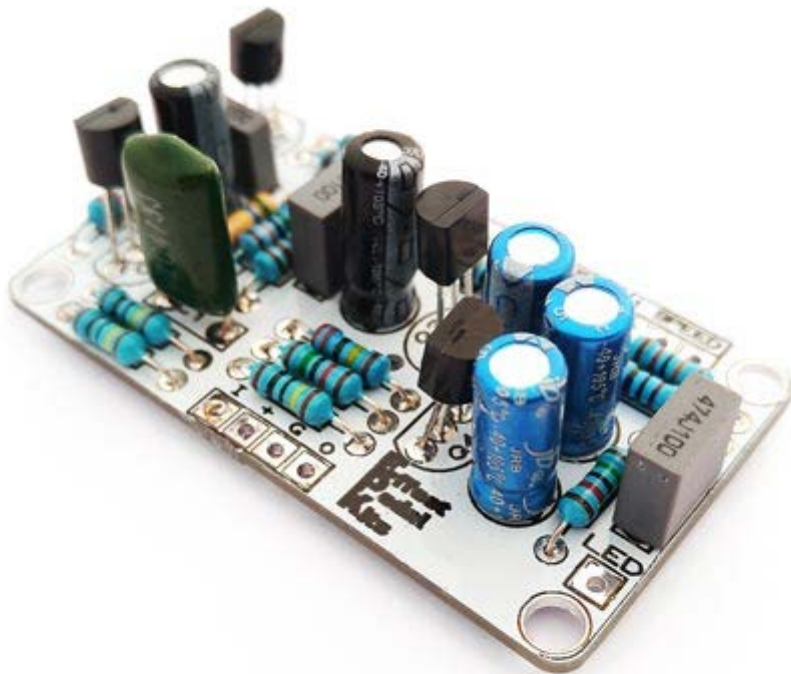




# **EPK Tremolo Kit Building Manual**



# Effect Pedal Kits:

## EPK Tremolo













This version of the EA Tremolo is based on the original circuit with some mods added. This effect pedal is a wonderful sounding tremolo, and while the circuit is relatively simple the EA Tremolo sounds very warm and pleasant to the ear. If you are looking for a more radical sounding tremolo, you should check the Pulsar Tremolo Kit.

As it doesn't include any kind of optocoupler, the EA Tremolo is quite easy to build. A very rounded modulation wave is generated by the LFO, and that's why the EA Tremolo sounds so natural.

The EA Tremolo effect pedal has a Speed potentiometer, which sets the frequency of the LFO, and a Depth knob to adjust the intensity of the tremolo.

But, besides being used as a tremolo, the EA Tremolo can also be used as a booster: the Volume knob sets the output volume of the pedal and allows you to get a bit more volume without needing a booster pedal.

