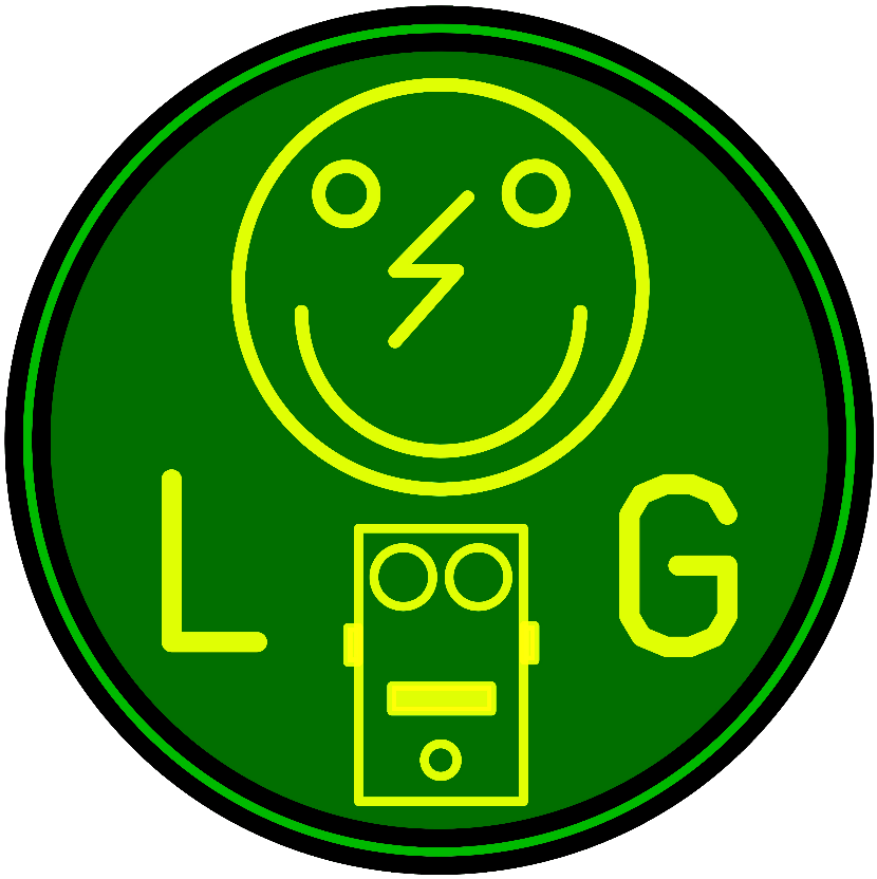
Signal Splitter

Building instructions

v1.0



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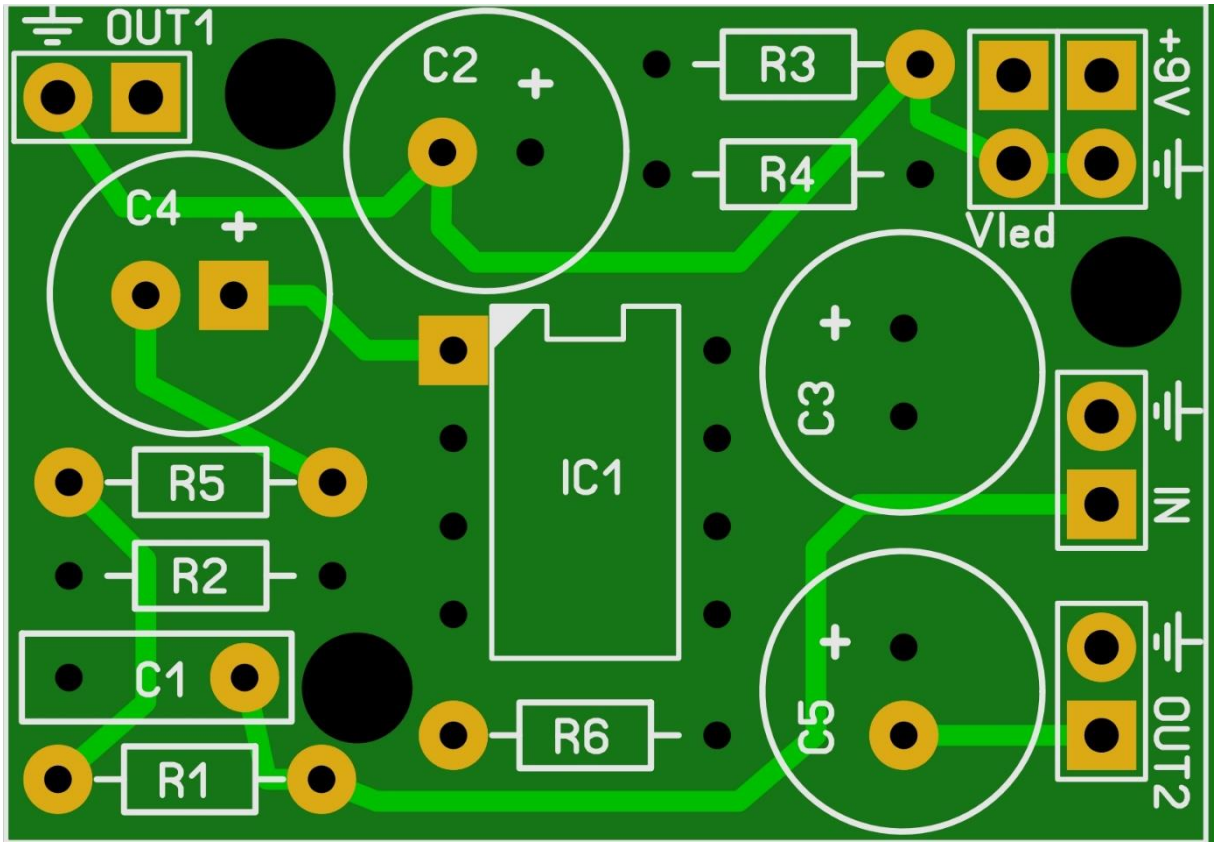
Read this entire manual thoroughly before you start building the effect!

Last update: 14-04-2017

PCB layout



Dimensions: 35 mm x 24,2 mm
1,38 inch x 0,95 inch

Components

Name	Value	Type
C1	220n	MKT
C2	22u	Electrolyte
C3	100u	Electrolyte
C4	10u	Electrolyte
C5	10u	Electrolyte
IC1	TL072	
R1	1M	1% Metalfilm
R2	1M	1% Metalfilm
R3	33k	1% Metalfilm
R4	33k	1% Metalfilm
R5	1M	1% Metalfilm
R6	1M	1% Metalfilm

Build sequence

Soldering this board can be very complicated for some people since the solder pads are very close together. Use a magnifying glass to make the job easier. The trick to soldering a PCB is to work from small to big components. My building sequence suggestions in this section are based on the parts I used myself. Sometimes some components are smaller (or bigger) so always use your own common sense and change the order. Usually capacitors differ a lot in size depending on their rating.

Note: Do not blow on your solder in an attempt to cool it down. That will possibly result in a bad join that might corrode!

This effect can also function on 18V if needed. If you are going to use 18V then all capacitors need to be rated 25V+.

Start by soldering the resistors, then 8 pins IC socket and then electrolytes.

You are almost ready to rock. Place the IC and start the off board wiring.

