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# RGB LED Flash Christmas Tree DIY Kit

## I. Introduction:

It is a flash Christmas tree kit consists of three circuit board, allows 36 LED flash alternately, showing a Christmas tree in the space of three-dimensional profile (the night environment has better viewing).

This DIY product needs to be soldered and assembled by yourself.

## II. Parameter:

- 1>.Work Voltage:DC 4.5V-5.5V
- 2>.Work Current:60mA
- 3>.Power Type:MINI USB
- 4>.Control Type:Button Control
- 5>.Color:RGB LED
- 6>.Work Temperature:-20℃~85℃
- 7>.Work Humidity:0%~95%RH
- 8>.Size(Installed):130\*70\*59mm

## III. Function:

- 1>.RGB LED light color changes automatically
- 2>.Switch control
- 3>.MINI USB provide power supply
- 4>.Perfect simple circuit

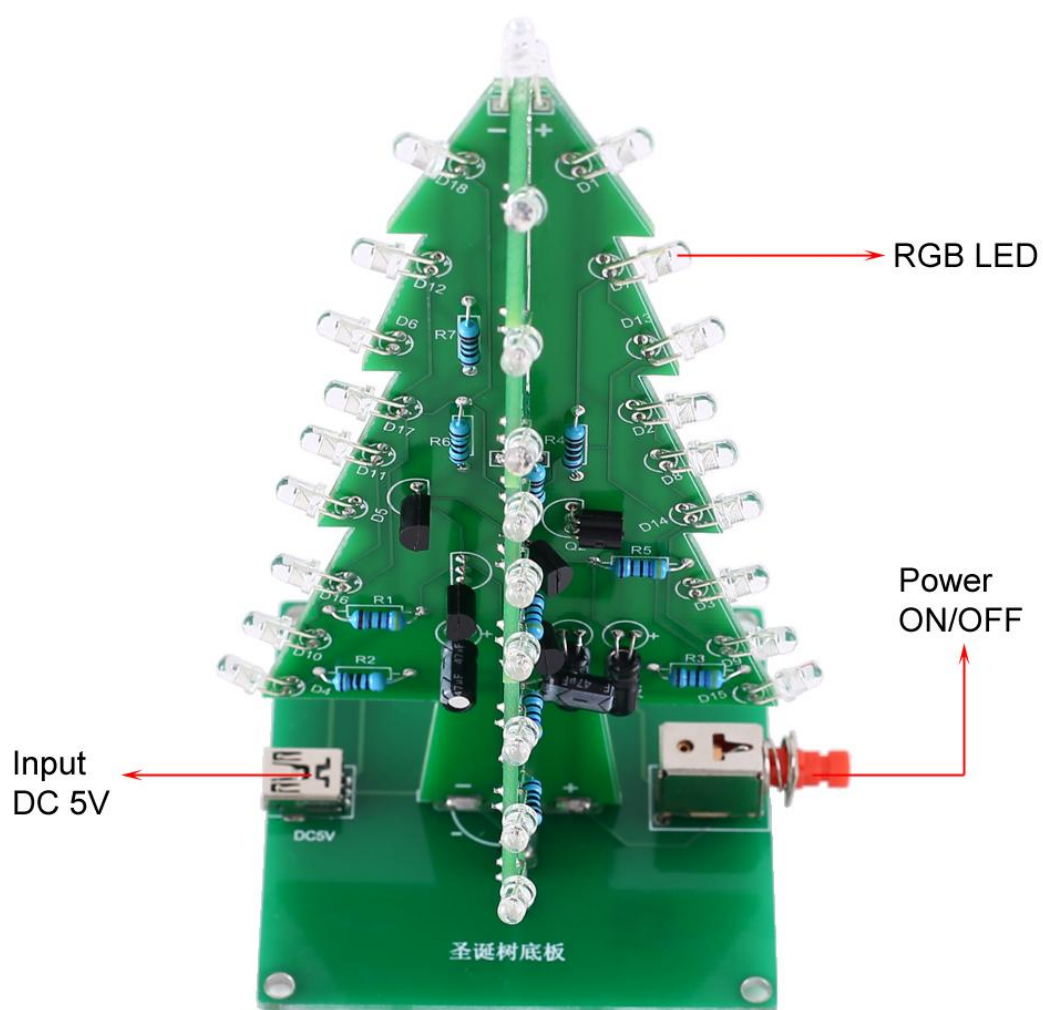
## IV. Component listing:

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	3
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				

