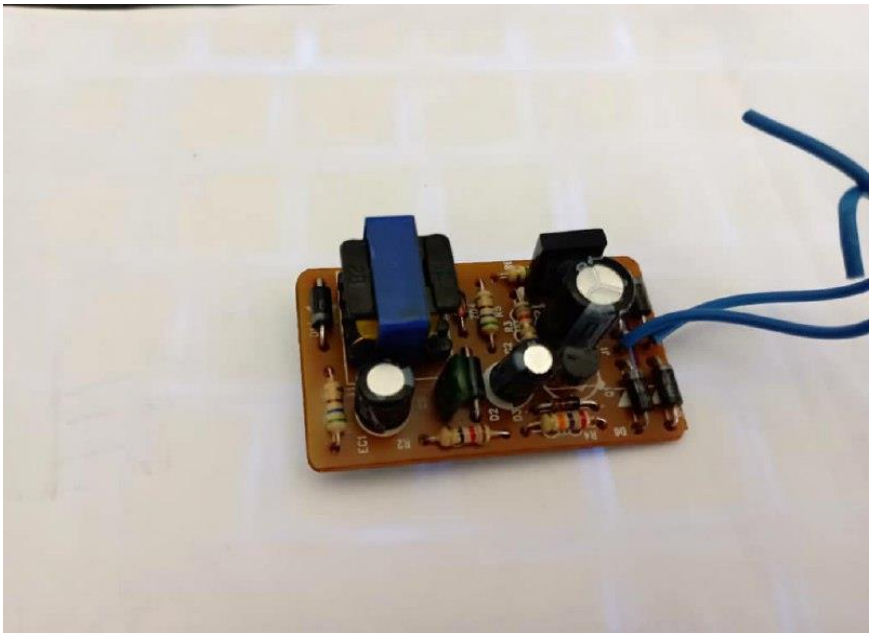
Pcb Reverse Engineering

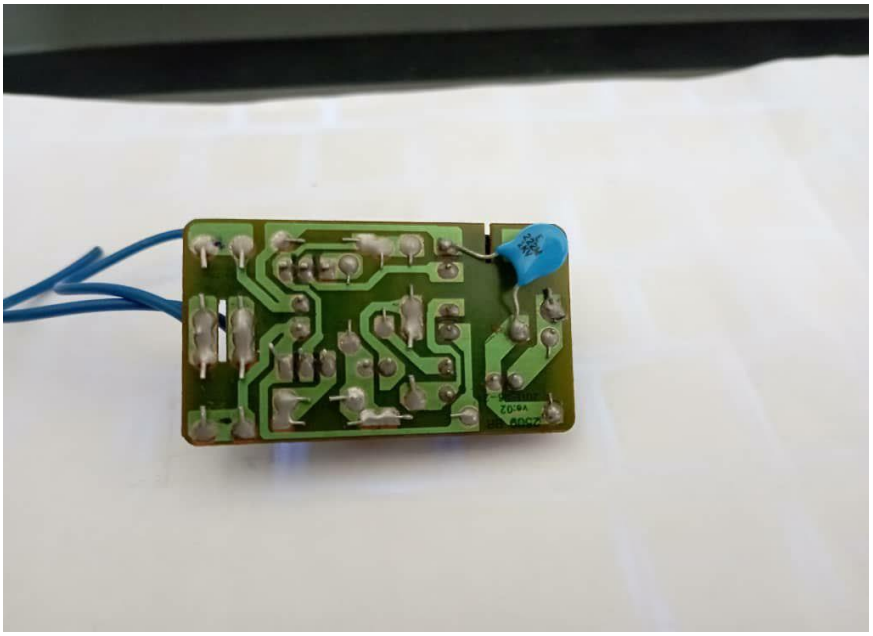
5v Usb Charger

I was sitting looking at a 5v charger and thought to myself why not reverse engineer it!!! This is my first reverse engineering

