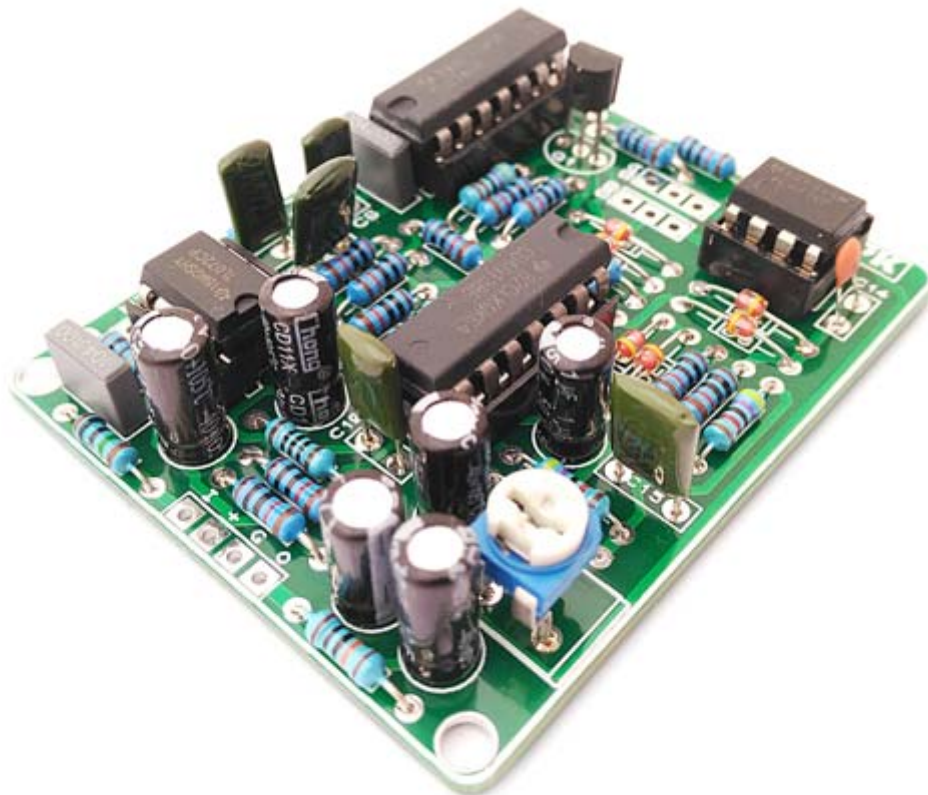


# **Uboat Suboctave Kit Building Manual**



# Effect Pedal Kits:

## Uboat Suboctave









The **Uboat Suboctave** is a very smooth **sub-octave** effect that generates a note one octave below the one you play. The **Uboat Suboctave** uses the same principle than other octavers to generate the output: it basically divides by two the frequency of the input signal, obtaining a sound one octave lower than the original. Nevertheless, the **Uboat Suboctave** uses a different method than the classic Boss OC-2 to create a circuit with a great tracking and responsiveness that generates a synth-like sound.

A quick note: to get the better results, the **Uboat Suboctave** should be used with **single notes** so it can properly track the audio and generate the octave down.

- The *MIX* knob lets you blend the generated sub-octave note with the dry signal, so you can go from just your original audio to the pure generated effect sound and everything in between.

- The *DPDT* alternates between the generated signal being in phase with the original audio (normal mode) and being 90° out of phase (synth mode).

