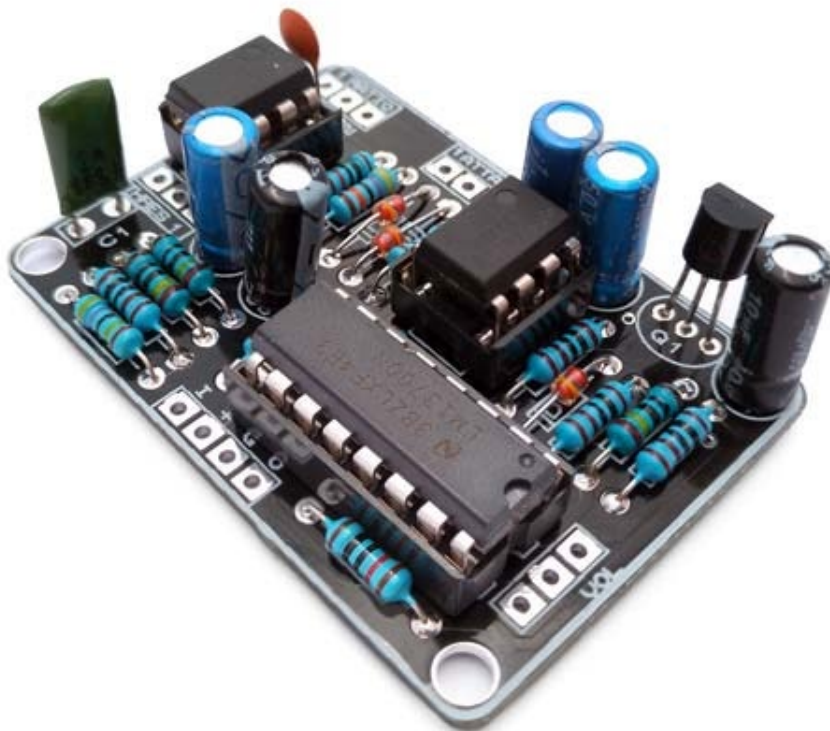


Supreme Compressor Kit Building Manual



Effect Pedal Kits:

Supreme Compressor

The Supreme Compressor Kit lets you build your modern OTA based compressor pedal. Operational Transconductance Amplifier based compressors, as the Ross Compressor or the MXR Dynacomp, are widely known and still used as a reference. Actually, most compressors out there are Dynacomp clones with some mods and variations! The Supreme Compressor has been redesigned to use a modern OTA IC (LM13700 instead of the now obsolete CA3080).

One of the main problems of compressors is that they're very noisy. At low input levels the amplifier is set to have maximum gain, producing the maximum amount of output hum as every small interference and noise in the circuit is picked and amplified. To avoid this, in the Supreme Compressor the OTA is rearranged inside the feedback loop in a way that, to get maximum gain, the OTA amplification is set to the minimum.

– **Attack** knob you can dial the time it takes to the compression to engage: short attack times will give an almost-instant fast tracking compression, while a longer setting will let go fast string hits and will act depending on the overall volume.









– **Release** determines how much the gain is reduced during compression.

– **Threshold** sets how loud the input signal has to be for the compression to kick in. This knob is also known as Sustain or Compression in other compressors.

– **Volume** adjusts the overall output level.

The Supreme Compressor Kit is based on ValveWizard's Engineer Thumb, check his website if you want more info about the project!