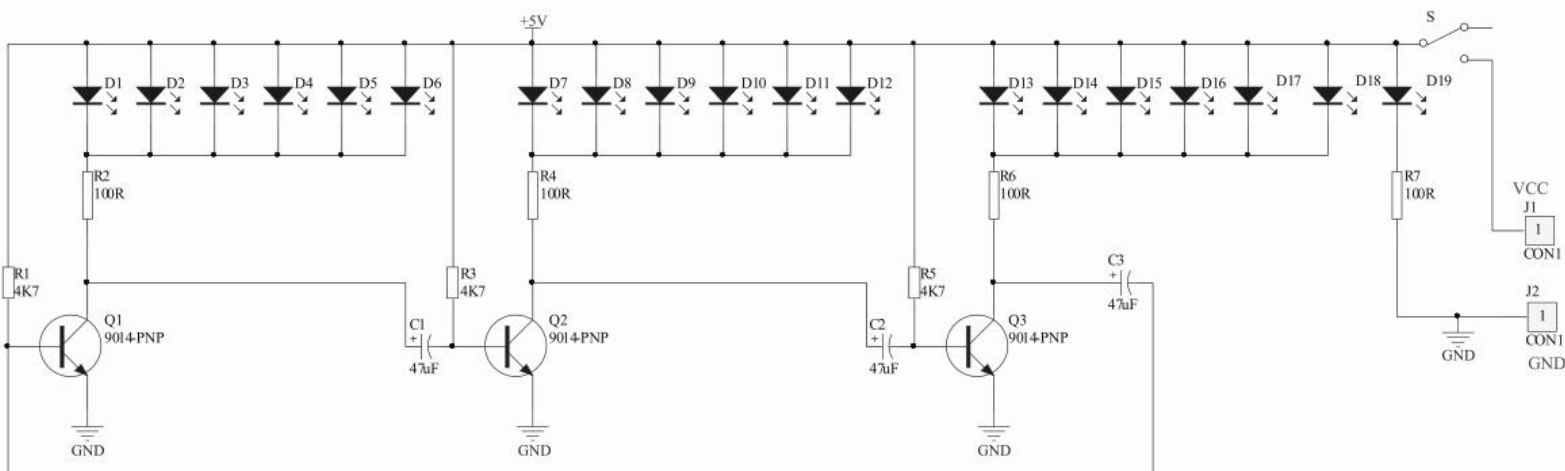
13	Power Switch	S	Red	1
14	Mini USB Socket	P1		1
15	Mini USB Cable		80cm	1
16	Copper column		M3*5+4mm	4
17	Nut		M3	4
18	PCB	PCB-C	59*59*1.6mm	1

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

## V. Basic instruction:



## VI. Schematic:



## 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 Notes

- 1>.User needs to prepare the welding tool at first.
- 2>.This DIY installation is more difficult to be installed, 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>.Users can complete installation by PCB silk screen and component listing.
- 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>.It is strongly recommended to read the installation manual before starting installation.

## IX. Installation Steps(Please be patient 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

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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.

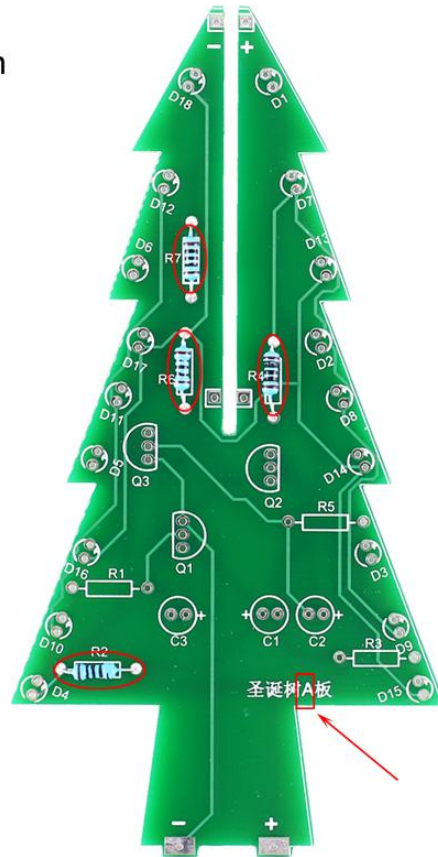
Step 16: Install the top LED. Note the positive and negative of LED. At this point, the installation is complete!!

Step 17: Mounting Copper column and nut as bracket.