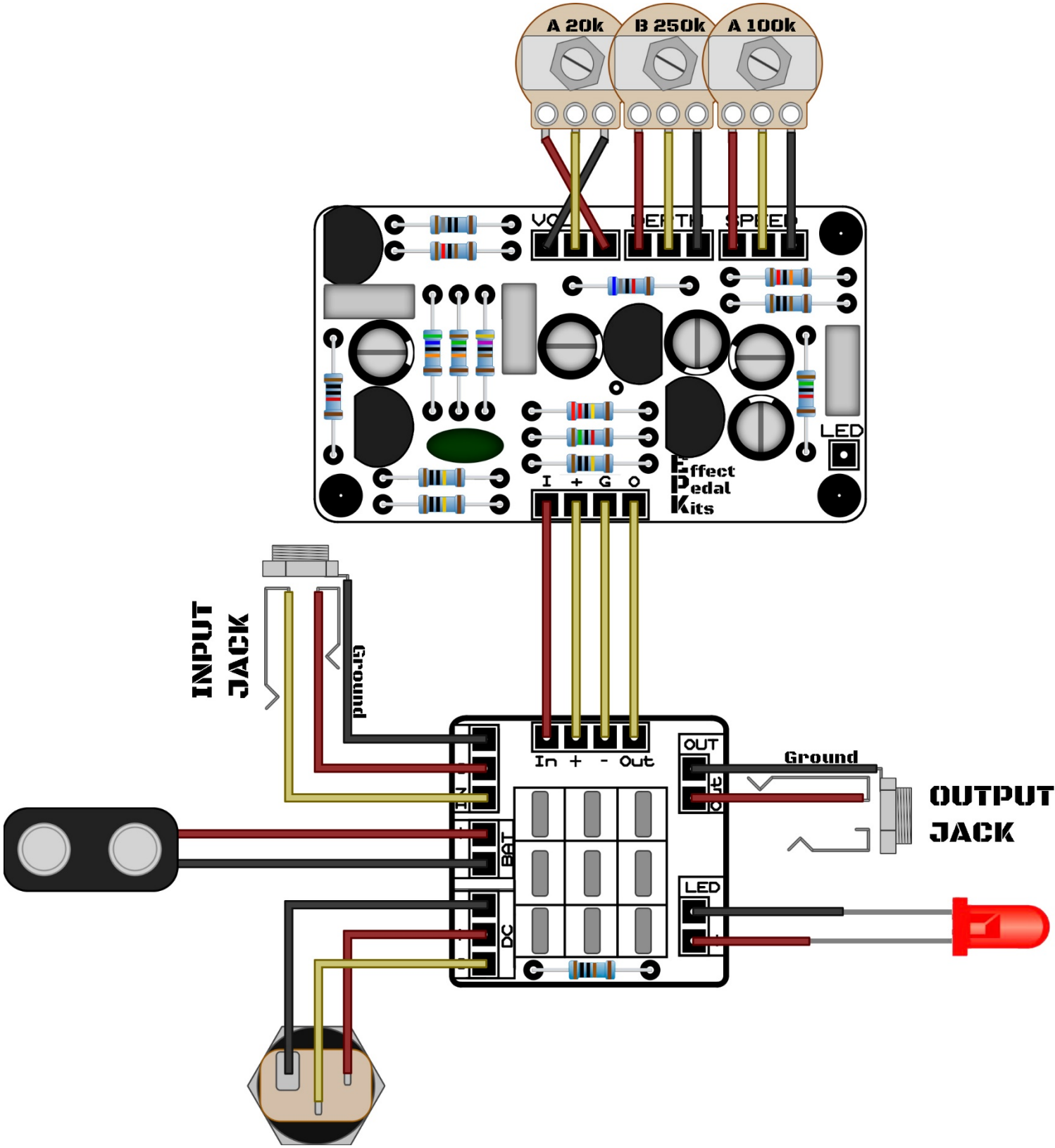
# BOM (1/2)

Resistors (15)				Capacitors (9)		
3	R1, R2, R3	1M		1	C1	47n
1	R4	10k		1	C2	10u (electrolytic)
1	R5	560k		1	C3	220n
1	R6	150k		2	C4, C6	470n
1	R7	2k		1	C5	22u (electrolytic)
1	R8	180		3	C7, C8, C9	1u
1	R9	1.2k				
1	R10	68k				
1	R11	120k				
2	R12, R14	15k				
1	R13	2.2M				
1	R15	1k				

# BOM (2/2)

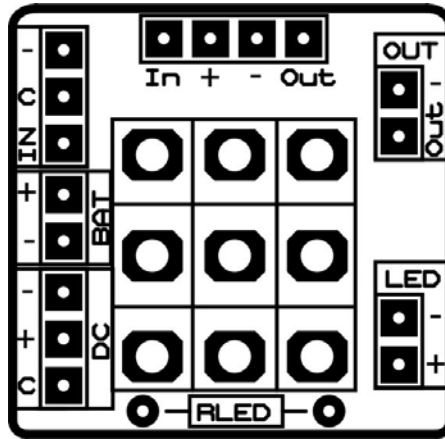
Diodes, Transistors and ICs			Generic Parts and Potentiometers		
2	Q1, Q3	J113	1	Battery clip	
1	Q2	2N3904	1	DC Jack	
1	Q4	2N5088	1	RLED	1k LED resistor
			1	LED Bezel	
			1	3PDT	
			2	IN, OUT	6.35mm Jacks
			1	250k Linear (B) Potentiometer	Depth
			1	100k Logarithmic (A) Potentiometer	Speed
			1	20k Logarithmic (A) Potentiometer	Vol

