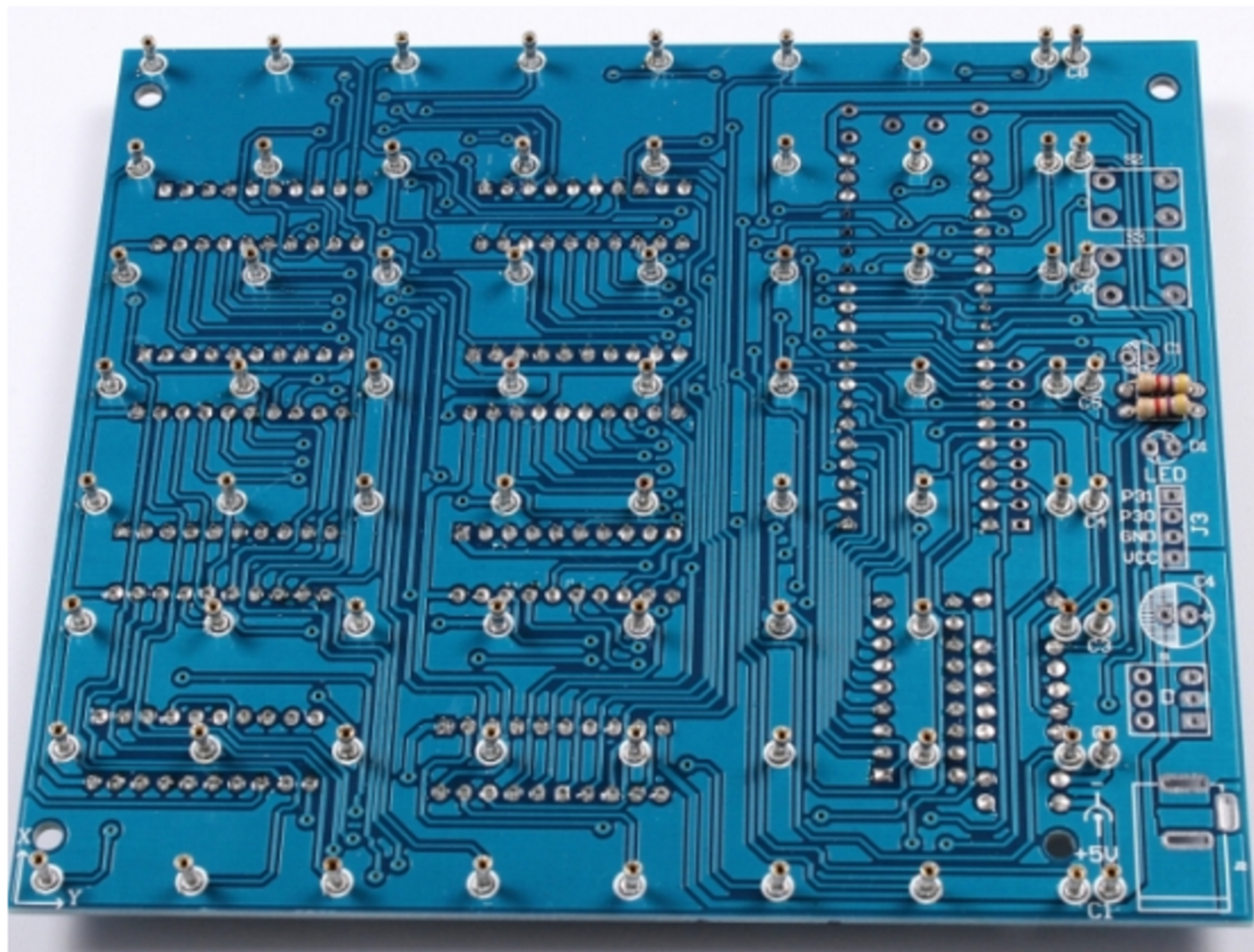Step 1: Take out 2pcs round female pin as picture. And you should prepare a pliers to break female pin as following picture.
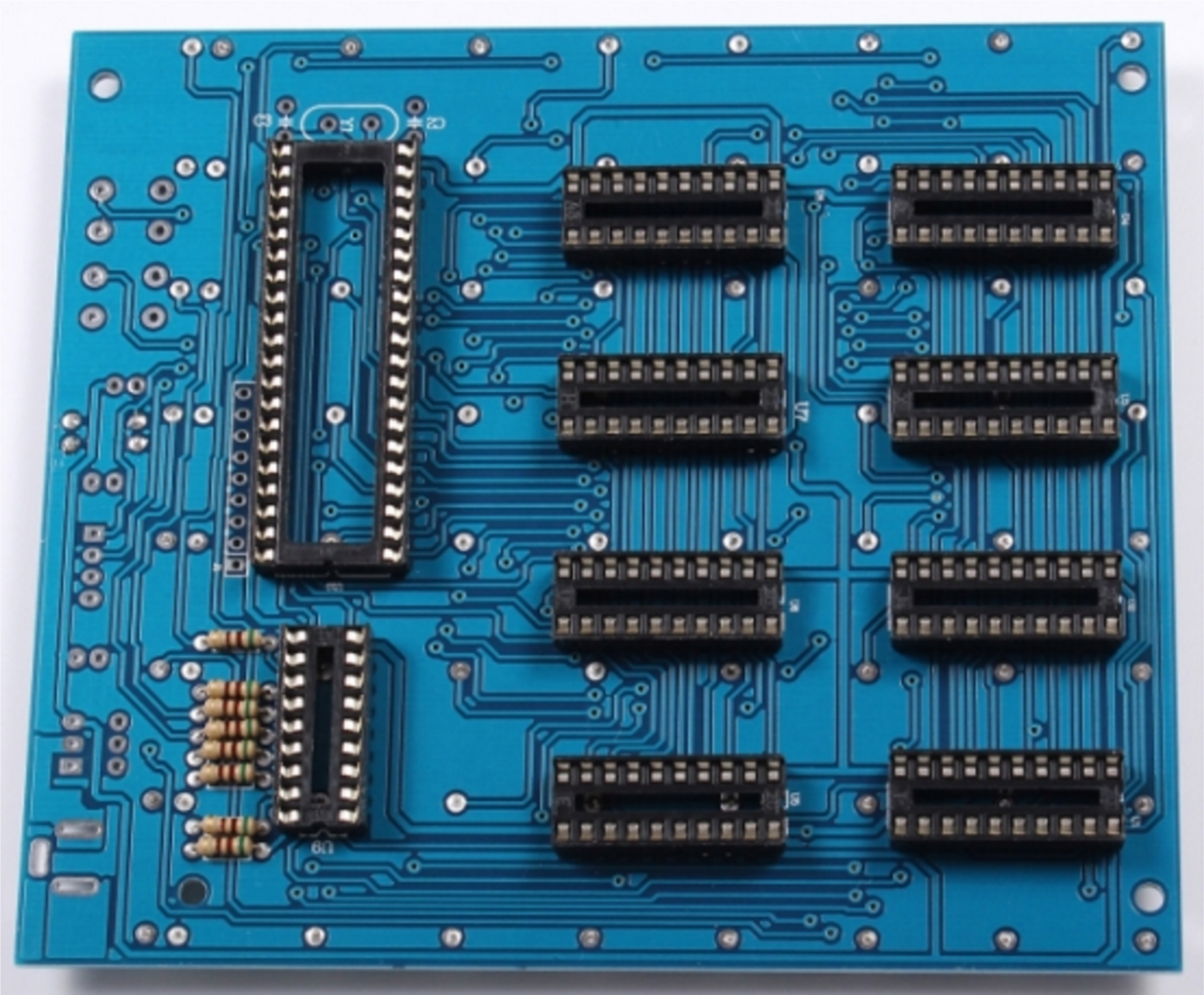
Step 2: Peel the plastic housing. Now we