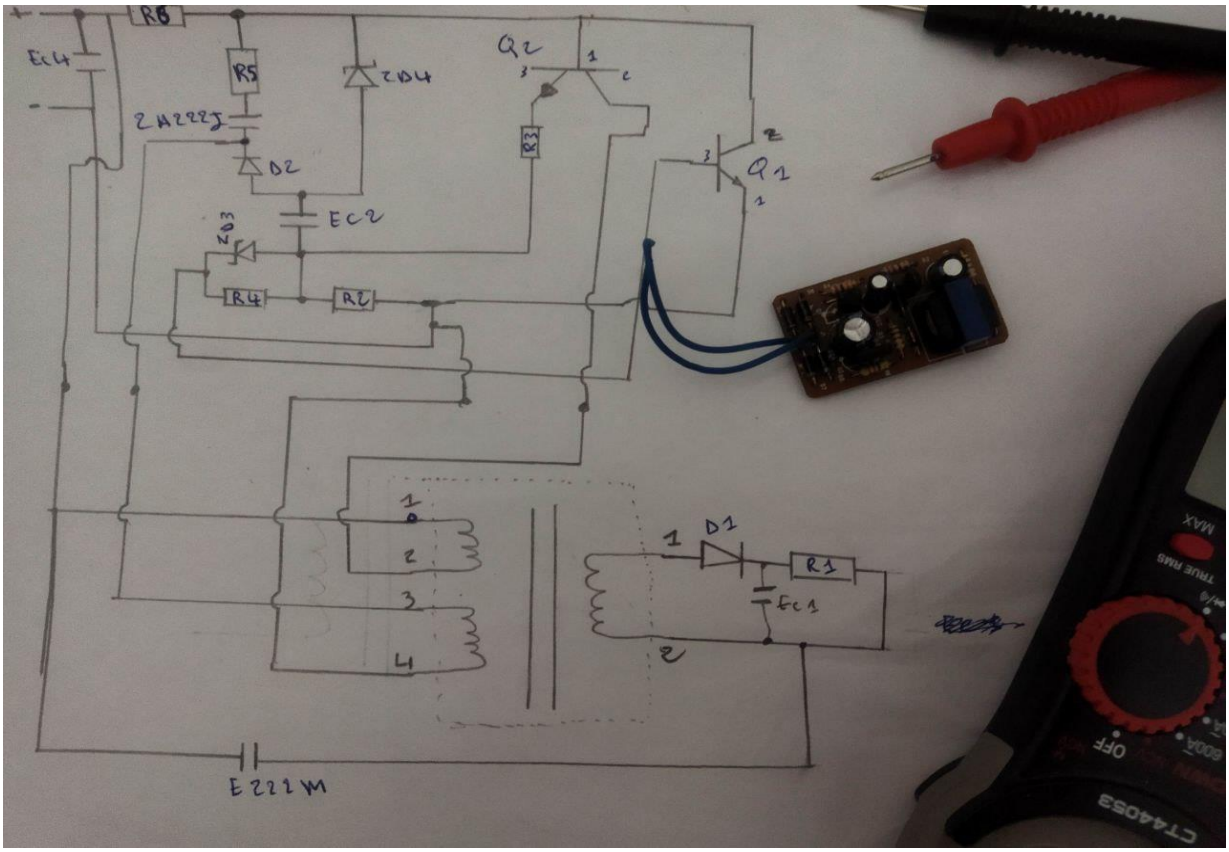
TOP:

