RGB LED Flash Christmas Tree DIY Kit

Ⅰ. Introduction

The Electronic Solder DIY Kits are used to installed to a beautiful Colorful LED Flashing Christmas Tree yourself, which consists of three circuit boards, allows 36 LED flashing alternately. It can light up the dark and illuminate your Christmas or other festivals.

Ⅱ. Parameter

1>. Size(Installed): 2.2*2.2*5in(55*55*125mm)
2>. Work Voltage: DC 4.5V-5.5V
3>. Work Current: 60mA
4>. Power Type: MINI USB
5>. Control Type: Button Control
6>. Color: RGB LED Flashing Alternately
7>. Work Temperature: -40℃~85℃
8>. Work Humidity: 0%~95%RH

Ⅲ. Features

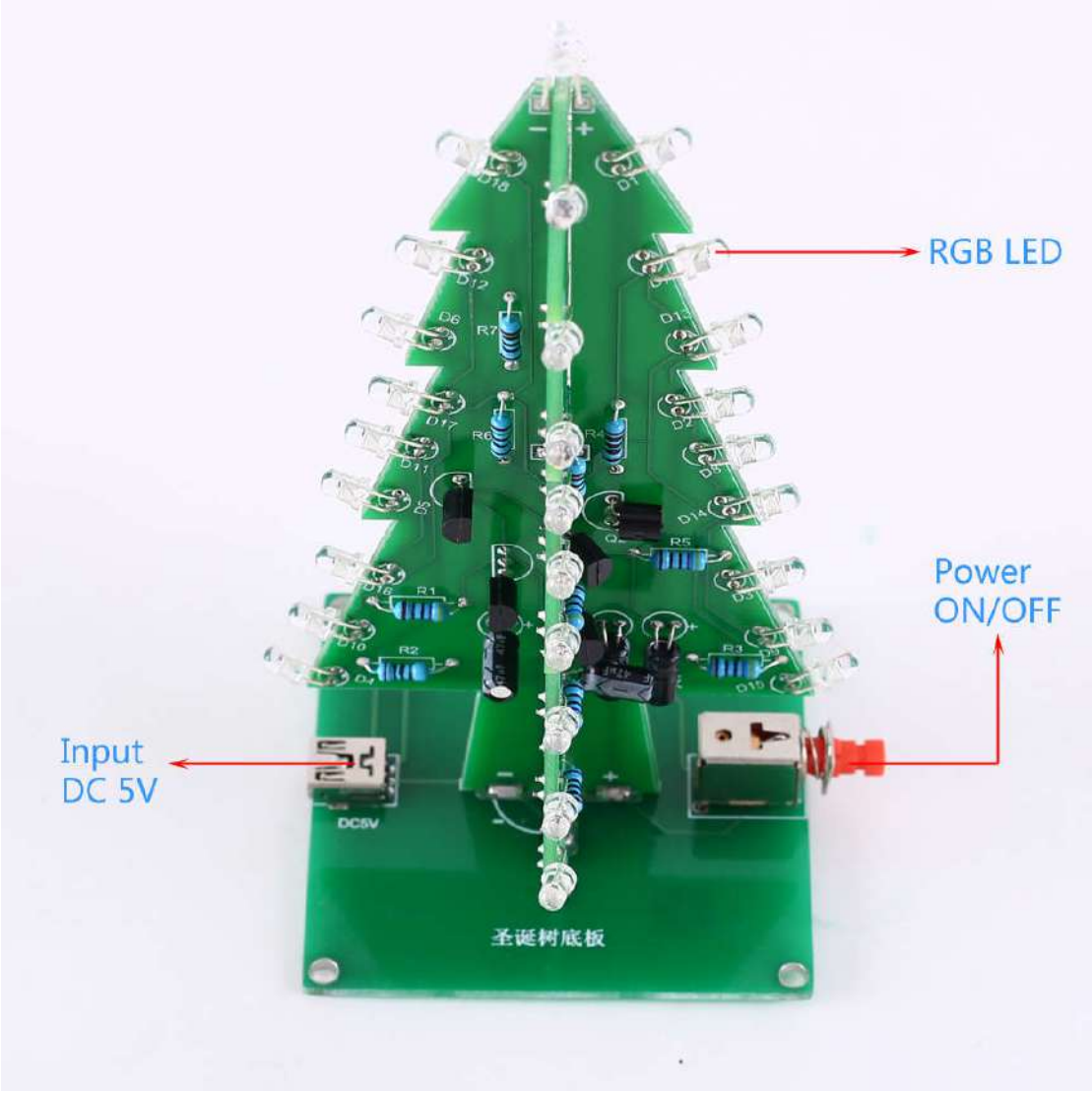
1>. RGB LED light flashing automatically
2>. Switch control
3>. MINI USB provide power supply
4>. Simple circuit, easy to assemble, fun to DIY

Ⅳ. Components List in The Package

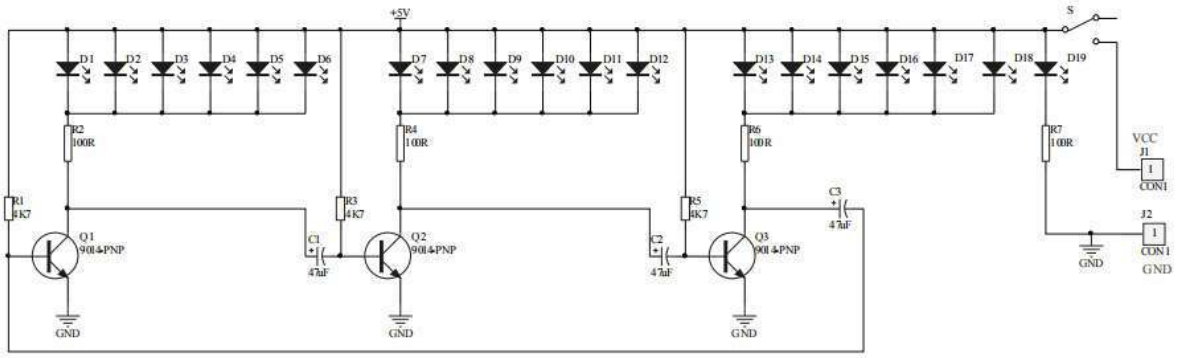
NO.	Component Name	PCB Marker	Parameter	QTY
		PCB-A		
1	Metal Film Resistor	R2,R4,R6,R7	100ohm	4
2	Metal Film Resistor	R1,R3,R5	4.7K ohm	3
3	Electrolytic Capacitor	C1,C2,C3	47uF 16V	3
4	RGB LED	D1-D18	3mm	18
5	S9014 Transistor	Q1,Q2,Q3	TO-92	3
6	PCB	PCB-A	115*59*1.6mm	1
		PCB-B		
7	Metal Film Resistor	R2,R4,R6	100ohm	4
8	Metal Film Resistor	R1,R3,R5	4.7K ohm	3
9	Electrolytic Capacitor	C1,C2,C3	47uF 16V	3
10	RGB LED	D1-D18	3mm	18
11	S9014 Transistor	Q1,Q2,Q3	TO-92	3
12	PCB	PCB-B	115*59*1.6mm	1
		PCB-C		
13	Power Switch	S	Red	1

14	Mini USB Socket	P1		1
15	Mini USB Cable		80cm	1
16	Copper column		M3*5+4mm	4
17	Nut		M3	4
18	PCB	PCB-C	59*59*1.6mm	1
Note: Users can complete the installation under the instruction of PCB silk screen and components listed.				