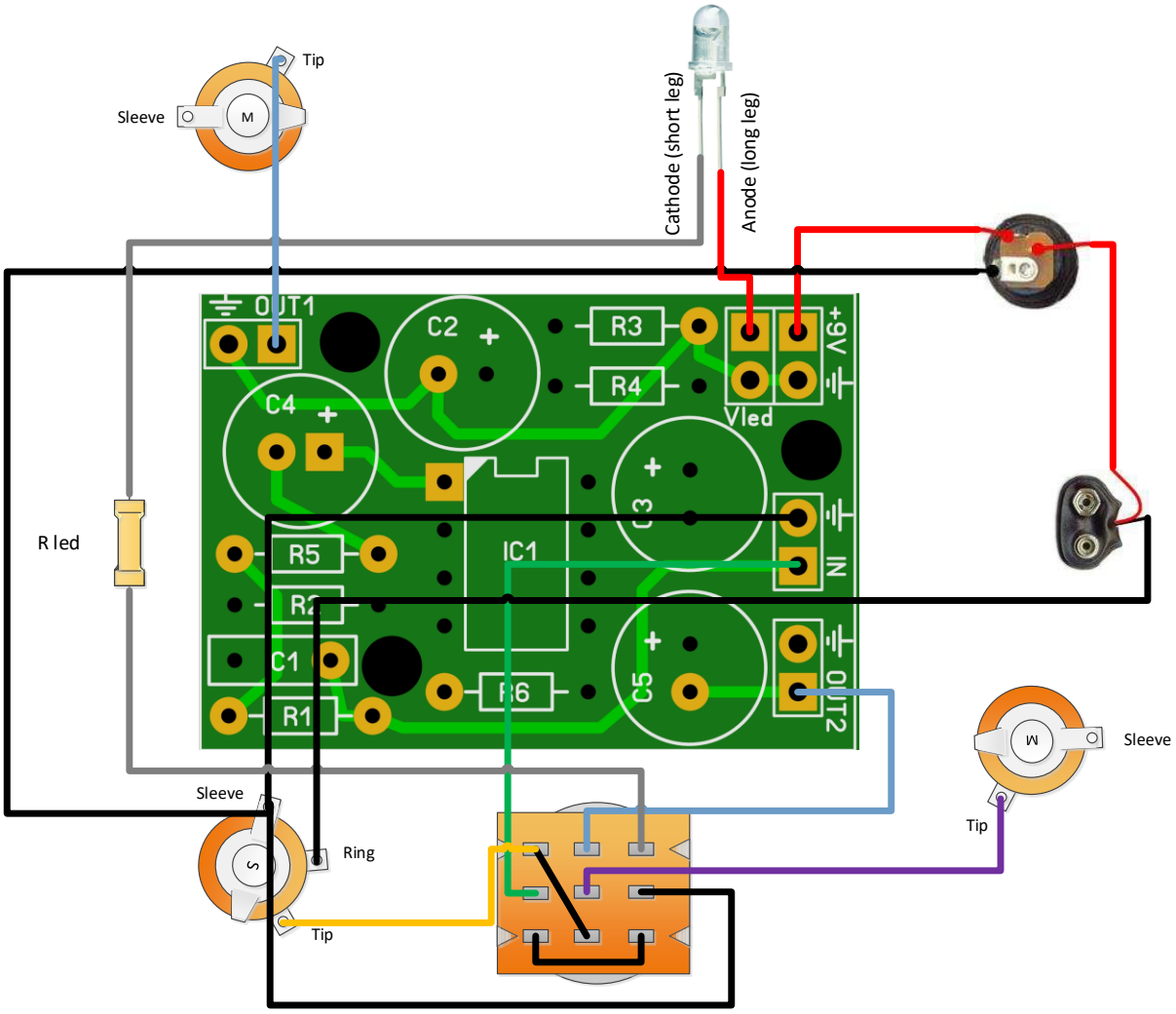
Besides the components mentioned in the table on the previous page, you will need:

- **3 input jacks**. 3 mono jacks if you are not going to use a battery but only the 9V adapter. 2 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 sell an easy off board circuit for this.
- **2,1mm DC jack** (isolated).
- **9v battery clip** (optional).
- **22 gage stranded hook-up wire.**
- **Hammond 1590A** case (or similar) in your favourite colour.

Off board wiring

This effect can be used for different purposes. You can use different off board wiring styles.

