SMD Components Soldering Practice Board DIY Kit

Ⅰ. Introduction

It is an SMD component soldering practice kit that allows users to practice and skillfully solder by soldering components such as SMD 0805, 0402, 0603, and SOT-23. It is suitable for electronic beginners and enthusiasts.

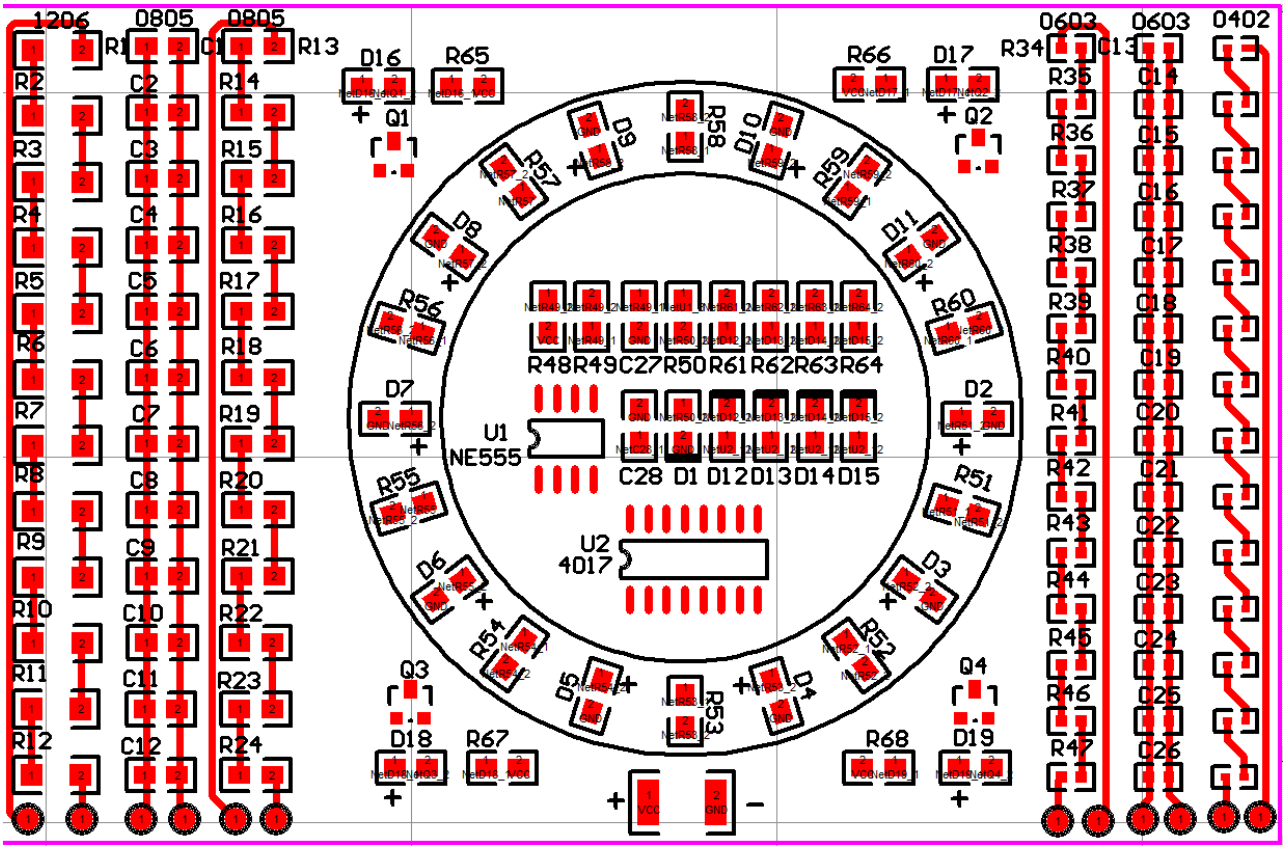
Ⅱ. Features

1. Multi-type SMD components
2. Pure work welding
3. Integrated practice area and functional test area
4. LED demonstration exercise results
5. Easy operation

Ⅲ. Parameters

1. Work Voltage: DC 3.0V-12.0V
2. Work Temperature: -40℉~185℉(-40℃~85℃)
3. Work Humidity: 0%~95%RH
4. Size(Installed): 3.5*2.3in(89*58*mm)

Ⅳ. Illustration of Patch Components PCB Board

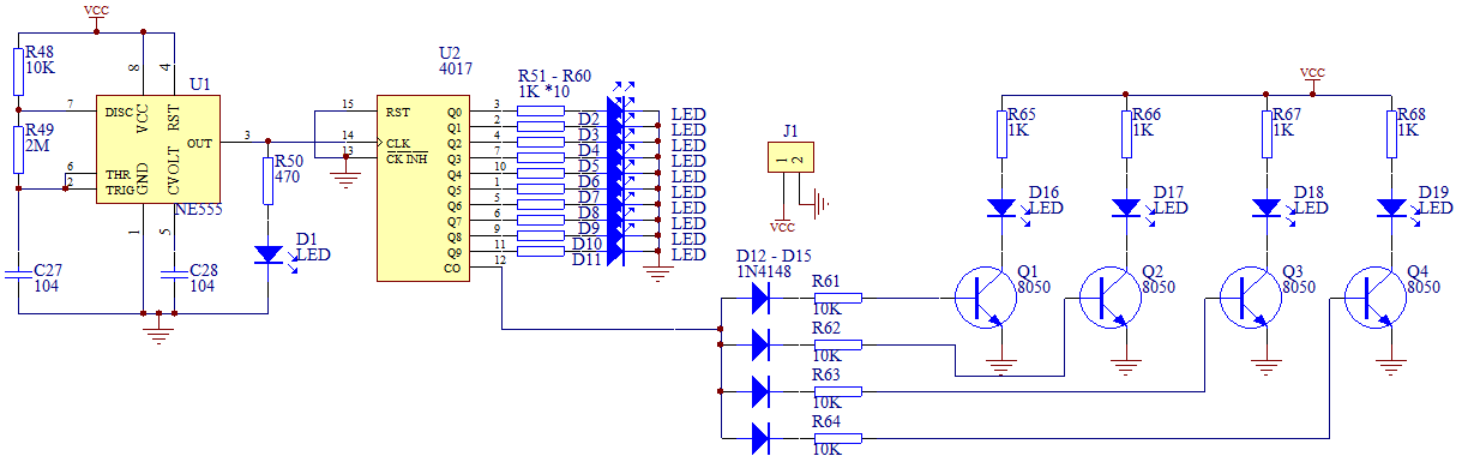


Ⅴ. Components List in The Package

NO.	Component Name	PCB Marker	Parameter	QTY	Remarks
1	SMD 1206 Resistor	R1~R12	Random	12	For Practice
2	SMD 0805 Capacitor	C1~C12	Random	12	For Practice
3	SMD 0805 Resistor	R13~R24	Random	12	For Practice
4	SMD 0603 Resistor	R34~R47	Random	14	For Practice
5	SMD 0603 Capacitor	C13~C26	Random	14	For Practice
6	SMD 0402 Capacitor or Resistor	0402	Random	14	For Practice
7	SMD 0805 Resistor	R50~R60,R65~R68	1K ohm	15	
8	SMD 0805 LED	D1,D2~D11	Red	11	
9	SMD 0805 LED	D16~D19	Blue	4	
10	SMD S8050 Transistor	Q1~Q4	SOT-23 J3Y	4	
11	SMD IN4148 Diode	D12~D15	LL-34 1206	4	
12	SMD 0805 Resistor	R48,R61~R64	10K ohm	5	
13	SMD 0805 Resistor	R49	2M ohm	1	
14	SMD 0805 Capacitor	C27,C28	0.1uF	2	
15	NE555	U1	SOP-8	1	
16	CD4017	U2	SOP-16	1	
17	PCB		89*58*mm	1	

NOTE 1: The components beyond center area are only for practice, have no real function, which could be installed in any suitable location. The components that form the center area must be installed in correct location and direction to make it work.