Ⅴ. Basic Instruction



Ⅵ. Schematic Diagram



Ⅶ. 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

Ⅷ. Installation Steps

1. Preparation:

1). This product comes to you is DIY kits that needs to be installed, not the finished product!

2). DIY Installation is a rather precise operation, which requires patience to finish the project.

3). Users need to prepare the welding tool first.

4). Users can complete the installation under the instruction of PCB Silk Screen and Components Listed.

5). Read the installation manual before starting installation carefully.

6). We have been keeping trying to improve the manual. If any words or steps of the instruction confuses you, please feel free to let us know because English is not our first language. We will appreciate for the generous help of pointing out our expression problem. Thank you in advance.

2. Operating Notice:

More tips about the DIY soldering that will directly affect the performance effect of the finished product as followed:

1). Pay attention to the positive and negative of some certain components. Make sure that all the components were soldered at right place in the right direction.

2). Make sure bonding pad not peel off and no pseudo /float soldering. (If it's not, you can repair the welding or reconnect adjacent components with superfluous metal pins to work things out.)

3). The soldering iron mustn't touch the components more than one second, or the high temperature of the soldering iron will damage the components.

4). Strictly prohibit short circuit.

5). If the soldering failed, it can be repaired through sucking out the components and re-soldering by means of a solder sucker.

6). User must install the LED according to the specified rules. Otherwise some LED will not give out light.

7>. Install complex components preferentially.

3. Installation Steps & Illustration(Please be patient to install!!!)**:**

Step 1: Install PCB-A. Install 4pcs 100ohm Metal Film Resistor on R2,R4,R6,R7.

Step 2: Install 3pcs 4.7K Metal Film Resistor on R1,R3,R5.

Step 3: Install 18pcs 3mm RGB LED at D1-D18.Pay attention to distinguish the positive and negative poles of LED and the Longer pin are positive pole. Control distance between PCB edge and LED head.

Step 4: Install 3pcs 47uF 16V Electrolytic Capacitor at C1,C2,C3.Pay attention to distinguish the positive and negative poles and the Longer pin are positive pole.A 2~3mm spacing is reserved between the capacitor and the PCB to facilitate bending of the capacitor for subsequent installation.

Step 5: Install 3pcs TO-92 S9014 Transistor at Q1,Q2,Q3.It is better to bend S9014's pin so that 2pcs PCB-A and PCB-B can better splicing.OK, PCB-A has been installed completed.

Step 6: Install PCB-B. Install 3pcs 100ohm Metal Film Resistor on R2,R4,R6.

Step 7: Install 3pcs 4.7K Metal Film Resistor on R1,R3,R5.

Step 8: Install 18pcs 3mm RGB LED at D1-D18.Pay attention to distinguish the positive and negative poles of LED and the Longer pin are positive pole. Control distance between PCB edge and LED head.

Step 9: Install 3pcs 47uF 16V Electrolytic Capacitor at C1,C2,C3.Pay attention to distinguish the positive and negative poles and the Longer pin are positive pole.A 2~3mm spacing is reserved between the capacitor and the PCB to facilitate bending of the capacitor for subsequent installation.

Step 10: Install 3pcs TO-92 S9014 Transistor at Q1,Q2,Q3.It is better to bend S9014's pin so that 2pcs PCB-A and PCB-B can better splicing.OK, PCB-B has been installed completed.

Step 11: Test.Connect 4.5V-5V to PCB-A and PCB-B separately.Preliminary welding success if LED are blinking automatically.

Step 12: Align the two positioning heads on PCB-A and PCB-B and then fixed with tin.

Step 13: Install Mini USB Socket at P1.

Step 14: Install 1pcs power switch at S.

Step 15: Fixed PCB-A and PCB-B on PCB-C.Align the two positioning heads and then fixed with tin.

Step 16: Install the top LED.Note the positive and negative of LED.At this point, the installation is complete!!

Step 17: Mounting Copper column and nut as bracket.

Step 18: Turn on the power and enjoy the effect.

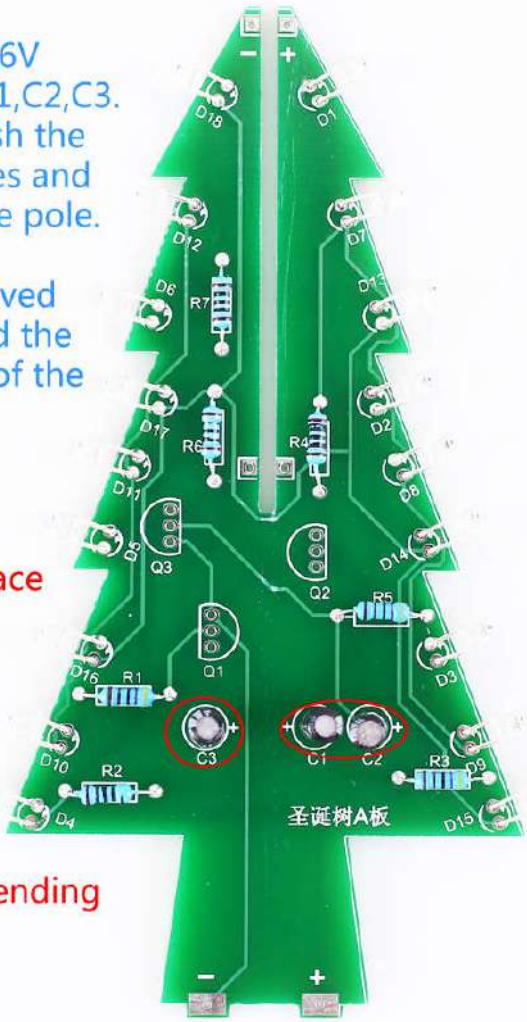
Step 1: Install PCB-A.
Install 4pcs 100ohm Metal Film Resistor on R2,R4,R6,R7.

Step 2: Install 3pcs 4.7K Metal Film Resistor on R1,R3,R5.


Long
Short pin
Negative
Step 3: Install 18pcs 3mm RGB LED at D1-D18.Pay attention to distinguish the positive and negative poles of LED and the Longer pin are positive pole. Control distance between PCB edge and LED head.
Distance
圣诞树A板

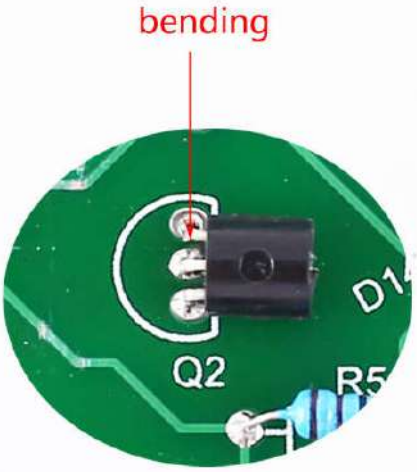
Step 4: Install 3pcs 47uF 16V Electrolytic Capacitor at C1,C2,C3. Pay attention to distinguish the positive and negative poles and the Longer pin are positive pole.

A 2~3mm spacing is reserved between the capacitor and the PCB to facilitate bending of the capacitor for subsequent installation.

