

# PBL-20S Five-Pointed Star Breathing Light

## 1.Introduction:

PBL-20S is a Five-Pointed Star Breathing Light DIY Kit. It is a simple breathing light and Its brightness automatically fades.

## 2.Feature:

- 1>.20pcs highlight LED
- 2>.Perfect simple circuit
- 3>.Automatic flashing
- 4>.Comes with battery box

## 3.Parameter:

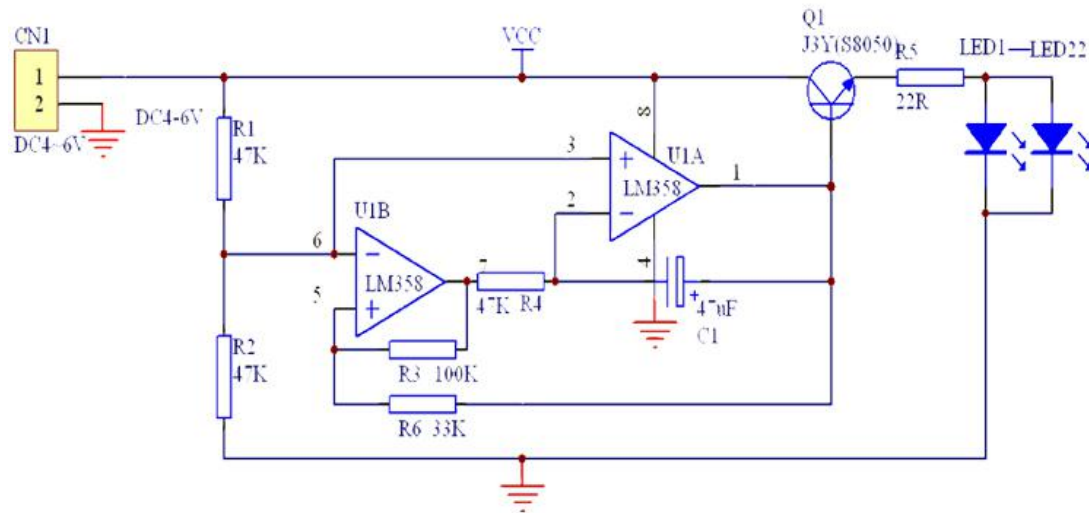
- 1>.Product Name:PBL-20S Five-Pointed Star Breathing Light DIY Kit
- 2>.Product Number:PBL-20S
- 3>.Work Voltage:DC 4.0V~6.0V
- 4>.Work Current:40mA
- 5>.Power Type:Battery Box
- 6>.Work Module:Gradient
- 7>.Color:Red LED
- 8>.Work Temperature:-40°C~85°C
- 9>.Work Humidity:5%~85%RH
- 10>.Size(Installed):47\*45\*6mm

## 4.Component Listing:

NO.	Component Name	PCB Marker	Parameter	QTY
1	SMD 0805 Resistor	R5	22ohm	1
2	SMD 0805 Resistor	R6	33Kohm	1
3	SMD 0805 Resistor	R1,R2,R4	47Kohm	3
4	SMD 0805 Resistor	R3	100Kohm	1
5	SMD 0805 Capacitor	C1	47uF	1
6	LM358	R6	SOP-8	1
7	S8050 Transistor	Q1	SOT-23	1
8	SMD 0805 LED	LED1-LED20	Red	20
9	Red Cable		20cm	1
10	Black Cable		20cm	1
11	AA*3 Battery Box			1
12	PCB	PB00060	47*45*1.5mm	1

Note:Users can complete the installation according to the PCB silk screen and component list.

## 5.Schematic:



## 6.Application:

- 1>.Training welding skills
- 2>.Student school
- 3>.DIY production
- 4>.Project Design
- 5>.Electronic competition
- 6>.Gift giving
- 7>.Crafts collection
- 8>.Home decoration
- 9>.Souvenir collection
- 10>.Graduation design
- 11>.Holiday gifts

## 7.Installation Tips:

- 1>.User needs to prepare the welding tool at first.
- 2>.Please be patient until the installation is complete.