Ⅵ. Schematic Diagram



Ⅶ. Notice before Installing

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 needs 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 two seconds, 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.

Ⅷ. Installation Method

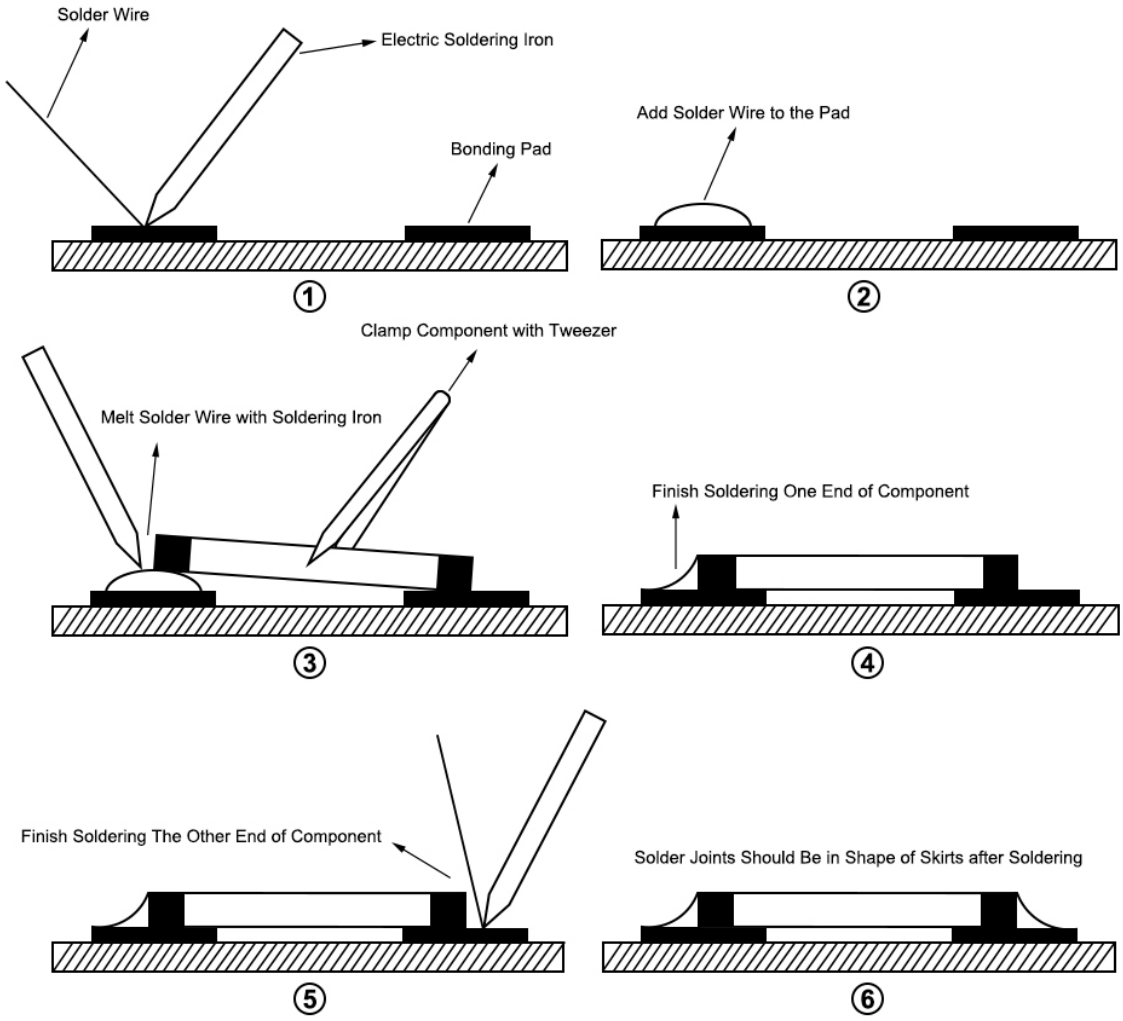
1. Preparation Tools:

To finish soldering this DIY project, you may need to prepare the following tools (NOT INCLUDED in product' package):

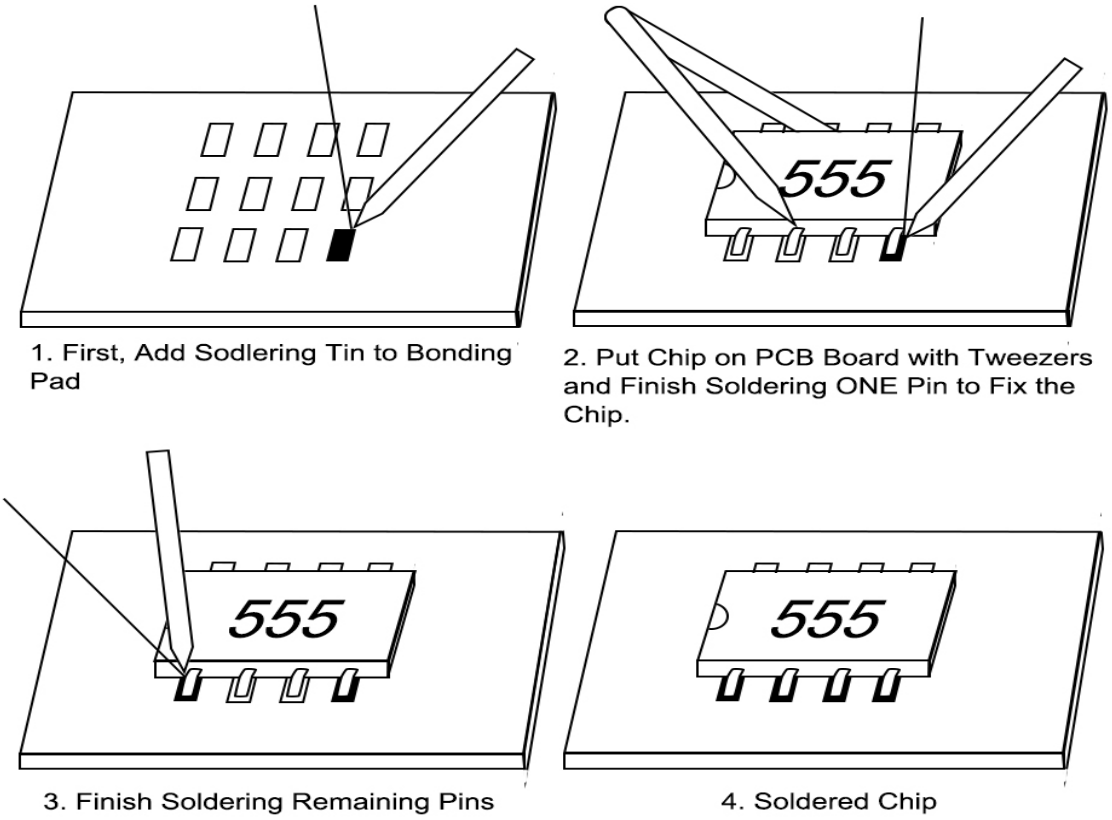
Electric Soldering Iron	Iron Stand	Solder Wire
Sharp-nose Pliers	Diagonal Pliers	Screwdriver
Screwdriver Set	Tweezers	Multimeter
Solder Sucker	Cleaning Sponge	