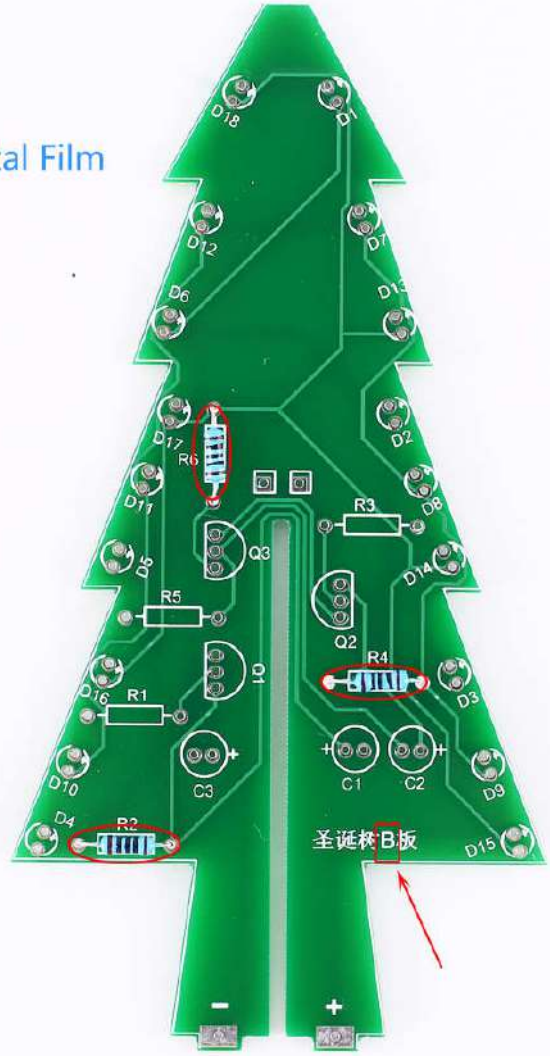


Step 5: Install 3pcs TO-92 S9014 Transistor at Q1,Q2,Q3. It is better to bend S9014's pin so that 2pcs PCB-A and PCB-B can better splicing.

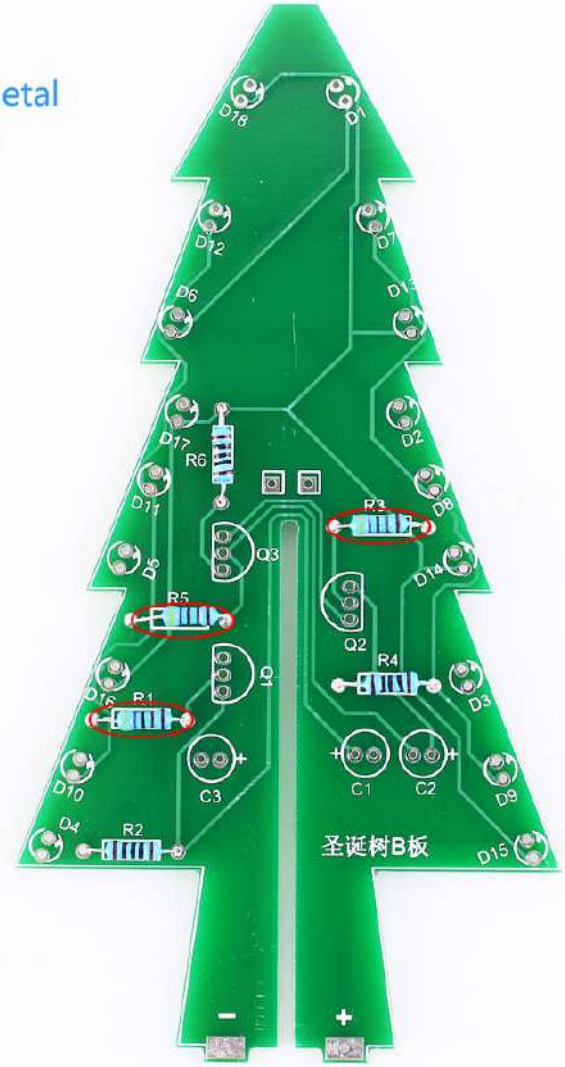
OK, PCB-A has been installed completed.

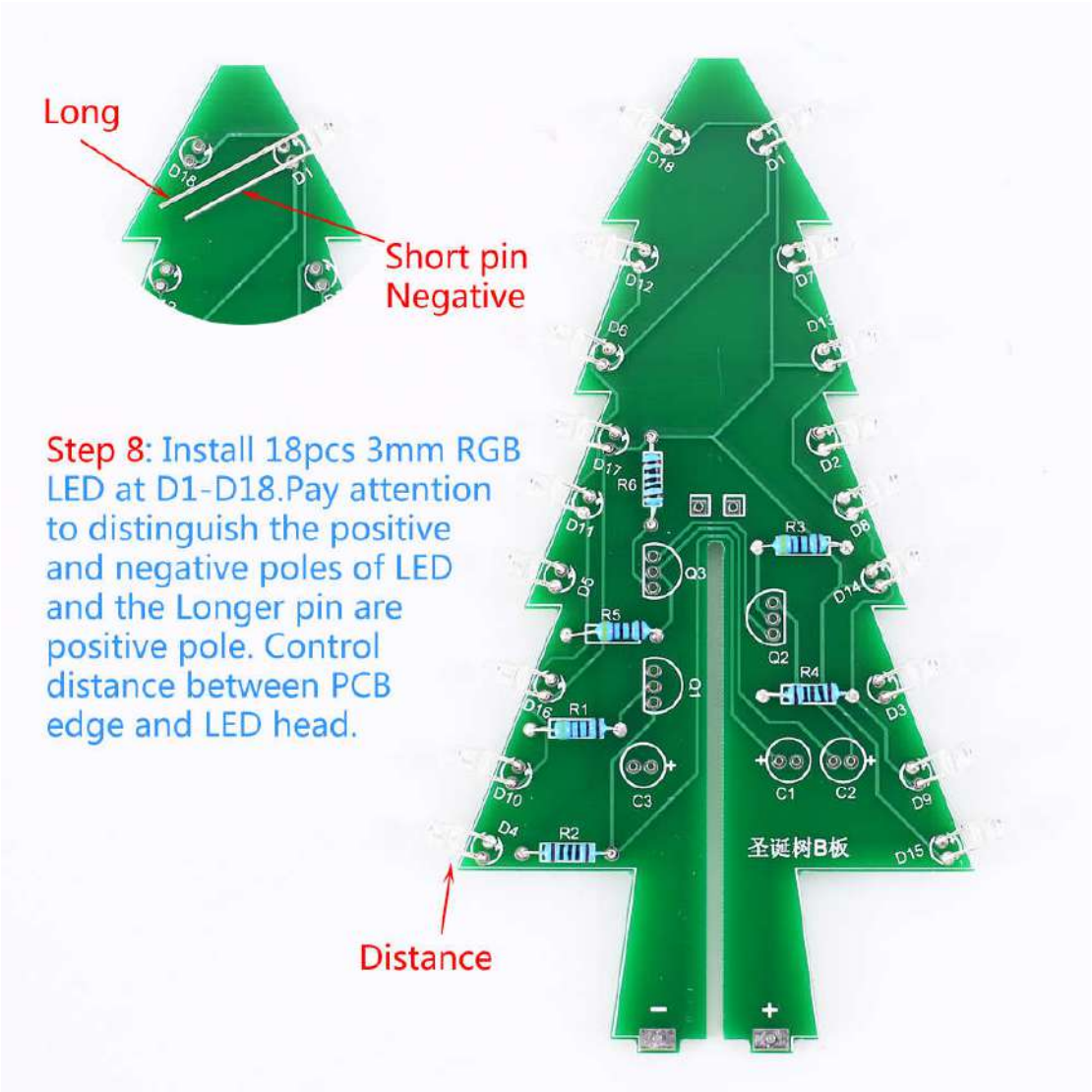


Step 6: Install PCB-B.
Install 3pcs 100ohm Metal Film Resistor on R2,R4,R6.