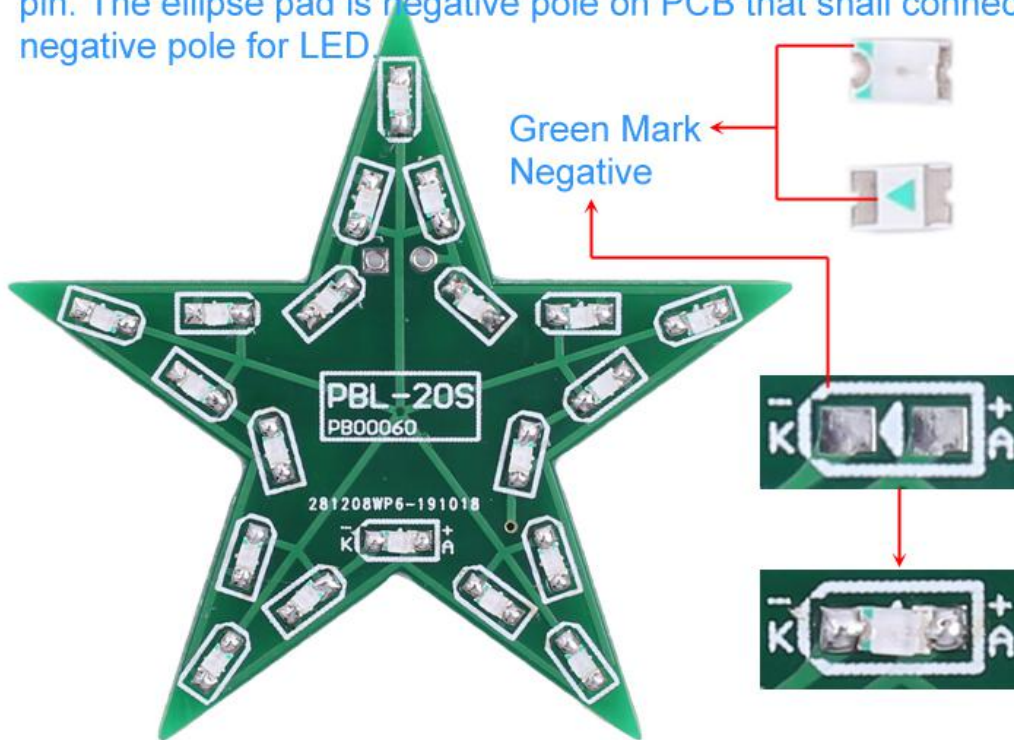
- 3>.The package is DIY kit.It need finish install by user.
- 4>.The soldering iron can't touch the components for a long time(1.0 second), otherwise it will damage the components.
- 5>.Pay attention to the positive and negative of the components.
- 6>.Strictly prohibit short circuit.
- 7>.User must install the LED according to the specified rules.Otherwise some LED will not light.
- 8>.Install complex components preferentially.
- 9>.Make sure all components are in right direction and right place.
- 10>.Check that all of the LED can be illuminated.
- 11>.It is strongly recommended to read the installation manual before starting installation!!!
- 12>.Please wear anti-static gloves or anti-static wristbands when installing electronic components.