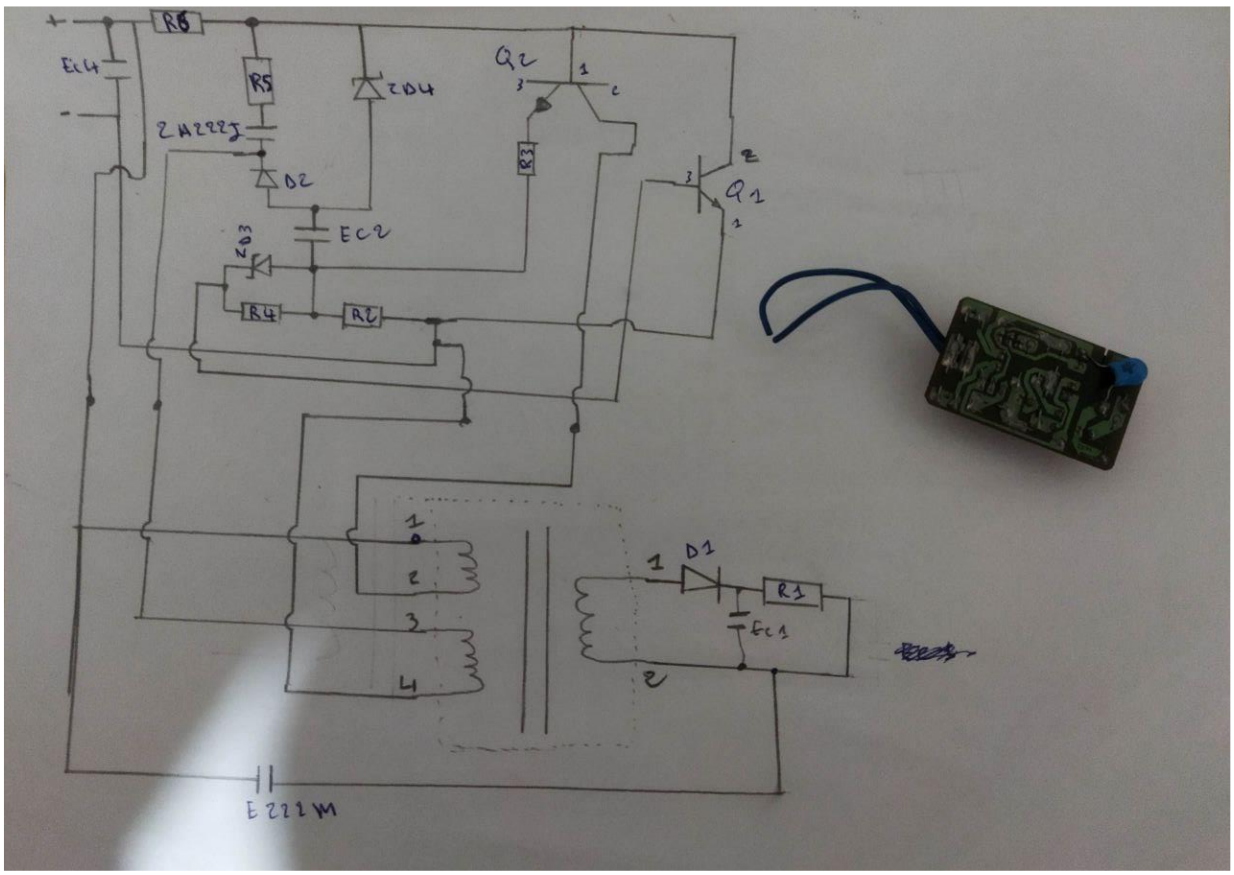


- **BOTTOM:**



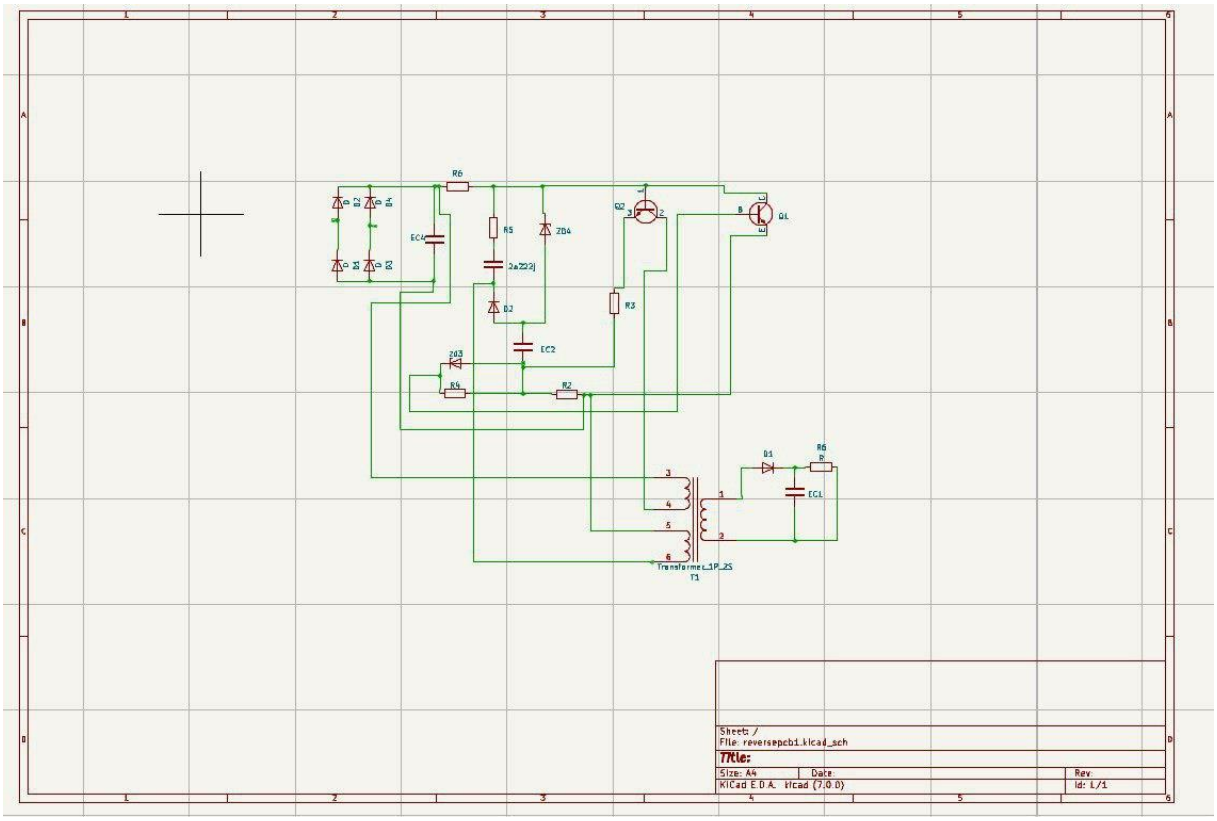
I traced the paths using a multimeter, then extracted the circuit diagram. As shown in the following figure