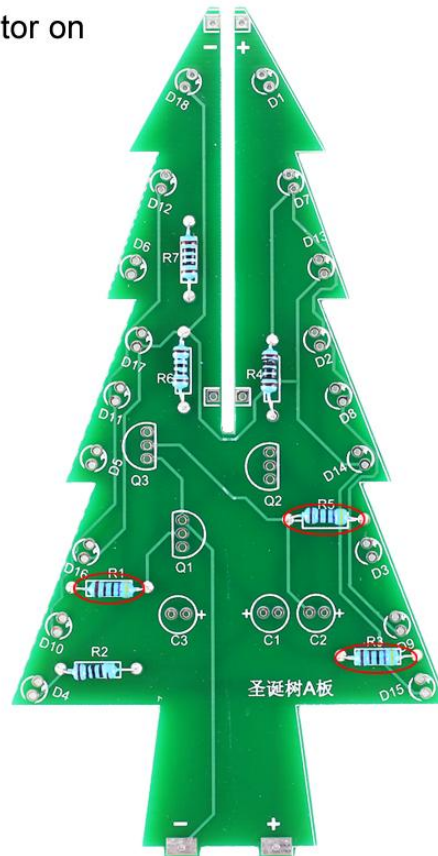
Step 18: Turn on the power and enjoy the effect.

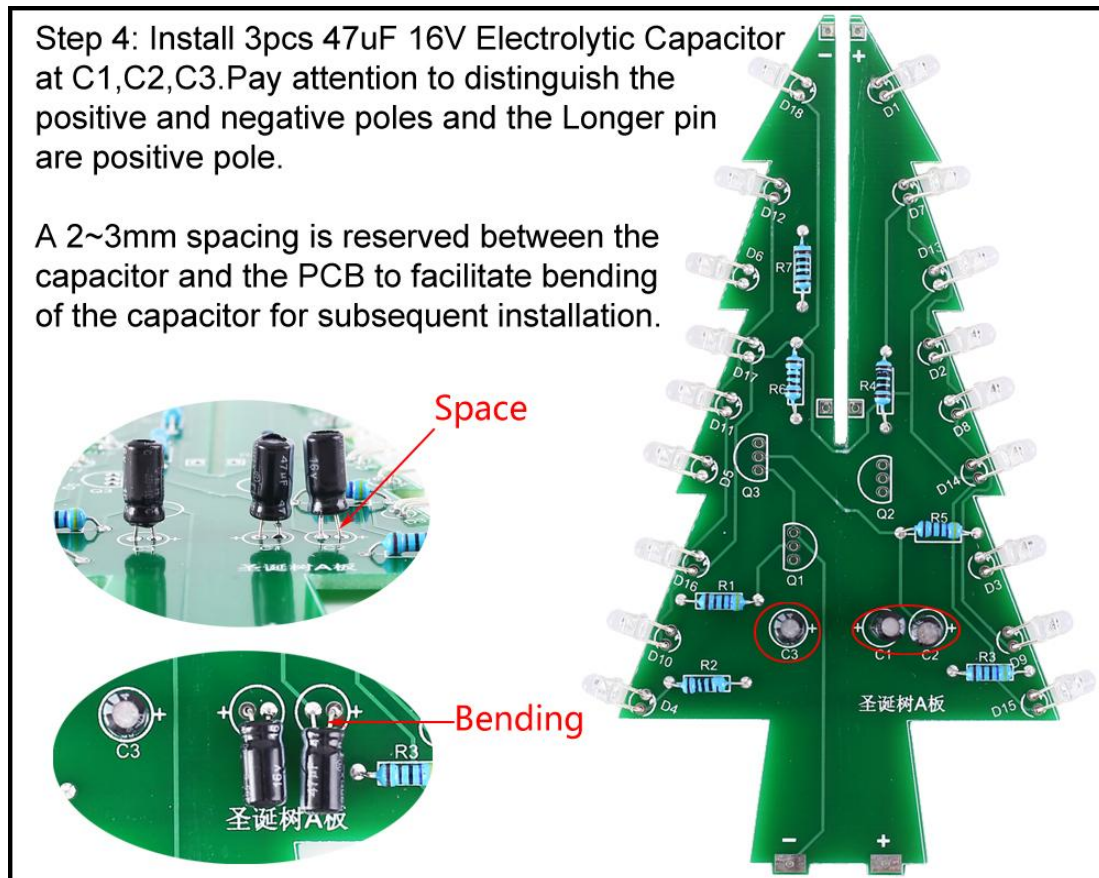
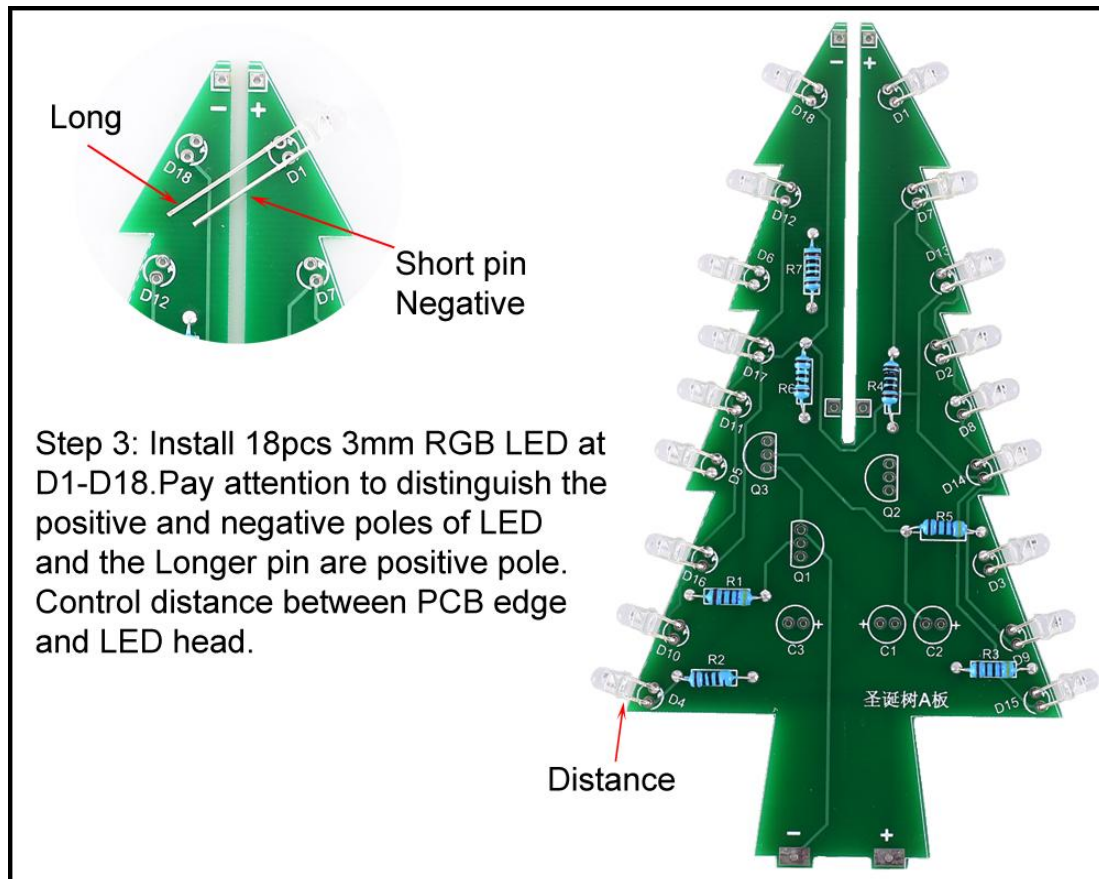
## **X. Install shown steps:**