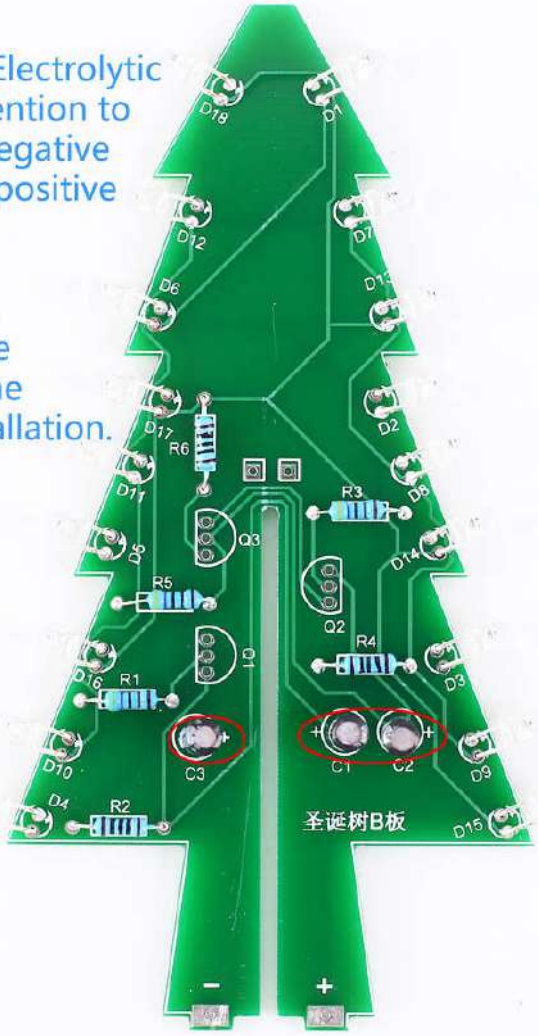
Step 7: Install 3pcs 4.7K Metal Film Resistor on R1,R3,R5.

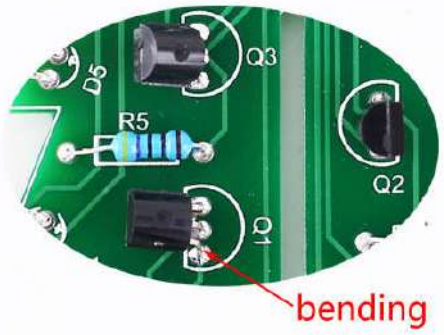



Long
Short pin
Negative
Step 8: Install 18pcs 3mm RGB LED at D1-D18.Pay attention to distinguish the positive and negative poles of LED and the Longer pin are positive pole. Control distance between PCB edge and LED head.
Distance
圣诞树B板

Step 9: Install 3pcs 47uF 16V Electrolytic Capacitor at C1,C2,C3.Pay attention to distinguish the positive and negative poles and the Longer pin are positive pole.

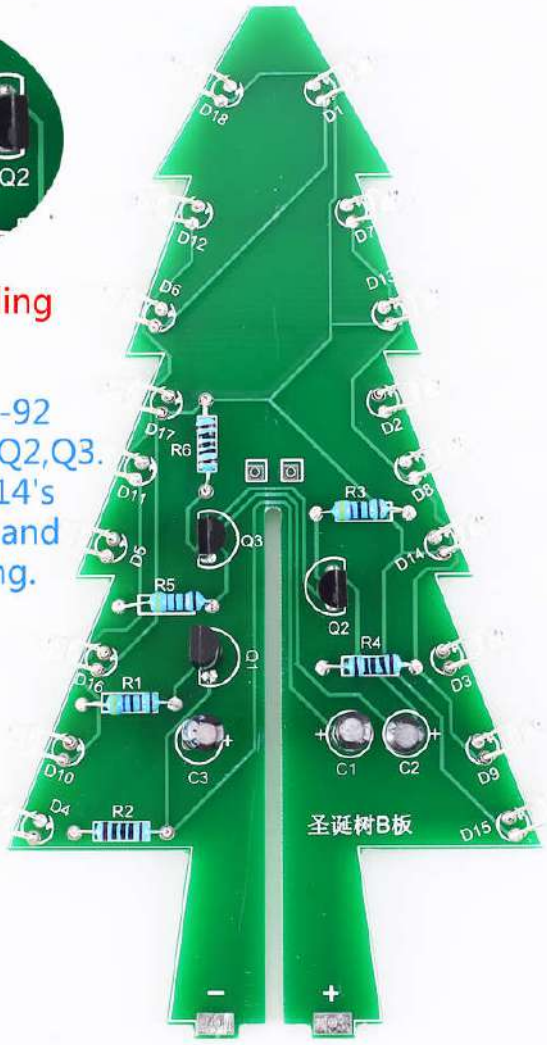
A 2~3mm spacing is reserved between the capacitor and the PCB to facilitate bending of the capacitor for subsequent installation.





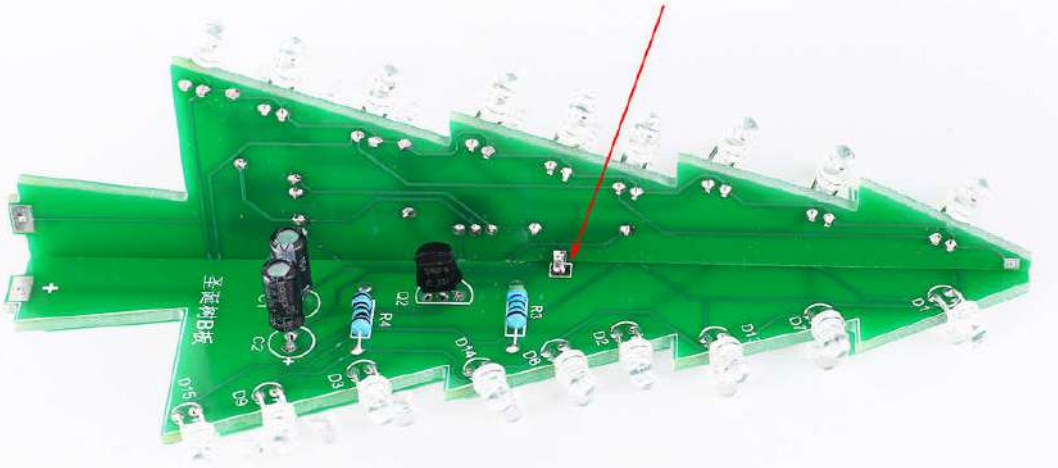
Step 10: Install 3pcs TO-92 S9014 Transistor at Q1,Q2,Q3. It is better to bend S9014's pin so that 2pcs PCB-A and PCB-B can better splicing.

OK, PCB-B has been installed completed.

