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ICs & Robot Gadgets
Easy Deal Easy Fun

Memory Training Game Machine DIY Kit

1.Introduction:

It is a Memory Training Game Machine DIY Kit.

After starting the game, it will flash the LED once, and the player needs to press the corresponding buttons in sequence, and then enter the next level when it is completely correct.

The larger the level, the more flashing LED, the more difficult the game.

It can be used to train the memory of the player, up to 99 LED can be flashed in sequence, challenge it, and you will train to achieve a super memory.

It is a very interesting DIY electronic product which enables users to understand the circuit more clearly and learn welding skills.

2.Feature:

✓Sound and LED color prompt
✓99 super training levels
✓Auto power saving mode
✓Simple circuit
✓DIY soldering project

3.Parameter:

Product Name:Memory Training Game Machine DIY Kit
Work Voltage:DC 9V
Game level:99
Work Temperature:-20℃~85℃
Work Humidity:5%~85%RH
Size(Installed):103*65*22mm

4.Use Steps:

1.Press ‘START’ button to start game.
2.The system displays a set of colors each time, and then user can press the corresponding buttons in the correct order to indicate that the level is passed successful.
3.The system adds a color by itself at next level to gradually increase the difficulty of the game.
4.The game will restart after failure.
5.Every time the game is restarted, the LED flashing sequence for each level is random.
6.Left 2bit screen ‘SCORE’ display current level.
7.Right 2bit screen ‘BEST’ display the highest historical level.
8.Automatic shut-down after 50second without operation.

5.Components List:

NO.	Component Name	PCB Marker	Parameter	QTY
1	Metal Film Resistor	R1-R4,R7-R10	100ohm	8
2	Metal Film Resistor	R5,R6	10Kohm	2
3	1N4148 Diode	D5,D6	DO-35	2
4	F5 Red/Green/Yellow/Blue LED	D1-D4	5mm	4
5	Ceramic Capacitor	C1-C3	0.1uF 104	3
6	Electrolytic Capacitor	C4	470uF	1
7	Electrolytic Capacitor	C5	10uF	1
8	S8550 Transistor	Q1	TO-92	1
9	S9013 Transistor	Q2	TO-92	1
10	HT7550-1 Voltage regulator	U1	TO-92	1
11	1.7mm Self-tapping screw			5
12	Speaker Wire(Random Color)		10cm	2
13	9V Battery Socket			1
14	2Bit Digital Tube	LED1,LED2	Red	2
15	Button			4
16	8ohm 0.5W Speaker	LS1	D28mm	1
17	STC15W404AS IC	U2	DIP-28	1
18	IC Socket	U2	DIP-28	1
19	NY3P Music IC(Installed)	U3	SOP-8	1
20	Black Box			1
21	PCB		95*60*1.6mm	1
Note:Users can complete the installation according to the PCB silk screen and component list.				

6.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(3s), otherwise damage 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.

7.Installation Steps(Please be patient):

Step 1: Make sure SOP-8 NY3P Music IC has been installed on PCB.

Step 2: Install 8pcs 100ohm Metal Film Resistor at R1-R4,R7-R10.

Step 3: Install 2pcs 10Kohm Metal Film Resistor at R5,R6.

Step 4: Install 1pcs DO-35 1N4148 Diode at D5,D6.

Pay attention to the installation direction. Note: The black mark on Diode and the white mark on PCB are corresponding.

Step 5: Install 1pcs DIP-28 IC Socket at MCU.There is a mark(notch) on one end of the IC Socket and there is a mark(curved silk screen printing) on PCB 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 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 5 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.

6.2.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.

6.3.Identify by edge of plastic case.The negative(cathode) lead of the LED should be the pin nearest the flat on the plastic case.

6.4.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)

6.5.It is positive(anode) where the white mark “+” pointing to on PCB.

Step 7: Install 4pcs 5mm Red/Green/Yellow/Blue LED at D1-D4. Note: The longer pin connect to ‘+’ pad. LED color be placed randomly.

Step 8: Install 3pcs 0.1uF 104 Ceramic Capacitor at C1-C3.

Step 9: Install 1pcs TO-92 S8550 Transistor at Q1.

Step 10: Install 1pcs TO-92 S9013 Transistor at Q2.

Step 11: Install 1pcs TO-92 HT7550-1 Voltage regulator at U1.

Step 12: Install 1pcs 470uF Electrolytic Capacitor at C4. Note: Pay attention to distinguish between positive and negative. The Longer pin is positive pole.

Step 13: Install 1pcs 10uF Electrolytic Capacitor at C5. Note: Pay attention to distinguish between positive and negative. The Longer pin is positive pole.

Step 14: Install 2pcs Red 2Bit Digital Tube at LED1,LED2. Pay attention to installation direction.

Step 15: Install 1pcs DIP-28 IC STC15W404AS at U2.There is a mark(notch) on one end of the IC and there is a mark(curved silk screen printing) 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 16: Connect 2pcs wire from 8ohm 0.5W Speaker to LS1 on PCB. The speaker does not need to distinguish between positive and negative, so the wire color is free to connect.

Step 17: Connect 9V Battery Socket to PCB on '+' and '-'. Red is positive pole to '+'.

Step 18: Use a plastic bag to cover the speaker to avoid that the metal on the surface of the speaker directly touches the PCB pad, which may cause a short circuit.

Step 19: Place speaker on case and fix PCB on case by 1pcs 1.7mm Self-tapping screw.

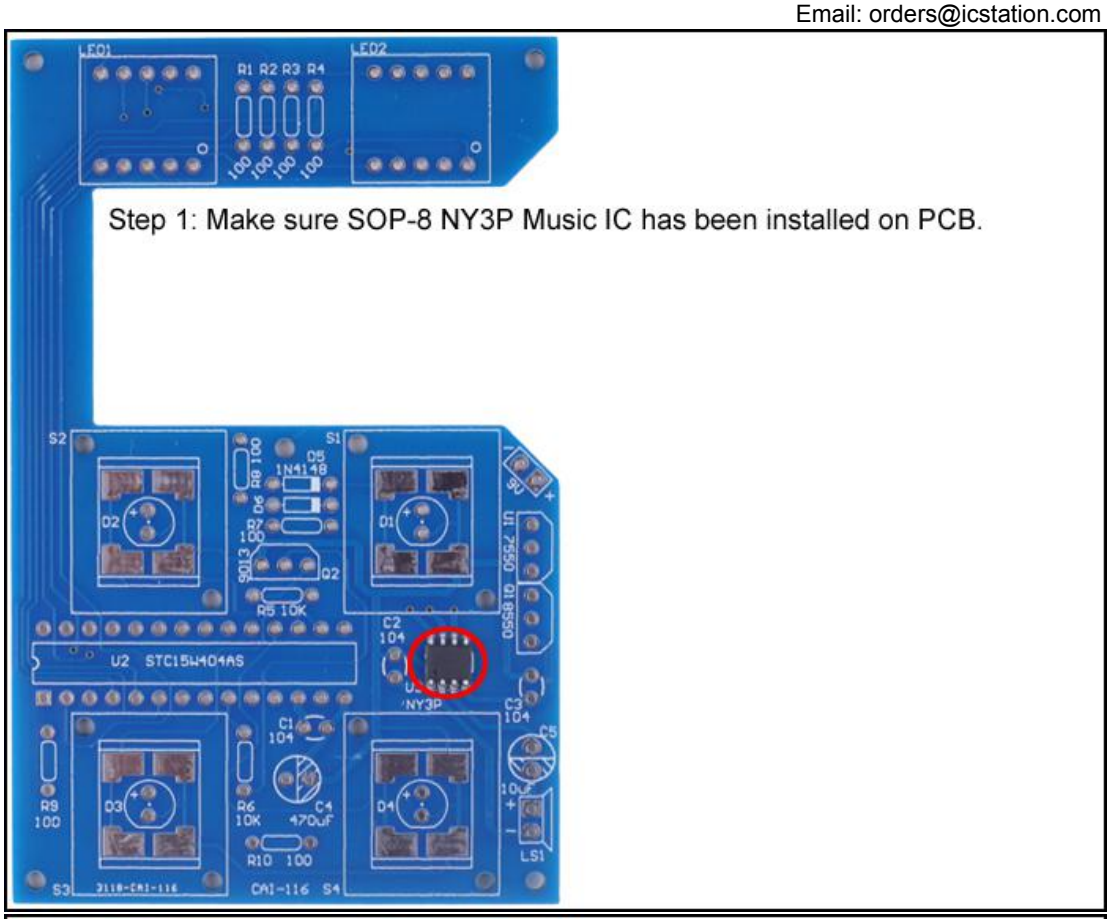
Step 20: Install 1pcs 9V 6F22 battery. Note:Users need to bring your own battery which not include in package.