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



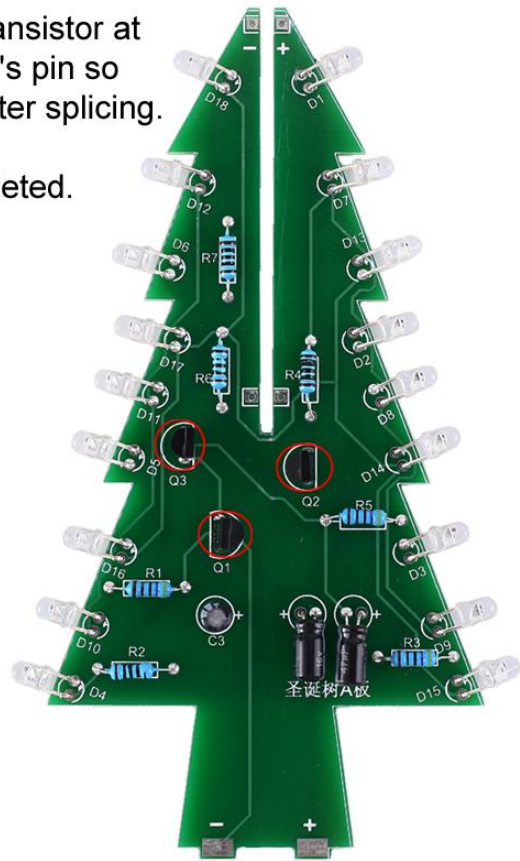
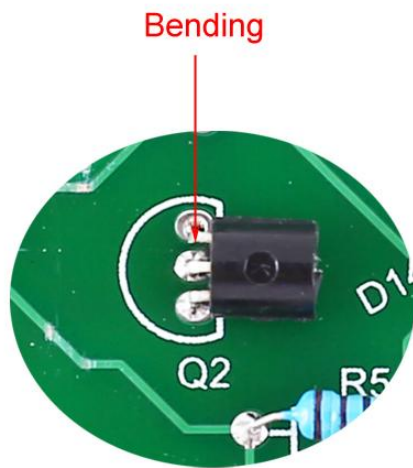
Step 2: Install 3pcs 4.7K Metal Film Resistor on  
R1,R3,R5.