1. Schematic

I drew the circuit diagram on KICAD



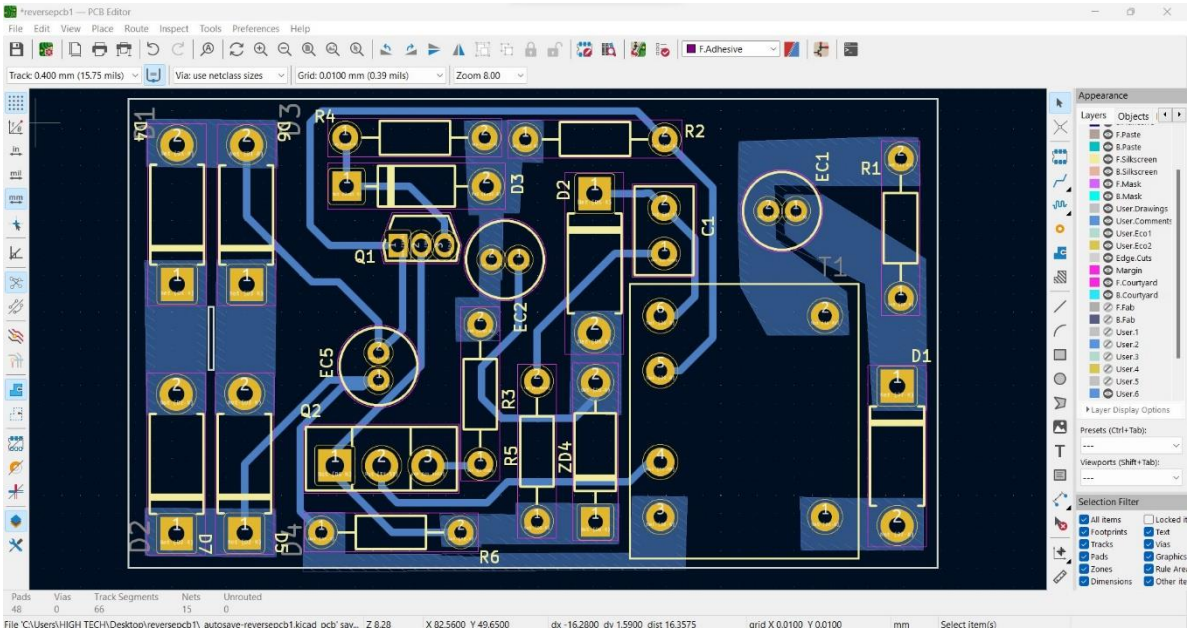
2. Layout

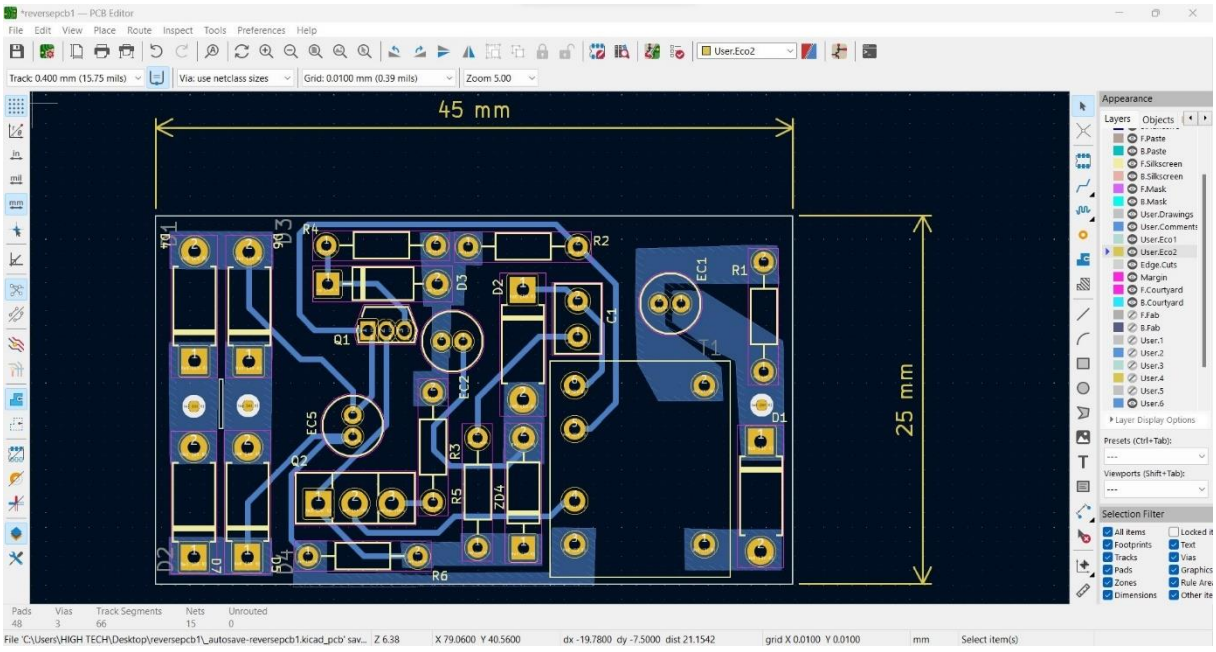
I set all component footprint I only found a problem with the transformer (EE10 Voltage Transformer smps) I designed it again by measuring the diameters of the pins in it and taking all its dimensions