## 8.Installation Steps(Please be patient install!!!):

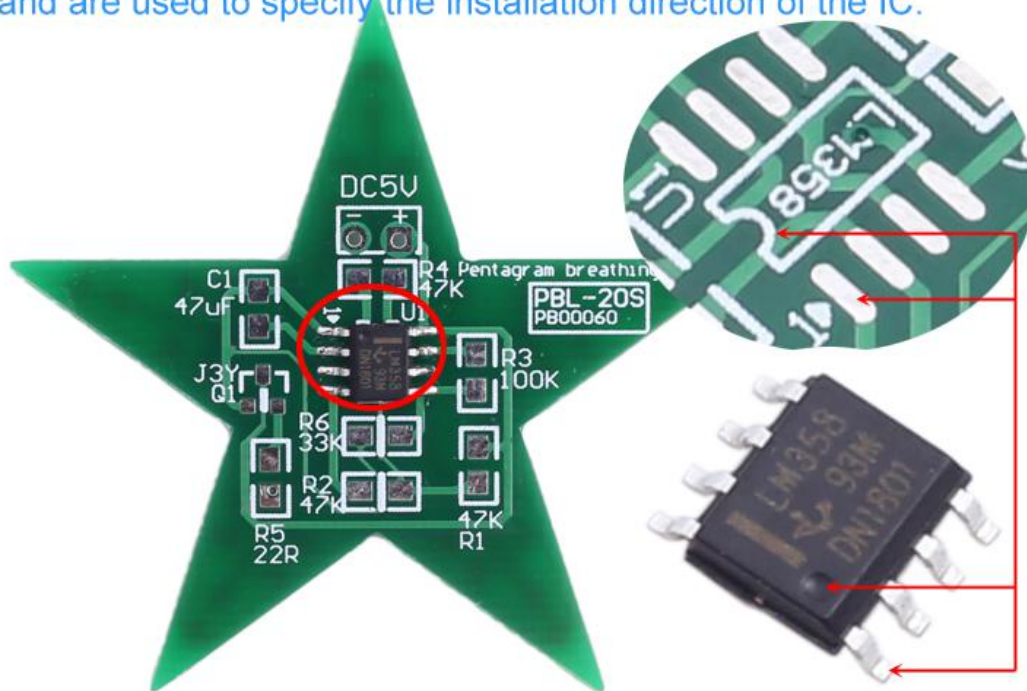
- 1>.Step 1: Install 20pcs SMD 0805 Red LED at LED1-LED20. It is negative pole for LED where there are green mark on LED pin. The ellipse pad is negative pole on PCB that shall connect to negative pole for LED.
- 2>.Step 2: Install 1pcs SOP-8 LM358 at U1.There is a smaller dot on one corner of the IC and there is a white dot on PCB where the IC can place on.These two marks are corresponding to each other and are used to specify the installation direction of the IC.
- 3>.Step 3: Install 1pcs SOT-23 S8050 Transistor at Q1.
- 4>.Step 4: Install 1pcs 22ohm SMD 0805 Resistor at R5.
- 5>.Step 5: Install 1pcs 33Kohm SMD 0805 Resistor at R6.
- 6>.Step 6: Install 3pcs 47Kohm SMD 0805 Resistor at R1,R2,R4.
- 7>.Step 7: Install 1pcs 100Kohm SMD 0805 Resistor at R3.
- 8>.Step 8: Install 1pcs 47uF SMD 0805 Capacitor at C1.
- 9>.Step 9: Install 1pcs AA\*3 4.5V Battery Box.
- 10>.Step 10: Connect to power supply and enjoy the effect.

## 9.Install shown steps:

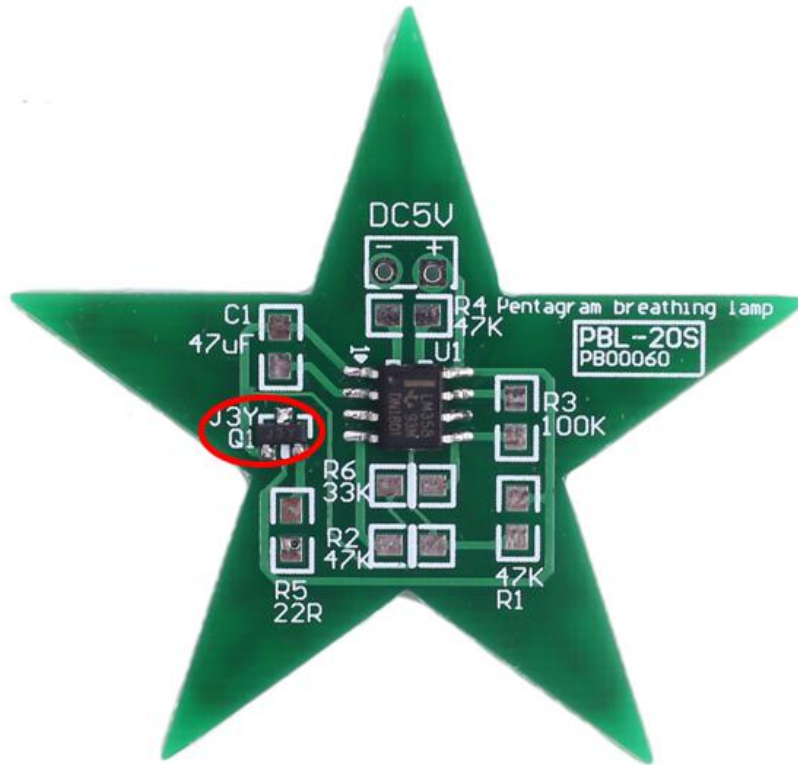
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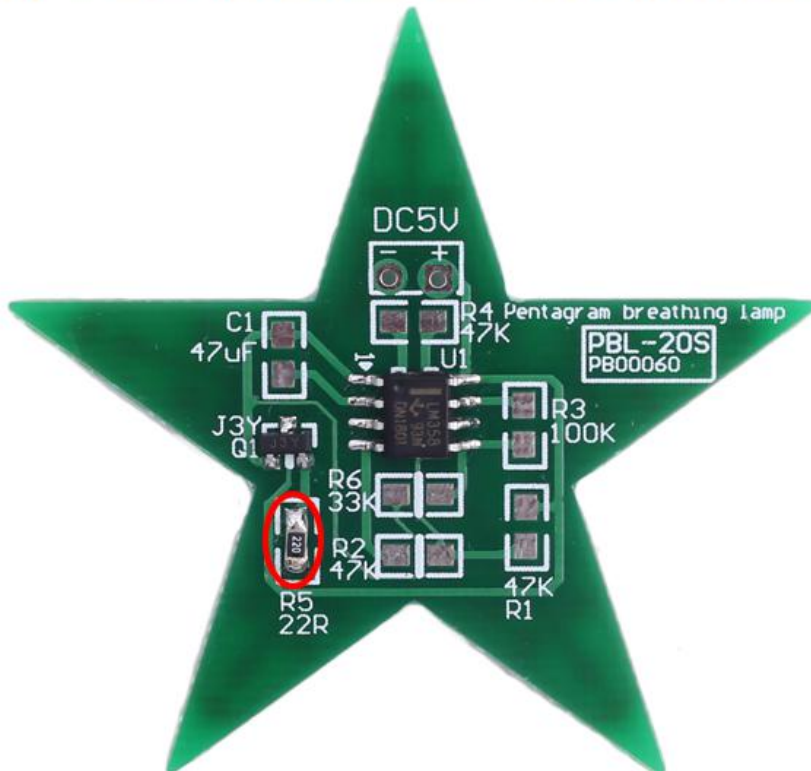
Step 2: Install 1pcs SOP-8 LM358 at U1. There is a smaller dot on one corner of the IC and there is a white dot on PCB where the IC can place on. These two marks are corresponding to each other and are used to specify the installation direction of the IC.



