



D.I.Y Red LED Flashing Heart Kit

Level – Beginner

AK-176



List of Components:

- PC Board
- 1 x 22 Ohm Resistor (R1/4-22)
- 1 x 10K Resistor (R1/4-10K)
- 3 x 47K Resistor (R1/4-47K)
- 1 x 100K Resistor (R1/4-100K)
- 1 x 47uf Capacitor (.47R50)
- 1 x 50K Potentiometer (RM065-503)
- 1 x LM358 IC (LM358)
- 1 x Switch
- 1 x S8050 transistor (S8050)
- 22 x 5mm Red LED (LED-5R)
- 1 x Battery Holder(150-340W)

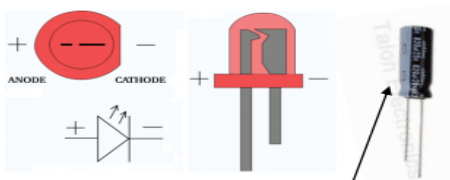
Extra Components needed which are not included: AA battery x 4 (30-448)

Component Polarity

When dealing with polarized components, it is important to be able to identify which pins represent the anode (positive) and cathode (negative). Here are a few ways of doing so for LEDs and capacitors:

- The shorter pin usually is the cathode (negative).

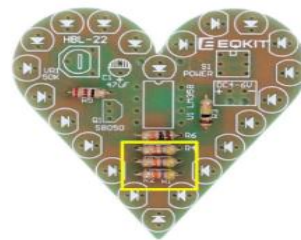
However, for LEDs if the leads are cut you can assume the cathode lead is on the side of the LED that has a flat cut. For capacitors, there usually is a sign on the component itself indicating which lead is the cathode (-).



Steps to Solder:

Note: Turn on solder iron to 285 C temperature and solder used for this kit is 60tin/40lead. You need to place components from labeled side of the board and solder at the green side (back) of the board

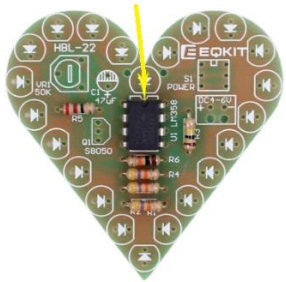
Step1: First solder all the resistors as shown in the images at their respective places.



R5->22 ohm, R6-> 10K, R1,R2,R4-> 47K, R3-> 100K.

Step2: Solder Capacitor at C1 and check polarity as described above.

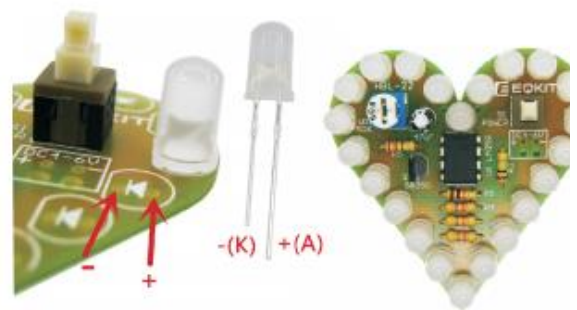
Step3: Now solder LM358 IC and notch side show face up as shown in image below.



Step4: Solder S8050 at the labeled place on the board.

Step5: Now solder Switch, Potentiometer at the labeled S1 and VR1 positions on the front side of the PCB, respectively.

Step6: Solder all the LED's , polarity as shown below. If you solder wrong, it may lead to LED failure.



Step7:

Finally, solder battery holder at the 4-6V labeled position for power source. Red wire goes to +ve and black goes to -ve. Place batteries into the AA holder and on the switch. you can see the LED lights blinking and can adjust the sensitivity using potentiometer.