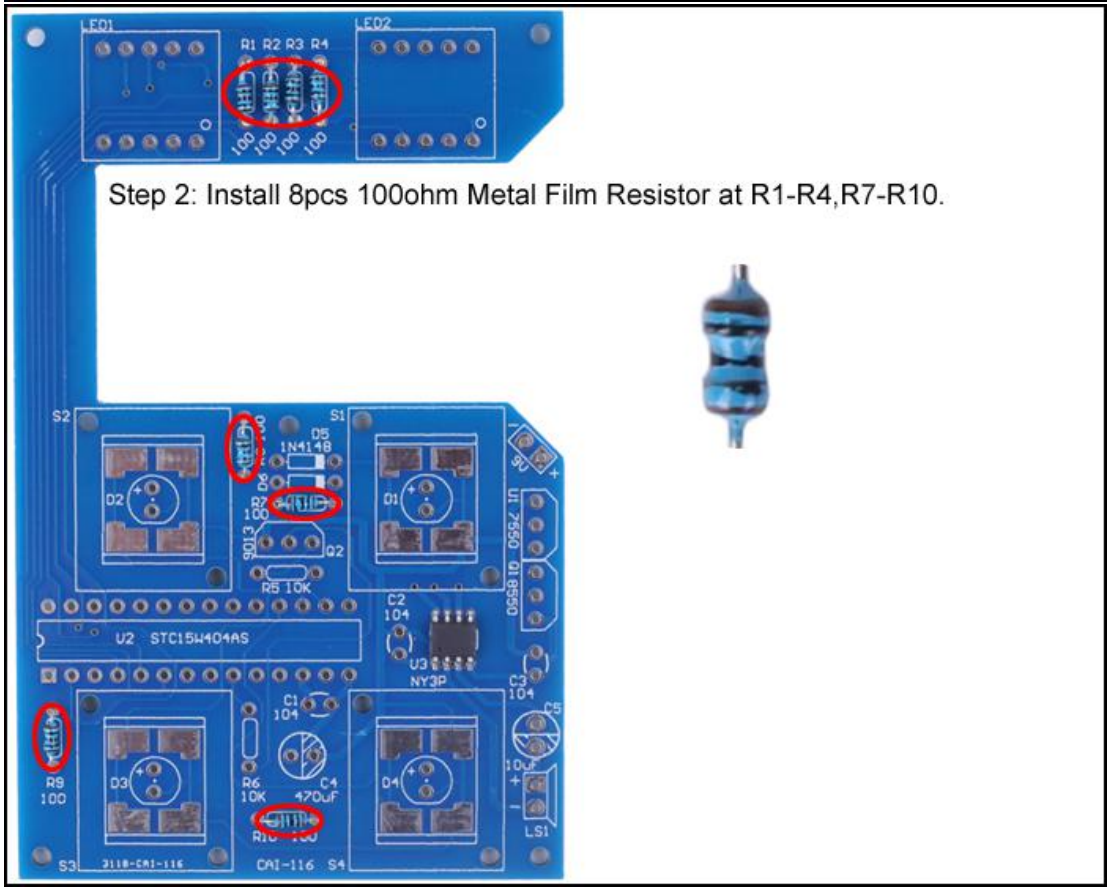
Step 21: Place 4pcs Button on LED. Just need place and no need to fix for now.

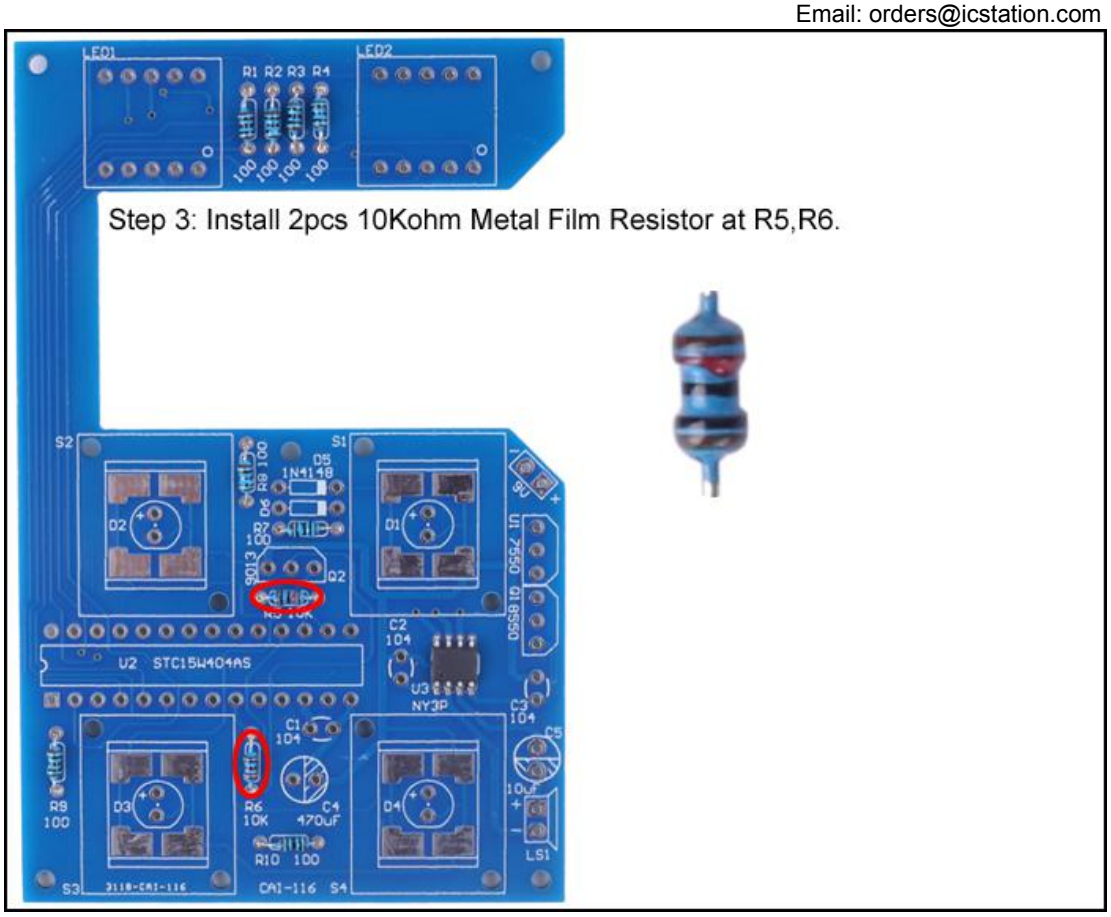
Step 22: Install another case which also can fix buttons.