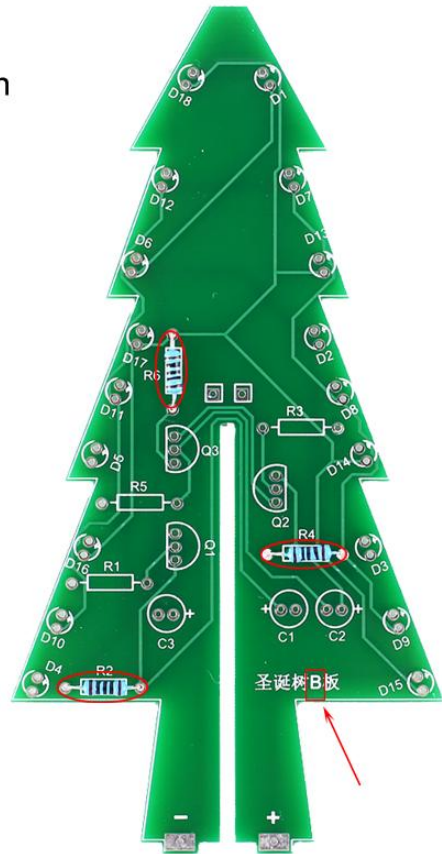


Step 5: Install 3pcs TO-92 S9014 Transistor at Q1,Q2,Q3. It is better to bend S9014's pin so that 2pcs PCB-A and PCB-B can better splicing.

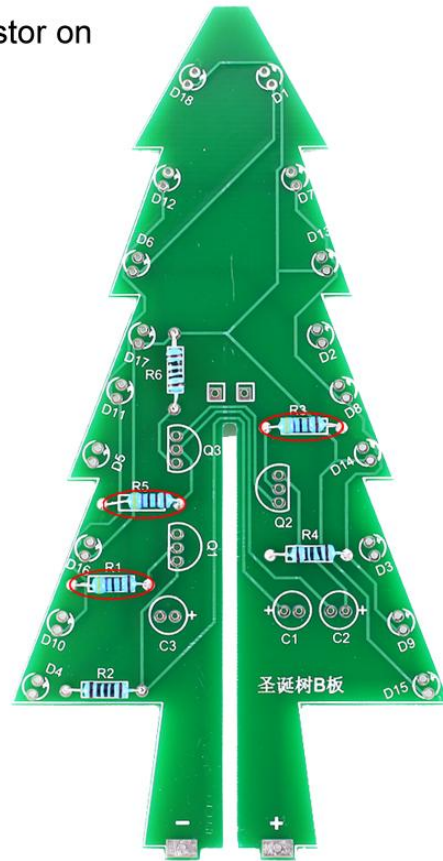
OK, PCB-A has been installed completed.



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.