# Component Placement

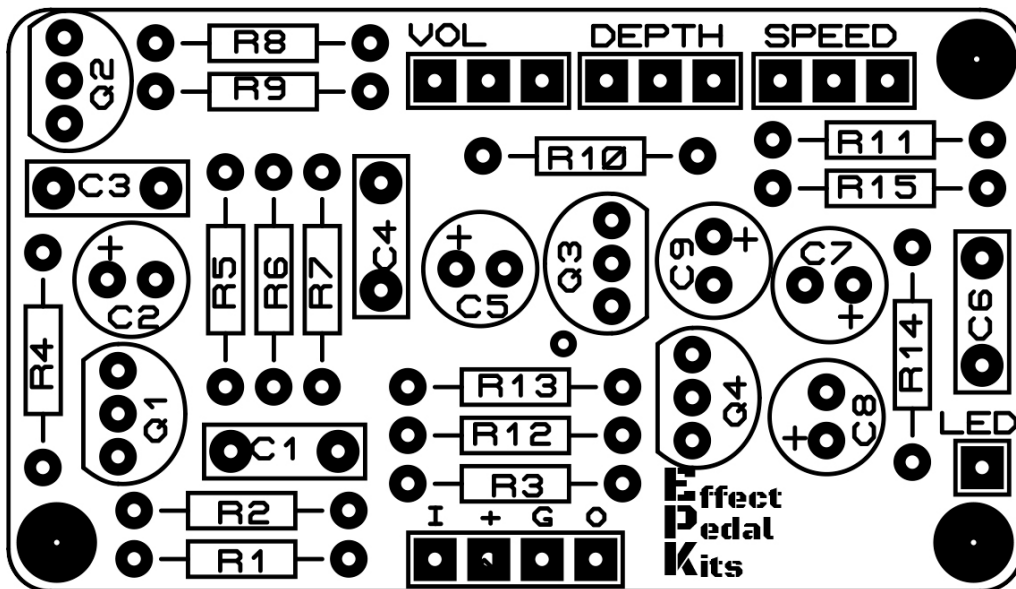


# Board Layouts

## 3PDT PCB

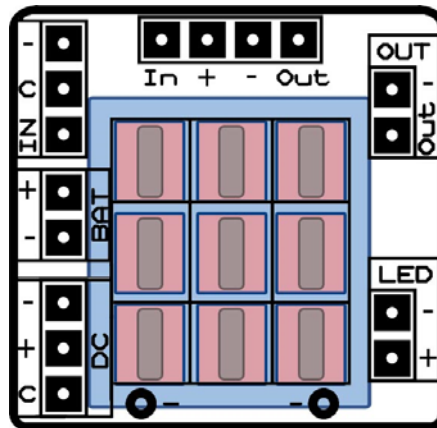


## Effect PCB



# 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:

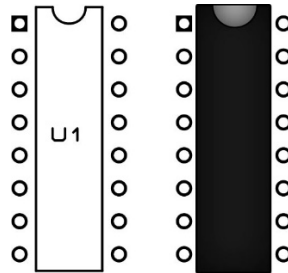


- 3- Don't apply too much heat! When soldering, the time you hold the solder iron against the joint should be **as short as possible** to avoid damaging any part (a few seconds should be enough). If you can't get a solder joint right, **let it cool** a bit before trying again.
- 4- If having troubles 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...).

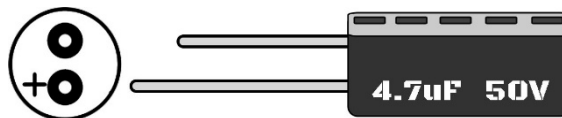
# Building Tips

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

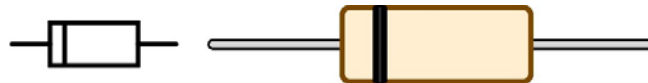
- **ICs** (they have a small dot or indication that must fit the indication in the board)



- **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.



# Schematic