2. Soldering Method:

2.1 Illustration for Soldering Patch RC Components:



2.2 Illustration for Soldering Patch IC Chip Components:



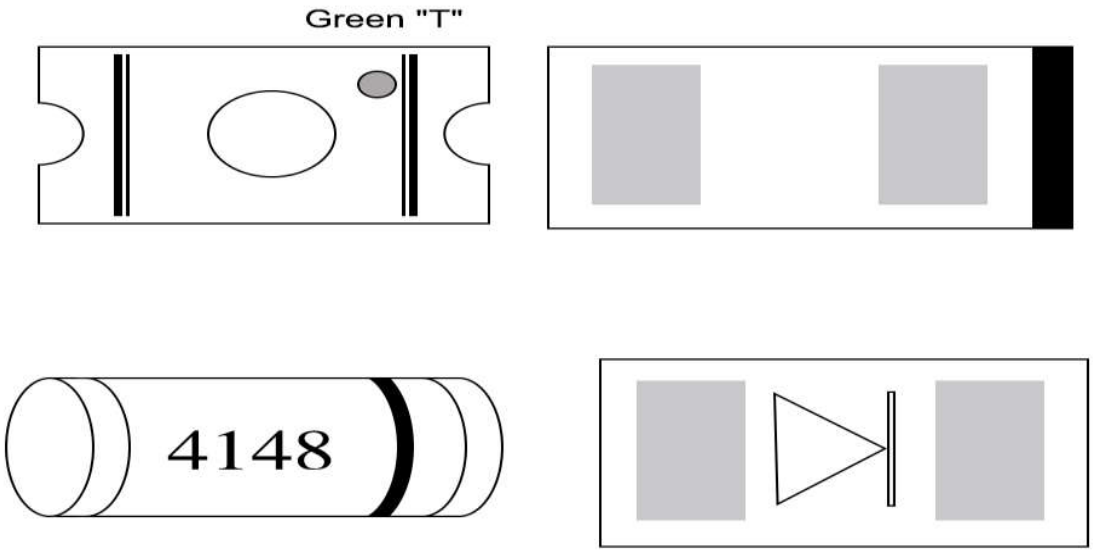
1. First, Add Sodlering Tin to Bonding Pad

2. Put Chip on PCB Board with Tweezers and Finish Soldering ONE Pin to Fix the Chip.

3. Finish Soldering Remaining Pins

4. Soldered Chip

2.3 Illustration for Positive and negative polarization of patch LED:



3. Installation Steps

3.1 Tips for Method:

1. Install SMD components at first.

2. Install complex components preferentially.

3. Pay attention to the installation direction of components.

4. Make sure the soldering iron does not touch the components for a long time. Otherwise it is easy to damage the components.

5. The PCB is divided into a practice area and a function area. The practice area does not participate in the circuit and can be installed arbitrarily to practice welding techniques. The functional area has a complete circuit, which must be properly installed by the schematic diagram and component listing.After the correct installation, user can see the operation of the circuit.

6. Install the practice area first, and then install the function area after skilled welding techniques.

3.2 Installation Steps & Illustration:

Step 1: Install 12pcs SMD 1206 Resistor at R1~R12.

Step 2: Install 12pcs SMD 0805 Capacitor at C1~C12.

Step 3: Install 12pcs SMD 0805 Resistor at R13~R24.

Step 4: Install 14pcs SMD 0603 Resistor at R34~R47.

Step 5: Install 14pcs SMD 0603 Capacitor at C13~C26.

Step 6: Install 14pcs SMD 0402 Capacitor or Resistor at the rightmost column of components. (*Note: 0402 components are very small, please be patient to complete the installation.)*

Step 7: Install 15pcs SMD 1K 0805 Resistor at R50(at center), R51~R60(at Ring), R65~R68(at 4 corners).

Step 8: Install 10pcs Red SMD 0805 LED at D2~D11 and 4pcs Blue SMD 0805 LED at D16~D19. Note: LED distinguishes between positive and negative, can not be installed reverse, otherwise the LED will be damaged and will not work properly. Methods to identify positive and negative: One end of the green mark is the negative. Or test positive and negative by multimeter.

Step 9: Install 4pcs SMD SOT-23 J3Y S8050 Transistor at Q1~Q4.

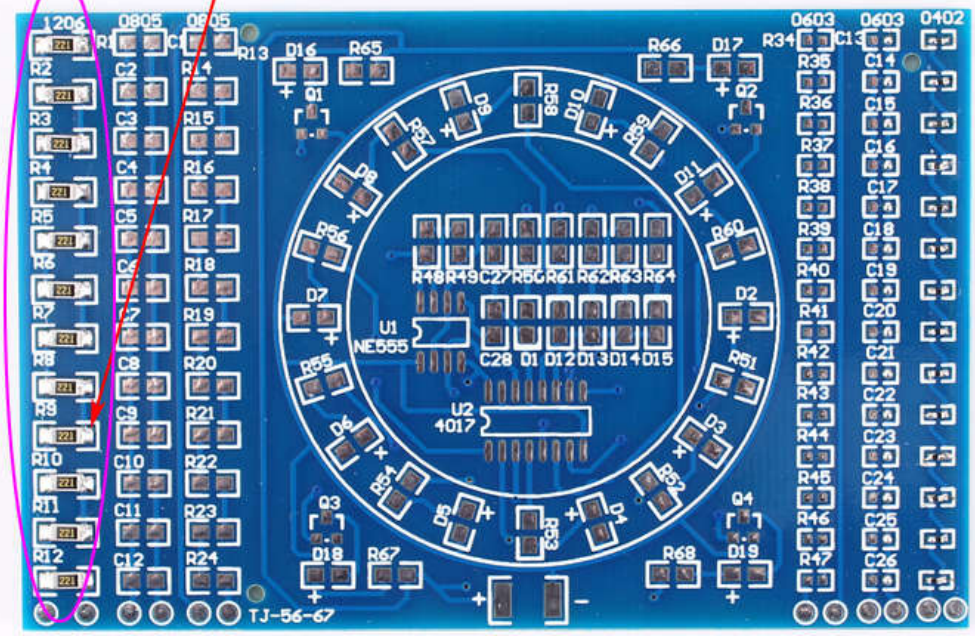
Step 10: Install 1pcs SOP-8 NE555 at U1 and 1pcs SOP-16 CD4017 at U2.Pay attention to the installation direction.