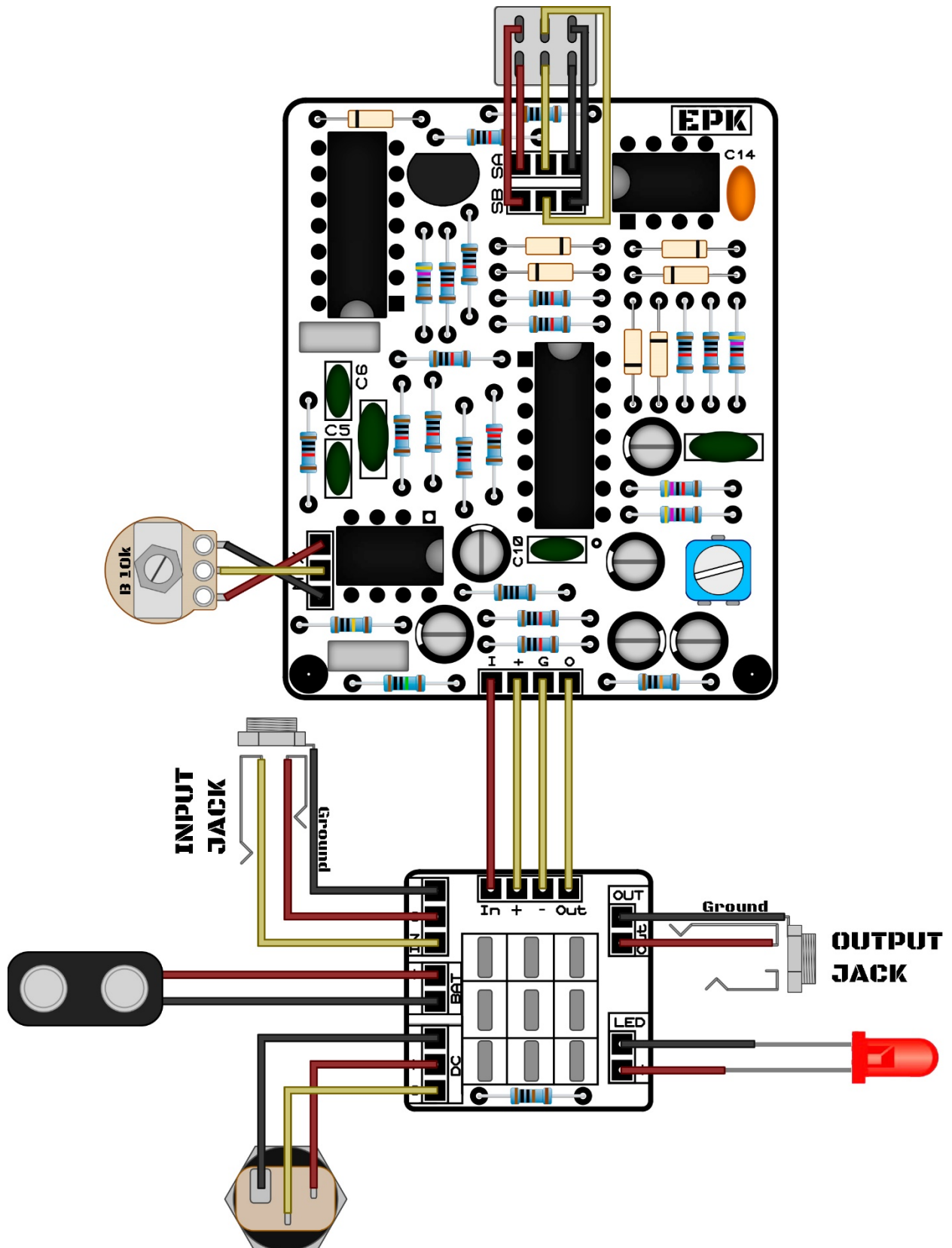
# BOM (1/2)

Resistors (24)				Capacitors (14)		
1	R1	10M		2	C1, C8	100n
15	R2, R3, R5, R6, R7, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18	10k		2	C2, C3	47u (electrolytic)
1	R4	1M		2	C4, C15	22n
1	R8	2.2k		2	C5, C6	4.7n
1	R19	4.7k		1	C7	1u (electrolytic)
3	R20, R21, R22	47k		3	C9, C11, C12	10u (electrolytic)
1	R23	100k		1	C10	2.2n
1	R24	100		1	C14	10p (ceramic)

# BOM (2/2)

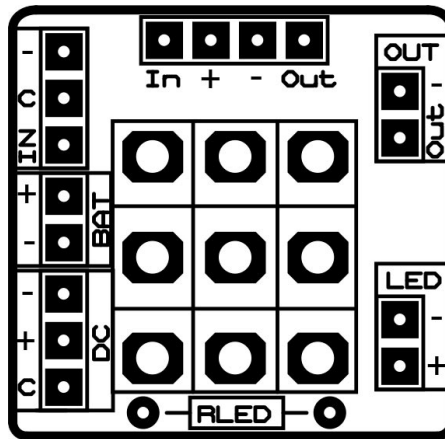
Diodes, Transistors and ICs			Generic Parts and Potentiometers		
2	U1, U3	TL072	1	Battery clip	
1	U2	TL074	1	DC Jack	
1	U4	CD4013	1	RLED	1k LED resistor
			1	LED Bezel	
1	Q1	J113	1	3PDT	
7	D1, D2, D3, D4, D5, D6, D7	1N914	2	IN, OUT	6.35mm Jacks
			1	Trimmer 100k	
			1	DPDT	SA, SB
			1	10kB Linear Potentiometer	Mix

