ICs & Robot Gadgets
Easy Deal Easy Fun

Electronic Whack-a-Mole Game DIY Kit

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1.Introduction:

Electronic Whack-a-Mole Game DIY Kit, which can be also used as a rapid response tester.

The higher the score, the better the reaction speed. Reflexes can also be exercised with frequent such tests.

2.Feature:

1>.Practicality is very powerful to improve responsiveness

2>.Score points for each round of the game, suitable for challenging yourself

3>.Experience the passion and speed

5>.Perfect simple circuit

6>.DIY hand soldering

3.Parameter:

1>.Product Name: Electronic Whack-a-Mole Game DIY Kit

2>.Work Voltage: DC 4.5V~5.5V

3>.Display color: Red

4>.LED color: Blue

5>.Work Temperature: -40℃~85℃

6>.Work Humidity: 5%~95%RH

7>.Size(Installed): 122*72*20mm

4.Function:

1>.Press Start button on top right to start game.

2>.LED 0#~9# lights up randomly(The LED lighting time and interval lighting time are also random within a certain range)

3>.Press the corresponding button during the lighting period to get 1 point. Pressing the light after the light is off is invalid.

4>.There are a total of 15 chances with a full 15 point.

5>.The higher the score, the better the reaction speed.

6>.Left 2bit digital tube display game time in second.

7>.Right 2bit digital tube display obtained points.

5. Components List:

NO.	Component Name	PCB Marker	Parameter	QTY
1	STC89C52RC	U1	DIP-40	1
2	IC Socket	U1	DIP-40	1
3	Metal Film Resistor	R6,R7,R8,R9	4.7Kohm	4
4	Metal Film Resistor	R4-R8,R14-R18	560ohm	10
5	Metal Film Resistor	R19-R28	10Kohm	10
6	Crystal Oscillator	Y1	12MHz	1
7	Ceramic Capacitor	C4,C5	22pF	2
8	Blue Light LED	0-9	3mm	10
9	Electrolytic Capacitor	C1,C3	10uF	2
10	S9012 Transistor	Q1,Q2,Q4,Q5	TO-92	4
11	Black Button	S1,S4-S13	6*6*14mm	11
12	DC-005 Power Socket	5V IN		1
13	0.56in 2Bit Digital Tube		Red	2
14	USB Power Wire		100cm	1
15	PCB		122*72*1.6mm	1
Note:Users can complete the installation according to the PCB silk screen and component list.				

6.Installation Steps (Please be patient):

Step 1: Install 4pcs 4.7Kohm Metal Film Resistor at R6,R7,R8,R9.
Step 2: Install 10pcs 560ohm Metal Film Resistor at R4-R8,R14-R18.
Step 3: Install 10pcs 10Kohm Metal Film Resistor at R19-R28.
Step 4: Install 1pcs 12MHz Crystal Oscillator at Y1.
Step 5: Install 2pcs 22pF Ceramic Capacitor at C4,C5.

Step 6: Identify the positive(anode) and negative(cathode) lead of LED.The leads of the LED must be installed correctly, otherwise the LED cannot be turned on. Here are four methods as following:

1. According to the length of the LED lead to distinguish. The longer pin is positive(anode) lead. The shorter pin is negative(cathode) lead.

2.Identify the negative(cathode) of the LED is to look into the plastic case where one can see that the negative(cathode) is much thicker/bigger inside the plastic case than the anode lead.
3.Identify by edge of plastic case. The negative(cathode) lead of the LED should be the pin nearest the flat on the plastic case.

4.Test by 3V battery or multi-meter. The pin is positive(anode) lead which has connect to the positive of 3V if LED can light up after connect 3V power supply.(LED should not be powered directly from the 3V for a short time:less then 0.5second)
It is positive(anode) where the white mark “+” pointing to on PCB.

Step 7: Install 10pcs 3mm Blue light LED at 0~9. Note: The longer pin is positive pole which need connect to ‘+’ pad.

Step 8: Install 1pcs DIP-40 IC Socket at U1. There is a gap mark on one end of the IC Socket and there is a gap mark on PCB silk screen where the IC Socket can place on. These two marks are corresponding to each other and are used to specify the installation direction of the IC Socket.

Step 9: Install 2pcs 10uF Electrolytic Capacitor at C1,C3.Pay attention to distinguish between positive and negative.The Longer pin is positive pole. Note: The capacitor C3 needs to be placed horizontally, keep a distance of 2mm between the capacitor and the PCB when installing.

Step 10: Install 4pcs TO-92 S9012 Transistor at Q1,Q2,Q4,Q5.
Step 11: Install 11pcs 6*6*14mm Black Button at S1,S4-S13.
Step 12: Install 1pcs DC-005 Power Socket at 5V IN.