Step 11: Install 5pcs SMD 10K 0805 Resistor at R48,R61~R64.

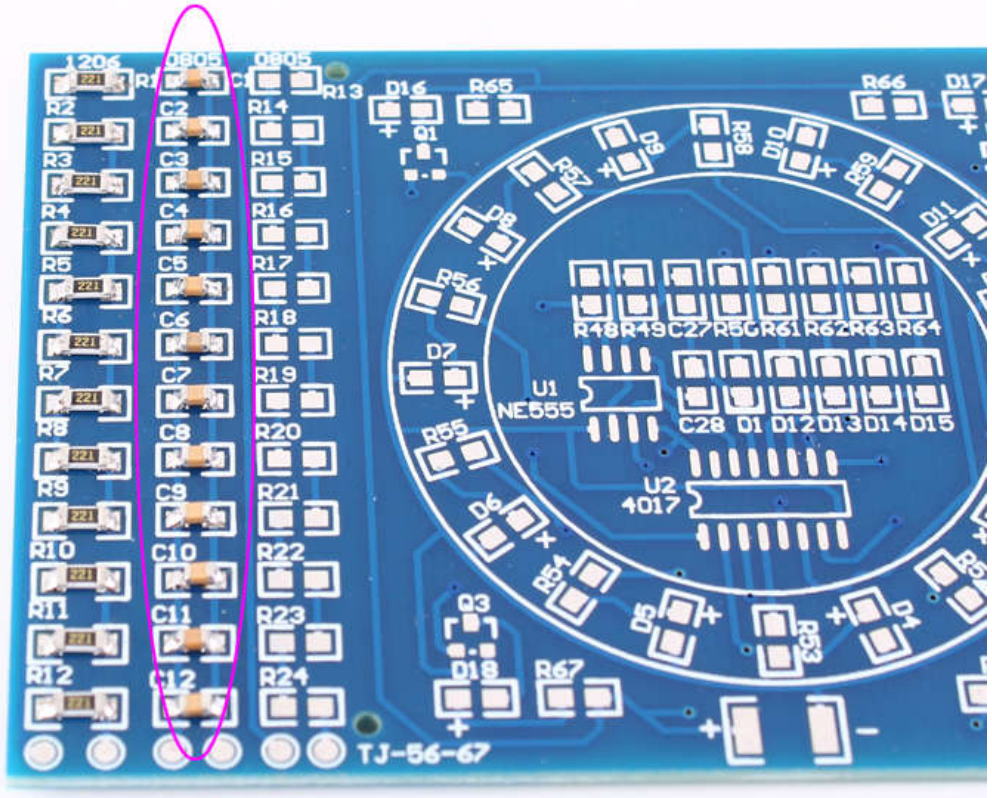
Step 12: Install 1pcs SMD 2M 0805 Resistor at R49,2pcs SMD 0.1uF 0805 Capacitor at C27,C28.4pcs SMD LL-34 1206 IN4148 diode at D12~D15. Note: Diode distinguishes between positive and negative, can not be installed reverse, otherwise the diode will be damaged and will not work properly. Methods to identify positive and negative: One end of the black mark is the negative.

Step 13: Connect DC 3.0V-12.0V to do a test.

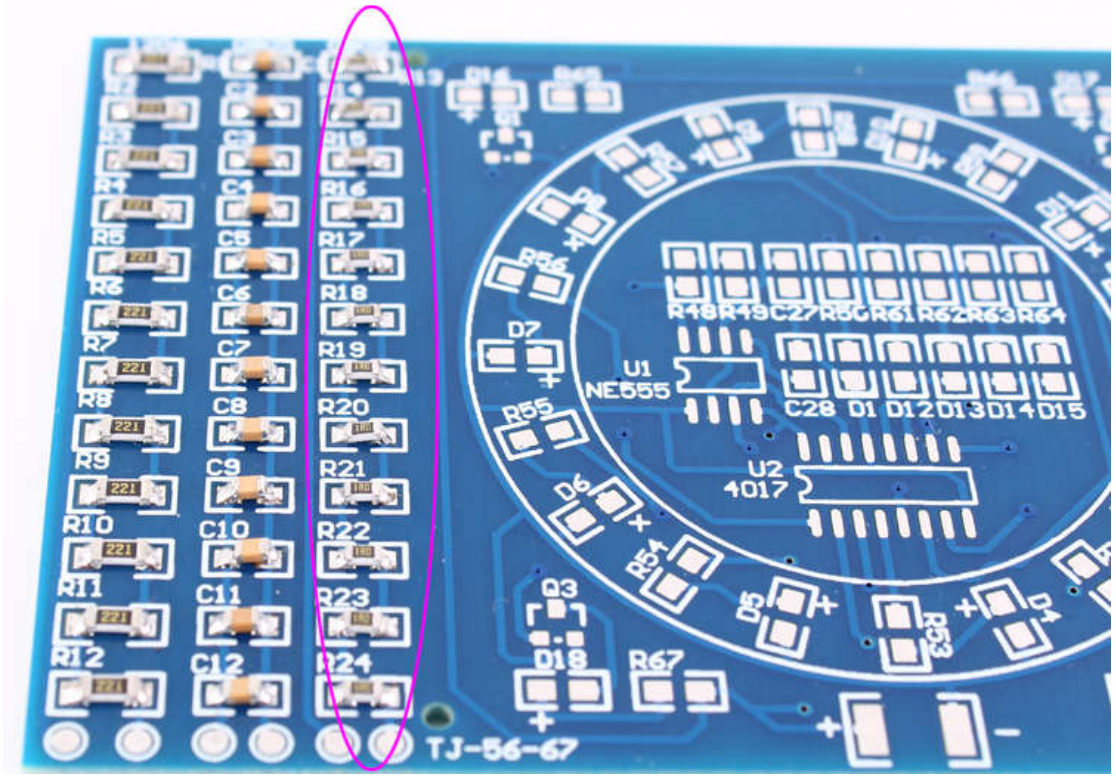
Step 1:Install 12pcs SMD 1206 Resistor at R1~R12.