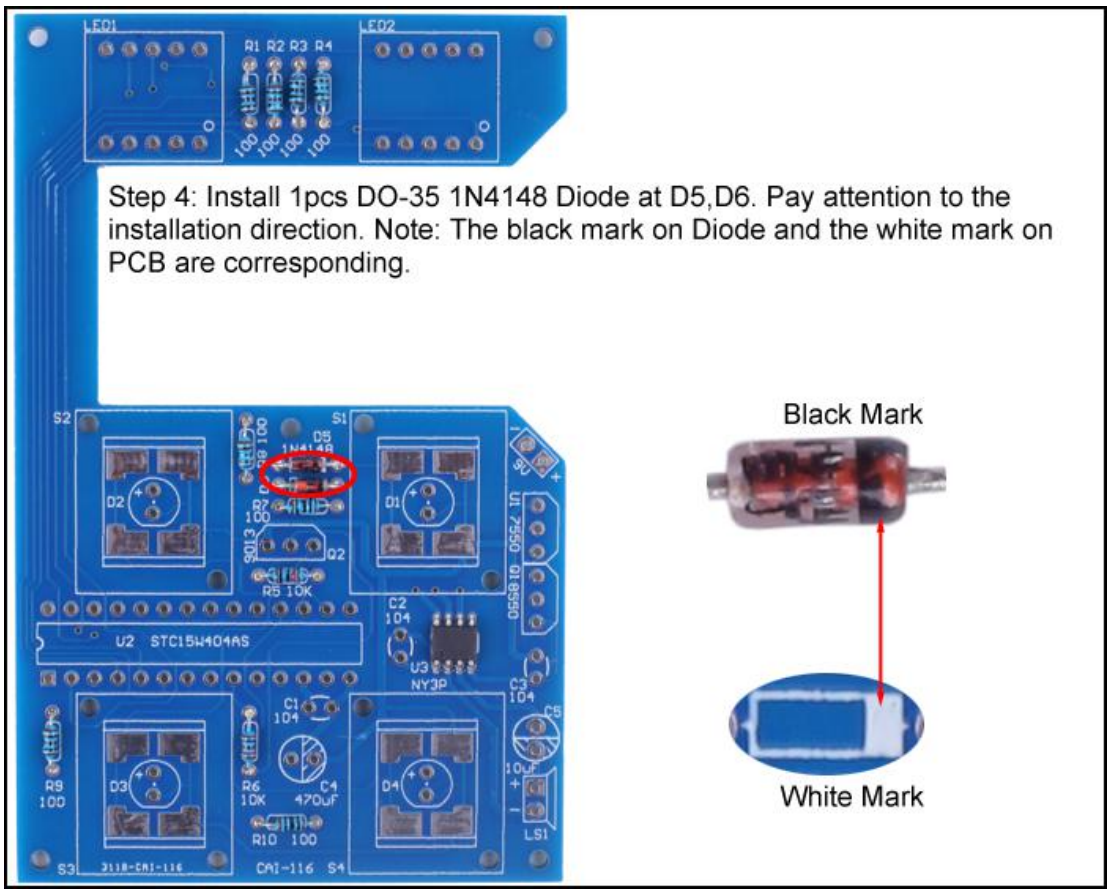
Step 23: Press 'START' button to game and exercising your memory.

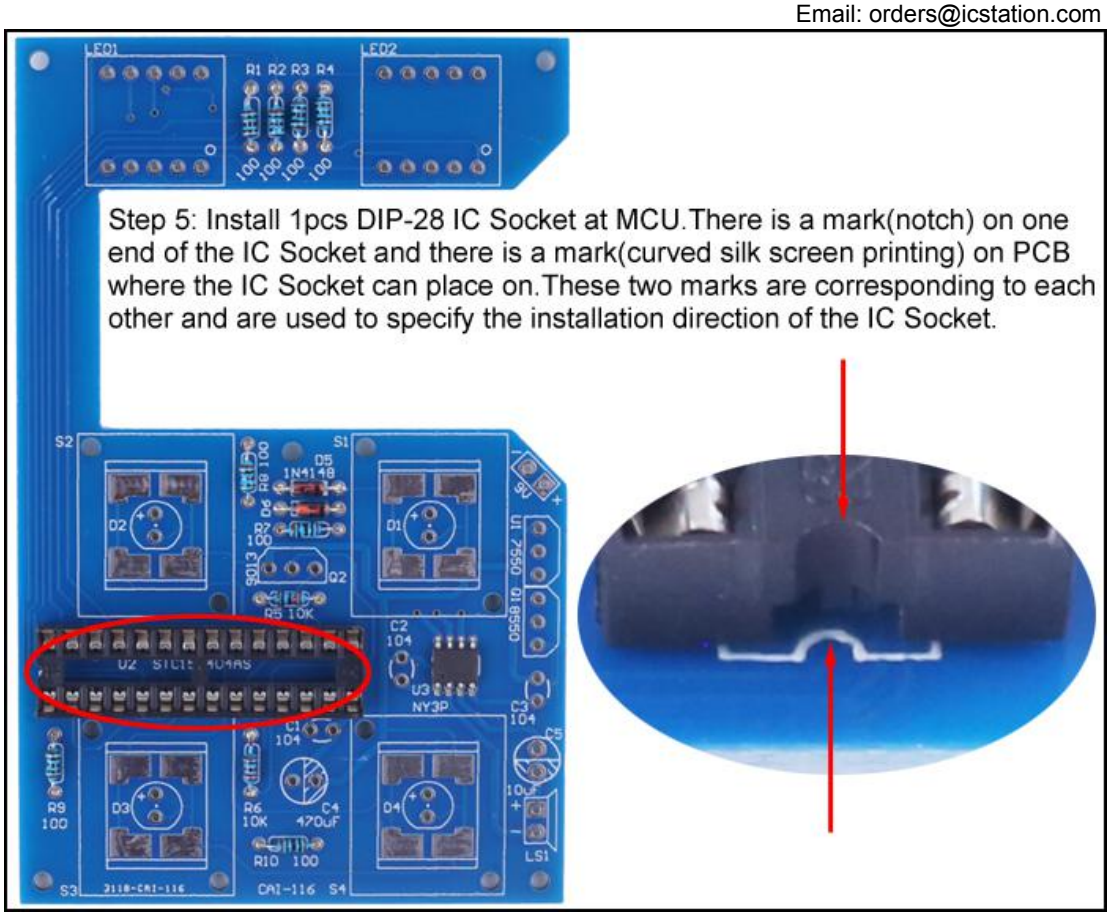
8.Install shown steps:


Step 1: Make sure SOP-8 NY3P Music IC has been installed on PCB.