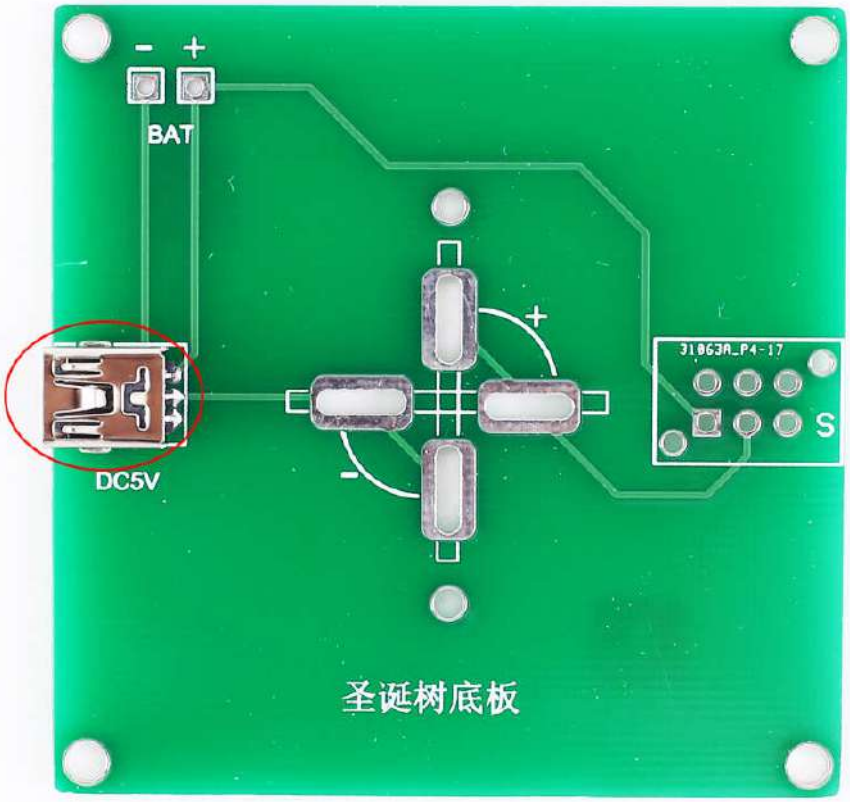


Step 11: Test.Connect 4.5V-5V to PCB-A and PCB-B separately.
Preliminary welding success if LED are blinking automatically.

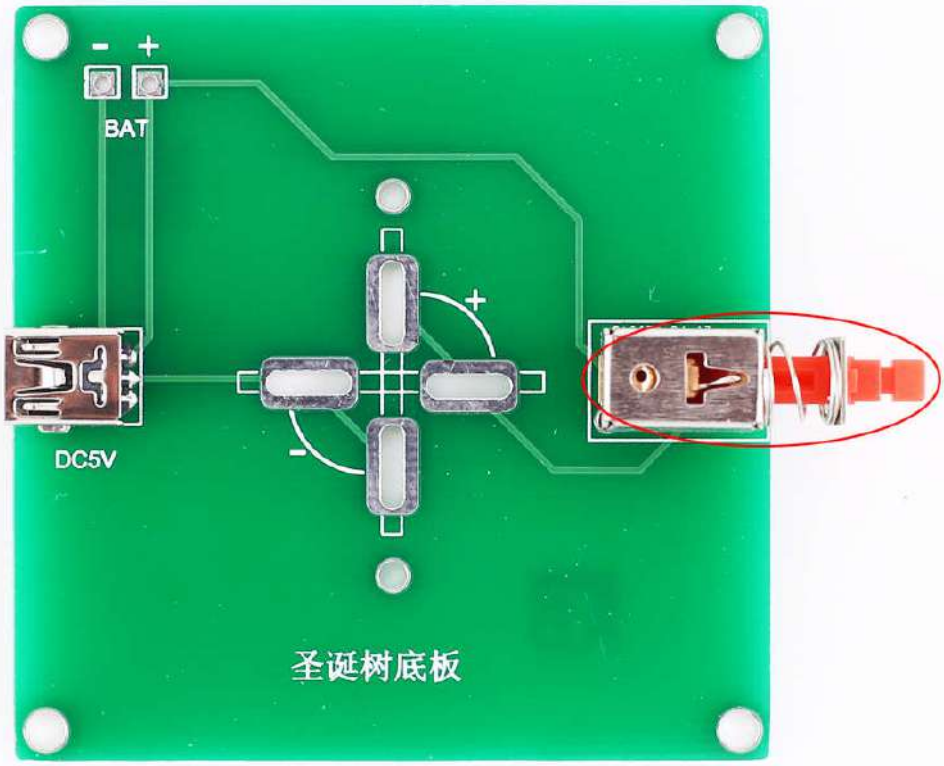
Step 12: Align the two positioning heads on PCB-A and PCB-B and then fixed with tin.



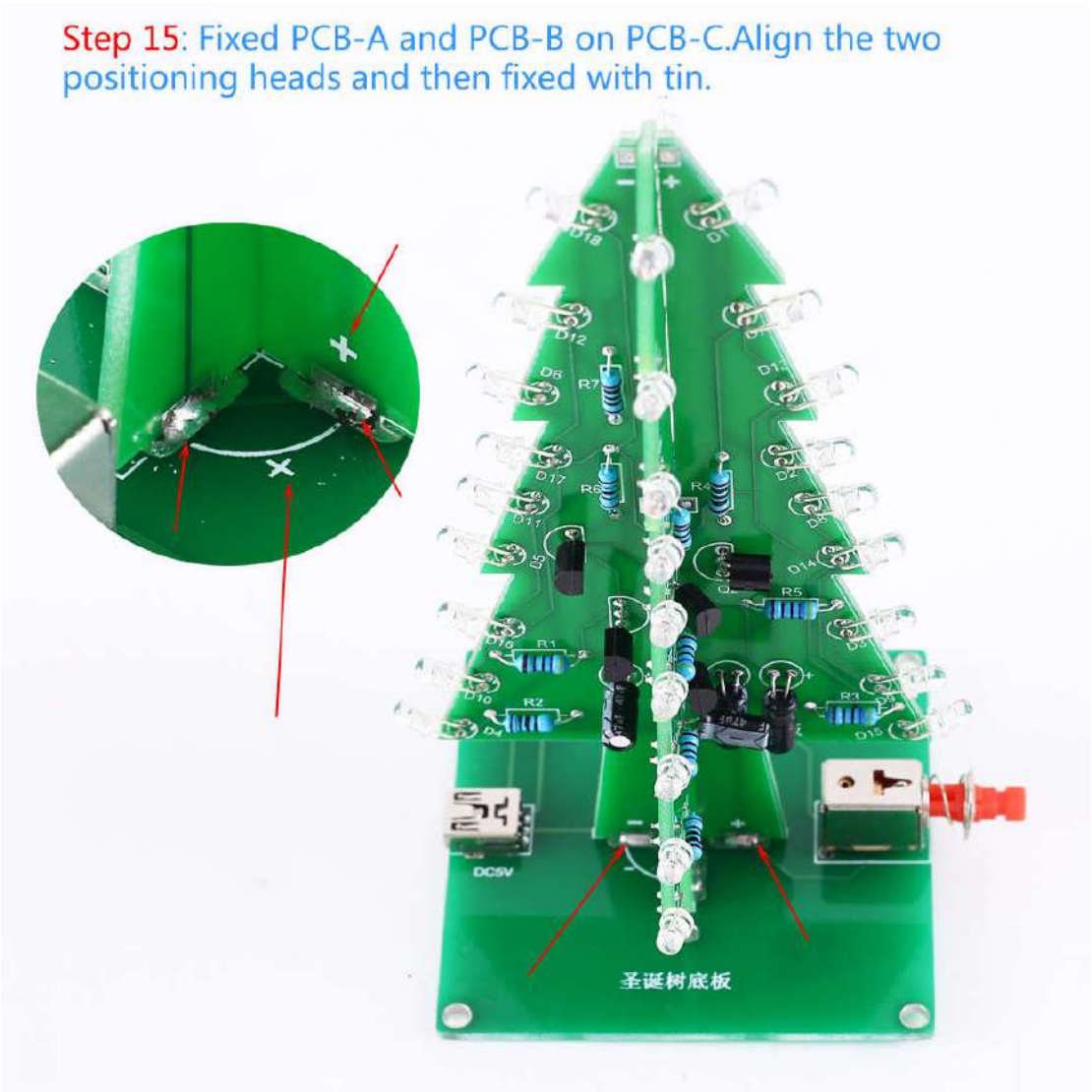
Step 13: Install Mini USB Socket at P1.