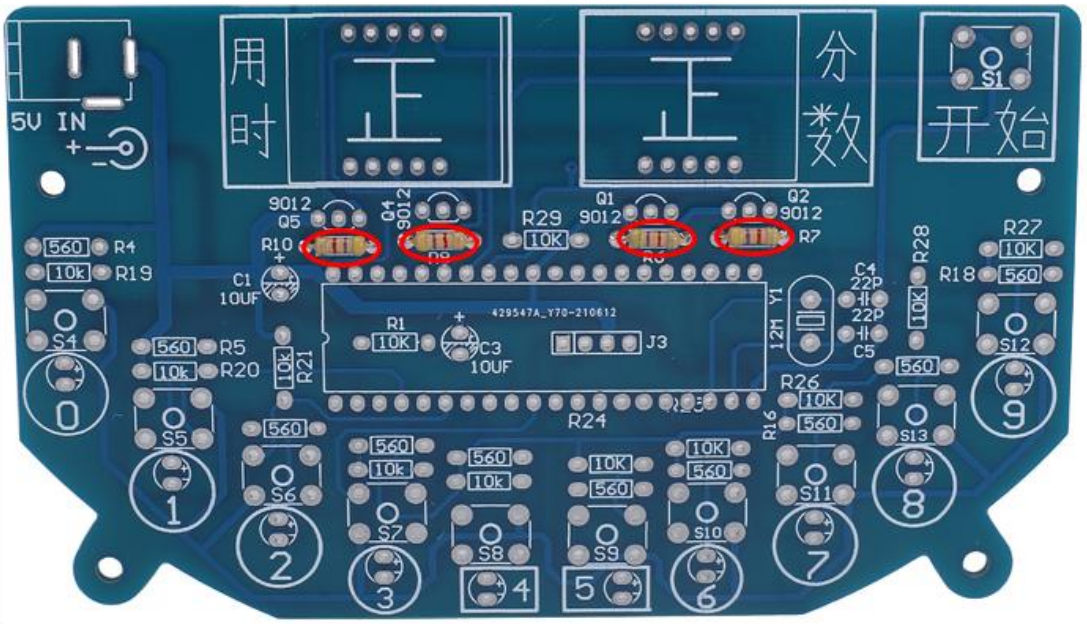
Step 13: Install 2pcs 0.56in 2Bit Digital Tube.
Note: The decimal point is on the lower line, which is used to locate the installation direction.

Step 14: Install 1pcs DIP-40 IC STC89C52RC.There is a gap mark on one end of the IC and there is a gap mark on DIP-40 IC Socket 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.

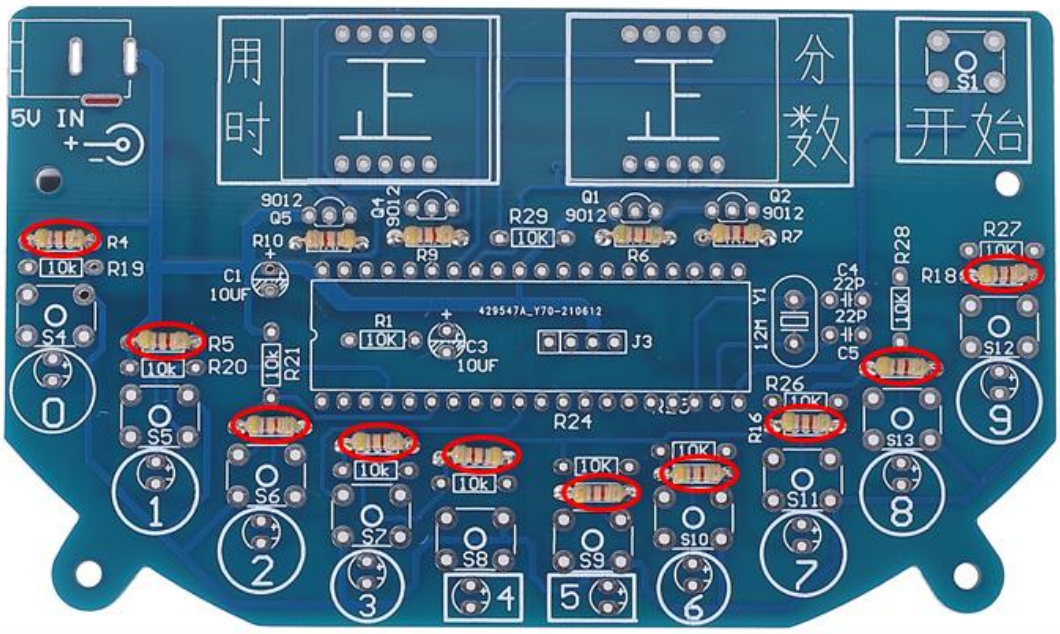
Step 15: Connect to power supply and enjoy the effect.