will get 80pcs metal pin. But we just need 72pcs.
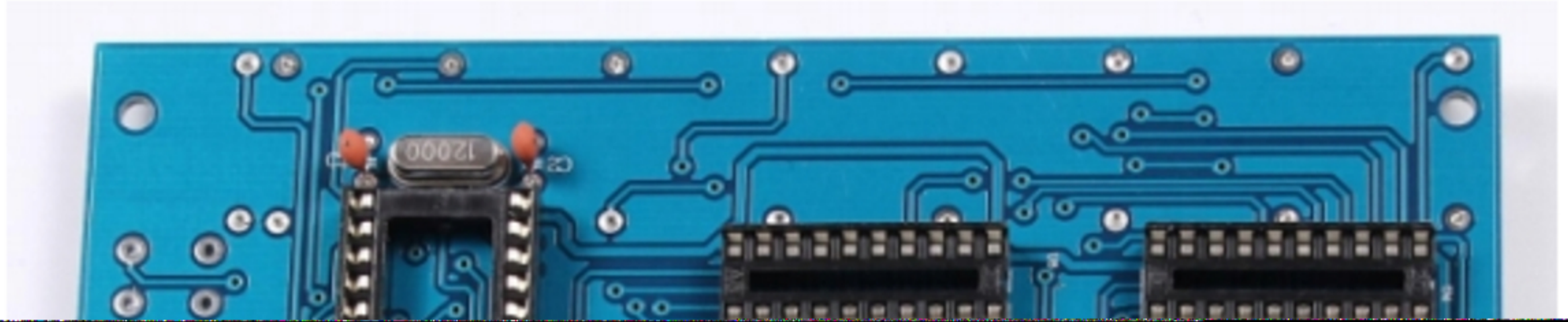
Step 3: Weld these metal pin on PCB. Please keep it perpendicular to the
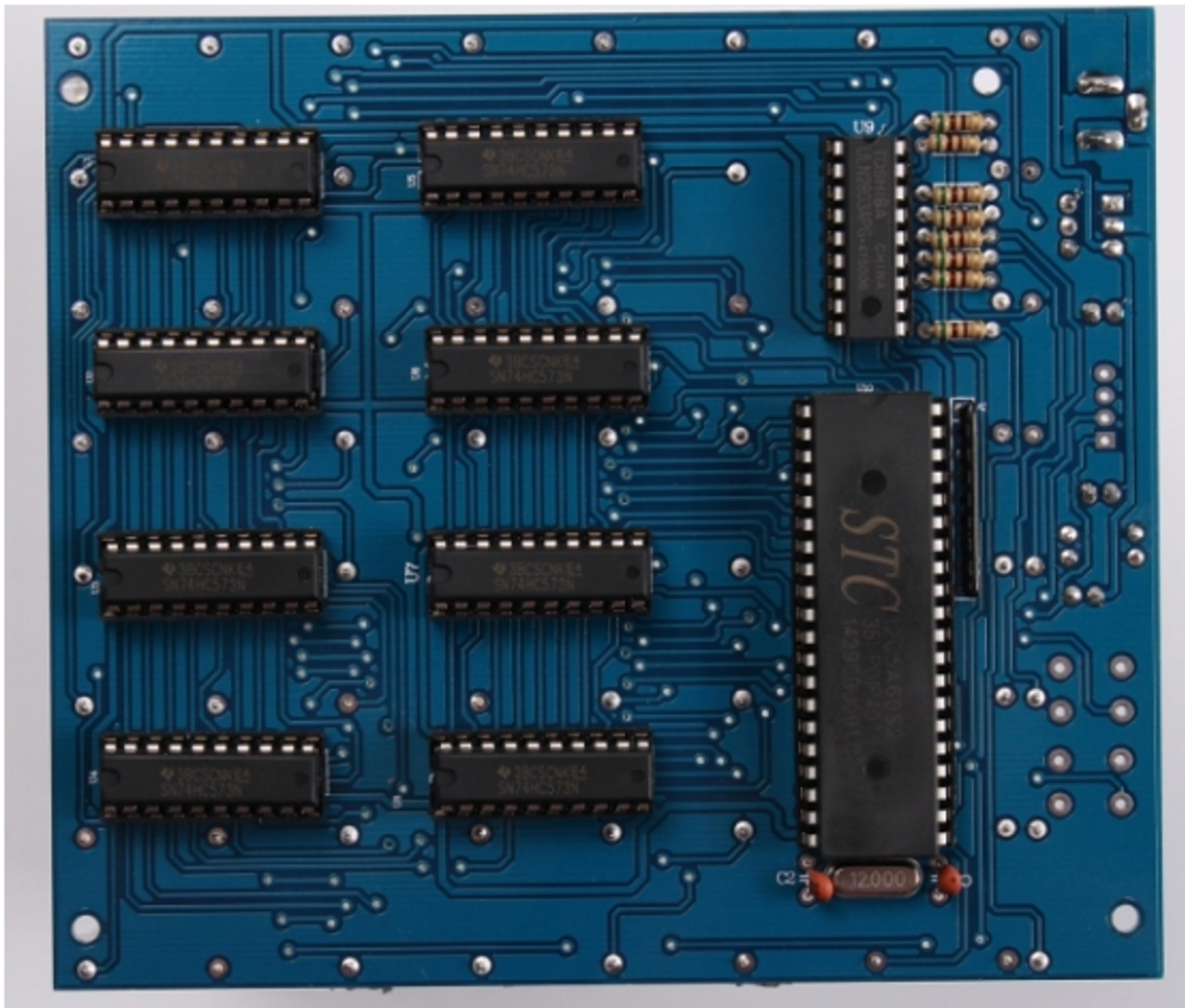
PCB circuit board. And then weld resistors.