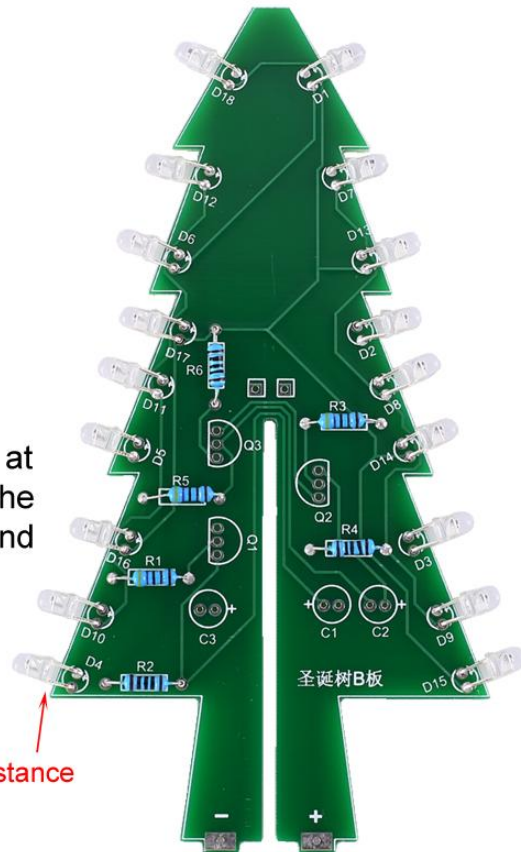


Long

Short pin  
Negative

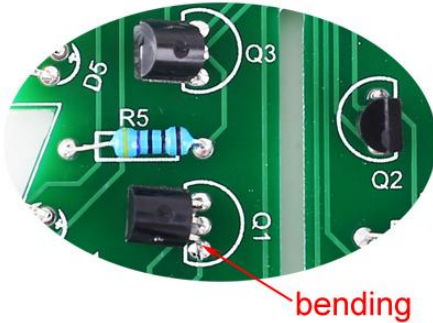
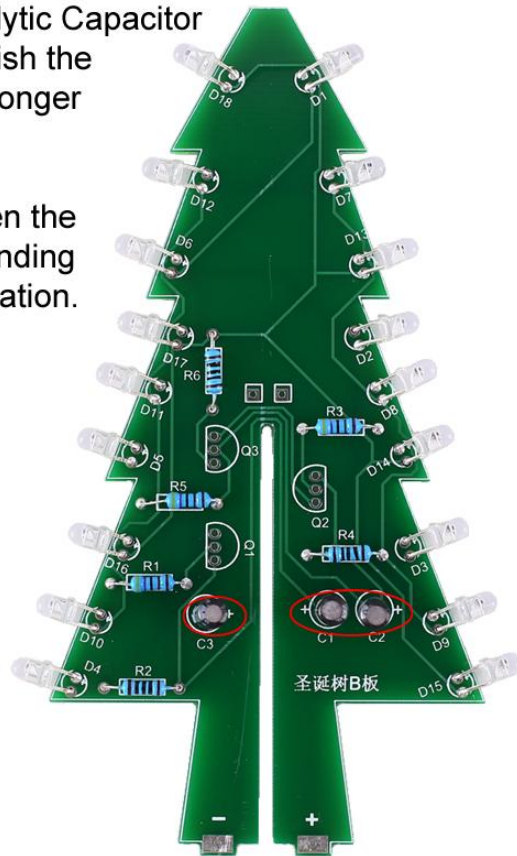
Step 8: Install 18pcs 3mm RGB LED at D1-D18. Pay attention to distinguish the positive and negative poles of LED and the Longer pin are positive pole. Control distance between PCB edge and LED head.

Distance



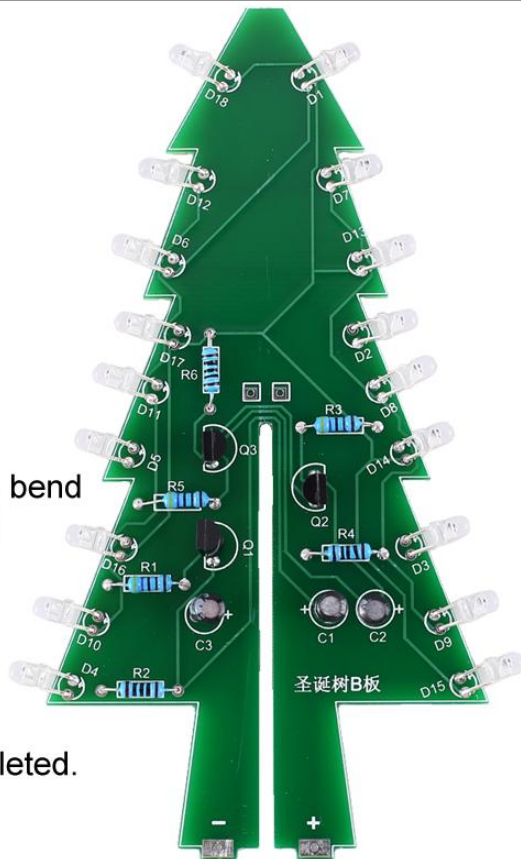
Step 9: Install 3pcs 47uF 16V Electrolytic Capacitor at C1,C2,C3. Pay attention to distinguish the positive and negative poles and the Longer pin are positive pole.