7.Install shown steps:

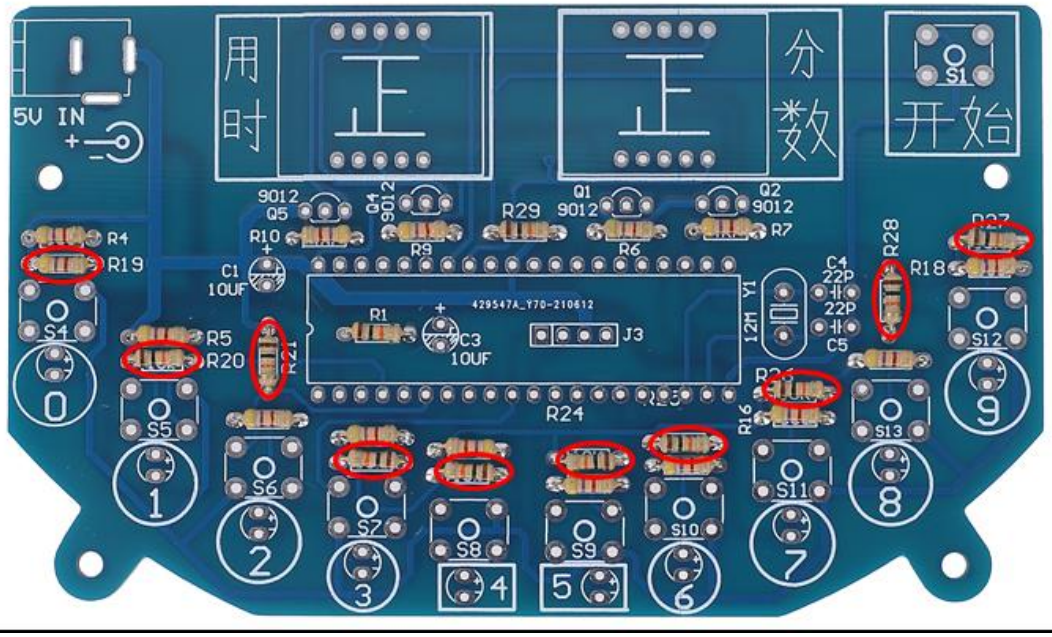
Step 1: Install 4pcs 4.7Kohm Metal Film Resistor at R6,R7,R8,R9.



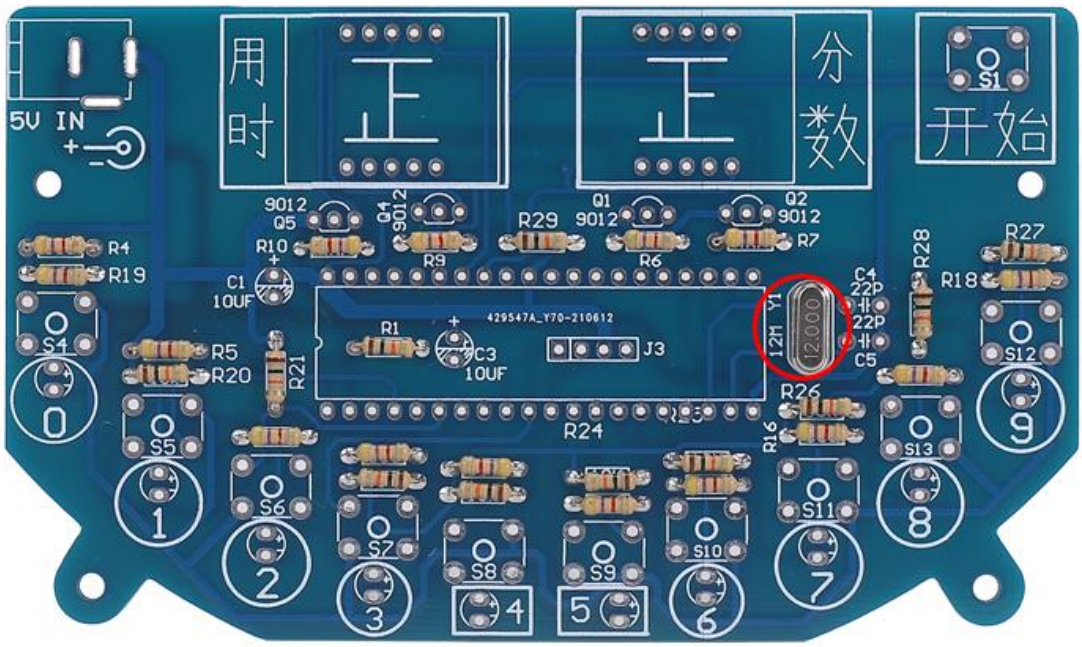
Step 2: Install 10pcs 560ohm Metal Film Resistor at R4-R8,R14-R18.



