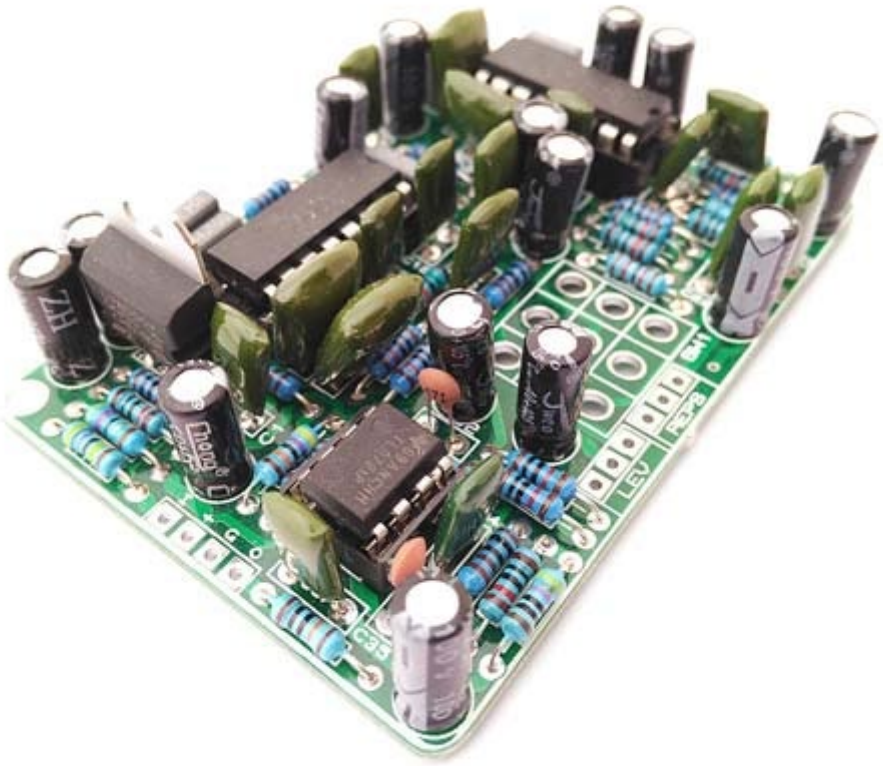
Ping Pong Delay Kit
Building Manual



Effect Pedal Kits:
Ping Pong Delay

If you are looking for a versatile and creative delay pedal, the **Ping Pong Delay Kit** is for you! Instead of using a single PT2399 like most delay pedals, the **Ping Pong Delay** has two of them. When set up in *echo mode* both audio processors are wired in series, so you can double the delay time to approximately **800ms**. The other mode is called the *ping pong mode*, and both PT2399 work on their with independent delay potentiometers: it's like having **two delays in paralel**!

– *Ping_D*: delay time for the first PT2399

– *Pong_D*: delay time for the second PT2399

– *Reps*: number of repetitions of both sections

– *Lev*: volume of the repetitions

– *3PDT footswitch*: alternates between the echo and ping pong modes

BOM (1/2)

Resistors (32)			
1	R1	4.7M	
6	R2, R5, R9, R13, R17, R30	1k	
2	R3, R28	470k	
16	R4, R6, R7, R10, R11, R12, R14, R15, R18, R19, R20, R22, R23, R26, R27, R29	10k	
2	R8, R16	15k	
1	R21	47	
1	R24	12k	
1	R25	4.7k	
1	R31	470	
1	R32	100k	