Step 14: Install 1pcs power switch at S.



Step 15: Fixed PCB-A and PCB-B on PCB-C.Align the two positioning heads and then fixed with tin.



Step 16: Install the top LED.Note the positive and negative of LED.At this point, the installation is complete!!

Step 17: Mounting Copper column and nut as bracket.

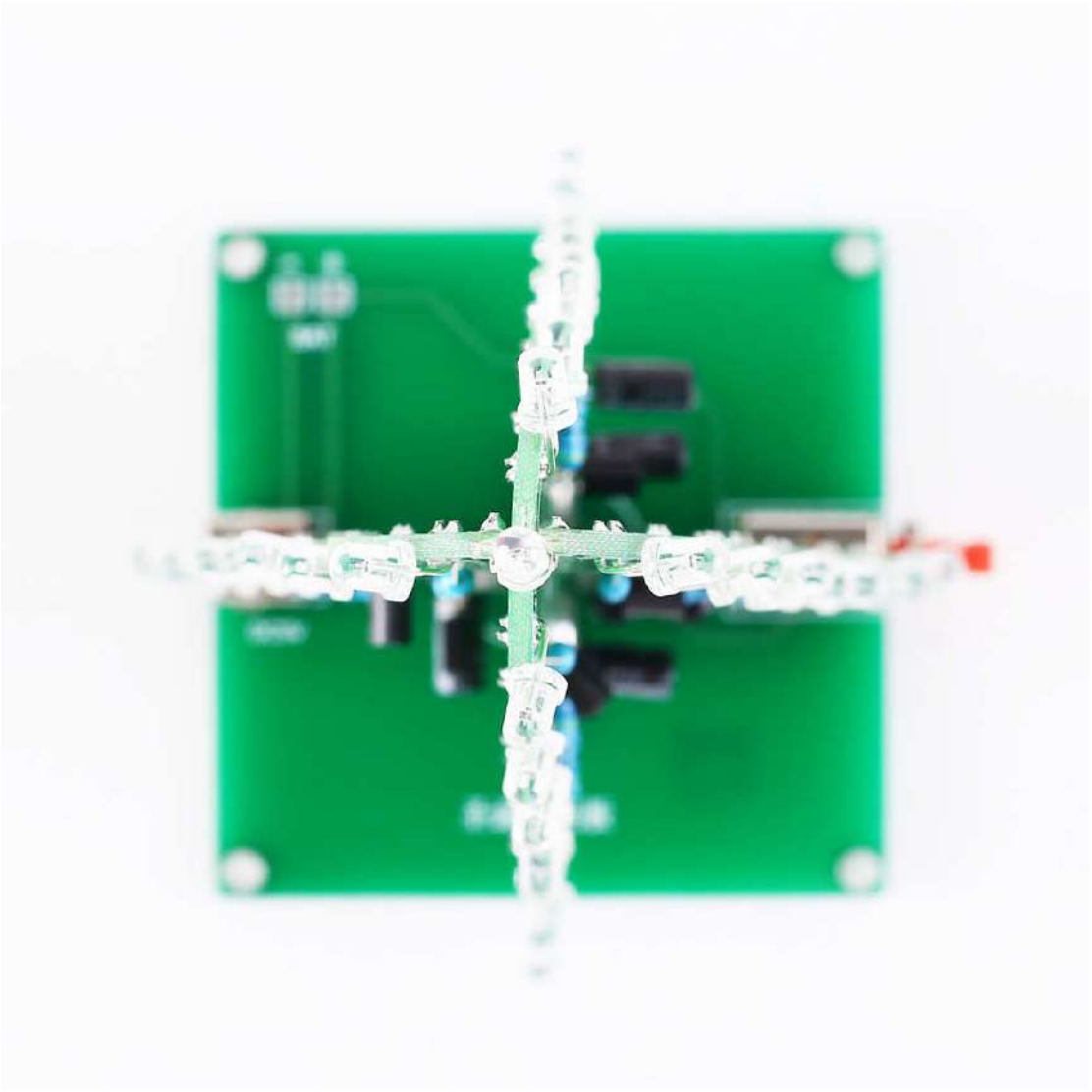
Step 18: Turn on the power and enjoy the effect.