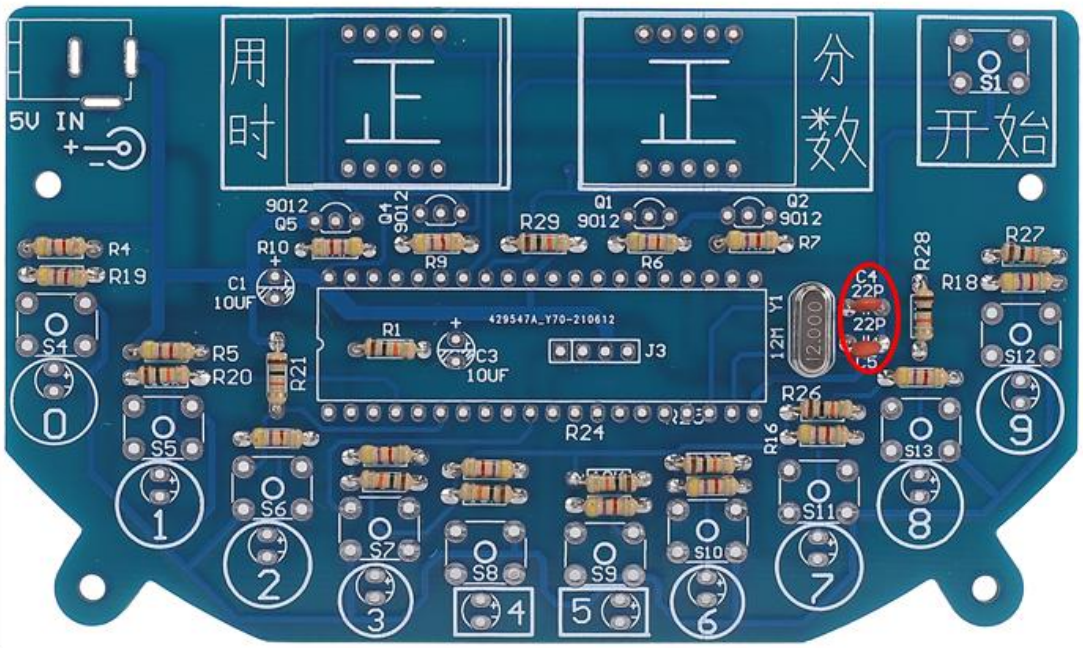
Step 3: Install 10pcs 10Kohm Metal Film Resistor at R19-R28.



Step 4: Install 1pcs 12MHz Crystal Oscillator at Y1.



Step 5: Install 2pcs 22pF Ceramic Capacitor at C4,C5.



Step 6: Identify the positive(anode) and negative(cathode) lead of LED.The leads of the LED must be installed correctly, otherwise the LED cannot be turned on.Here are four methods as following:

6.1>.According to the length of the LED lead to distinguish. The longer pin is positive(anode) lead. The shorter pin is negative(cathode) lead.

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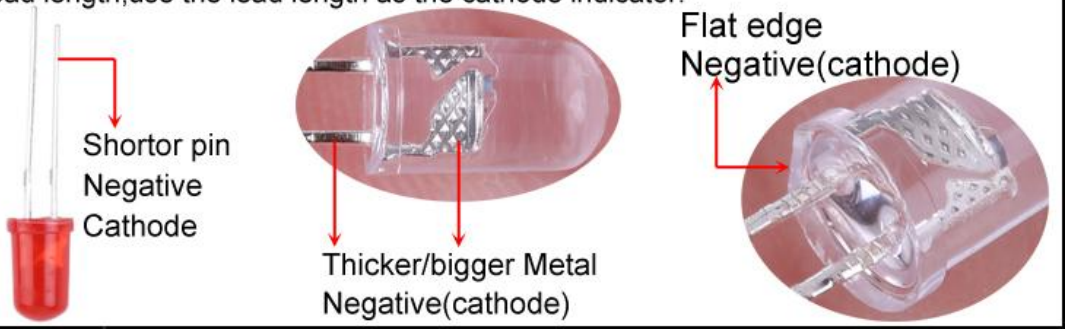
6.4>.Test by 3V battery or multimeter.The pin is positive(anode) lead which has connect to positive of 3V if LED can light up after connect 3V power supply.
(LED can not be powered directly from 3V for a short time:less then 0.5second)

6.5>.Note:If the flat on package disagrees with other indicators(short lead,large cathode lead end), then other indicators take priority. I.e. if the flat disagrees with the lead length,use the lead length as the cathode indicator.