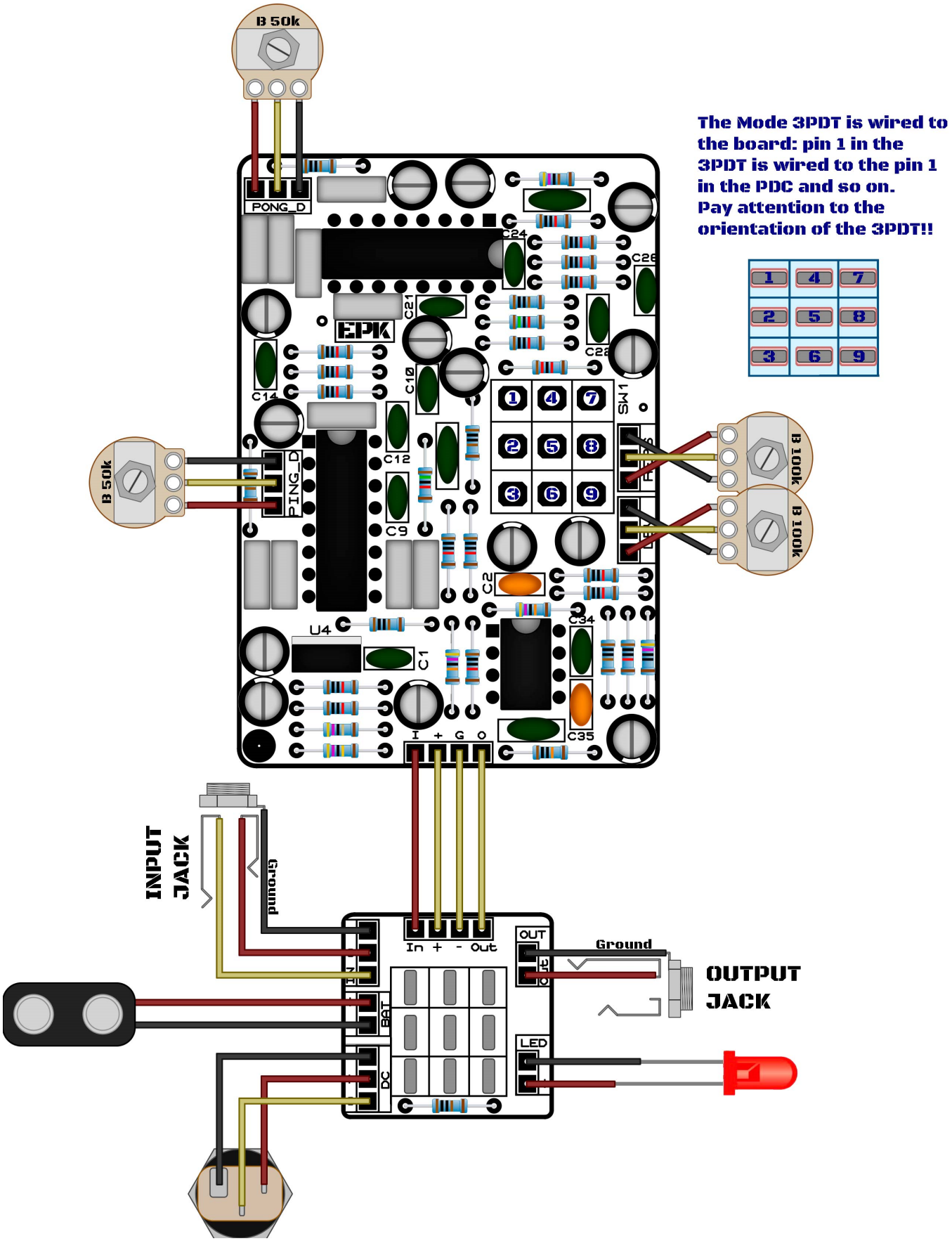
Capacitors (39)		
7	C1, C10, C14, C22, C26, C34, C37	10n
1	C2	470p (ceramic)
2	C3, C15	100u (electrolytic)
6	C4, C5, C16, C17, C38, C39	100n
4	C6, C7, C18, C19	82n
2	C8, C20	22n
4	C9, C12, C21, C24	2.2n
9	C11, C13, C23, C25, C30, C31, C32, C33, C36	1u (electrolytic)
1	C27	22u (electrolytic)
2	C28, C29	47u (electrolytic)
1	C35	47p (ceramic)

BOM (2/2)