Step 2: Install 8pcs 100ohm Metal Film Resistor at R1-R4,R7-R10.


Step 3: Install 2pcs 10Kohm Metal Film Resistor at R5,R6.


Step 4: Install 1pcs DO-35 1N4148 Diode at D5,D6. Pay attention to the installation direction. Note: The black mark on Diode and the white mark on PCB are corresponding.
Black Mark
White Mark



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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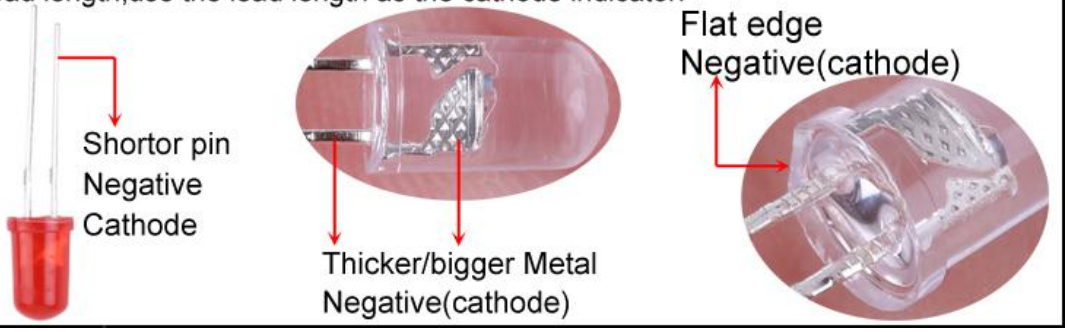
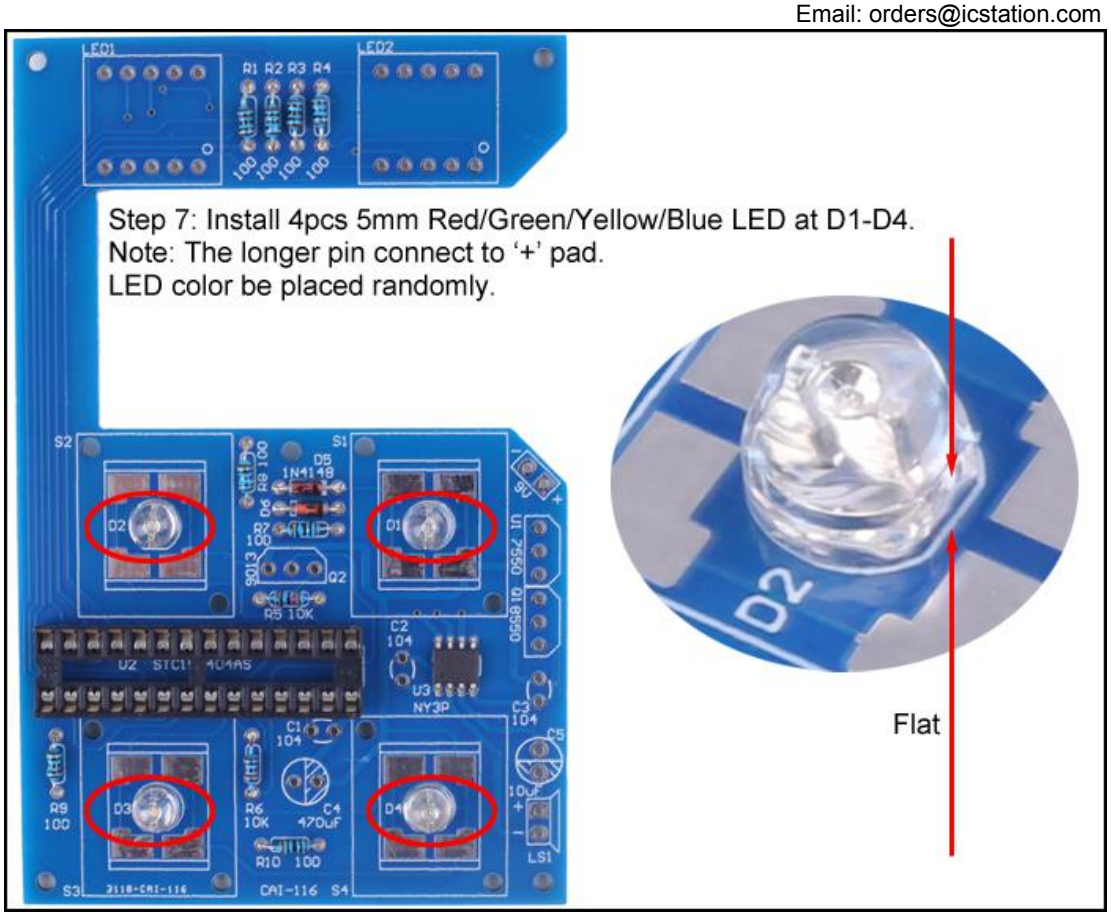
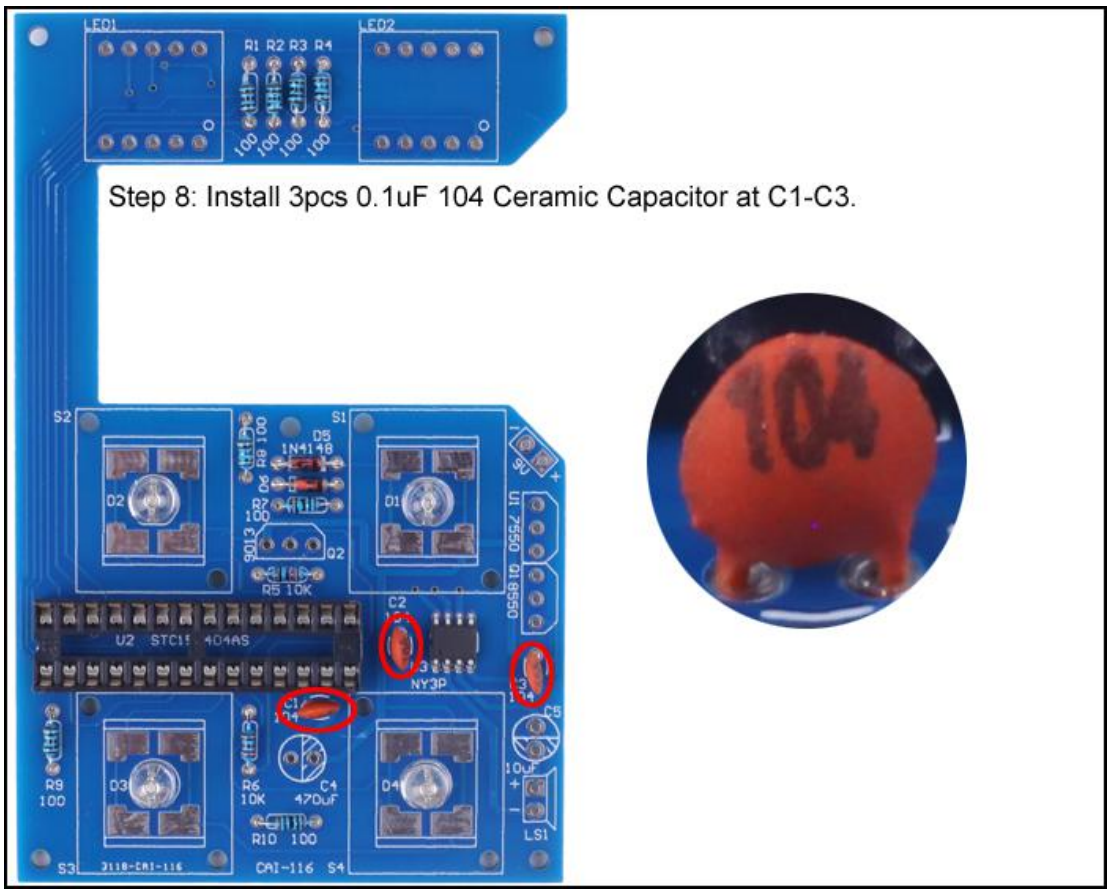
6.3>.Identify by edge of plastic case.The negative(cathode) lead of the LED should be the pin nearest the flat on the plastic case.