DC5V
圣诞树底板

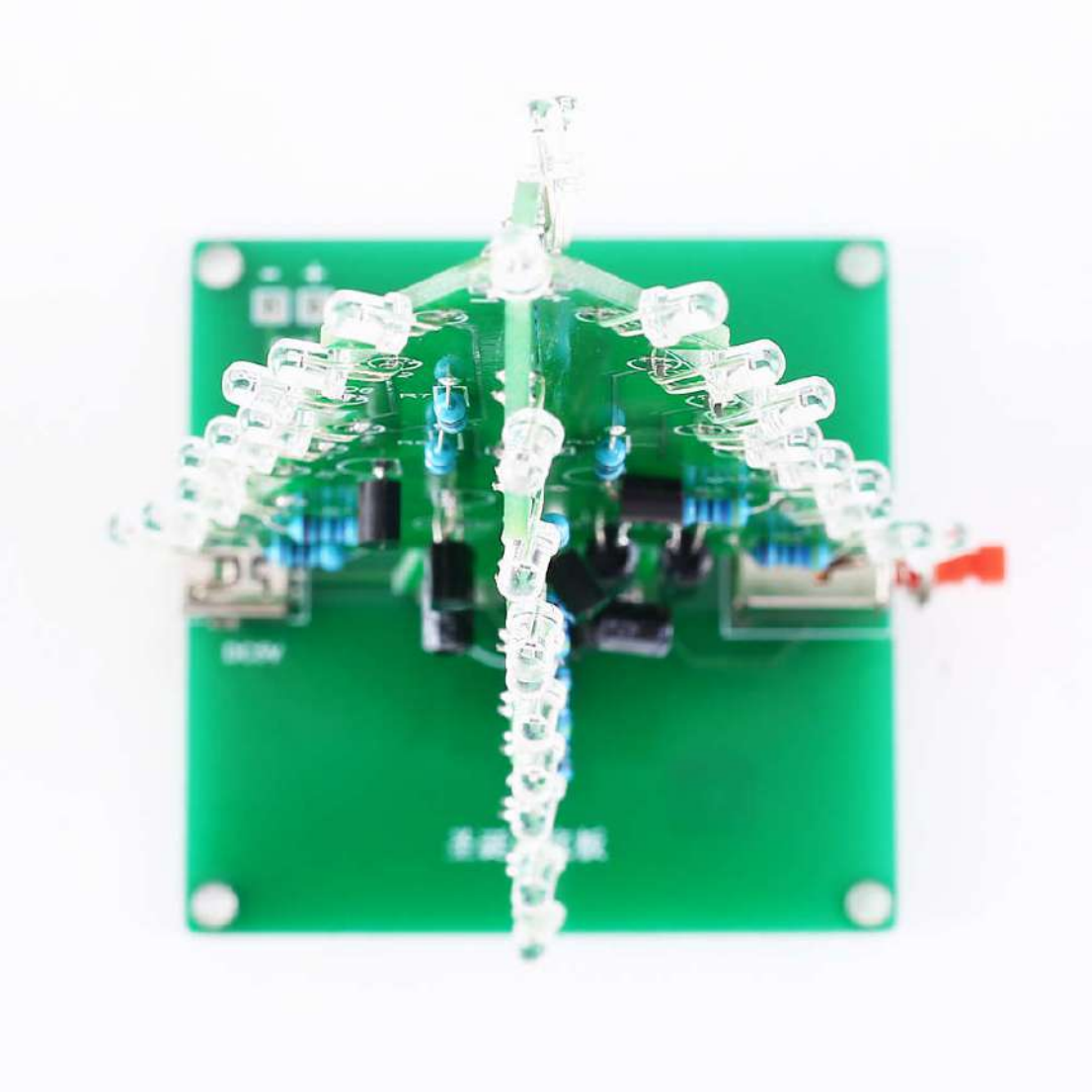

D18
D1
D12
D6
R7
D17
R6
R4
D11
D2
D5
D14
R5
D16
R1
D10
R2
R3
D4
D15
DC5V
圣诞树底板


DC5V
圣诞树底板


BAT
+
-




圣诞树底板

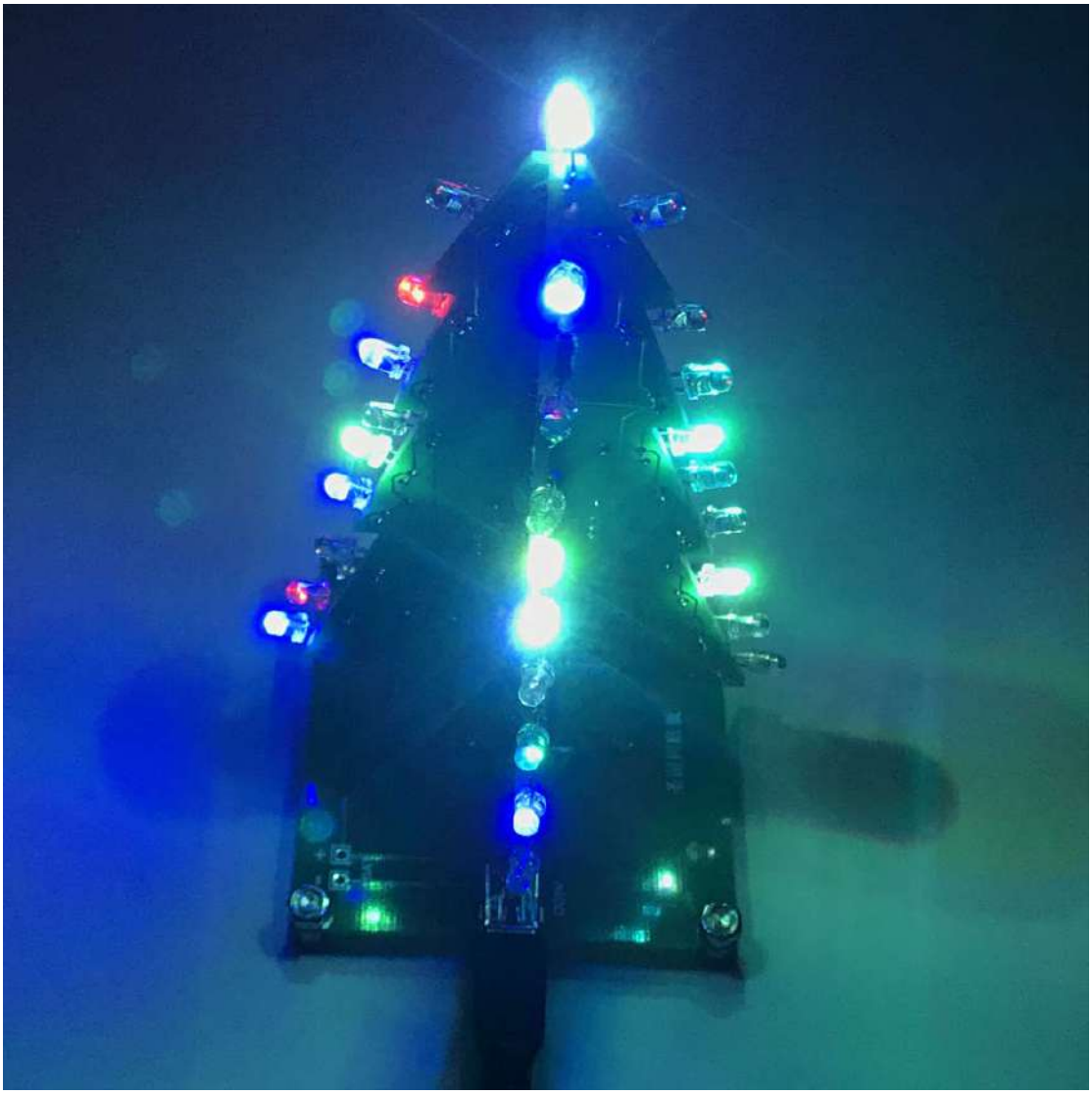


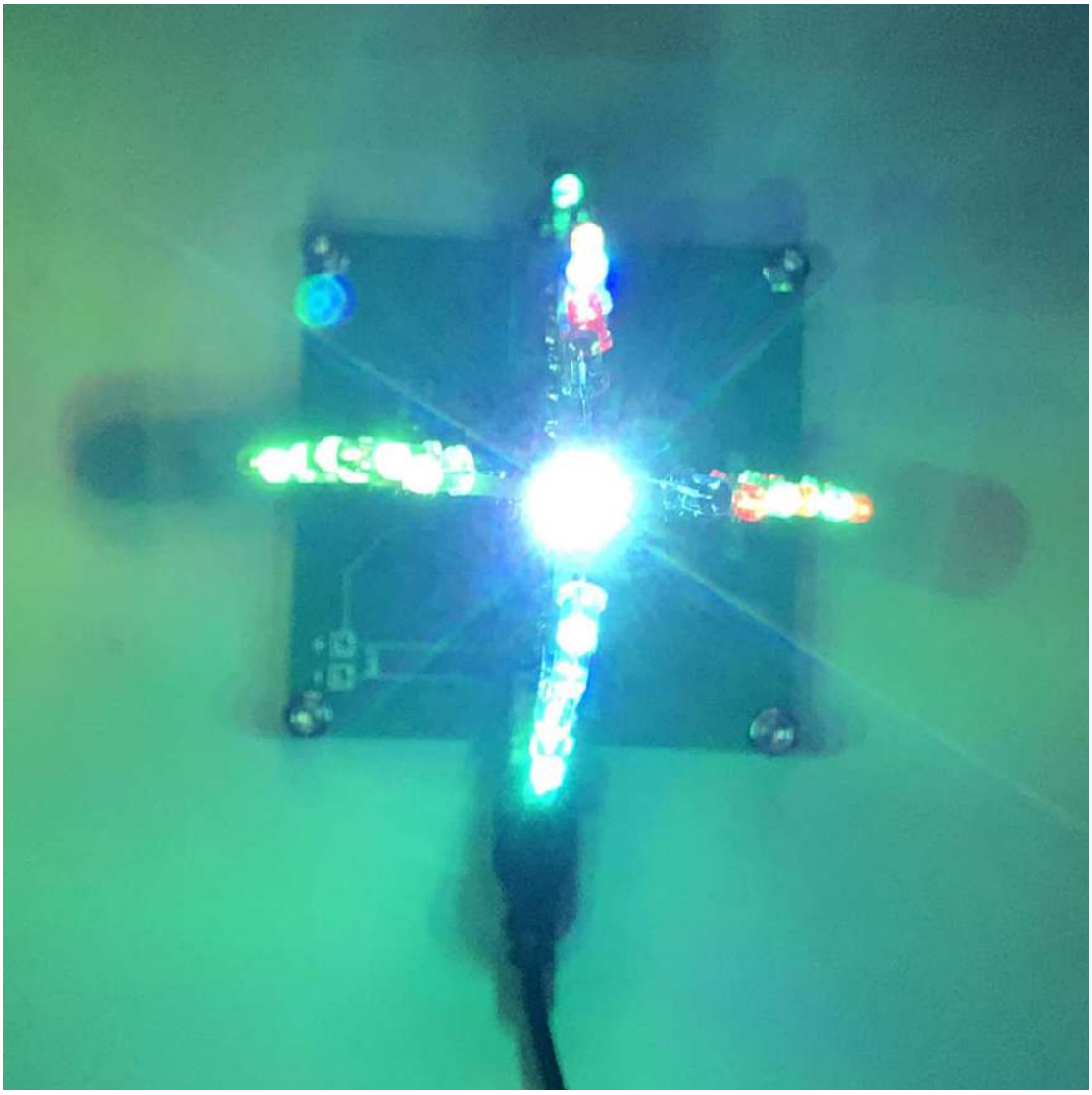

D18
D12
D6
D17
R6
D11
R3
D14
R1
R4
D10
D4
R2
D15

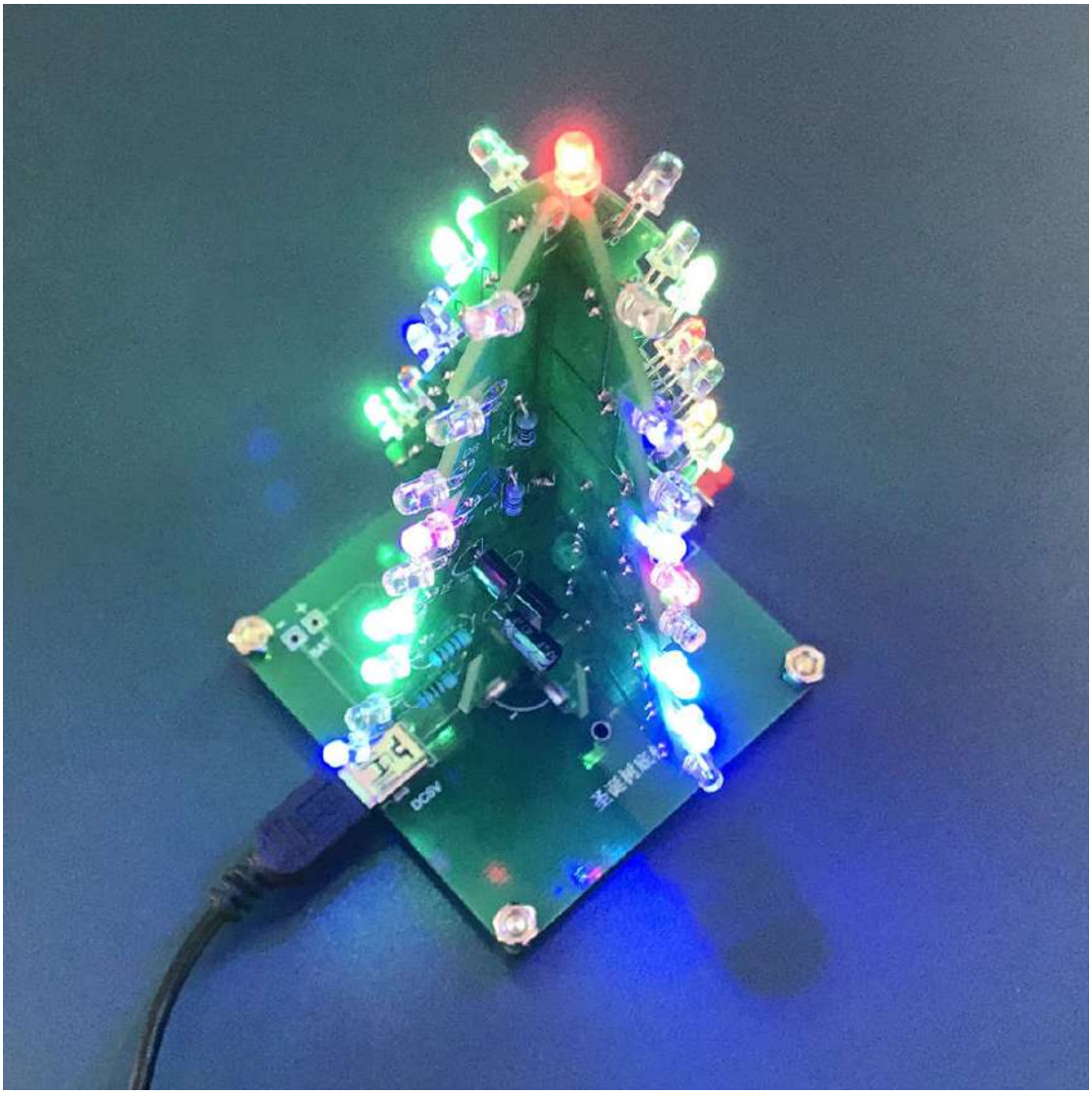

BAT
+
-


DC5V
BAT
+
-


BAT
DC5V







Ⅸ. Tips about DIY Electronics

This product comes to you is DIY kits that needs to be installed, not the finished product! Read the product instruction carefully before installing. And DIY Electronics Operation is a practice activity that **requires certain foundation** of basic electronic theoretical knowledge and welding and hands-on ability. We can't guarantee that all our friends will DIY successfully due to the varying learning phases.

We pledge seriously to you: We could fully satisfy you with our quality products, high-efficiency logistics and perfect after-sale service! We will **do our utmost to assist you** to complete the installation. Your satisfaction is our commitment.

If the finished product does not achieve the effect we described or you have any questions or problems with our product or the transaction unfortunately, **don't rush to give us a negative feedback** out of anger and impulse, please do not hesitate to **contact us** directly for further help.

Ⅹ. Appendix

1. WHDTS specializes in Electronics Products, such as circuit components, function modules,

wireless module, robotics accessories, DIY kits etc.. WHDTS devotes lifetime to providing excellent products with competitive price, fast delivery and 100% after-sales service for all makers, DIYer, R & D personnel, electronic enthusiasts, students and teachers. We are aimed at making your electronics projects go with a swing.

2. WHDTS has long been engaged in Electronics Related Products wholesale and retail business. Welcome letter calls to discuss the wholesale and retail business.

3. We have been keeping trying to improve the manual. If any words or steps of the instruction confuses you, please feel free to let us know because English is not our first language. We will appreciate for the generous help of pointing out our expression problem. Thank you in advance.