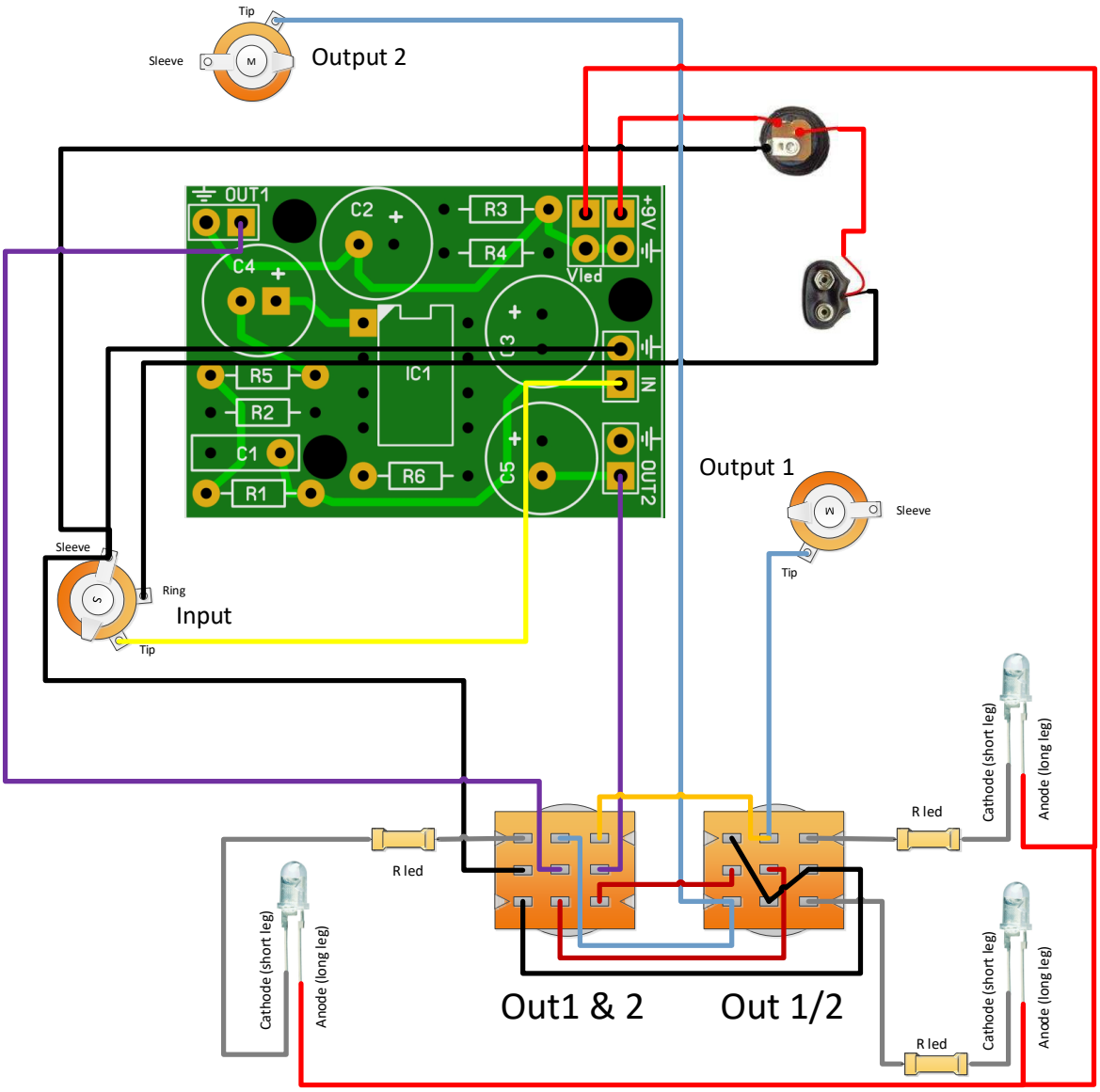
Side chain signal splitter (Off, Out 1 and Out 2)



Use this if you want to split the signal to side chain it to an effect. Side chaining is sometimes used in effects that are triggered by the input signal (eg autowah's) and are placed in a position in the effects chain where the input signal is already heavily overdriven (eg autowah after OD/distortion etc.). In this case you can feed the input signal from the beginning of your effect chain to this effect and make it function as if it was in the beginning of the chain.

In the off position it is true bypass to output 2, in the On position the signal is sent to both outputs. I do not advise to use this wiring when Output 1 is connected to an amp. In the Off position Output 1 is not grounded and can have some noise even though there is no signal on the input.

Channel selector (Out 1/Out 2, Out 1 & Out 2)



This is a beast to wire but works beautifully. You can either use 2 LED's for the "Out1 or Out2" switch or a bi-color LED to save space. When you switch the "Out1 and Out2" switch on it will turn off the "Out1 or Out2" LED to make sure you know which setting you are using.

Troubleshooting

All PCB's have been 100% factory e-tested and out of every batch I receive I build an effect to double check, 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). Pay special attention to the polarity.
- Check that you oriented the capacitors and IC the right way. MKT capacitors as well as resistors do not need to be oriented. A likely sign of incorrect capacitors and/or orientation is when an effect is sputtering, rumbling or "motor boating".
- 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 loose or cold solder can be really bad for your board. Reflow all your components.
- Replace the IC, it might be defective. Before doing that first unplug the 9V and wait for 5 seconds.
- Check that you have good/high grade components. A lot of Chinese sourced parts are fakes (especially high end opamps, audio capacitors, vintage diodes and transistors) so be careful that you source your parts from reliable suppliers.

Schematic