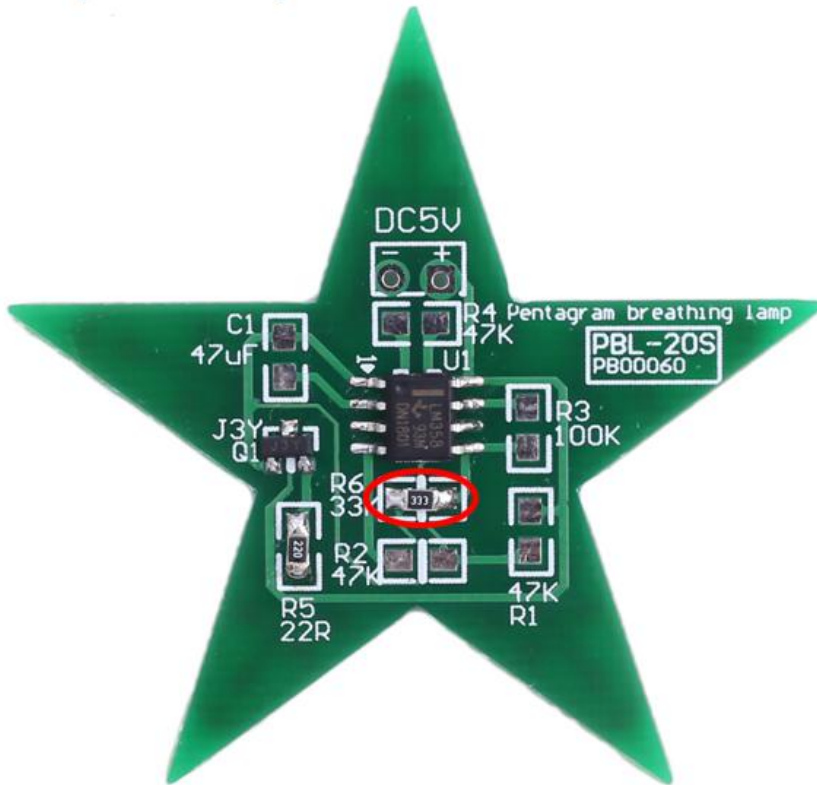
Step 3: Install 1pcs SOT-23 S8050 Transistor at Q1.