Step 4: Weld IC socket.

Step 5: Please pay an attention to the PIN-1 of A09-103 resistor. Then weld crystal and ceramic capacitors.

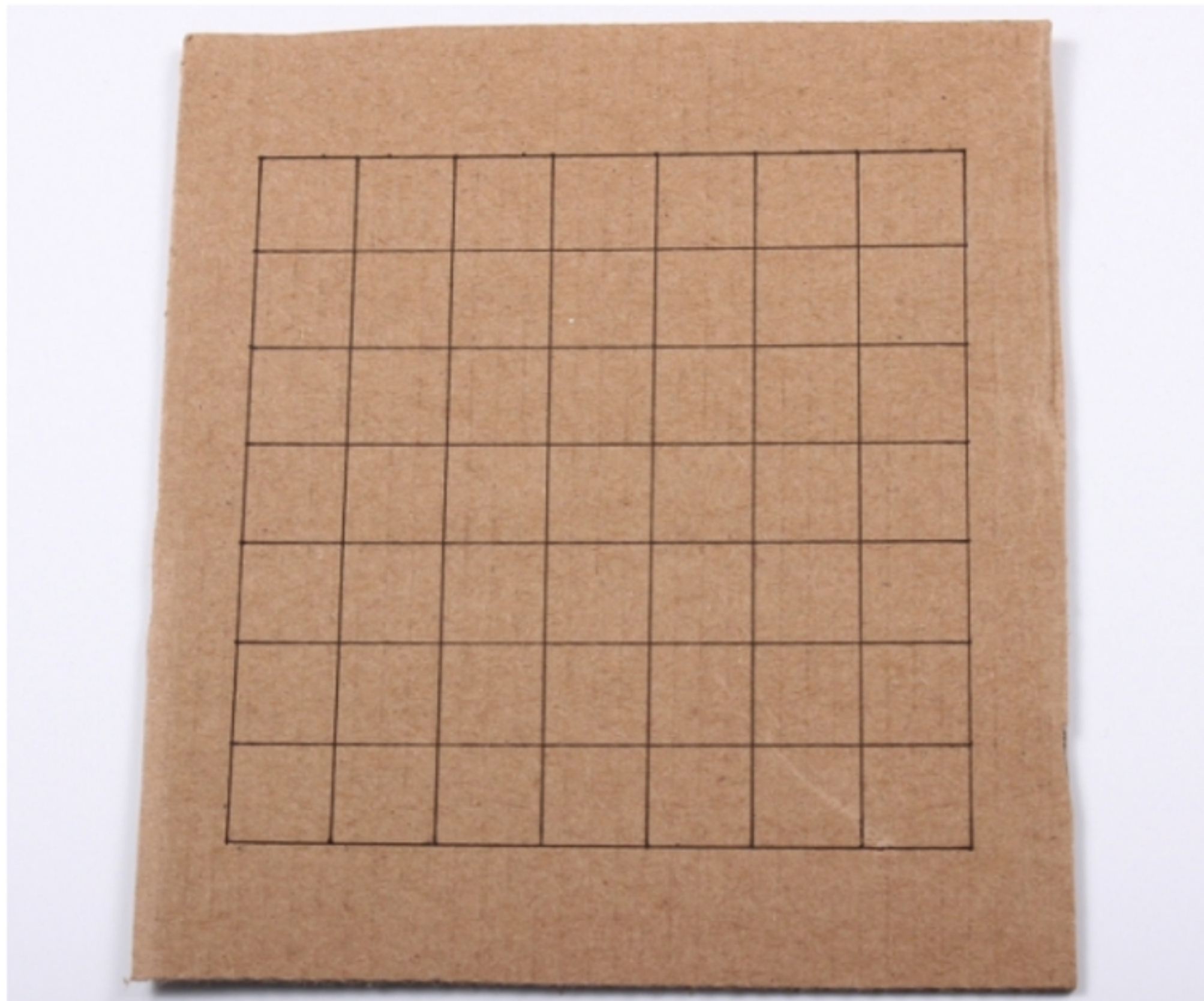# Step 6: Weld other components except LED and install ICs.