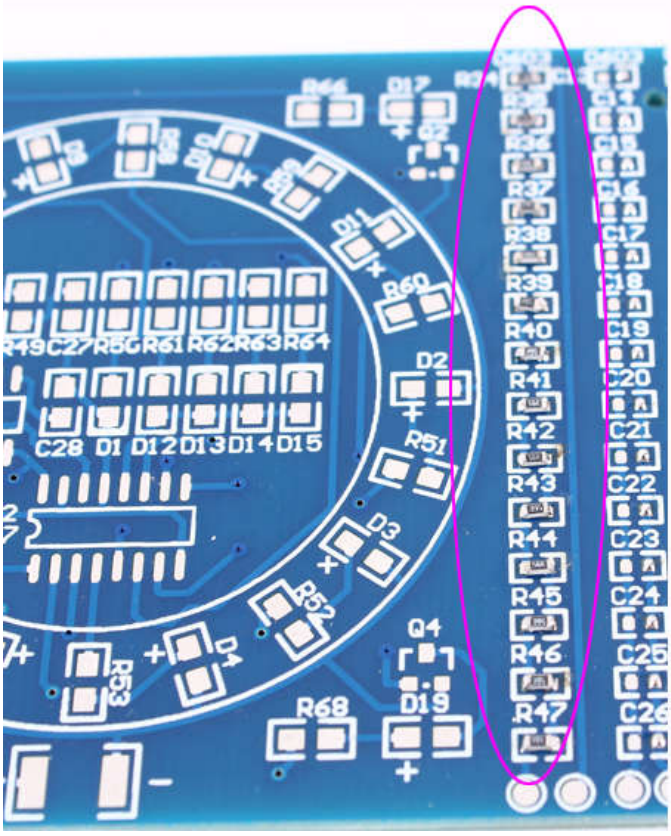


Step 2:Install 12pcs 0805 Capacitor at C1~C12.



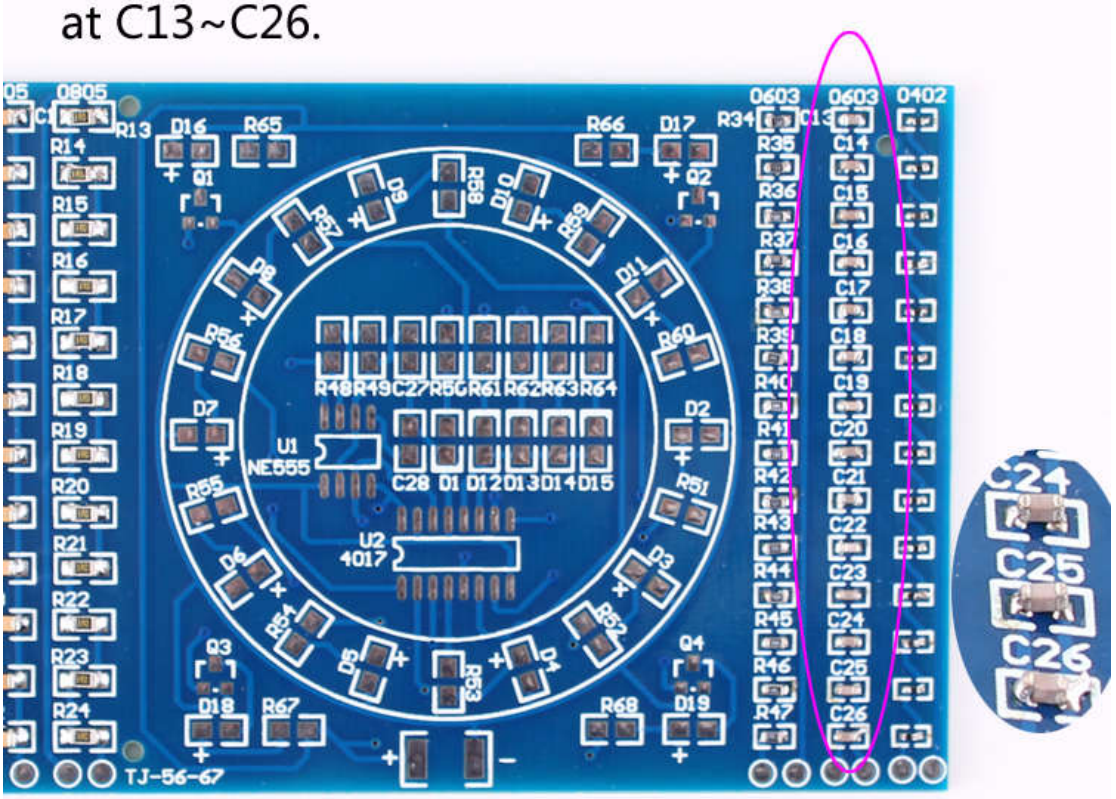
Step 3:Install 12pcs 0805 Resistor at R13~R24.





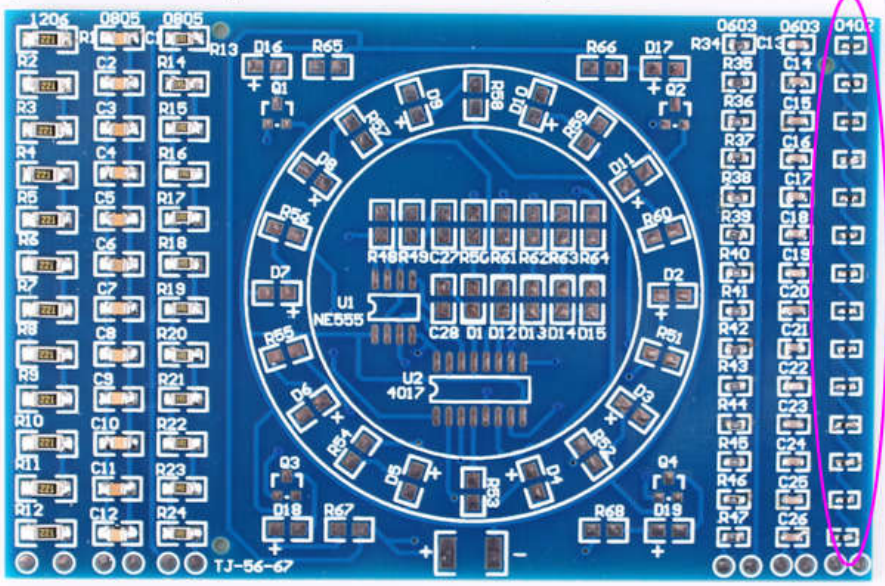
Step 4:Install 14pcs SMD 0603 Resistor at R34~R47.

Step 5:Install 14pcs SMD 0603 Capacitor at C13~C26.

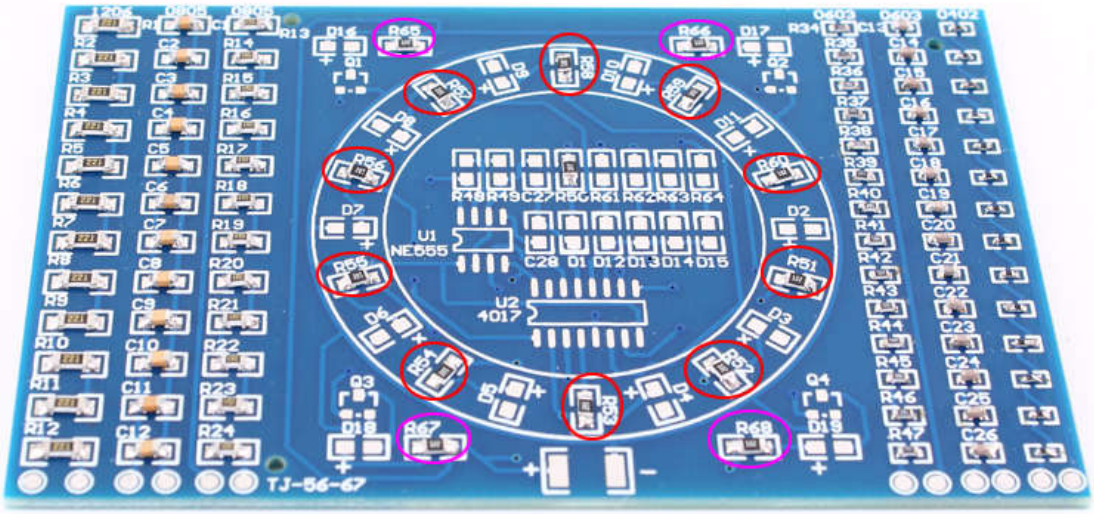


Step 6:Install 14pcs SMD 0402 Capacitor or Resistor at the rightmost column of components.