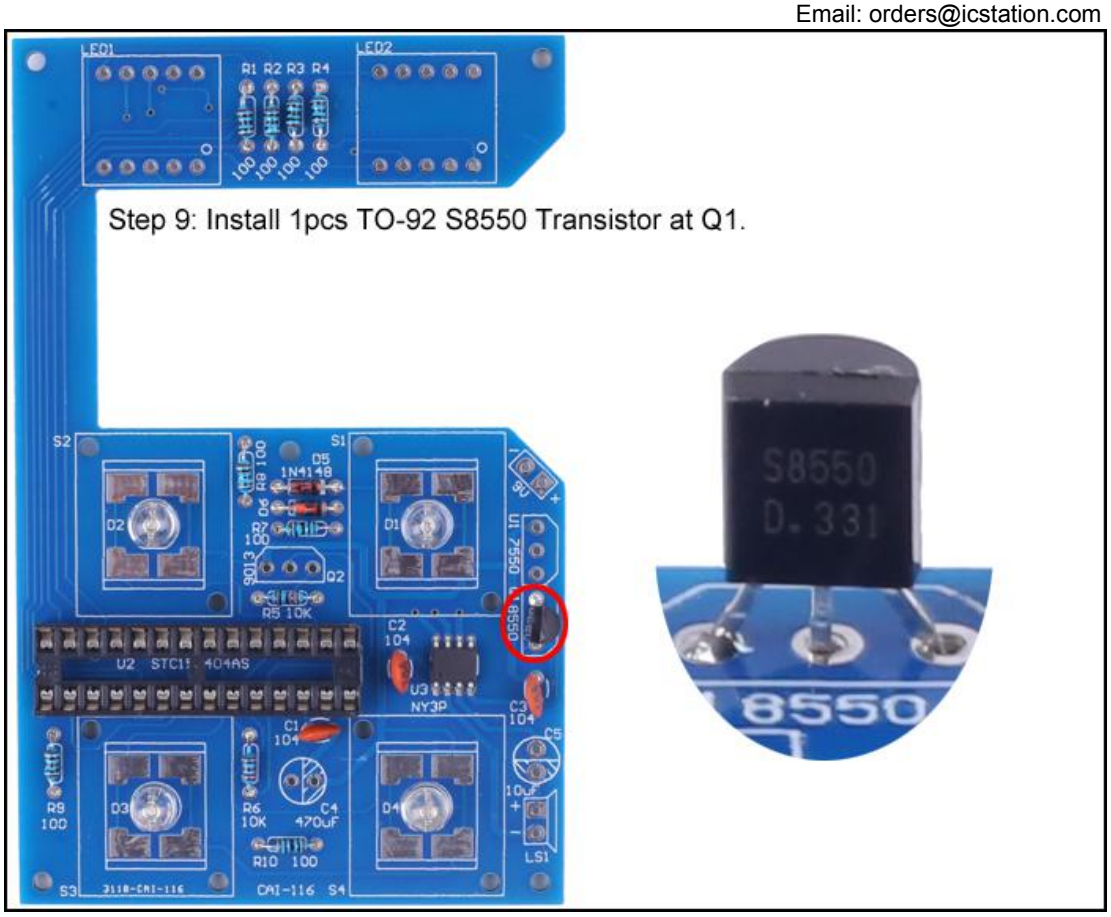
6.4>.Test by 3V battery or multimeter.The pin is positive(anode) lead which has connect to positive of 3V if LED can light up after connect 3V power supply.
(LED can not be powered directly from 3V for a short time:less then 0.5second)

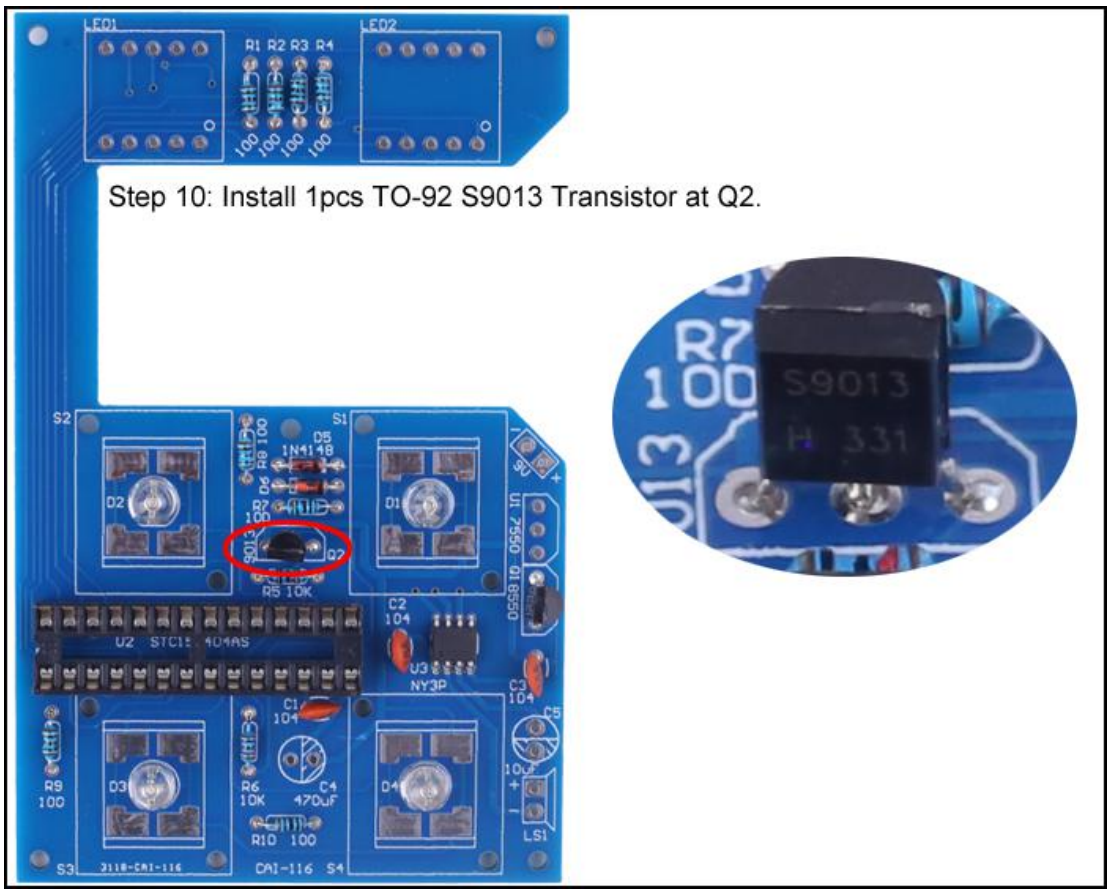
6.5>.Note:If the flat on package disagrees with other indicators(short lead,large cathode lead end), then other indicators take priority. I.e. if the flat disagrees with the lead length,use the lead length as the cathode indicator.