Step 7: Now we begin to weld LED. But there is some thing we should know before weld.

1>.The space between two neighboring LED is 1.5cm.

2>.Prepare a cardboard or thin wooden board, thin plastic plates, Acrylic board if you have drill. We will use a cardboard in install ation manual.

3>.Draw a 8x8 table in cardboard.

Step 8: Drilling. You can drill a relatively small hole by abandoned pen. And then make hole bigger by 3mm LED. There is some small drawback on this way. As you can see it on picture, holes are not strictly on a same straight line. The effect you can see pictures in this manual.
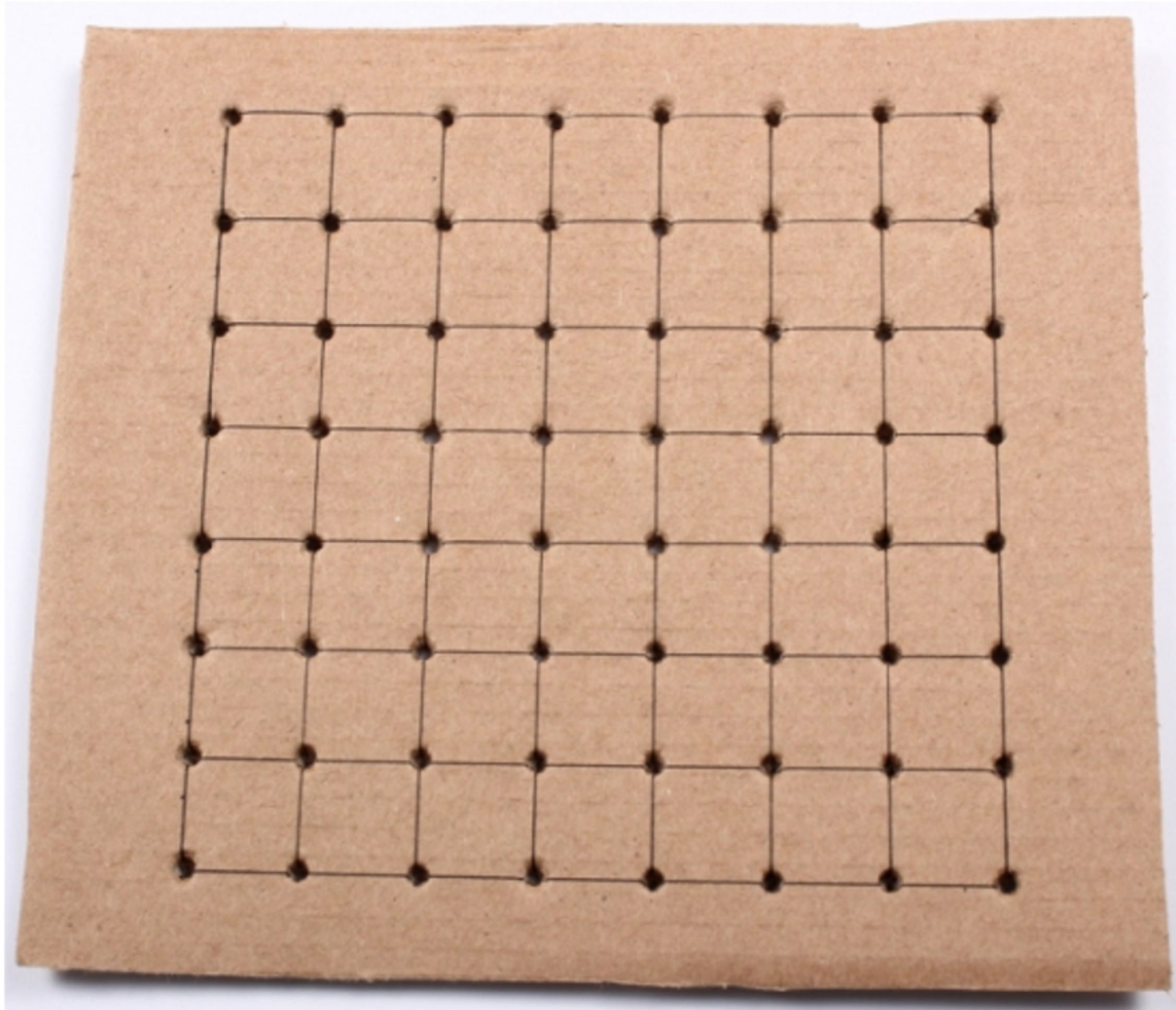
Step 9: Bent LED pins. You can use needle nose pliers. The bending point should keep a distance of more than 2mm to colloidal. As picture, bending point of negative pin is farther than the positive pin ones. They distance is 2mm too. In the same place the number of folds can not exceed three times
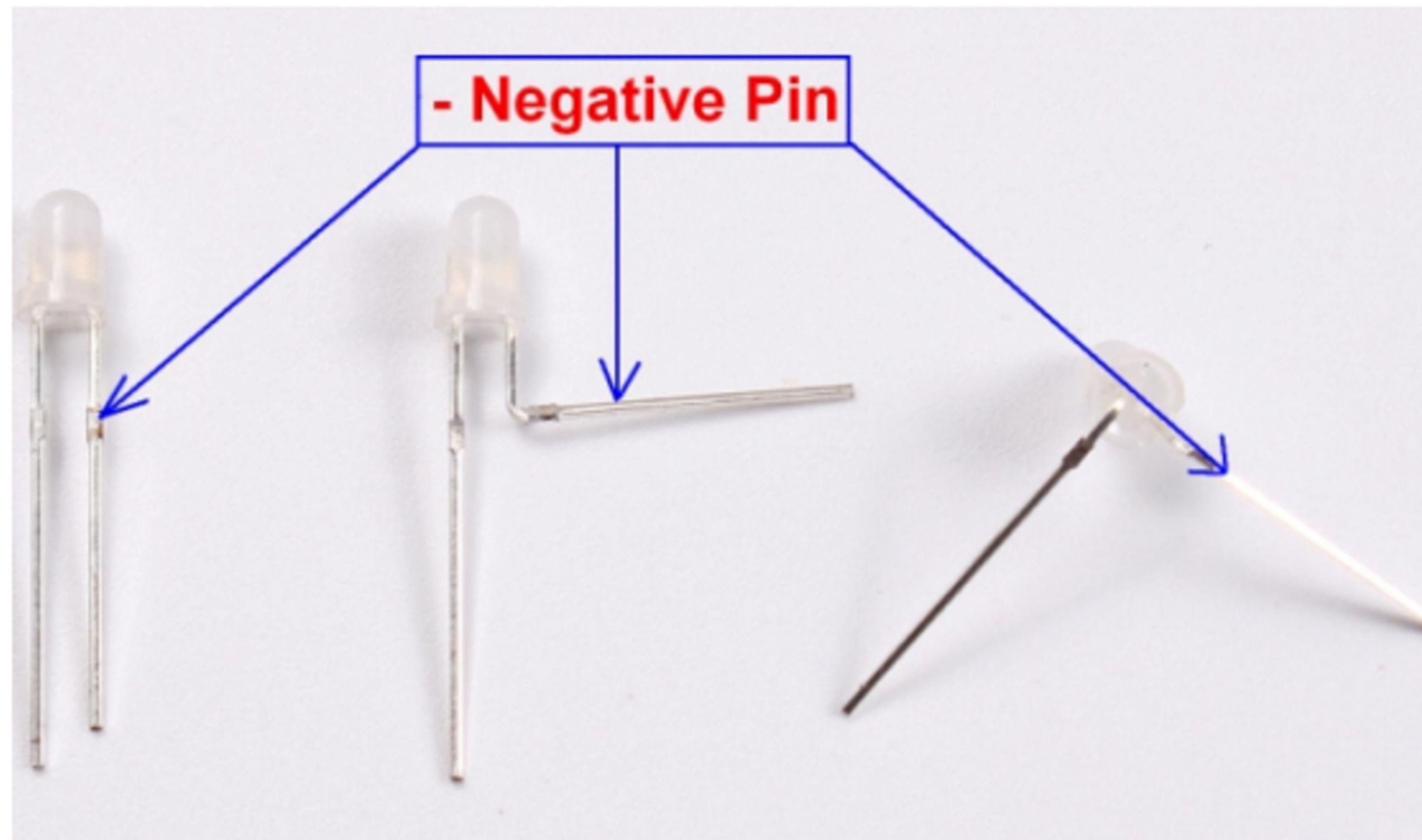
Step 10: After deal with LED, we can weld LED. 3D8 LED cube is divided into 8 faces. It has 8*8=64pcs LED on each face. Then weld negative pole form same layer after weld 8 faces. Layer 1~8 connect to C1~8 on PCB in turn.