Note:0402 components are very small, please be patient to complete the installation.

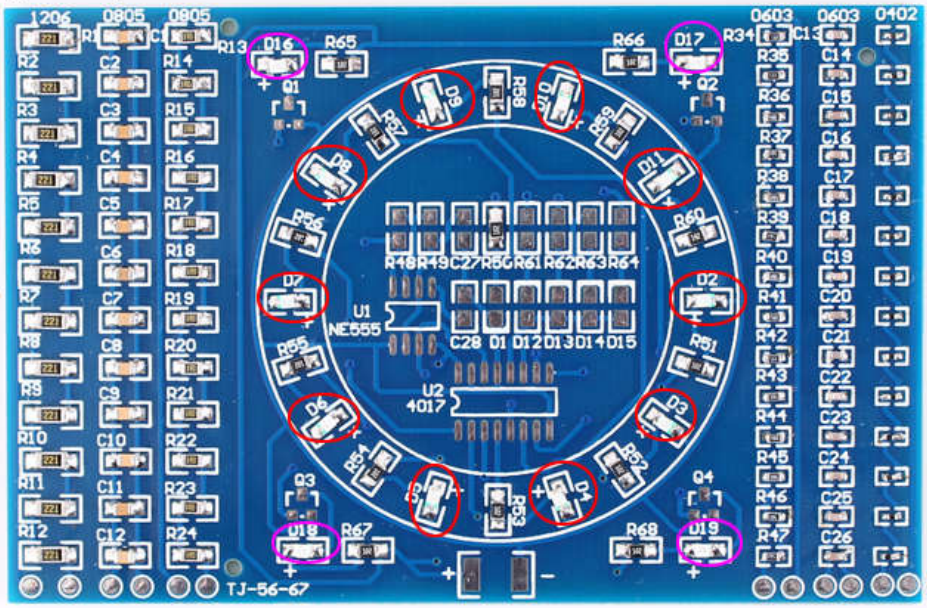


Step 7:Install 15pcs SMD 1K 0805 Resistor at R50(at center),R51~R60(at Ring), R65~R68 (at 4 corners).

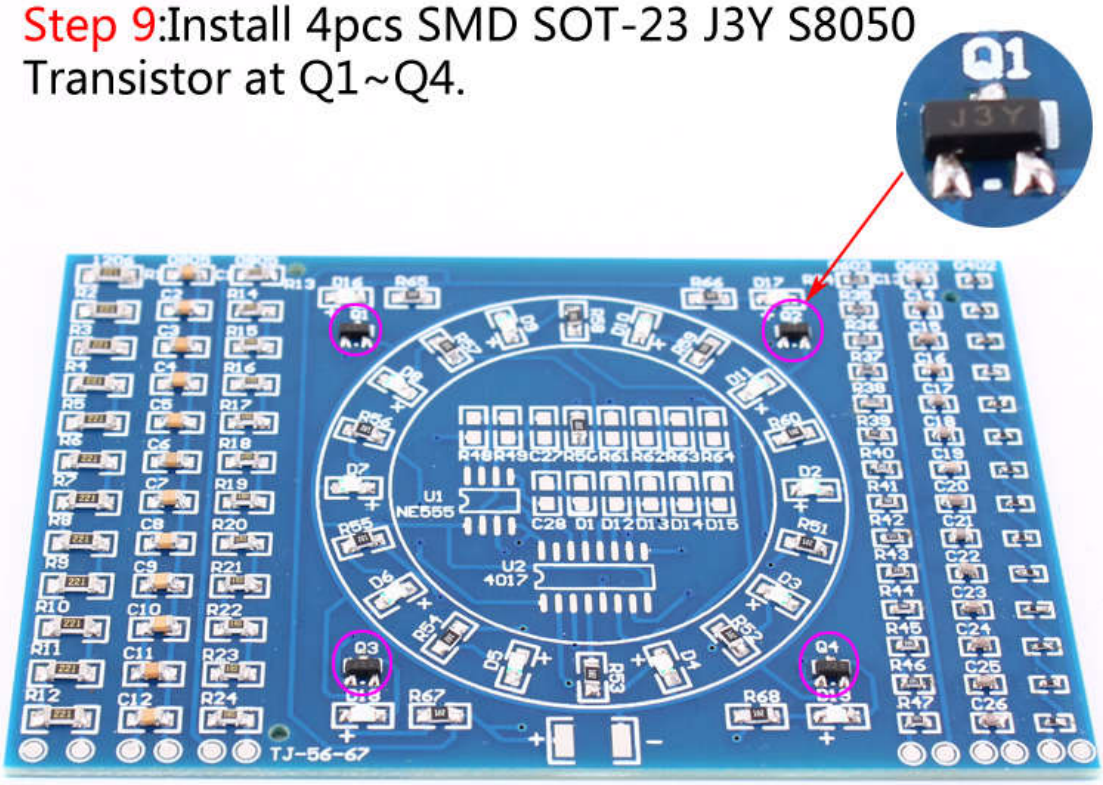


Step 8:Install 10pcs Red SMD 0805 LED at D2~D11 and 4pcs Blue SMD 0805 LED at D16~D19. Note: LED distinguishes between positive and negative, can not be installed reverse, otherwise the LED will be damaged and will not work properly. Methods to identify positive and negative: One end of the green mark is the negative. Or test positive and negative by multimeter.