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

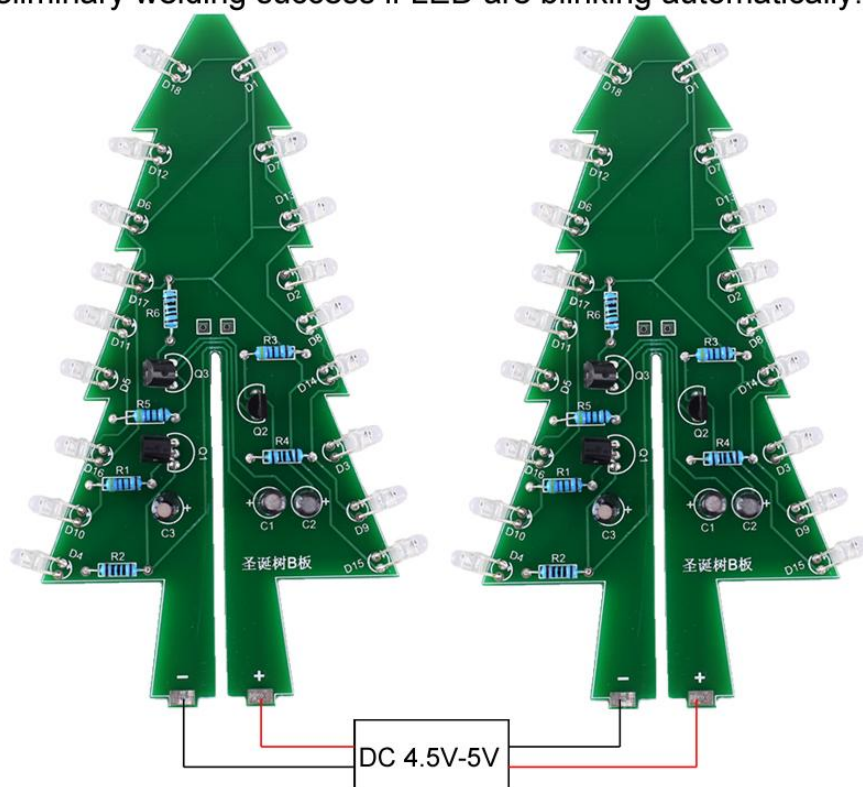


Step 10: Install 3pcs TO-92 S9014 Transistor at Q1,Q2,Q3. It is better to bend S9014's pin so that 2pcs PCB-A and PCB-B can better splicing.

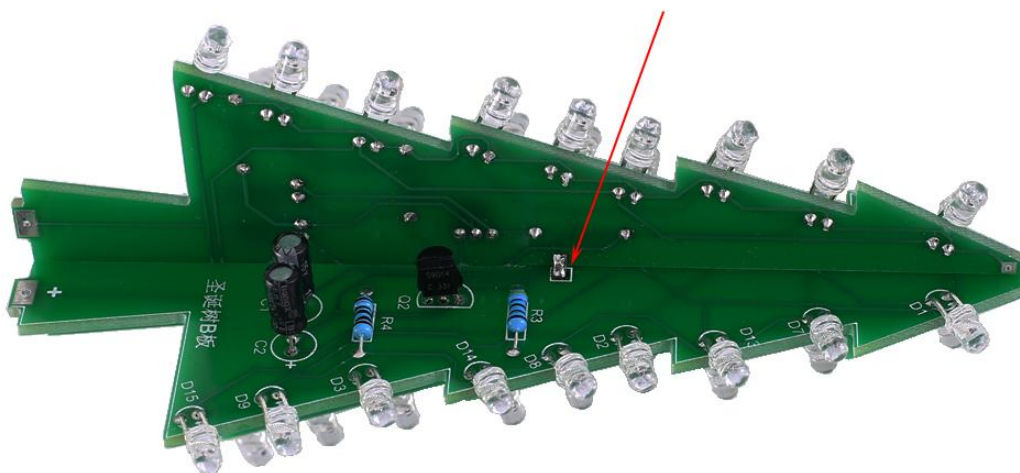
OK, PCB-B has been installed completed.