Diodes, Transistors and ICs		
1	U1	TL072
2	U2, U3	PT2399
1	U4	LM7805

Generic Parts and Potentiometers		
1	Battery clip	
1	DC Jack	
1	RLED	1k LED resistor
1	LED Bezel	
1	3PDT	
2	IN, OUT	6.35mm Jacks
2	100kB Linear Potentiometer	LEV, REPS
2	50kB Linear Potentiometer	PING_D, PONG_D
1	3PDT Footswitch	MODE

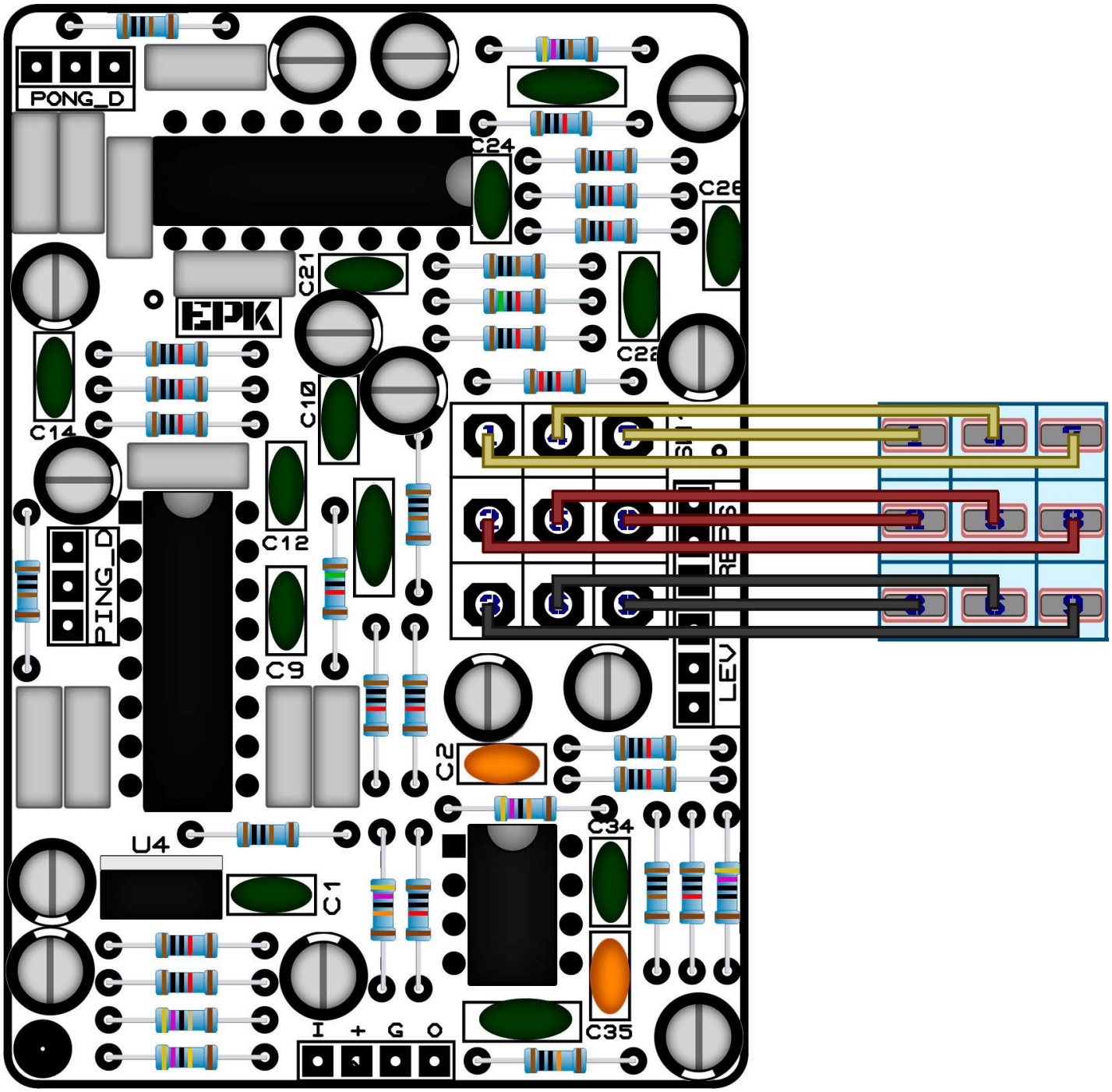
Component Placement



The Mode 3PDT is wired to the board: pin 1 in the 3PDT is wired to the pin 1 in the PDC and so on. Pay attention to the orientation of the 3PDT!!

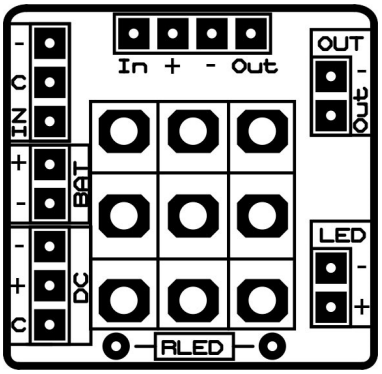
Mode 3PDT wiring to the PCB

Here you can see a detail on how the 3PDT is wired to the board. The potentiometers are not shown for clarity.