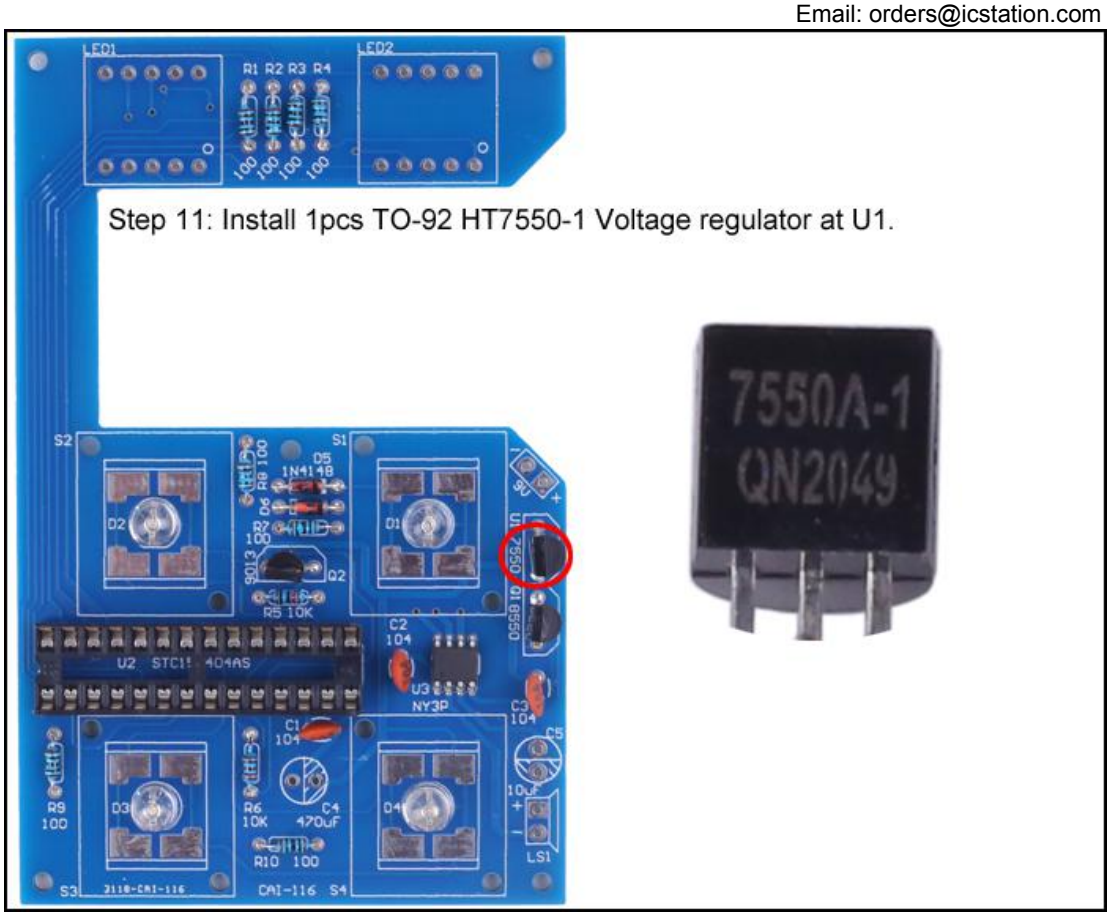


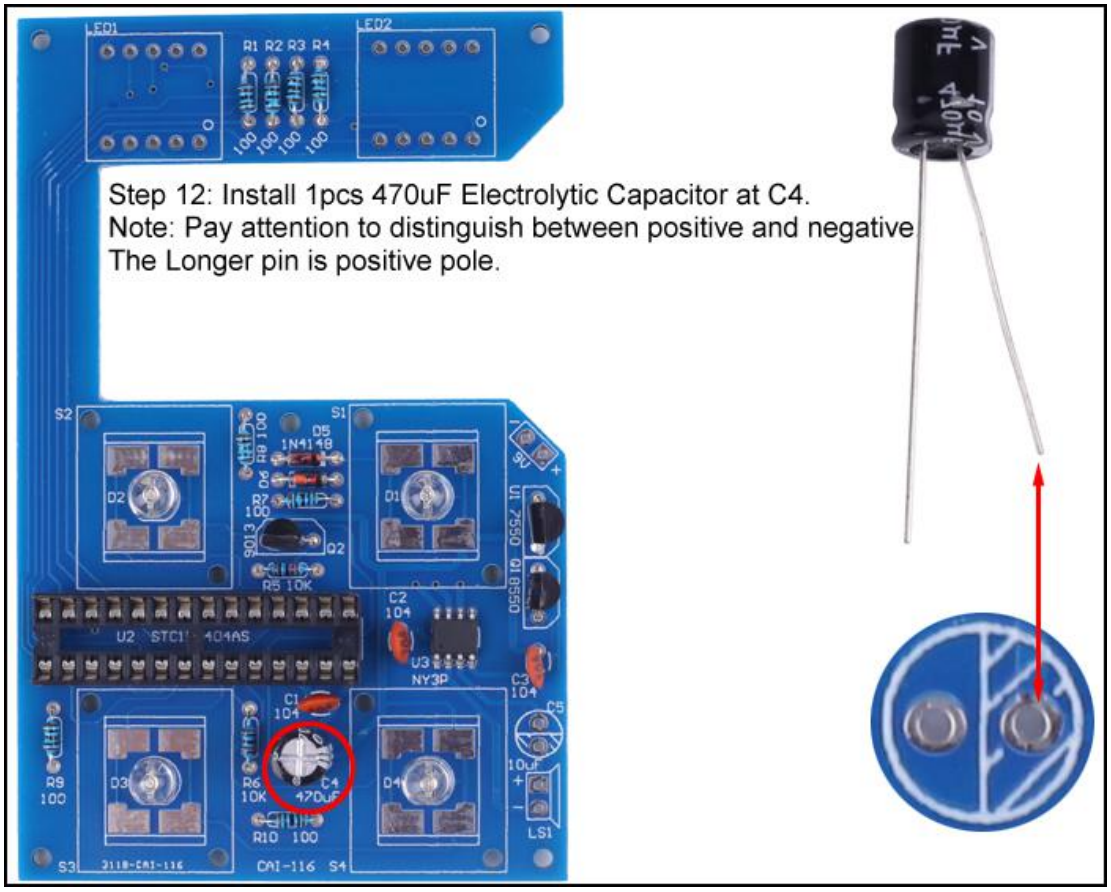

Step 7: Install 4pcs 5mm Red/Green/Yellow/Blue LED at D1-D4.
Note: The longer pin connect to '+' pad.
LED color be placed randomly.
D2
Flat


Step 8: Install 3pcs 0.1uF 104 Ceramic Capacitor at C1-C3.
104


Step 9: Install 1pcs TO-92 S8550 Transistor at Q1.
S8550
D-331
8550


Step 10: Install 1pcs TO-92 S9013 Transistor at Q2.
R7
100
S9013
H 331


Step 11: Install 1pcs TO-92 HT7550-1 Voltage regulator at U1.
7550A-1
QN2049