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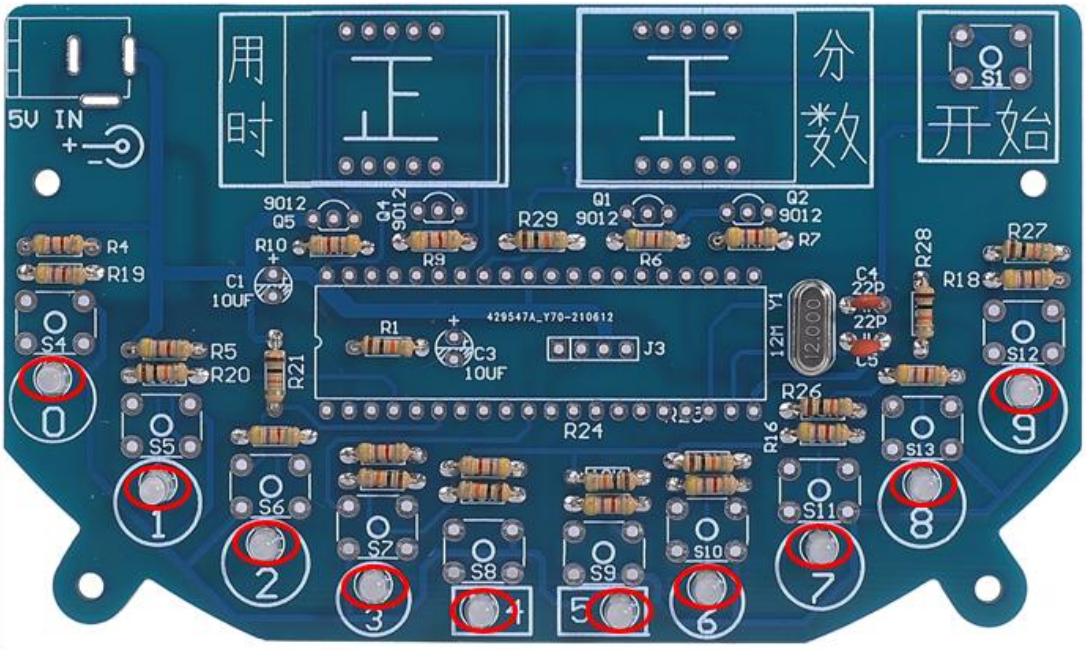
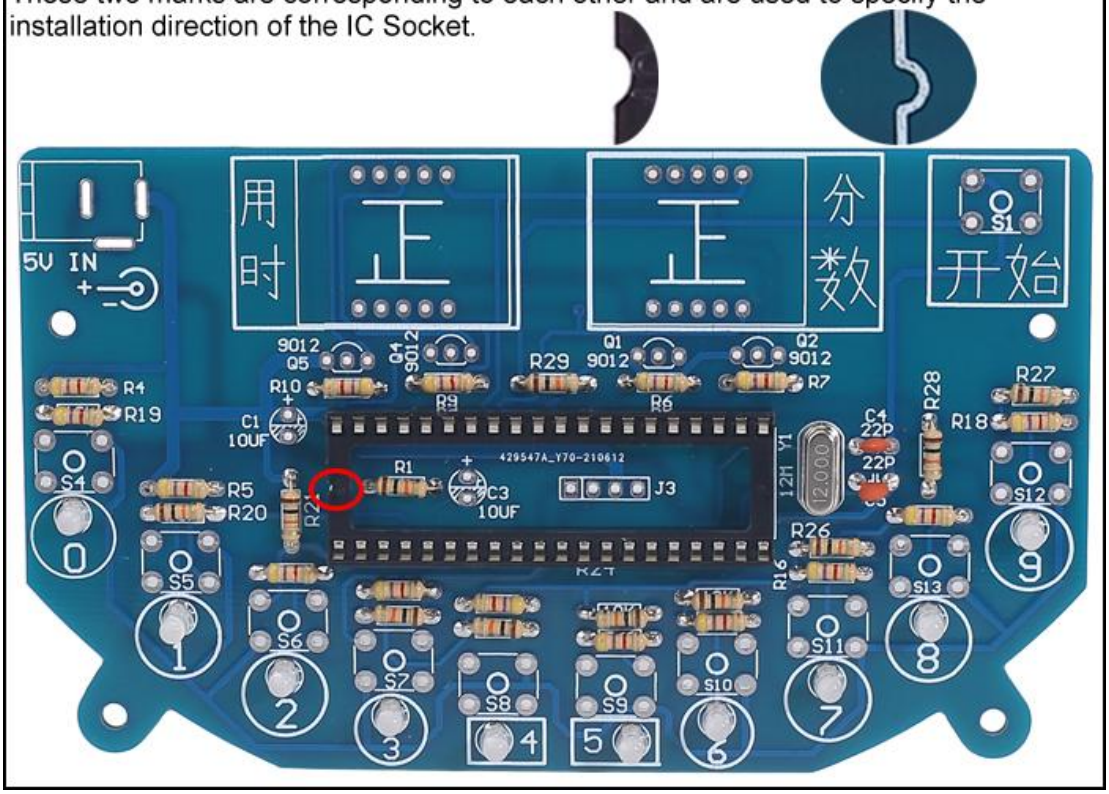


Step 8: Install 1pcs DIP-40 IC Socket at U1. There is a gap mark on one end of the IC Socket and there is a gap mark on PCB silk screen where the IC Socket can place on. These two marks are corresponding to each other and are used to specify the installation direction of the IC Socket.