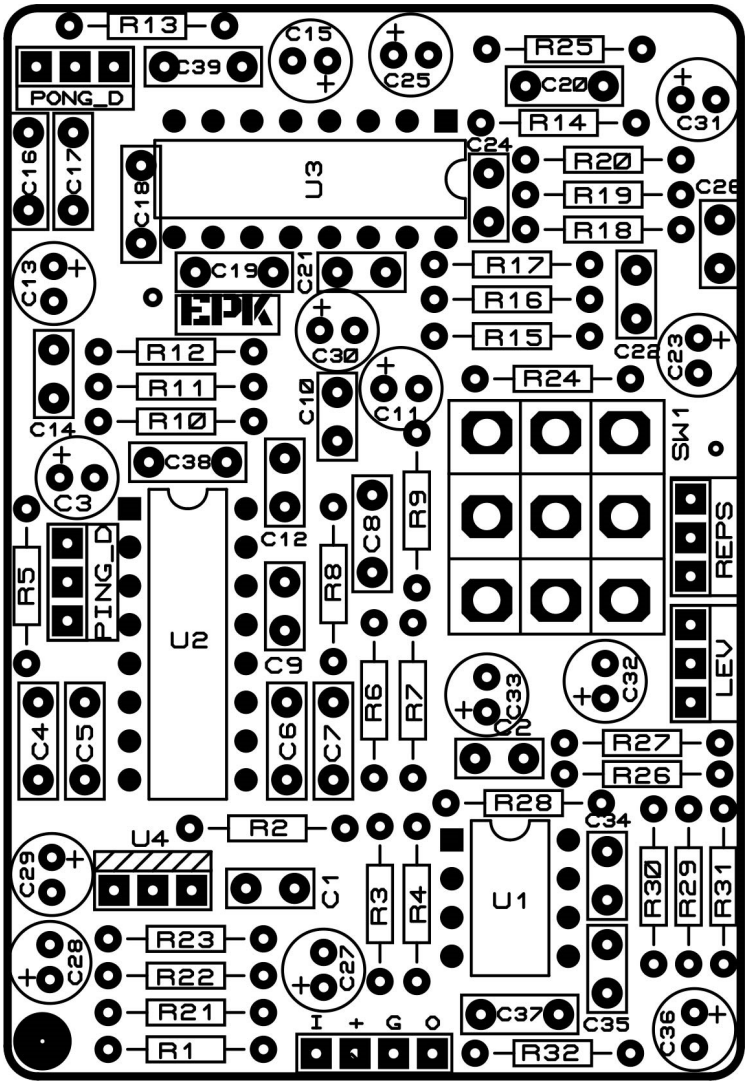


Board Layouts

3PDT PCB

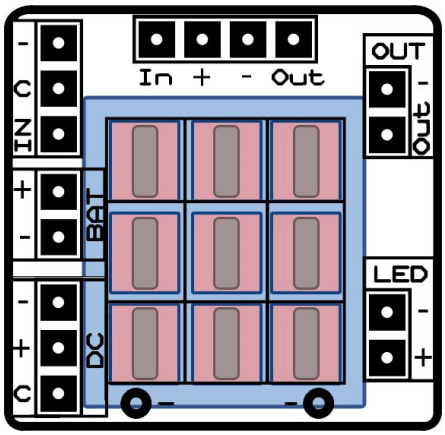


Effect PCB



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:

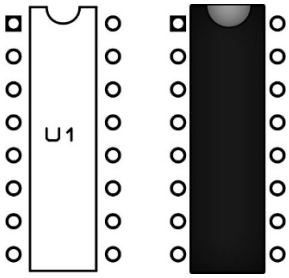
3- Don't apply too much heat! When soldering, the time you hold the solder iron against the joint should be **as short as posible** to avoid damaging any part (a few seconds should be enough). If you can't get a solder joint right, **let it cool** a bit before trying again.

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…).