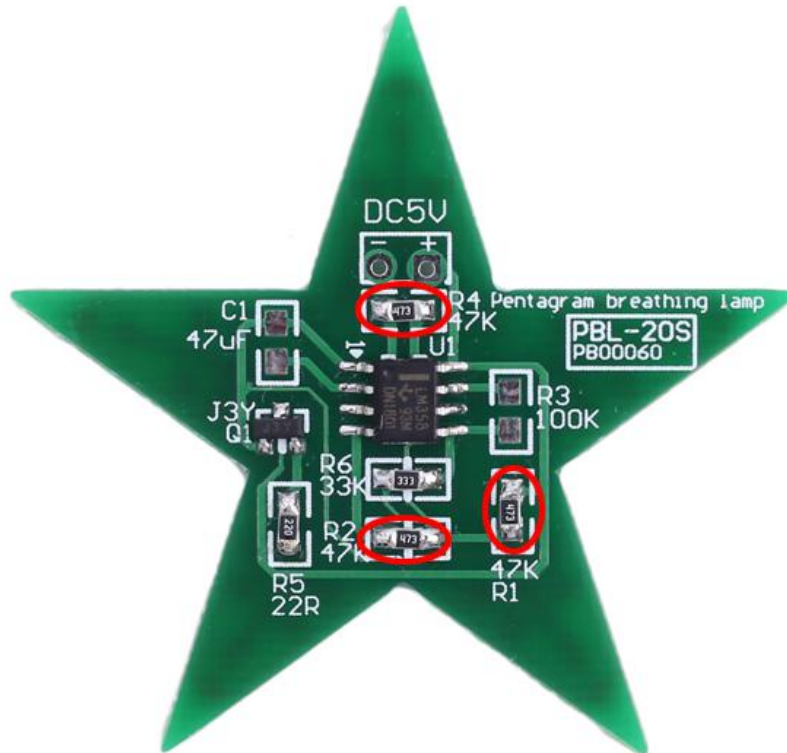
Step 4: Install 1pcs 22ohm SMD 0805 Resistor at R5.



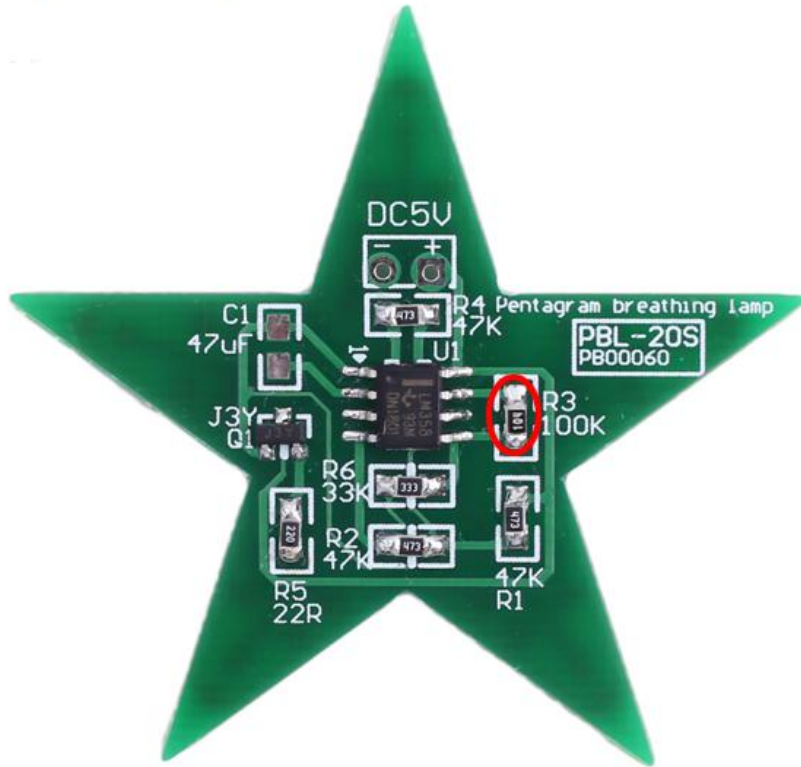
Step 5: Install 1pcs 33Kohm SMD 0805 Resistor at R6.