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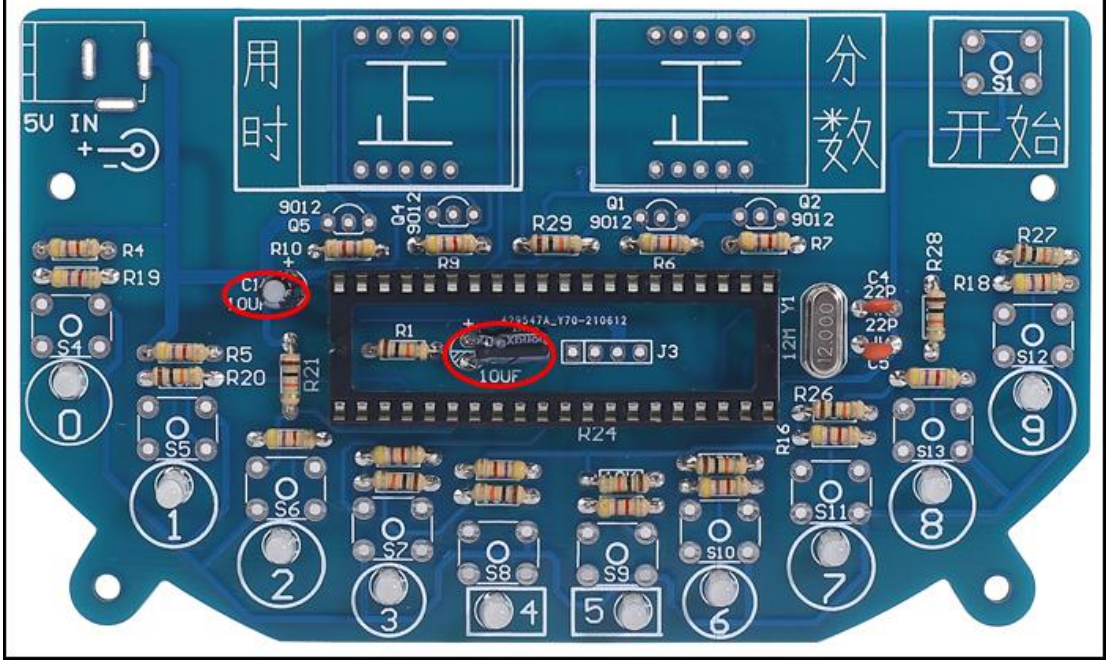