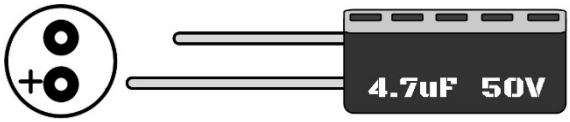
Building Tips

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

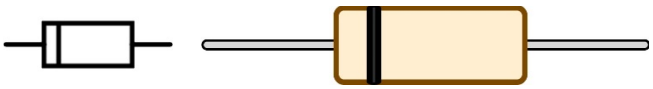
- **ICs** (they have a small dot or indication that must fit the indication in the board



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

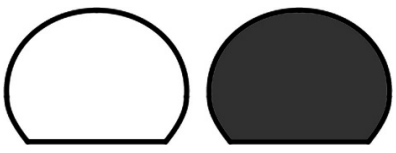


- **Diodes** (check for the mark and make it fit with the one in the PCB):



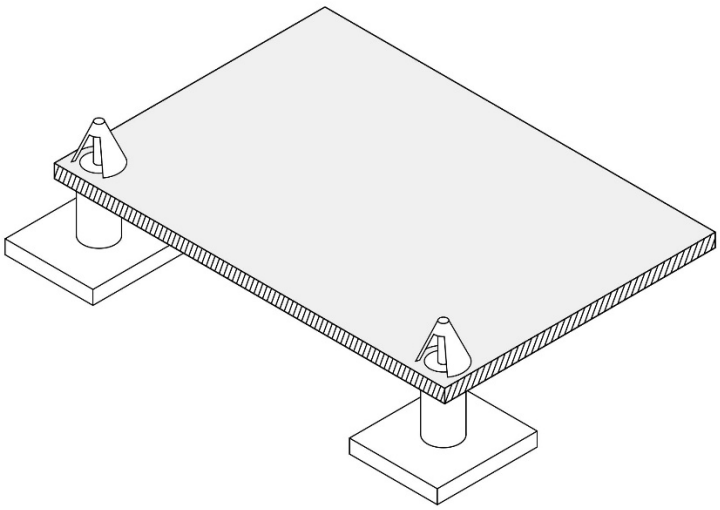
- **Leds** (longer pin is connected to the "+" hole)