Layer 8
Layer 7
Layer 6
Layer 5
Layer 4
Layer 3
Layer 2
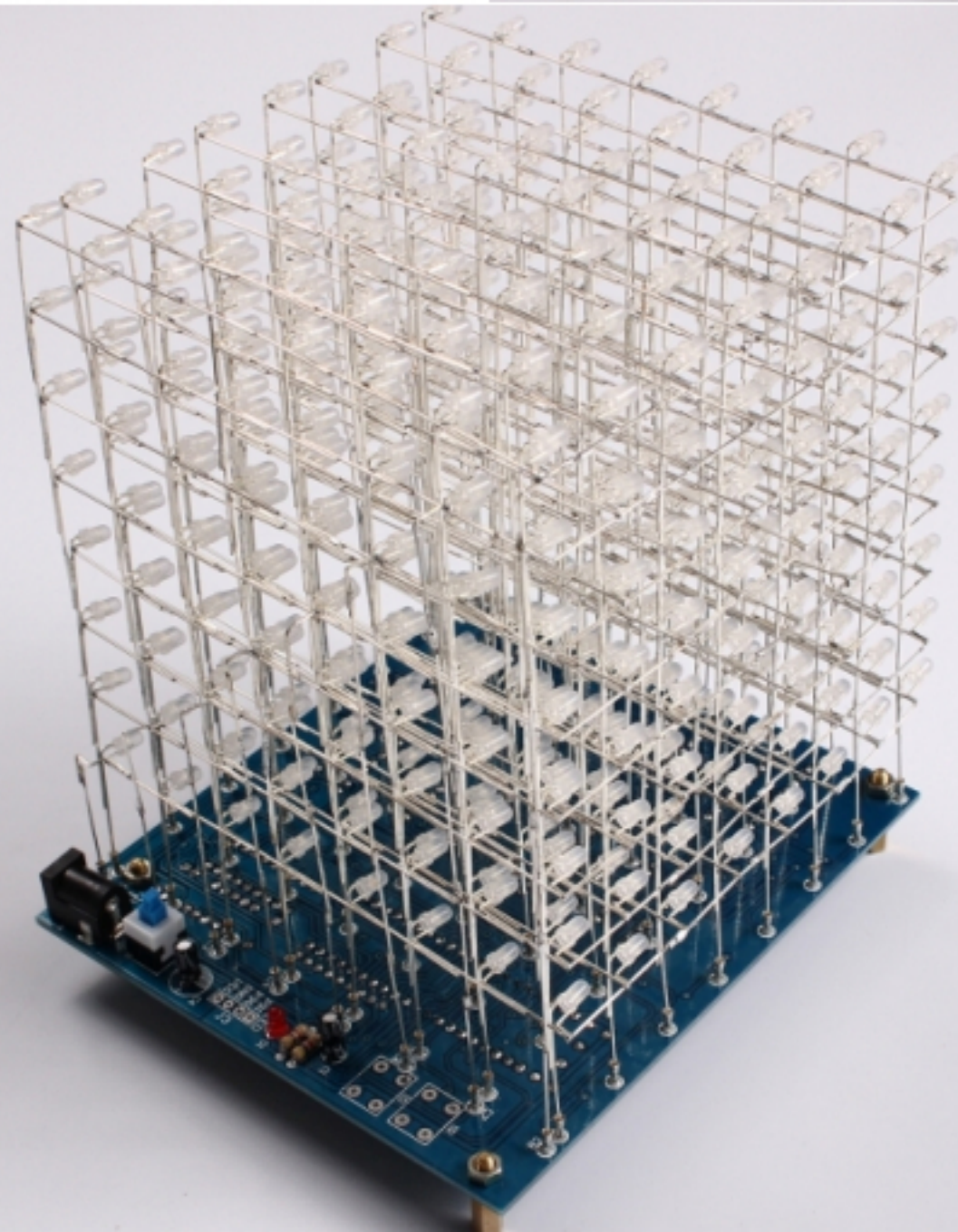Layer 1
- Negative
+ Positive
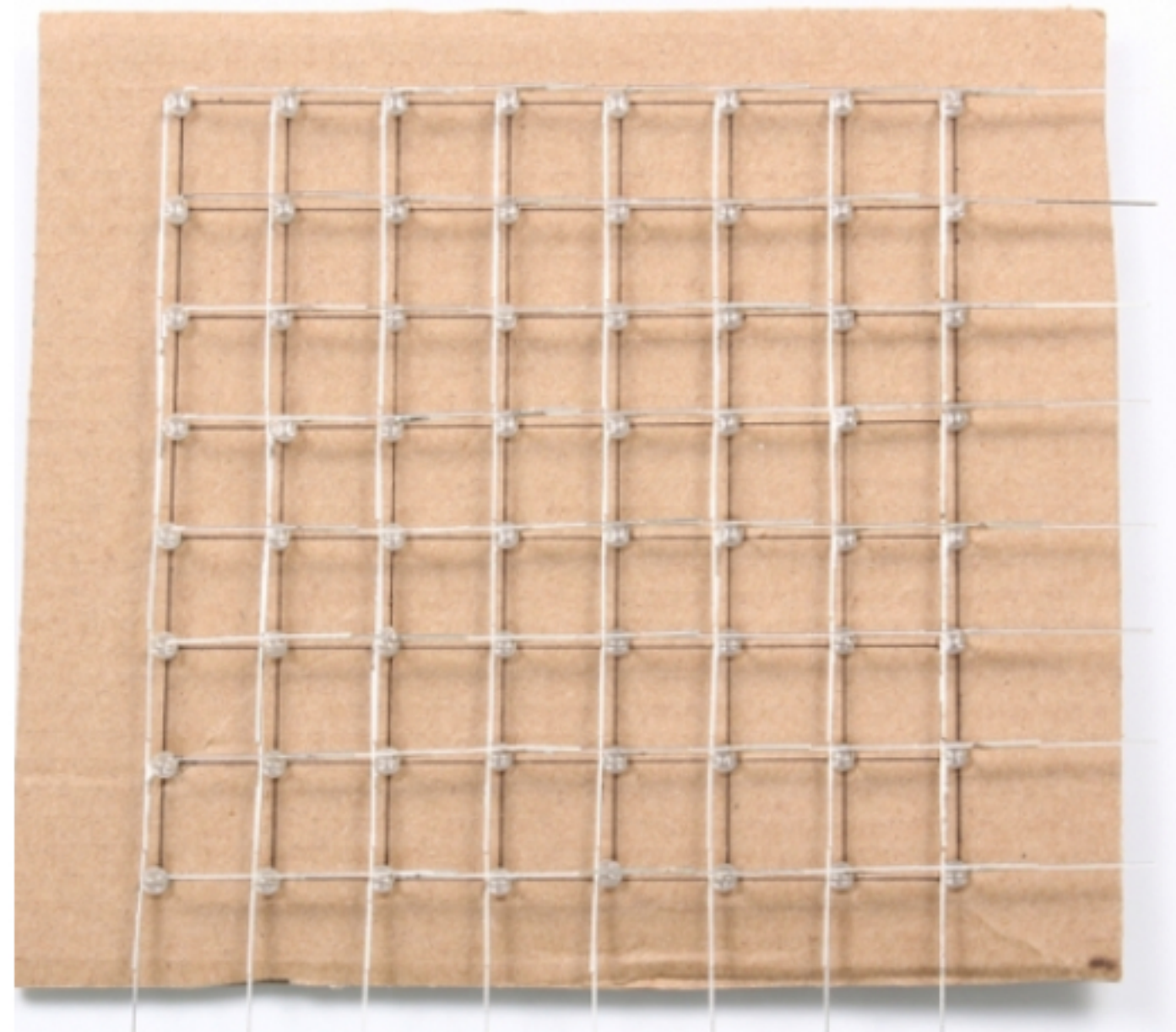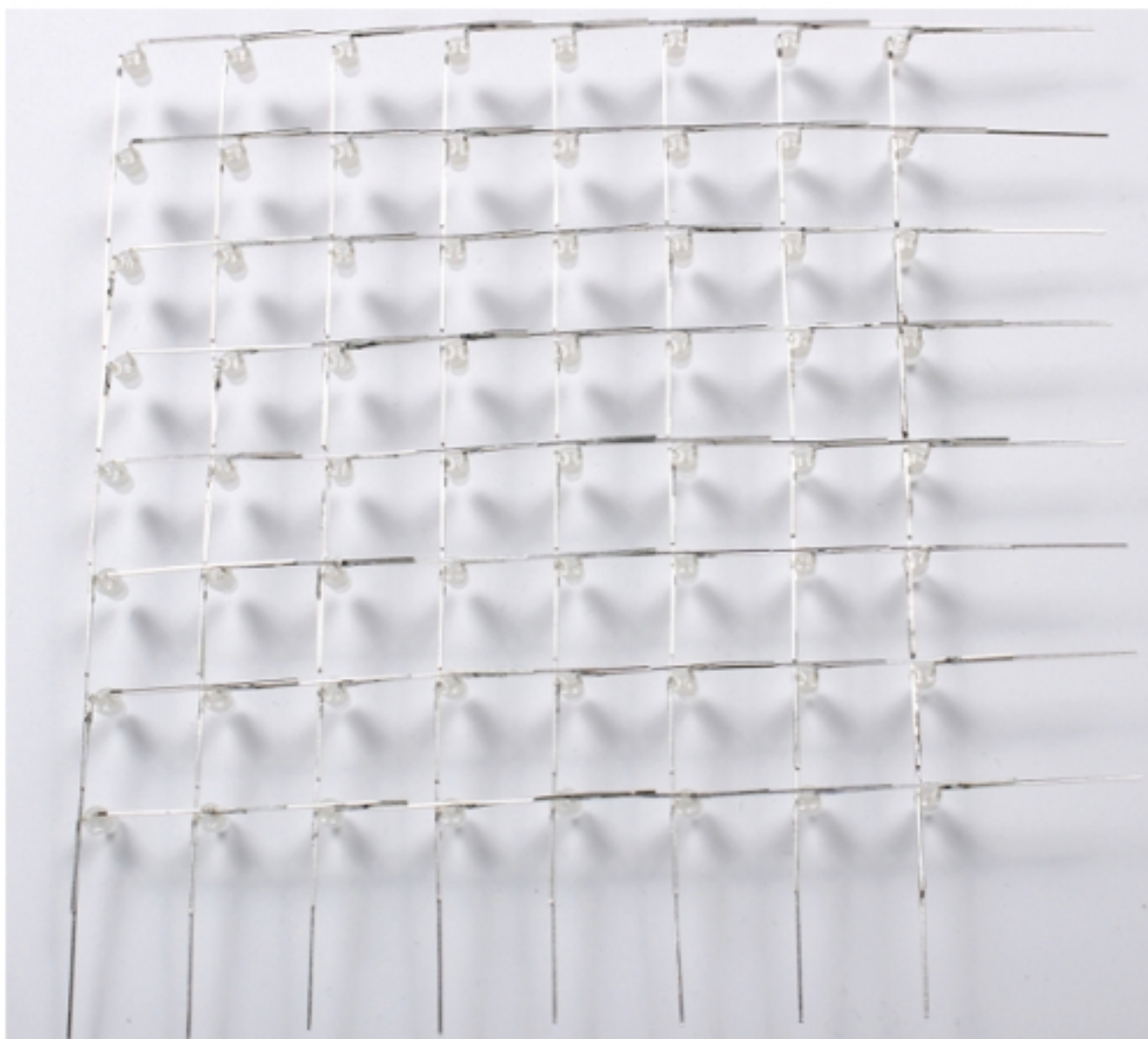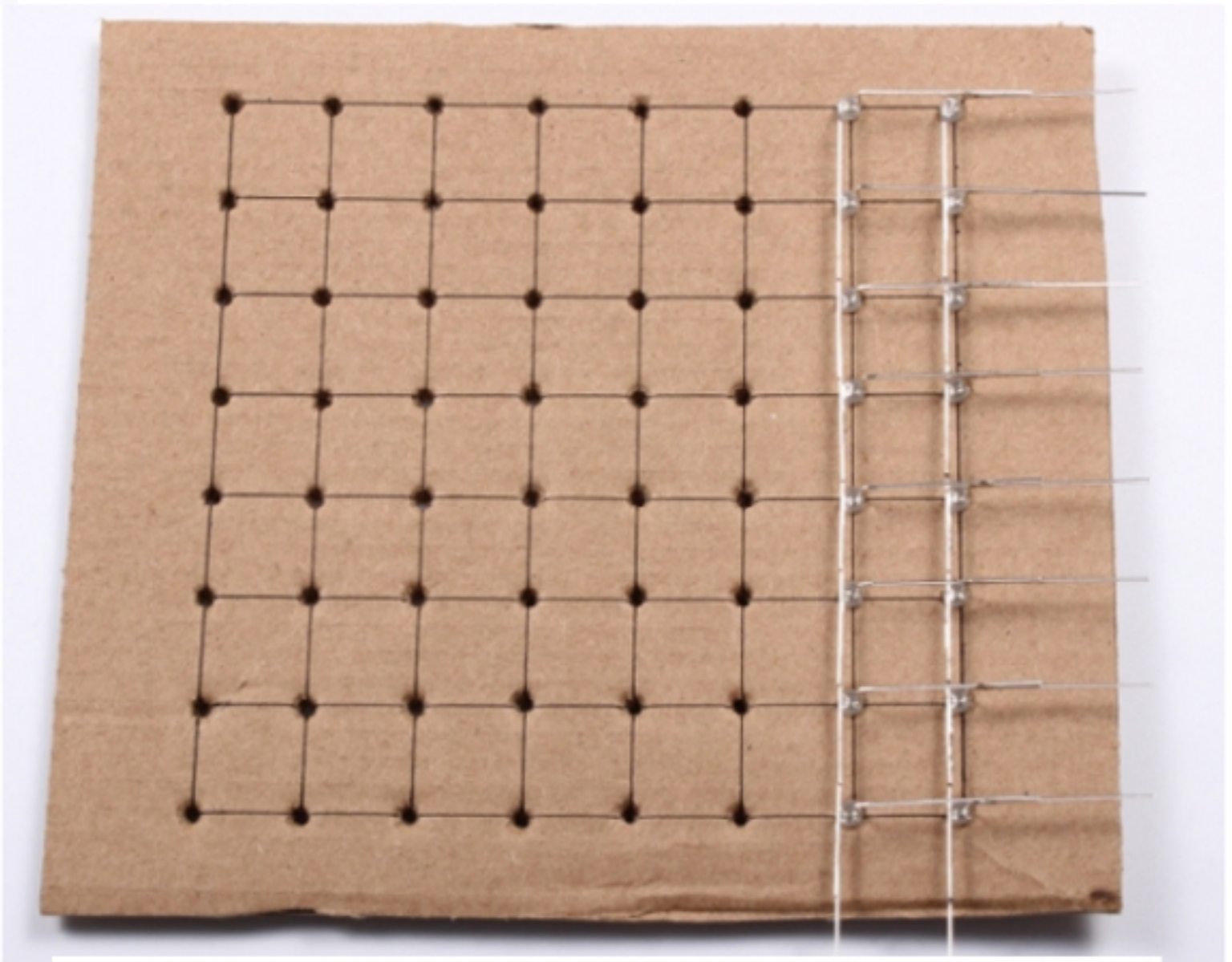