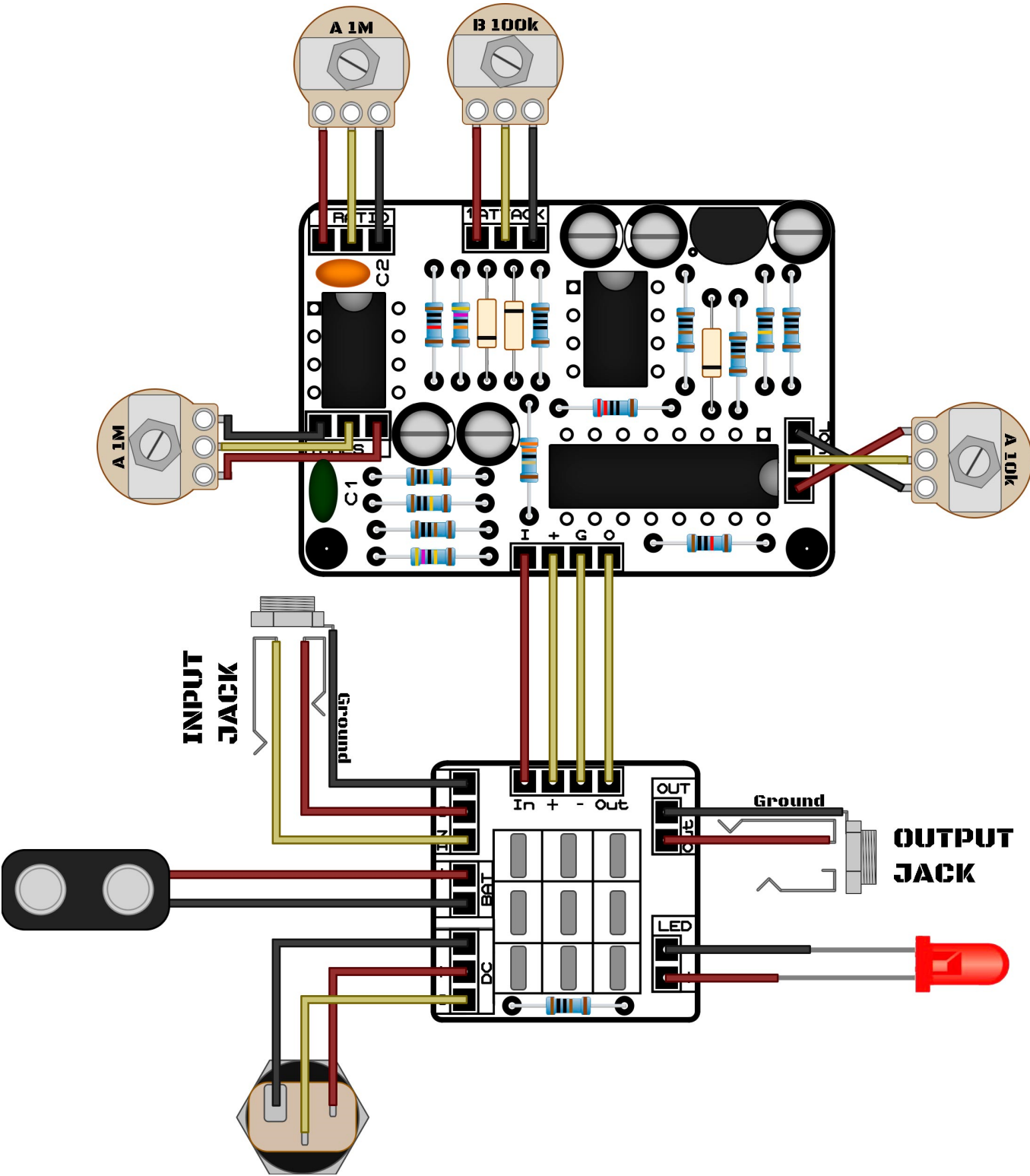
BOM (1/2)

Resistors (14)				Capacitors (7)		
1	R1	4.7M		1	C1	10n
4	R2, R5, R8, R9	1k		1	C2	100p (ceramic)
2	R3, R4	10k		1	C3	10u (electrolytic)
1	R6	220		3	C4, C5, C7	1u (electrolytic)
1	R7	470k		1	C6	47u (electrolytic)
3	R10, R12, R13	1M				
1	R11	33				
1	R14	100				

BOM (2/2)

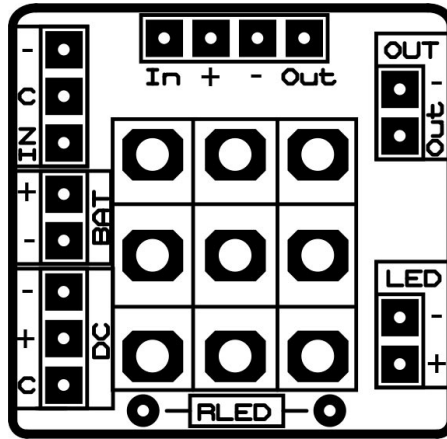
Diodes, Transistors and ICs			Generic Parts and Potentiometers		
2	U1, U3	TL072	1	Battery clip	
1	U2	LM13700	1	DC Jack	
1	Q1	BC327	1	RLED	1k LED resistor
3	D1, D2, D3	1N914/1N4148	1	LED Bezel	
			1	3PDT	
			2	IN, OUT	6.35mm Jacks
			1	100k Linear (B) Potentiometer	Attack
			1	10k Logarithmic (A) Potentiometer	Vol
			2	1M Logarithmic (A) Potentiometer	Ratio, Thres