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



Building Tips

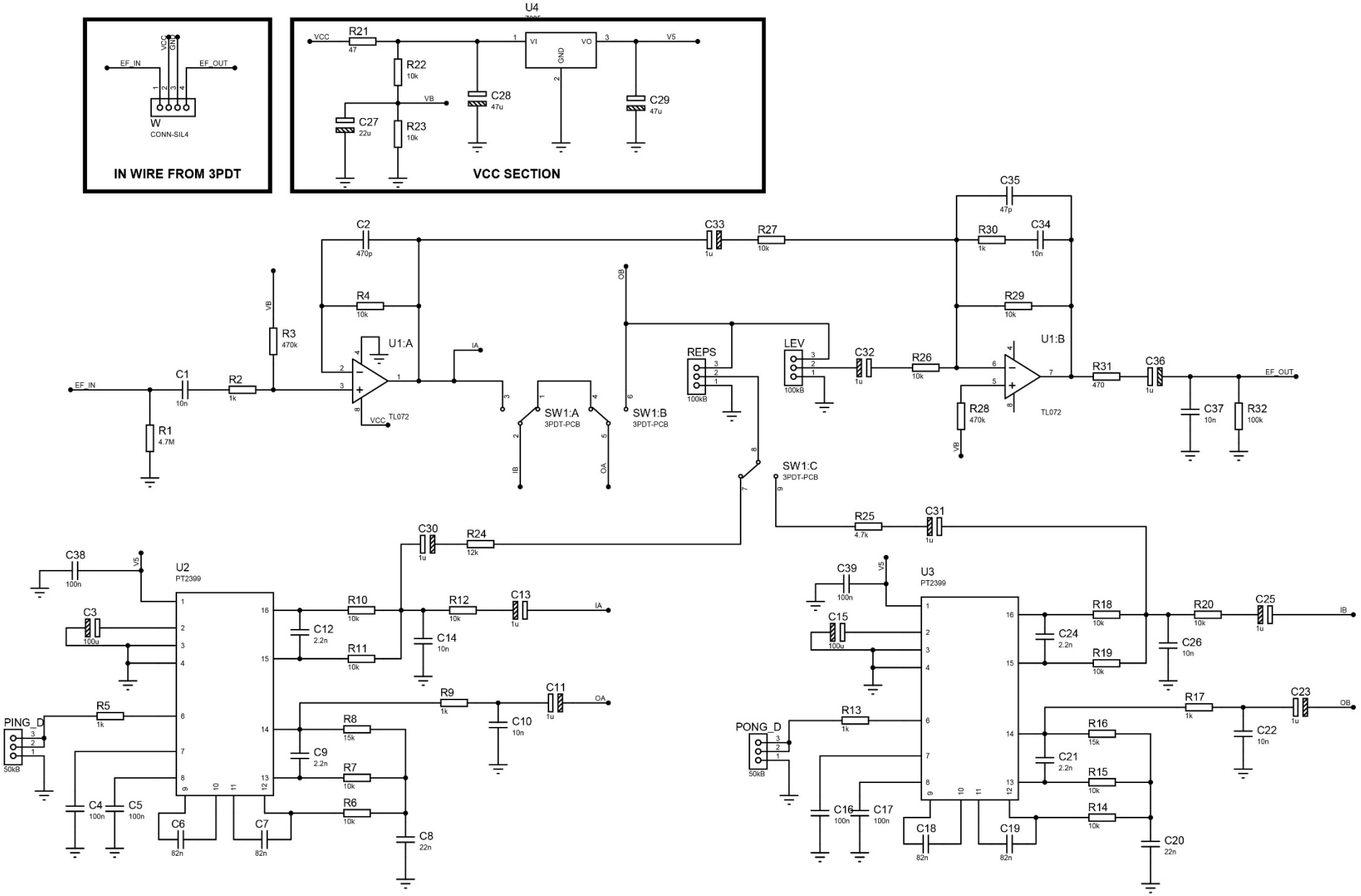
6- With the kit we include plastic PCB supports with an adhesive bottom. You can use them to anchor the PCB to your enclosure for a better stability. Just insert the PCB support tip into the 3.5mm holes and remove the adhesive protective film.



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


IN WIRE FROM 3PDT
VCC SECTION
U4
R21
R22
R23
C27
C28
C29
U1:A
U1:B
TL072
SW1:A
SW1:B
SW1:C
3PDT-PCB
REPS
LEV
U2
U3
PT2399
PING_D
PONG_D
EF_IN
EF_OUT
IA
IB
OA
OB
VB
V5