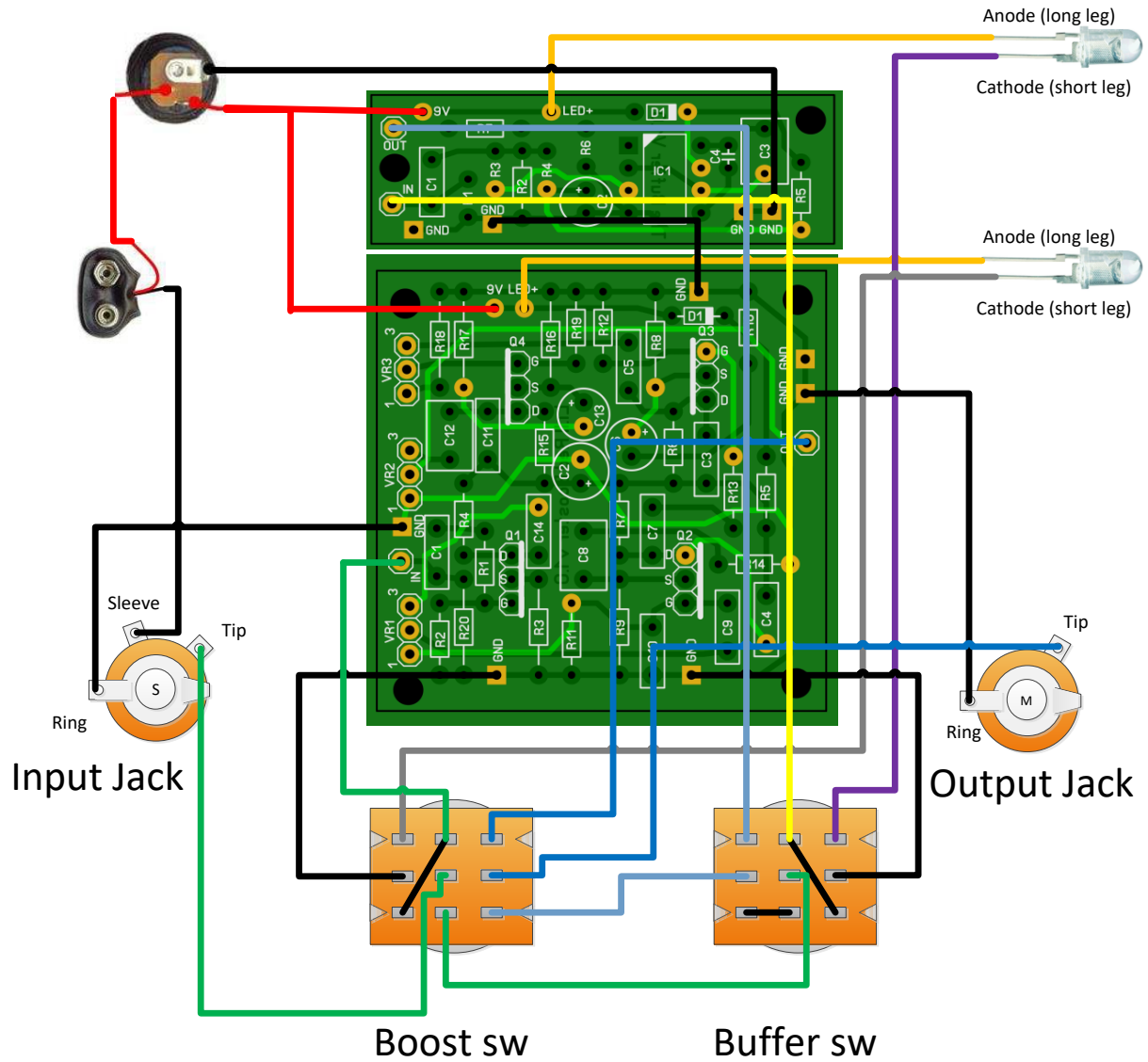


Notice that in the “off” position the effect input is connected to ground to prevent possible oscillation.

The LED requires a resistor (R led in the diagram) depending on the type of LED you are using. An ultra-bright red or blue LED requires a 4k7 resistor, Green requires 680R.

Adding the buffer

Build the buffer as mentioned in the separate building instructions. To add it to the booster, wire it as follows:



When the buffer switch is **DOWN**, the buffer is **ON** when the boost is **OFF**.

Troubleshooting

All PCB's have been e-tested 100% in the factory, so there should not be a connection problem on the PCB itself.

The board is not working (at all), what now?

- Check if your 9V is plugged in correctly (and/or soldered correctly on the board).
- Check that you oriented the capacitors, IC's ,transistors and diodes the right way. MKT capacitors and resistors do not need to be oriented.
- Check if you used the correct values of the components. For resistors you can look here: <http://www.diyaudioandvideo.com/Electronics/Color/>
- Double and triple check your soldering! A lose or cold solder can be really bad for your board.
- Replace the IC's and transistors, one might be defective. Before doing that first unplug the 9V and wait 5 seconds.

Schematic