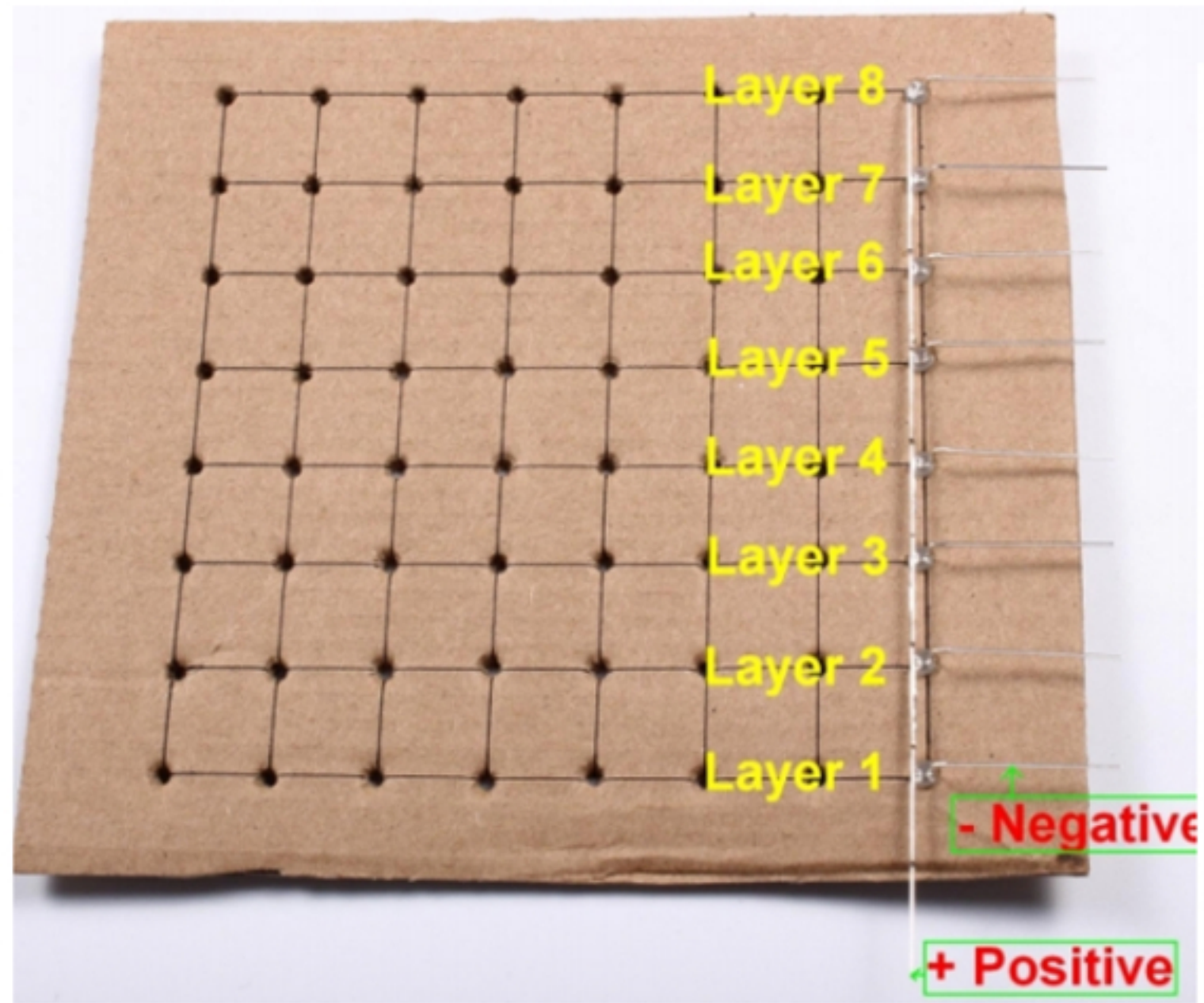
Step 11: Don't forget test LED during weld. It is very important. It is good before weld but some LED will be damaged after weld. So you should make sure each one LED is good before installation.