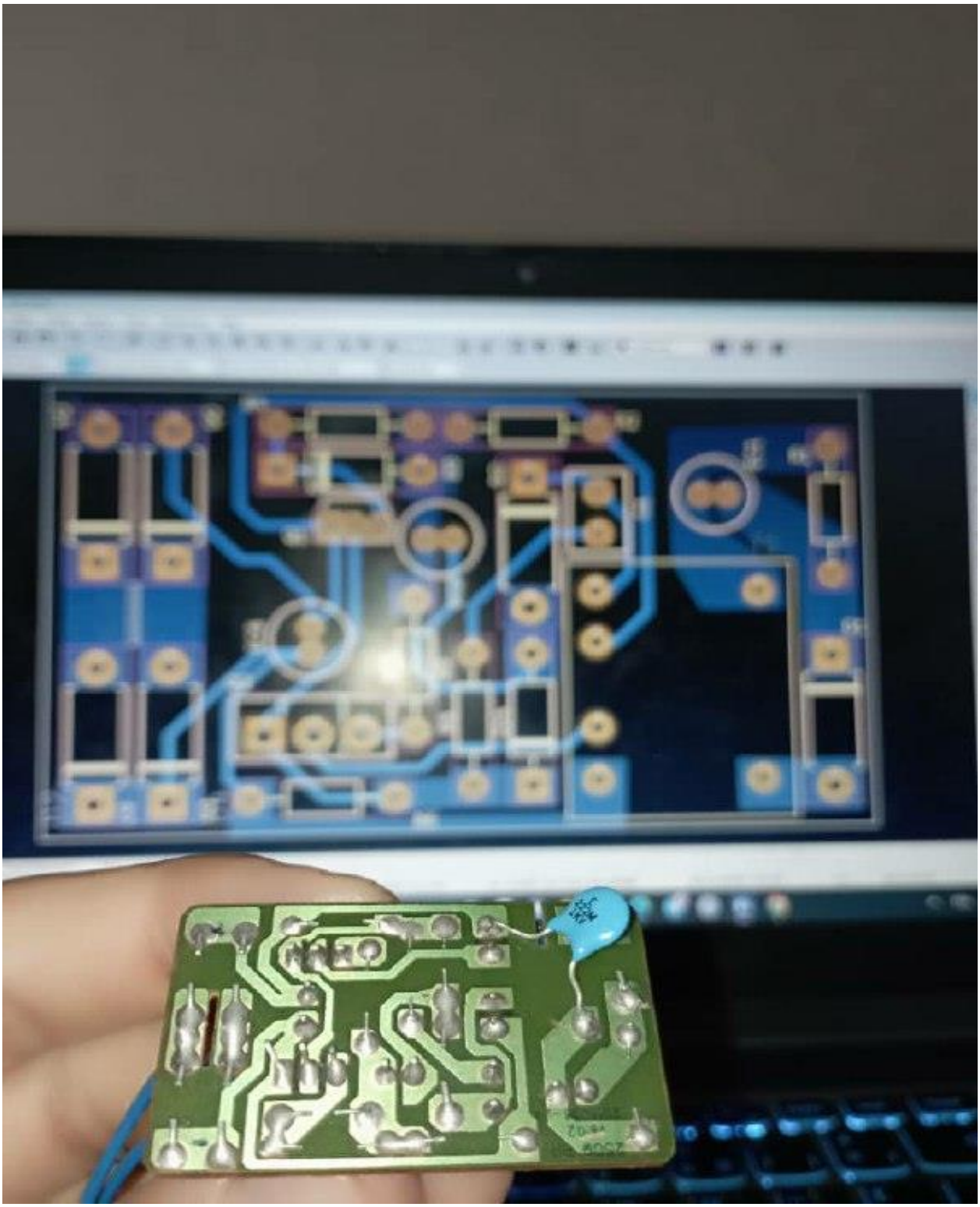
Symbol : Footprint Assignments

1	C1	EC4	Capacitor_THT:C_Radial_D4.0mm_H7.0mm_P1.50mm
2	C2	2a222j	Capacitor_THT:C_Rect_L4.6mm_W3.0mm_P2.50mm_MKS02_FKP02
3	C3	EC1	Capacitor_THT:C_Radial_D4.0mm_H5.0mm_P1.50mm
4	Cec1	EC2	Capacitor_THT:C_Radial_D4.0mm_H5.0mm_P1.50mm
5	D1	D	Diode_THT:D_A-405_P7.62mm_Horizontal
6	D2	D	Diode_THT:D_A-405_P7.62mm_Horizontal
7	D3	D	Diode_THT:D_A-405_P7.62mm_Horizontal
8	D4	D	Diode_THT:D_A-405_P7.62mm_Horizontal
9	D5	D2	Diode_THT:D_A-405_P7.62mm_Horizontal
10	D6	ZD4	Diode_THT:D_DO-35_SOD27_P7.62mm_Horizontal
11	D7	D1	Diode_THT:D_A-405_P7.62mm_Horizontal
12	Dzd1	zd3	Diode_THT:D_DO-35_SOD27_P7.62mm_Horizontal
13	Q1	Q2	Package_TO_SOT_THT:TO-126-3_Vertical
14	Q2	Q1	Package_TO_SOT_THT:TO-92S
15	R1	R4	Resistor_THT:R_Axial_DIN0204_L3.6mm_D1.6mm_P7.62mm_Horizontal
16	R2	R6	Resistor_THT:R_Axial_DIN0204_L3.6mm_D1.6mm_P7.62mm_Horizontal
17	R3	R5	Resistor_THT:R_Axial_DIN0204_L3.6mm_D1.6mm_P7.62mm_Horizontal
18	R4	R2	Resistor_THT:R_Axial_DIN0204_L3.6mm_D1.6mm_P7.62mm_Horizontal
19	R5	R3	Resistor_THT:R_Axial_DIN0204_L3.6mm_D1.6mm_P7.62mm_Horizontal
20	R6	R	Resistor_THT:R_Axial_DIN0204_L3.6mm_D1.6mm_P7.62mm_Horizontal
21	T1	Transformer_1P_2S	EE10TRANSFO6PIN:EE10 Voltage Transformer