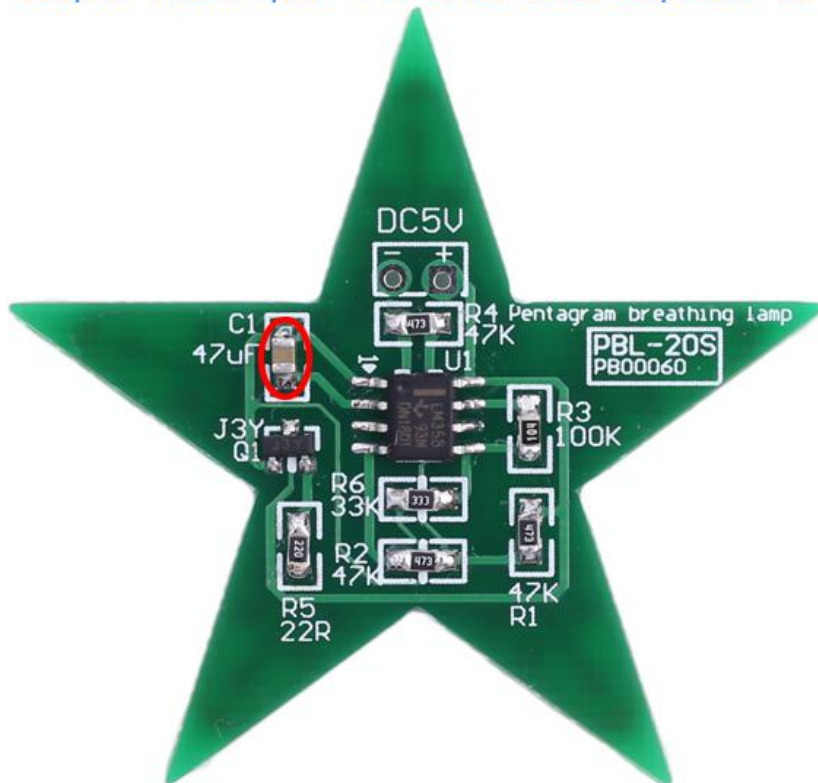
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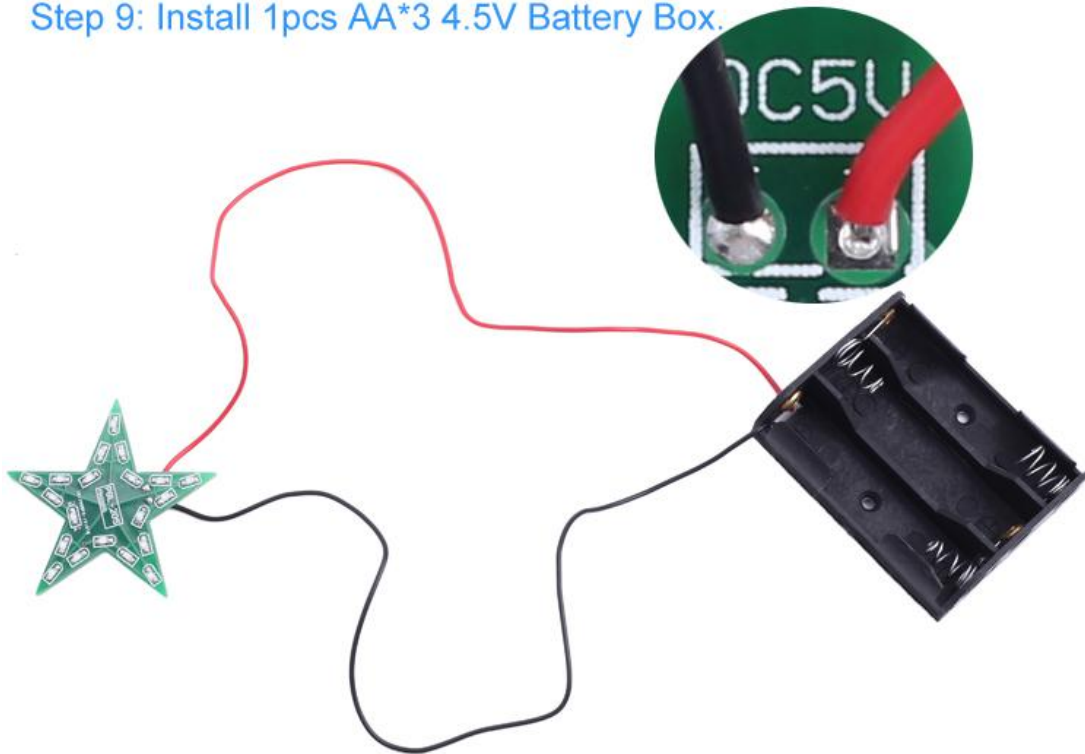
Step 7: Install 1pcs 100Kohm SMD 0805 Resistor at R3.



Step 8: Install 1pcs 47uF SMD 0805 Capacitor at C1.



Step 9: Install 1pcs AA\*3 4.5V Battery Box.



Step 10: Connect to power supply and enjoy the effect.