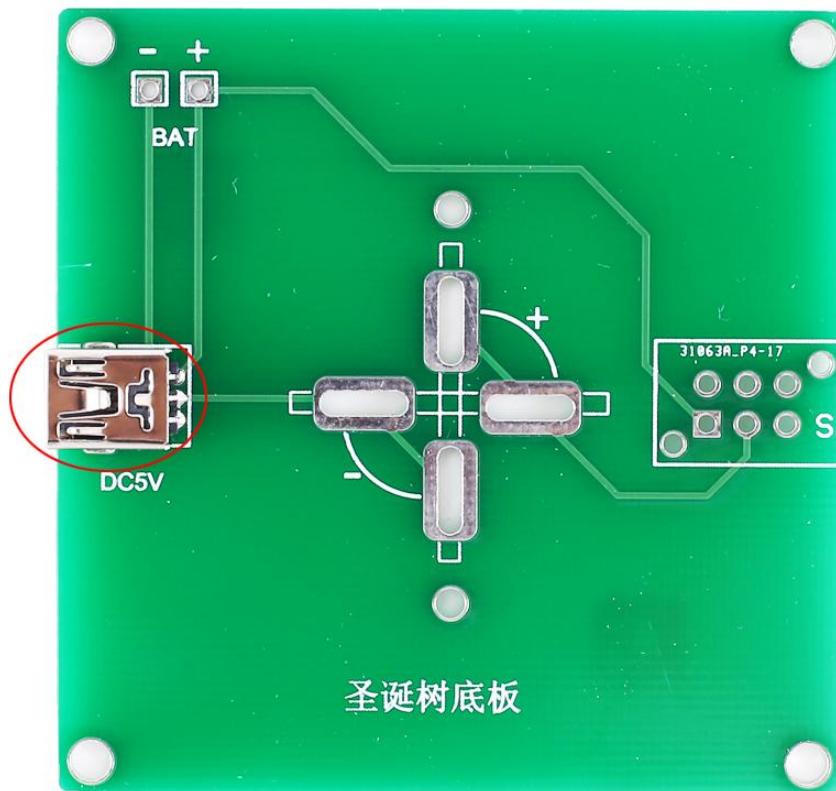
Step 11: Test. Connect 4.5V-5V to PCB-A and PCB-B separately. Preliminary welding success if LED are blinking automatically.



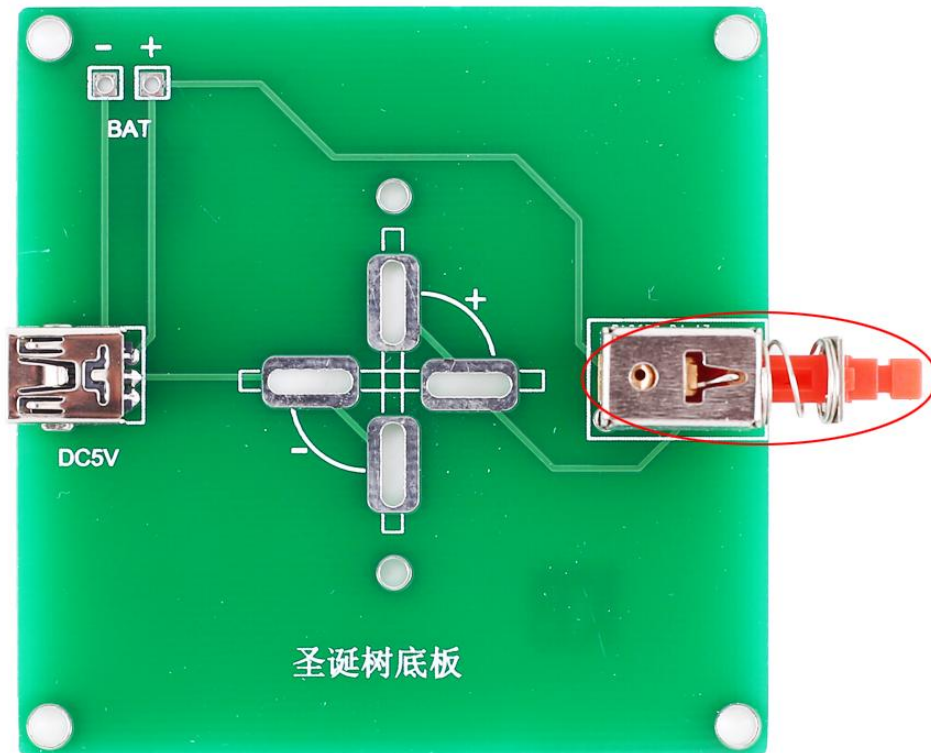
Step 12: Align the two positioning heads on PCB-A and PCB-B and then fixed with tin.



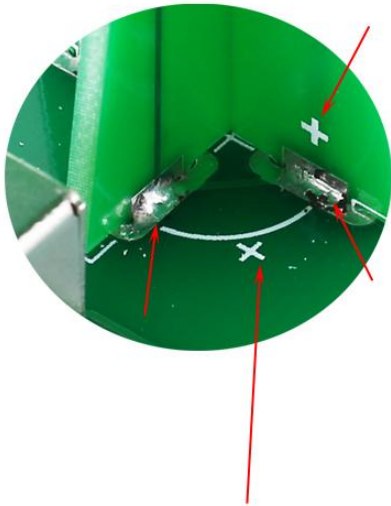
Step 13: Install Mini USB Socket at P1.



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.  
Now, the installation is complete!!



Step 17: Mounting Copper column and nut as bracket.

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