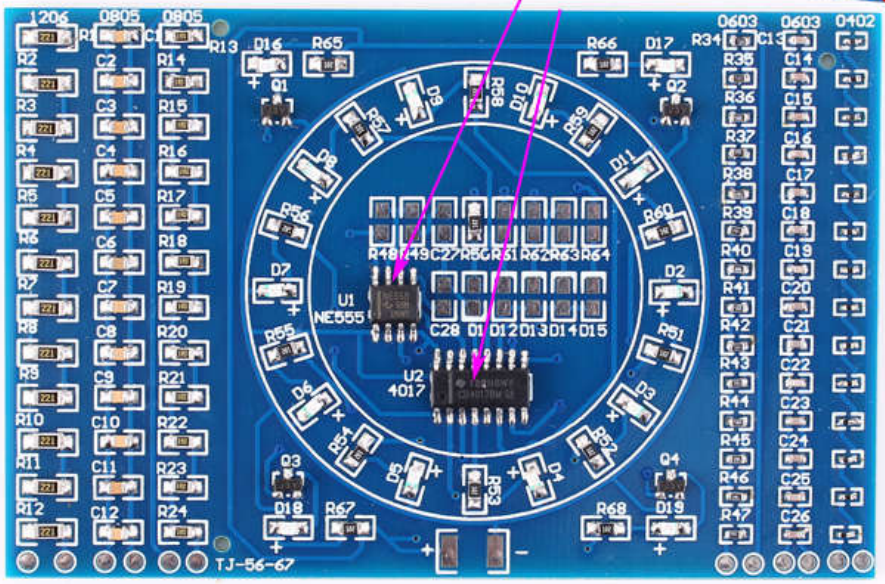
Green Mark: Negative

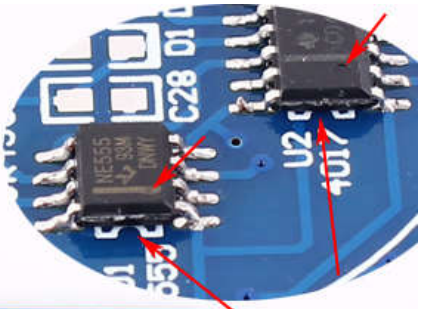


Step 9:Install 4pcs SMD SOT-23 J3Y S8050 Transistor at Q1~Q4.

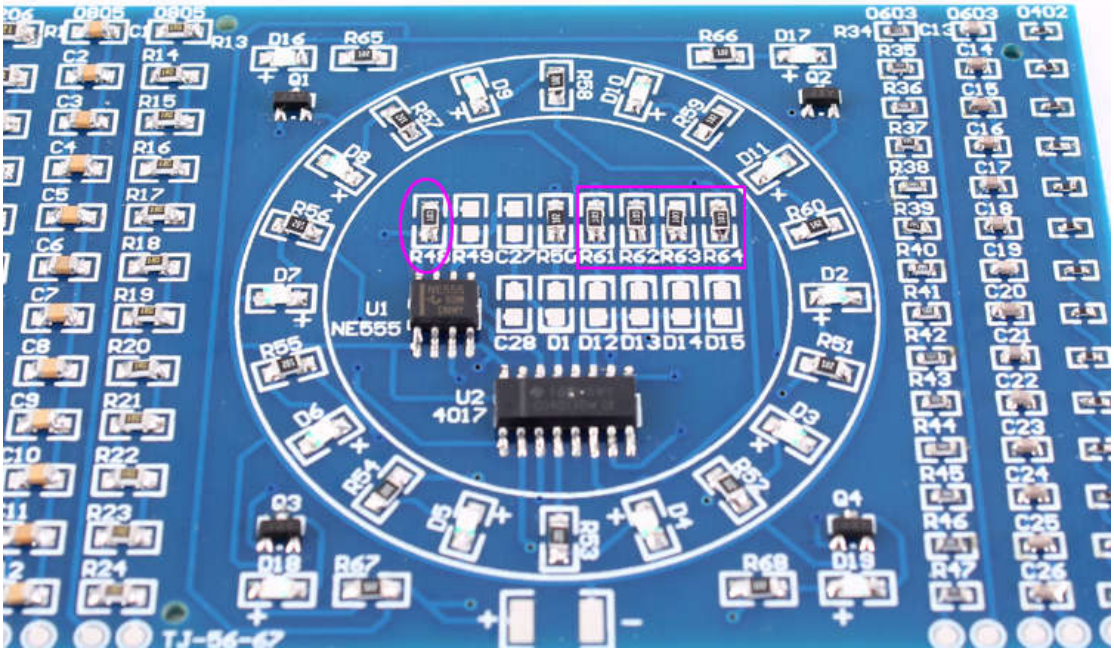


Step 10:Install 1pcs SOP-8 NE555 at U1 and 1pcs SOP-16 CD4017 at U2.Pay attention to the installation direction.



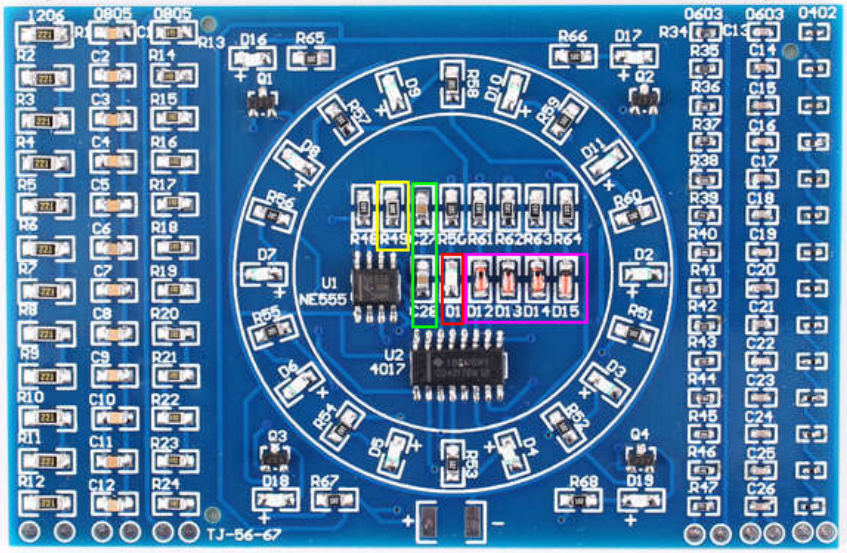


Step 11:Install 5pcs SMD 10K 0805 Resistor at R48,R61~R64.

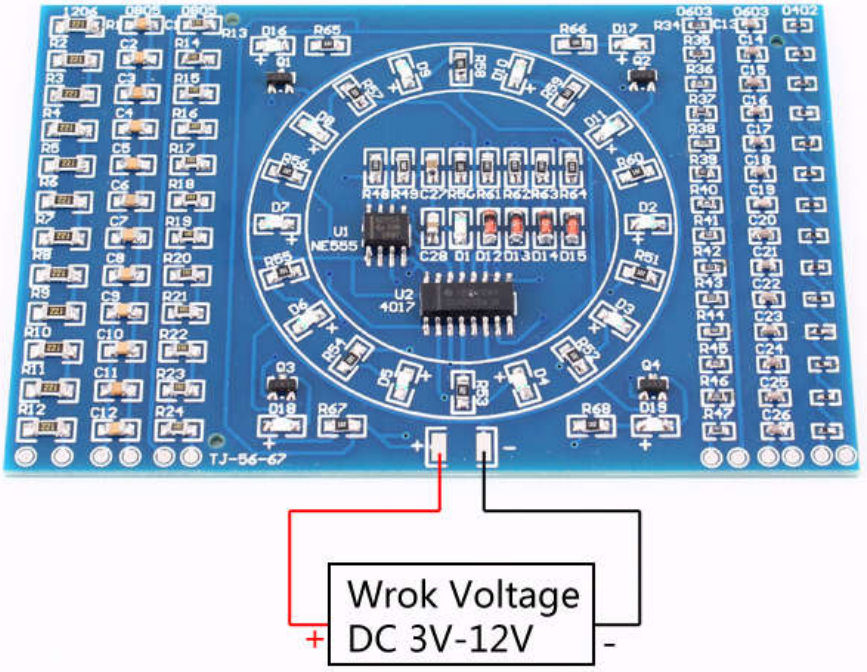


Step 12:Install 1pcs SMD 2M 0805 Resistor at R49,2pcs SMD 0.1uF 0805 Capacitor at C27,C28.4pcs SMD LL-34 1206 IN4148 diode at D12~D15.1pcs SMD Red LED at D1.