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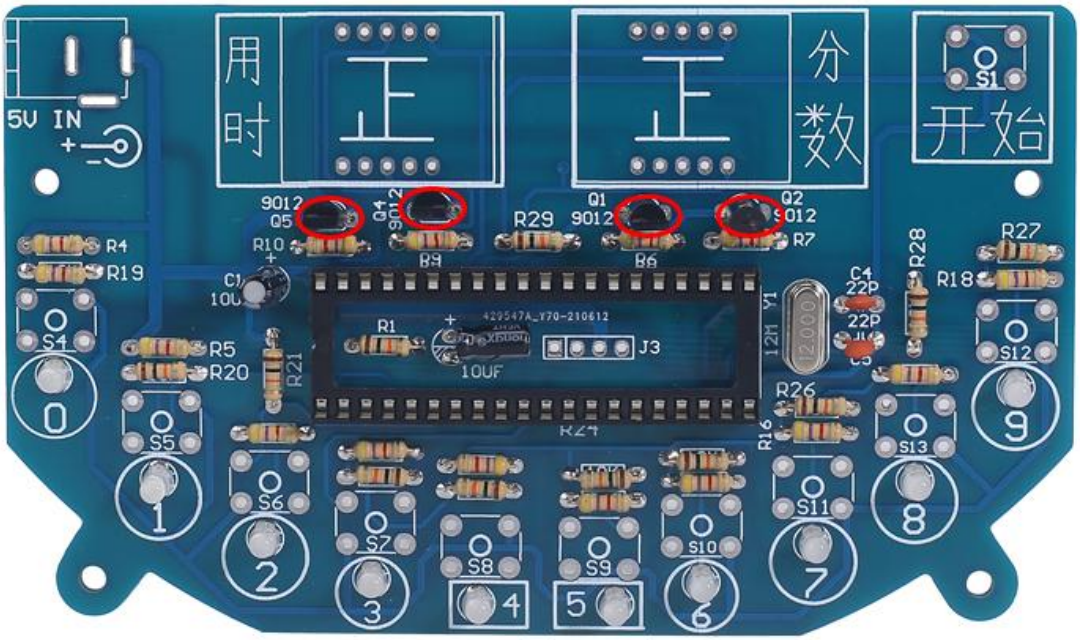
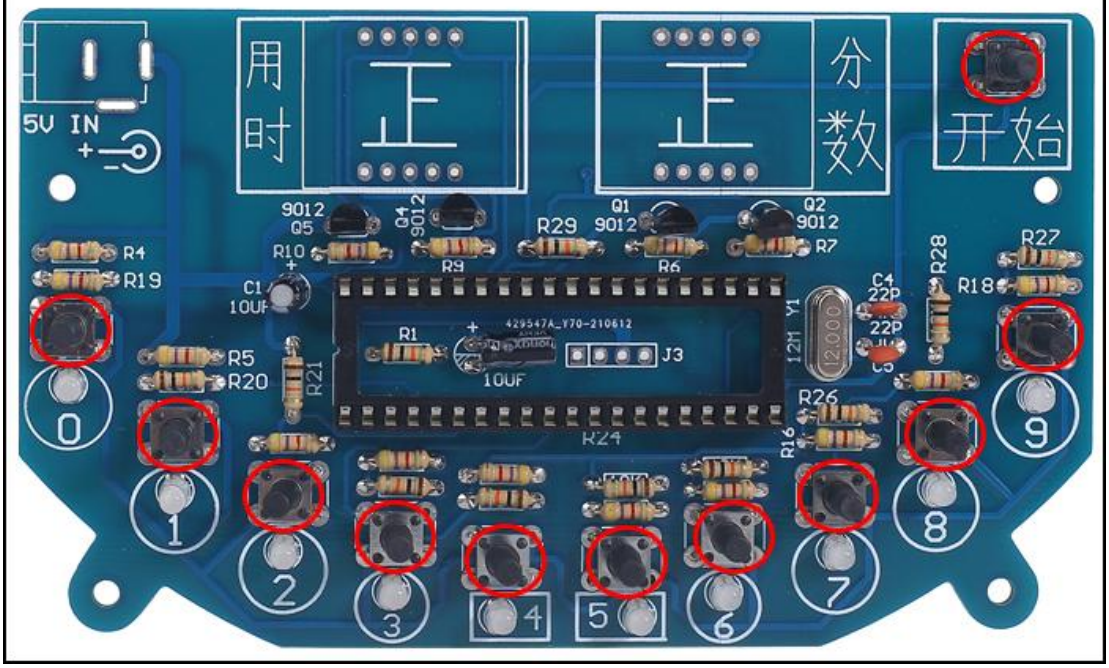
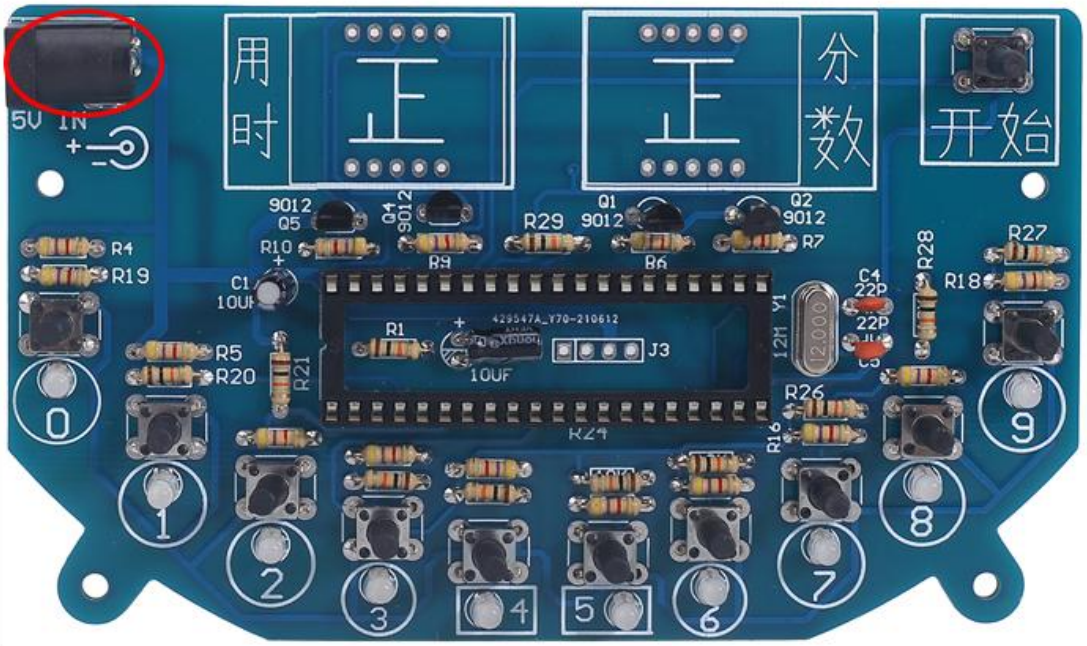


Step 11: Install 11pcs 6*6*14mm Black Button at S1,S4-S13.



Step 12: Install 1pcs DC-005 Power Socket at 5V IN.