Step 12: Install 1pcs 470uF Electrolytic Capacitor at C4.
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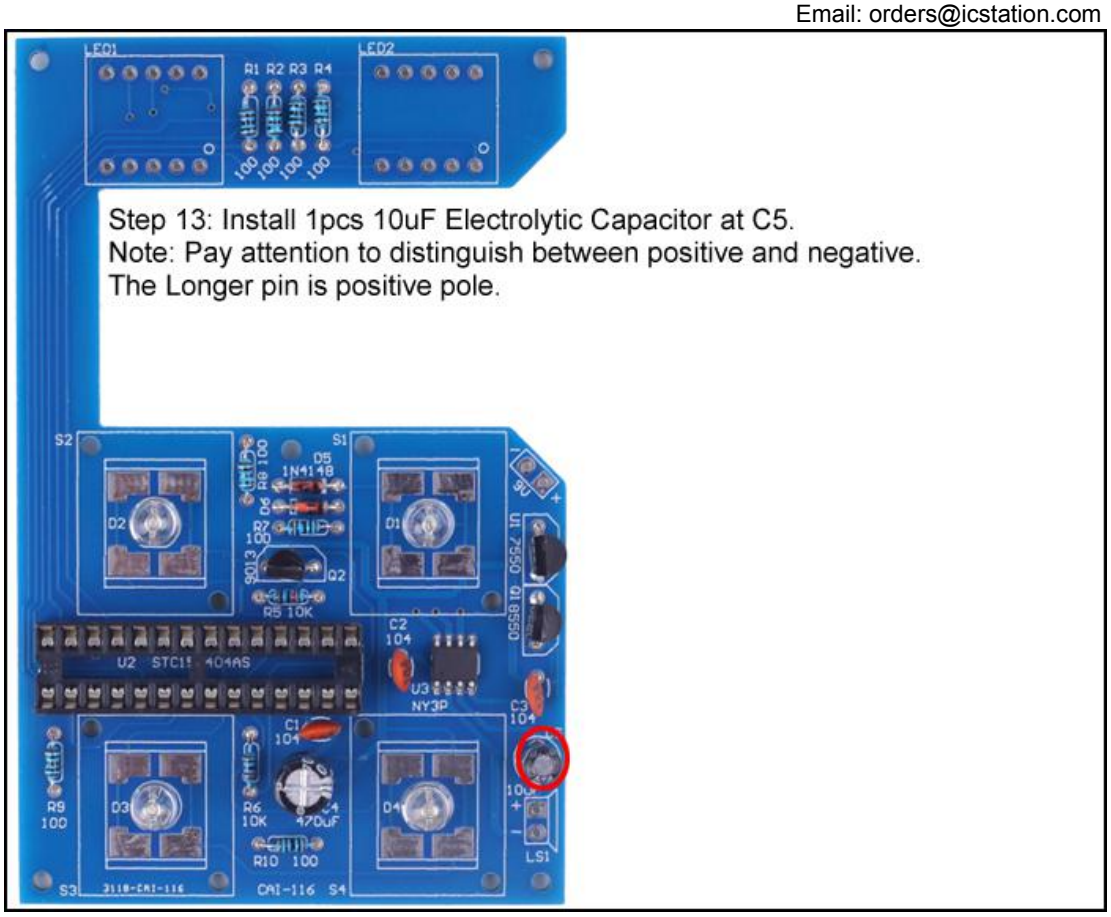
The Longer pin is positive pole.


Step 13: Install 1pcs 10uF Electrolytic Capacitor at C5.
Note: Pay attention to distinguish between positive and negative.
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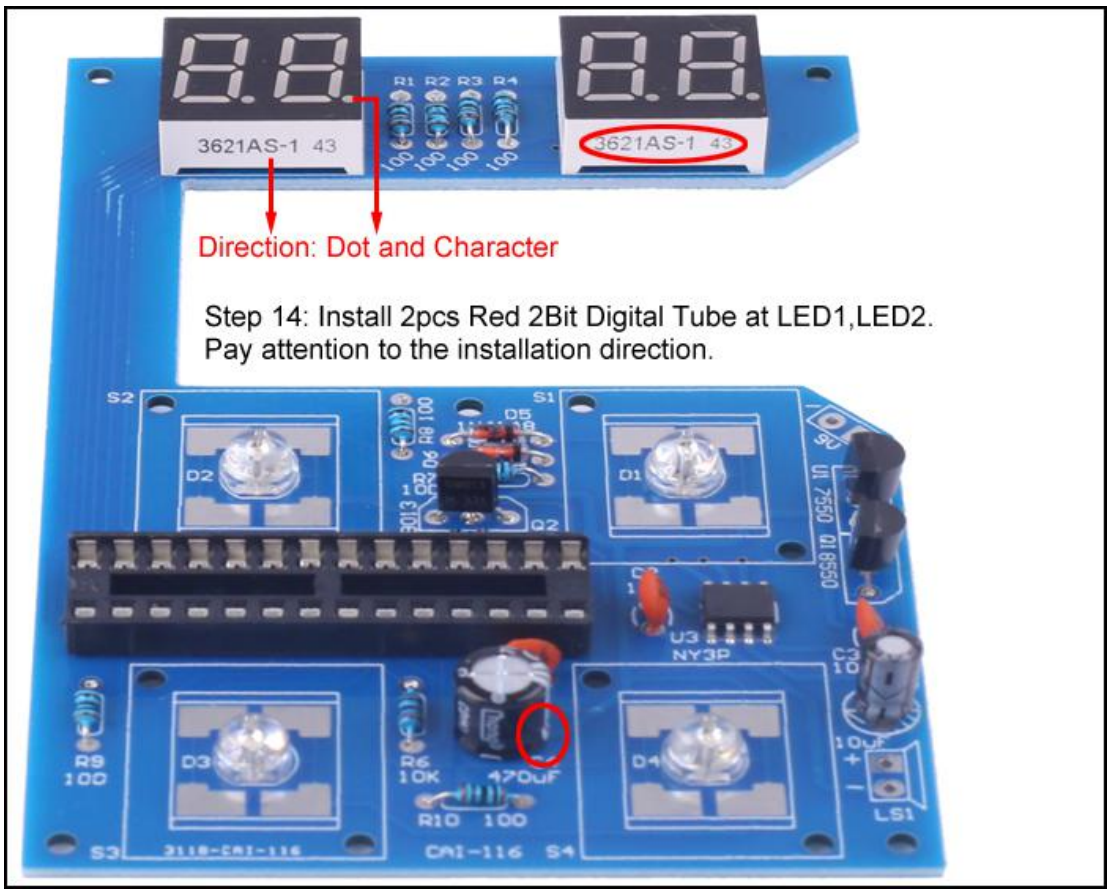
3621AS-1 43
3621AS-1 43
Direction: Dot and Character
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Pay attention to the installation direction.