Step 12: Install each face to PCB. We have cut negative pin on each face in this manual. But you can bend it too.
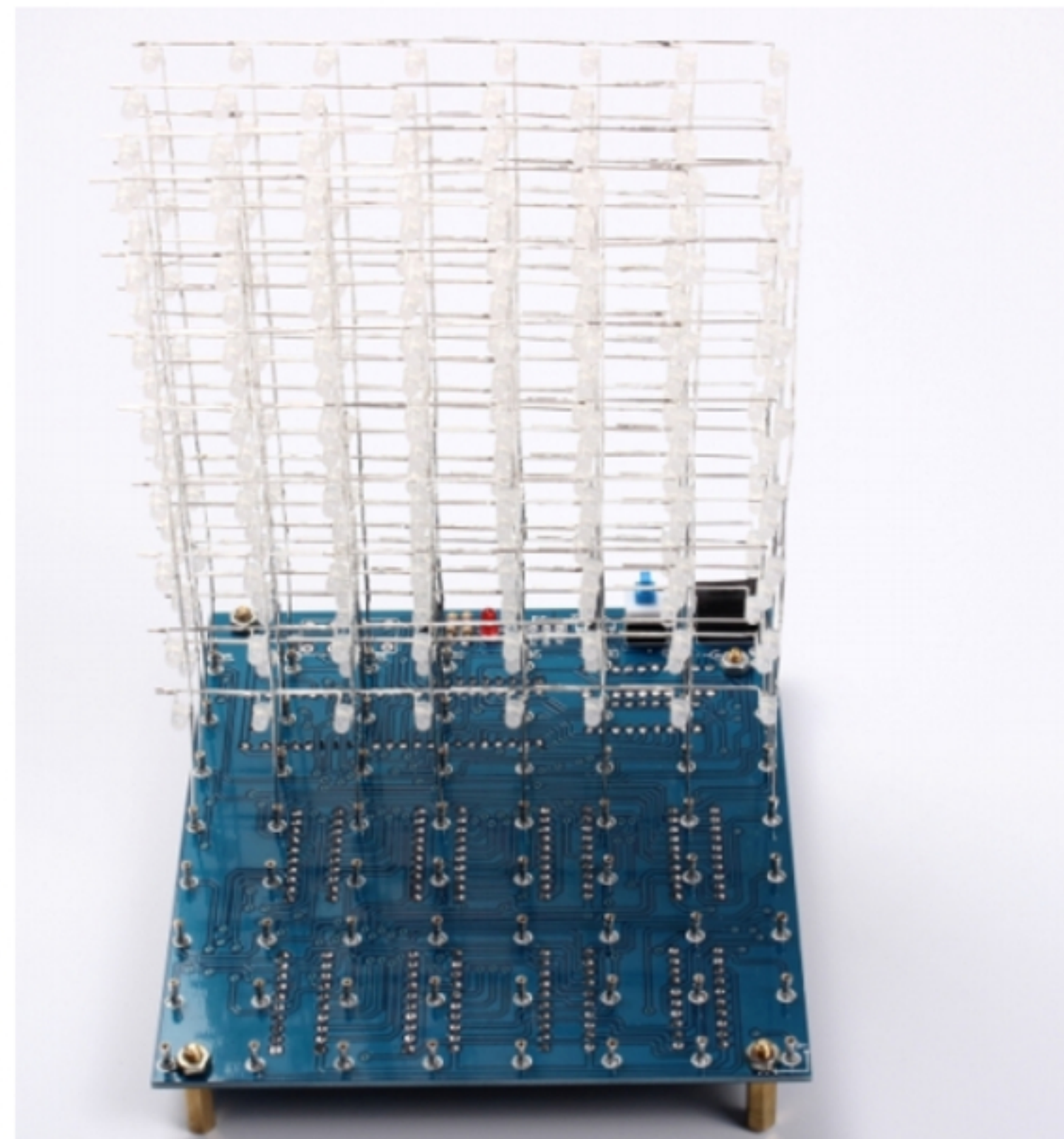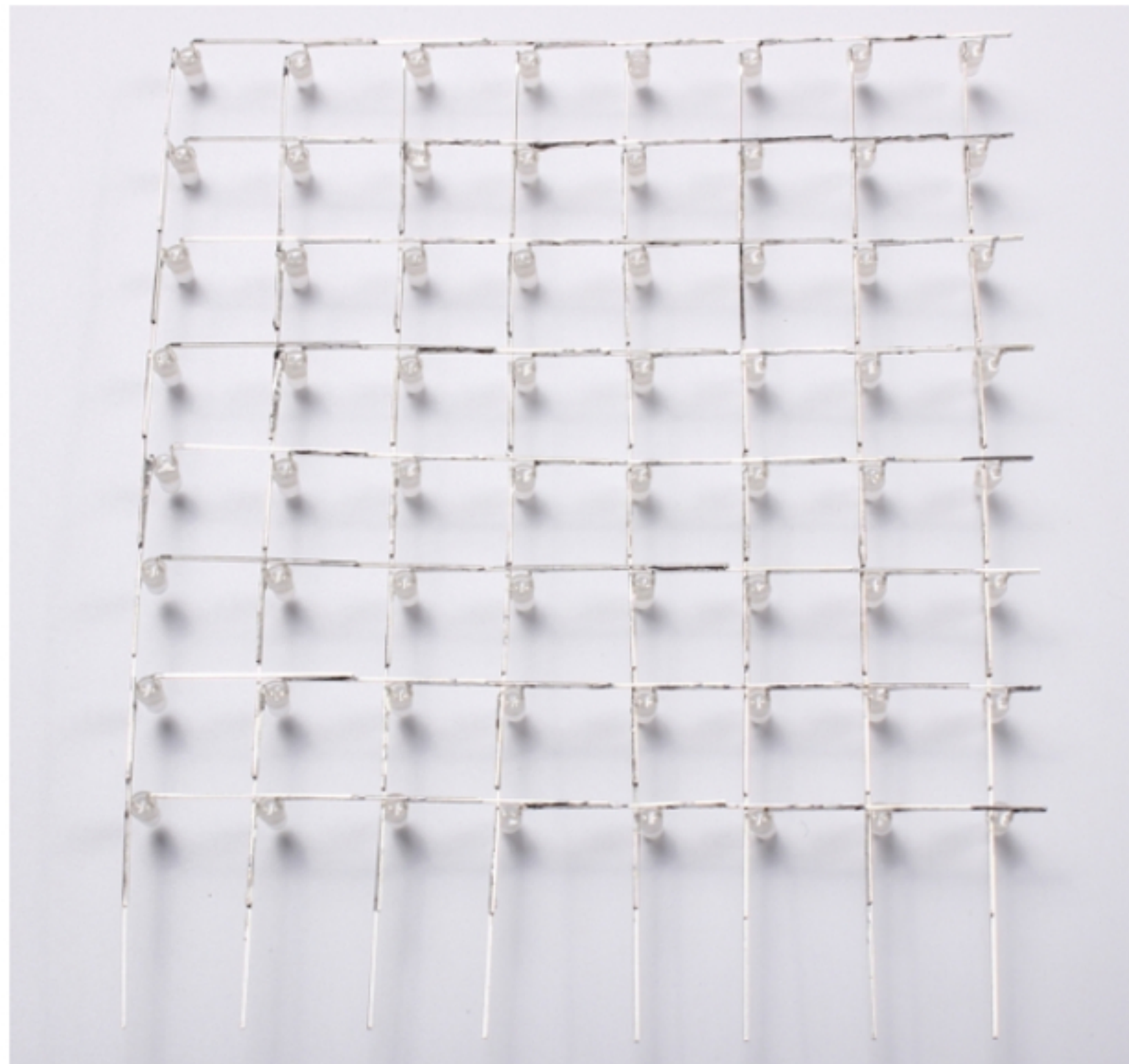
Step 13: Weld negative pin together on each layer.
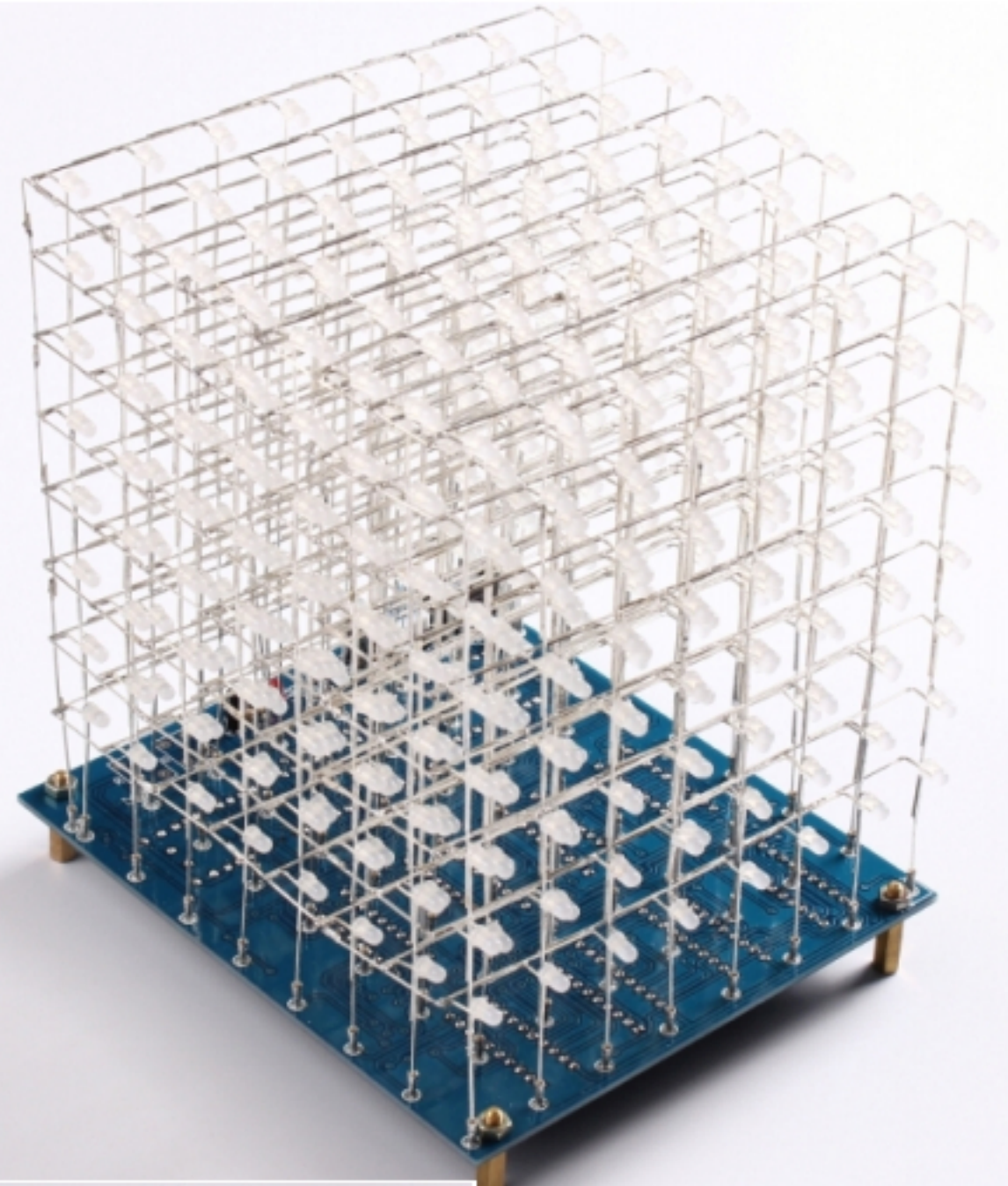
Step 14: Connect layer 1~8 to C1~C8 in turn. There is a red wire in kit, but we do not use it. We use some metal pin form excess LED because we want to keep one color on this cube. You can also use red wire.