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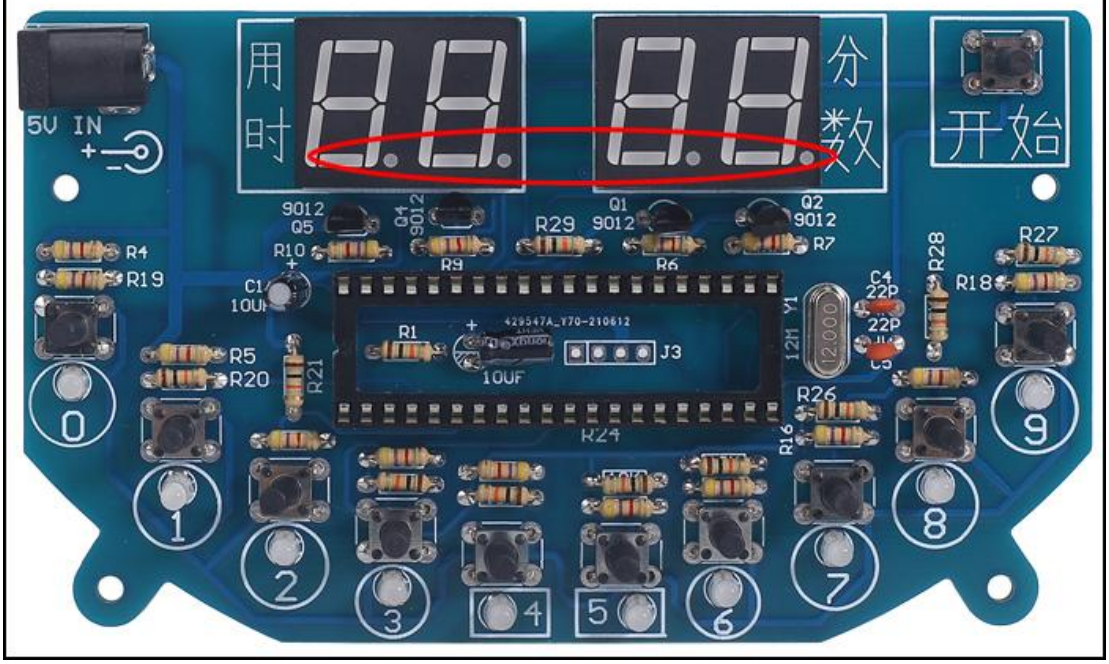

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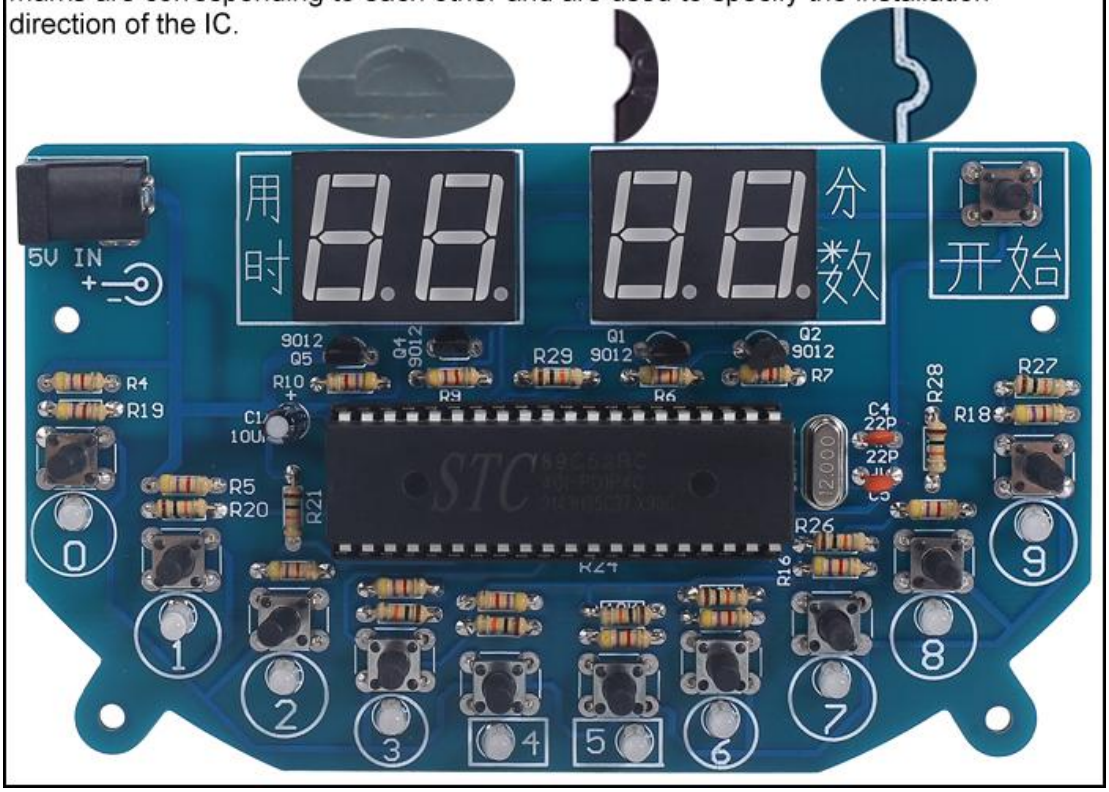

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