# Component Placement

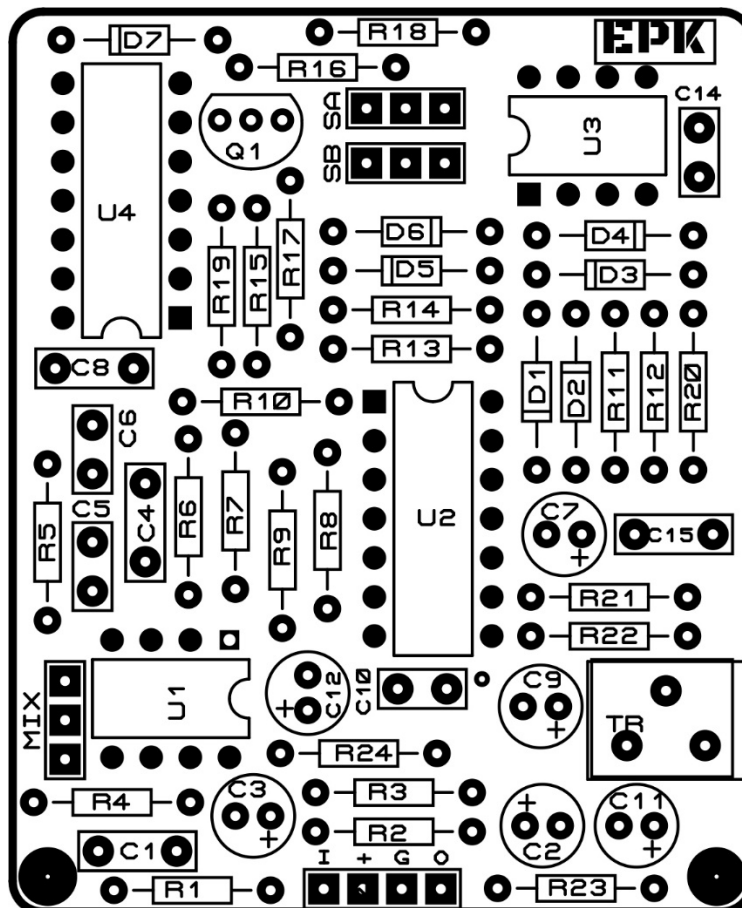


# Board Layouts

## 3PDT PCB

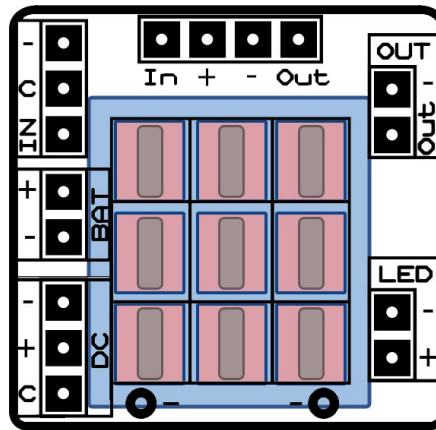


## Effect PCB



# 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:

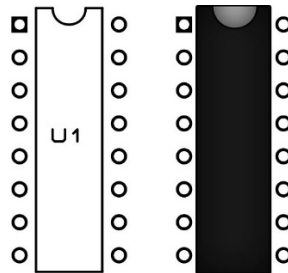


- 3- Don't apply too much heat! When soldering, the time you hold the solder iron against the joint should be **as short as possible** to avoid damaging any part (a few seconds should be enough). If you can't get a solder joint right, **let it cool** a bit before trying again.
- 4- If having troubles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

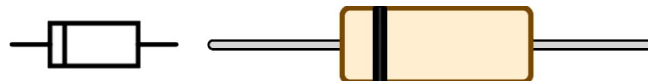
- **ICs** (they have a small dot or indication that must fit the indication in the board)



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



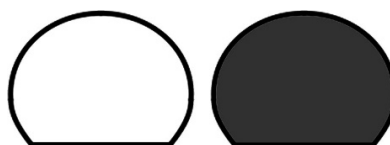
- **Diodes** (check for the mark and make it fit with the one in the PCB):



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



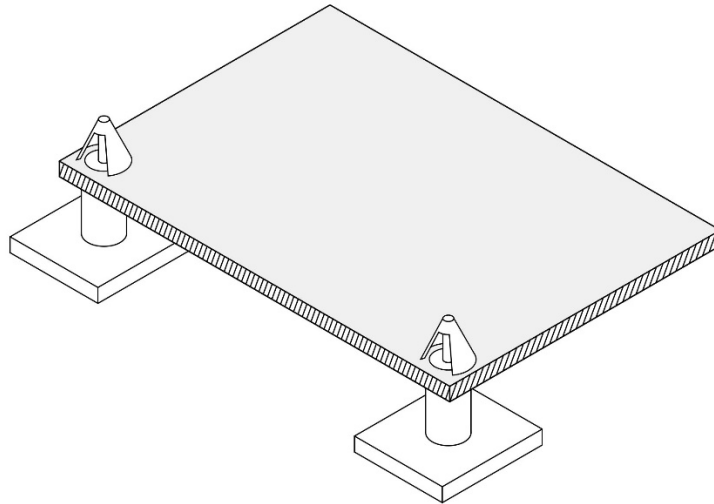
- **Transistors** (inserted to fit the drawing in the PCB)





# **Building Tips**

- 6- With the kit we include plastic PCB supports with an adhesive bottom. You can use them to anchor the PCB to your enclosure for a better stability. Just insert the PCB support tip into the 3.5mm holes and remove the adhesive protective film.



**To avoid any issue always check the latest building manual. Use the pictures only as a reference! Colors/shapes of wires, PCB or parts can change slightly, this doesn't affect their functionality in any way.**

**Always double check part polarity, resistor and capacitor values, potentiometer placement, IC orientation... before soldering.**

## Schematic