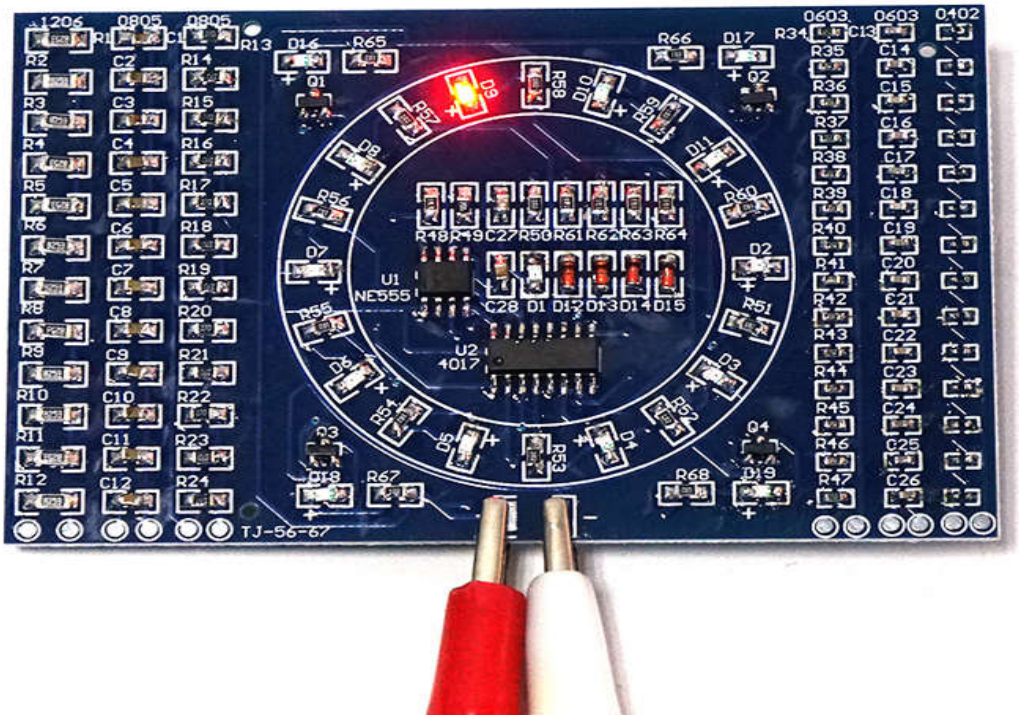
Note: Diode distinguishes between positive and negative, can not be installed reverse, otherwise the diode will be damaged and will not work properly. Methods to identify positive and negative:One end of the black mark is the negative.

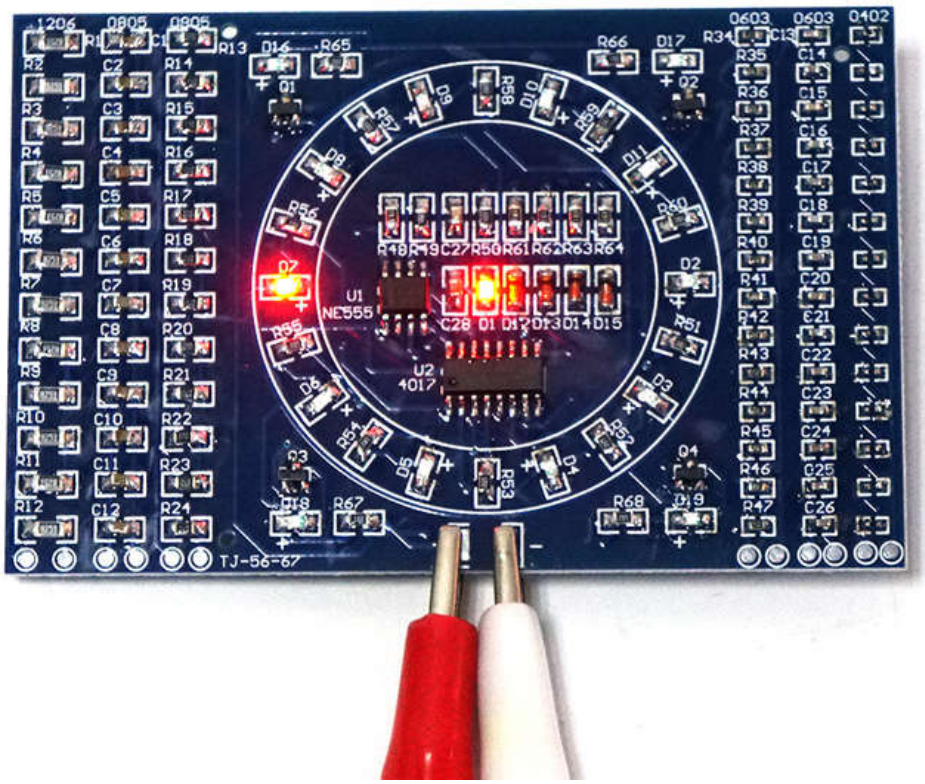


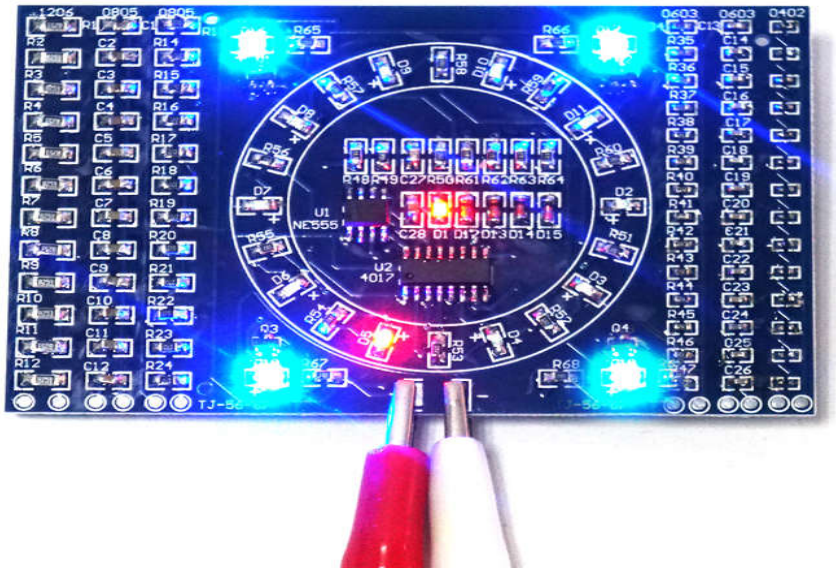
Step 13:Connect DC 3.0V-12.0V to do a test.



Ⅸ. Effects of Finished Product Display







Ⅹ. 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.

XI. 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.