Component Placement

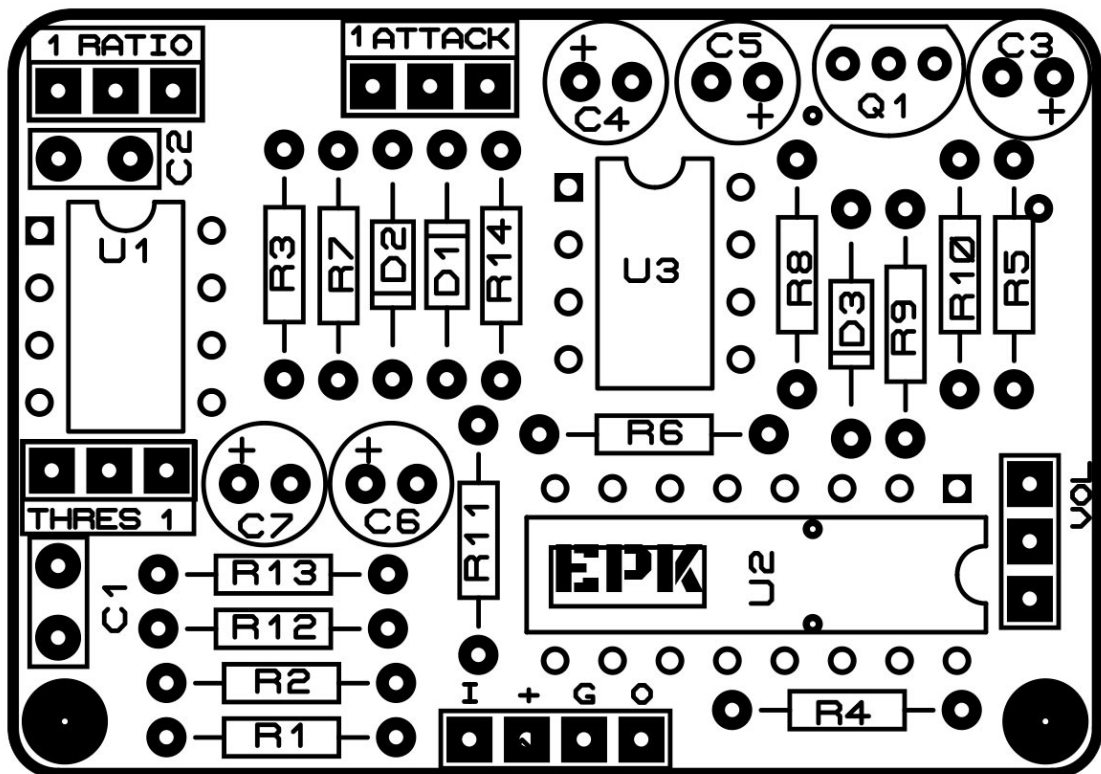


Board Layouts

3PDT PCB

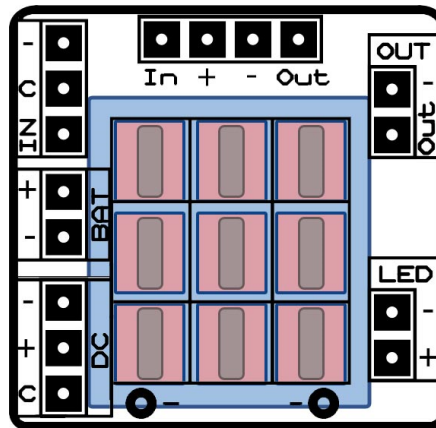


Effect PCB



Building Tips

- 1- Pay attention to the **orientation of the 3PDT!** In the following picture you can see how the 3PDT pins should be positioned (inserting the pins in the holes can be a bit tight to avoid movement while soldering):



- 2- For a proper soldering you just have to apply the **right amount of solder wire**. A right solder joint should have a concave shape around the joint and look like this:

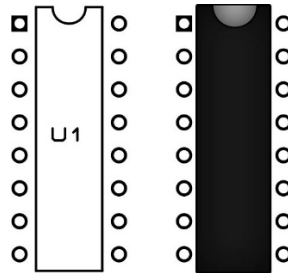


- 3- Don't apply too much heat! When soldering, the time you hold the solder iron against the joint should be **as short as possible** to avoid damaging any part (a few seconds should be enough). If you can't get a solder joint right, **let it cool** a bit before trying again.
- 4- If having troubles with the building, checking the schematic in the last page will help you find **where the audio signal stops**. When you find the spot, check out that **everything around that joint is ok** (components placed at their right place, solder joints...).

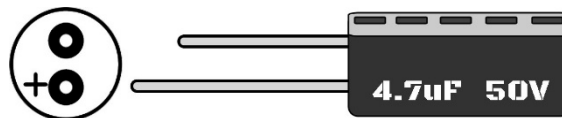
Building Tips

5- Pay attention to the **parts that have a polarity** and make sure they are connected as in the component placement picture:

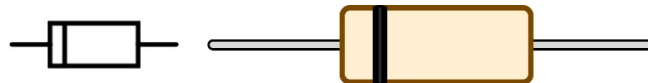
- **ICs** (they have a small dot or indication that must fit the indication in the board)



- **Electrolytic capacitors** (longer pin is connected to the “+” hole):



- **Diodes** (check for the mark and make it fit with the one in the PCB):



- **Leds** (longer pin is connected to the “+” hole)



- **Transistors** (inserted to fit the drawing in the PCB)



To avoid any issue, check the latest building manual. Use the pictures only as a reference! Colors/shapes can change slightly, always check the part polarity, resistor values, potentiometer placement... before soldering.