3. Listing (some components more than need)
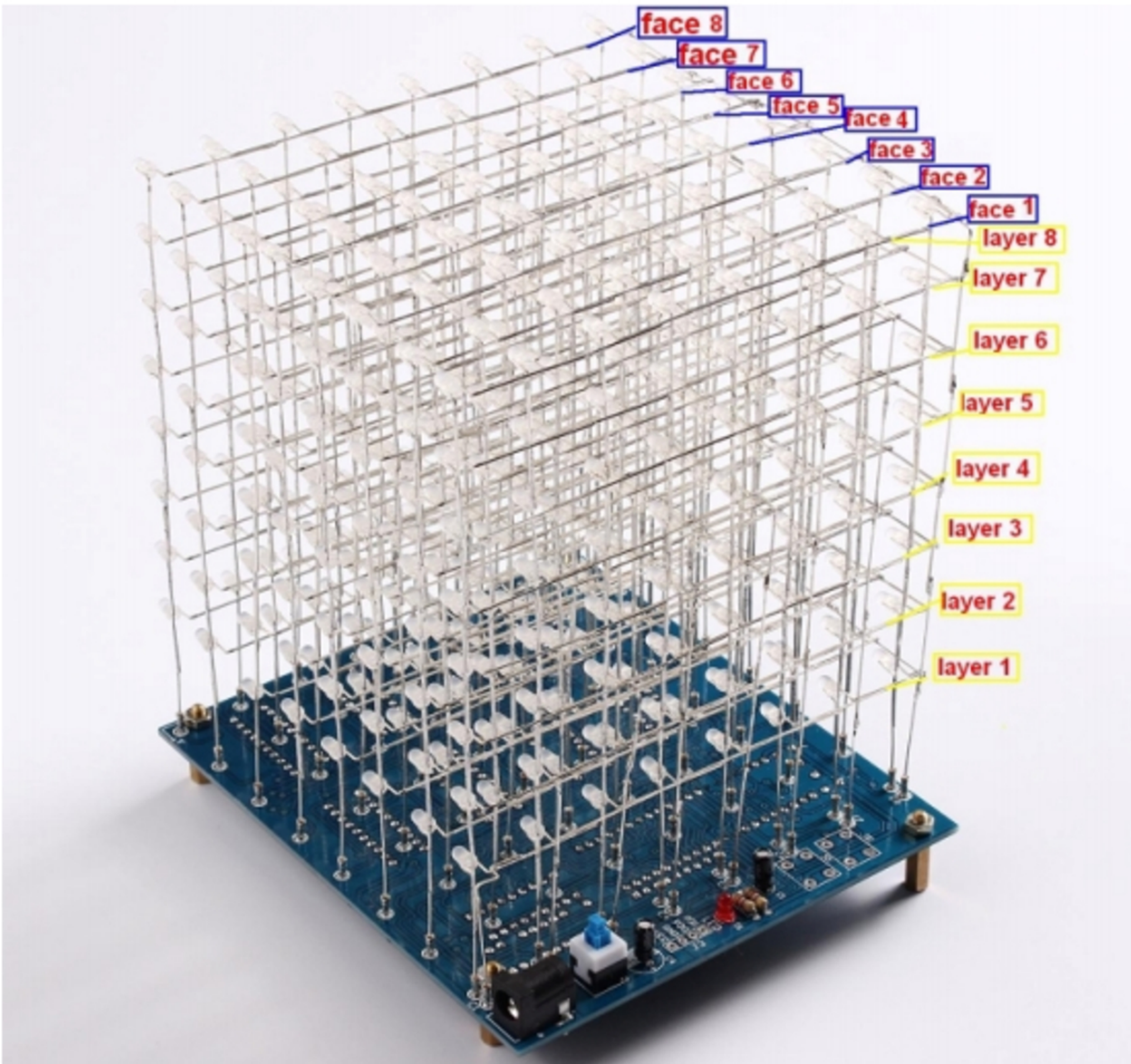
NO.	Component	Number	Parameter	Quantity
1	PCB circuit board			1
2	Blue Light LED		3mm	512
3	1*40P Round female pin			2
4	DIP-20 IC Socket	U1~U8		8
5	74HC573	U1~U8	DIP-20	8
6	USB to DC005 cable			1
7	DC005 Socket			1
8	DIP-18 IC Socket	U9		1
9	ULN2803	U9	DIP-18	1
10	DIP-40 IC Socket	U10		1
11	STC12C5A60S2(with code)	U10	DIP-40	1
12	A09-103 Resistor	J1	10K ohm	1
13	8*8 Self-locking Push Switch	S1		1
14	Electrolytic Capacitor	C1,C4	10UF 25V	2
15	Crystal Oscillator	Y1	12Mhz	1
16	Ceramic Capacitor	C2,C3	22PF	2
17	Resistor	R3~R10	470 ohm	8
18	Resistor	R1,R2	4.7K ohm	2
19	Red LED	D1	3mm	1
20	0.8 single conductor			1

12.8cm

6.6cm

2.1cm

12.7cm

11.1cm

STC