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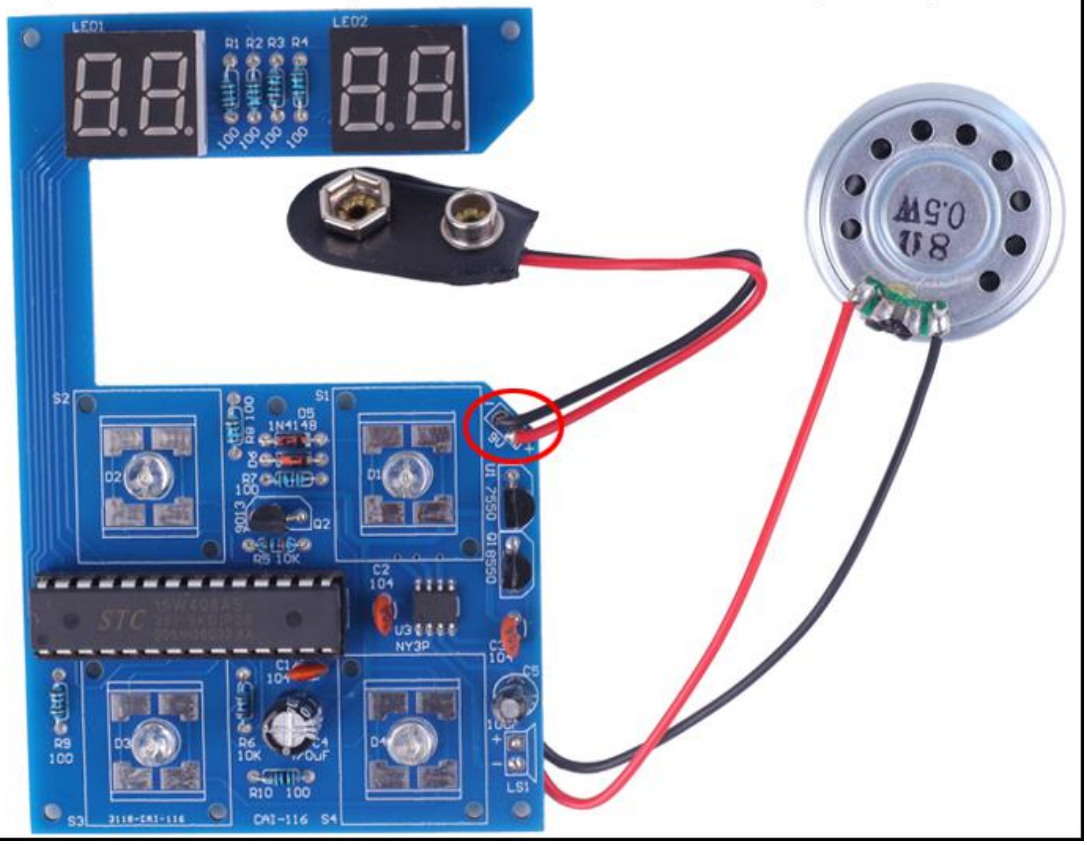

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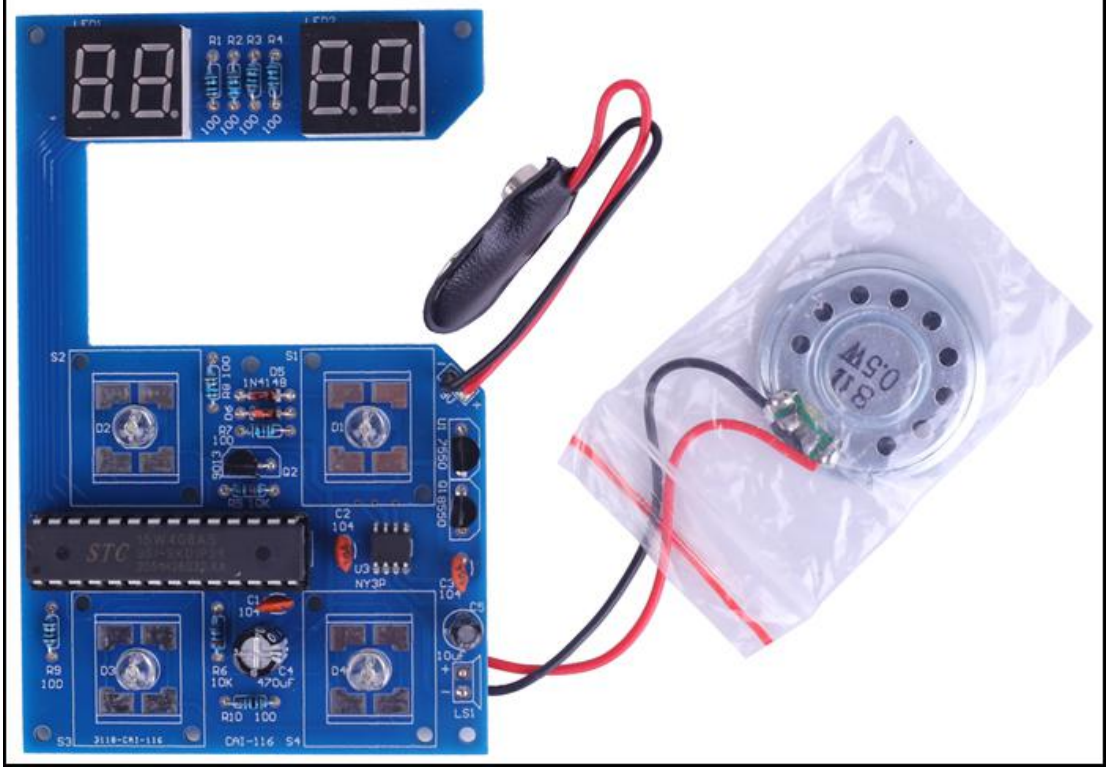

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