Finally I routed the PCB tracks

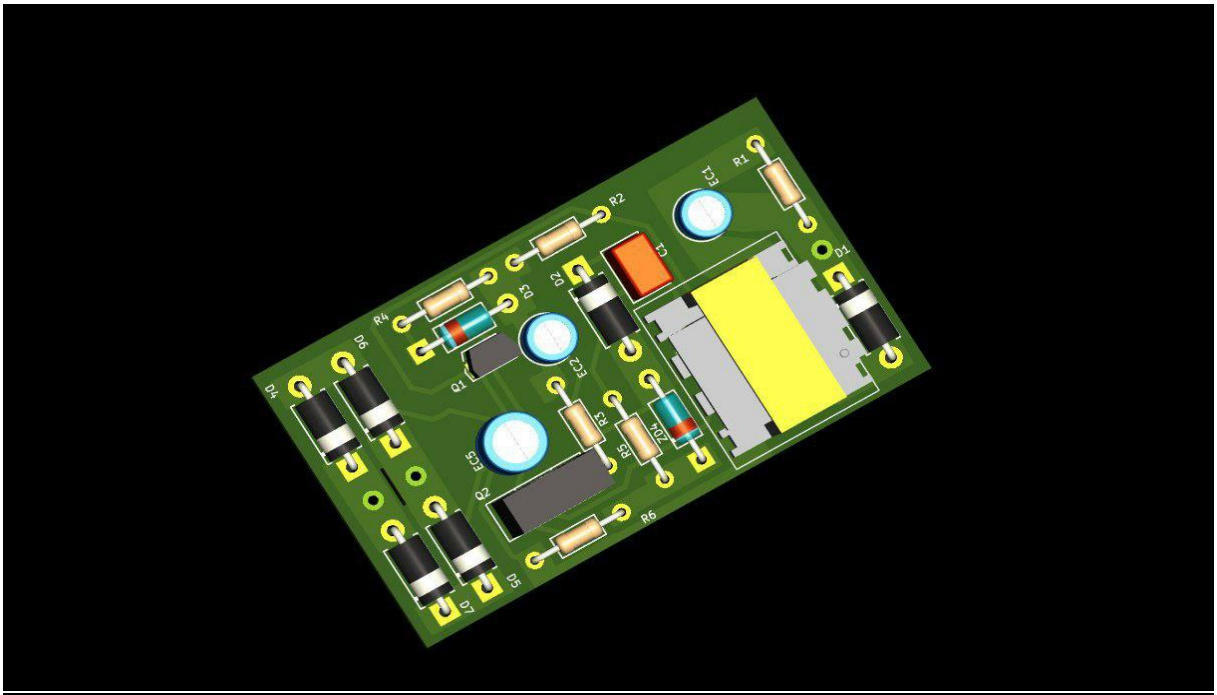


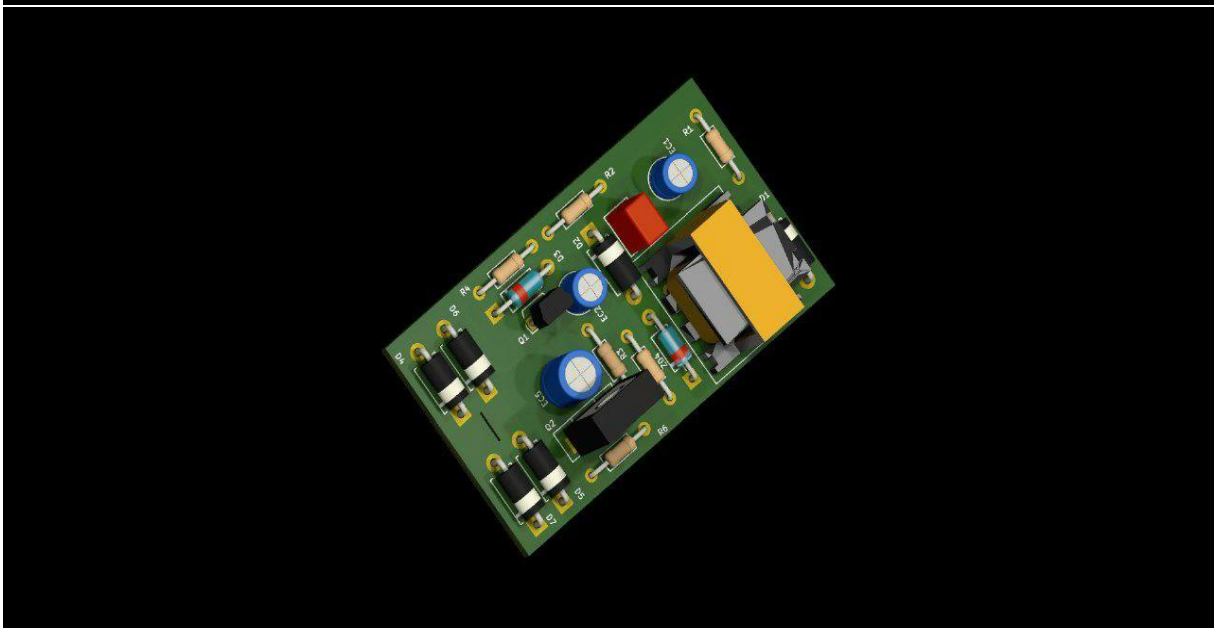




3. 3D

- **TOP**





- **BOTTOM**