

# 8 SQUARE 焊接教程



8 SQUARE 是一颗你胸口前闪烁的红心来吧，一起让这颗红心跳动吧

焊枪的温度高达 200°C 以上，所以手千万不能碰到焊枪的笔尖，而且手握锡线的位置也不能太靠前，会烫手的哦。



现在开始焊接第一个焊盘。先把焊枪的笔尖凑到焊盘上，然后将锡线凑到焊盘上。正常的情况下，融化的锡线会自动附着在焊盘上，形成一个漂亮的火山状。焊好后，我们需要剪掉多余的管脚，这时会用到鸭嘴钳。



现在完成剩下的所有焊点的焊接吧。

## 2. 电容

电容是套件里面黄色碟状的东西，它上面写着 104，意思是它的容值为 100nF。电容的焊接方法和电阻是一样的，你只要按着下面的位置，把它们加到板子上，并且焊好就可以了。

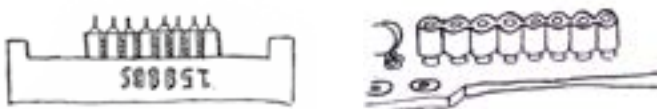
## 5. 开关与按键

套件中有一个开关和一个按键，开关用于通电和断电，按键用于模式的切换。将它们按下图的方式安装到板子上。



## 6. 排母

排母是用来插上我们的 LED 点阵的，每只脚都与主控板的一个信号相连。套件内有两个 8 pin 的排母，它们的位置就是板上的两排圆孔。焊接它们我们可以用 LED 点阵来帮忙。先把它们插到 LED 点阵上：



LED 点阵的一边标有它的型号，将型号对准板上的“1”标记，然后翻转，开始焊接。焊完两个排母之后，你的板子就完成了。

## 1. 电阻

包装盒中有三种不同阻值的电阻，分别是 10k ohm，1k ohm 以及 2k ohm。插件电阻是最常见而且最容易焊的元件，我们也从它开始。

先找到一个 10k ohm 的电阻。它在板上的位置是 R4，我们把 10k ohm 电阻插到板上 R1 的位置。



然后把板子翻转过来，把 R1 的两只脚掰开。为什么要这么做呢？因为这样元件就可以固定在板子上，就算翻转也不会掉下来了。现在先用这个方法把所有电阻都插到板子上。

型号	位置
1k ohm	R1, R2, R5, R6
2k ohm	R3
10k ohm	R4

固定完电阻之后，我们先测试一下焊枪的温度够不够，然后才开始焊接。测试的方法是，将锡线凑到焊枪的笔尖处，看焊锡是否融化成液状。



型号	位置
100nF	C1, C2, C3, C4

## 3. LED

LED 是最常见的发光元件。它的两只脚是一只长一只短的。那是因为它是有正负极。LED 长的脚为正，短脚为负。8 SQUARE 的板上标有 + 和 - 两种标记，将 LED 的长脚对准 +，短脚对准 -，就可正确安装 LED 了。



型号	位置
红色	CH
绿色	OK

## 4. 电池座

正面将电池座装好，然后反过来，在底面的大焊盘上加焊锡焊好电池座。电池座的焊盘上你可以加多点焊锡，焊好后的电池座应该是这样的：



## 功能测试方法：

- 完成焊接之后，我们可以测试功能了。安装上电池后：
- 将拨动开关拨到 ON，点阵上是否开始有心跳动画的效果呢？
  - 按一下轻触开关，心跳动的速度是否加快了？
  - 长按轻触开关，心的方向是否改变了？



遇到问题？给我一只猫吧：  
litliao@gmail.com

以上内容由南荔工坊研发，并遵从右侧的开源协议。



# 8 SQUARE Soldering Guide



8 SQUARE is a heartbeat necklace kit. come and let's make it bounce.

Attention! The temperature at the tip of the soldering iron can run up to 200°C+. Don't ever touch tip with your fingers! And keep a proper length of solder between the tip and your hand.



Now let's start soldering our first pad. Place the solder against the pad you want to solder. Move the tip of the soldering iron to the pad and melt some solder. The melted solder should instantly stick to the lead and form a volcano shape.



The excess leads are useless, cut them off with a flash cutter. Here you go. Finish all leads of resistors now.

## 2. Capacitors

The capacitors we use are yellow, disc-shaped components. They have digits 104 printed on the body,

## 1. Resistor

In the bag there are three types of resistors, 10k ohm, 1k ohm and 2k ohm. Through-hole resistor is the most commonly used component and the easiest to solder. Please find a 10k ohm resistor and insert it into the base board at location R4:



Flip over the base board and bend away its two leads. This way we can fix the component onto the board so it won't move when the board is flipped. Now follow the table to insert all resistors.

Type	Location(s)
1k ohm	R1, R2, R5, R6
2k ohm	R3
10k ohm	R4

Let's test if the soldering iron is hot enough. Put the solder against the tip of the soldering iron, and check if it melts.

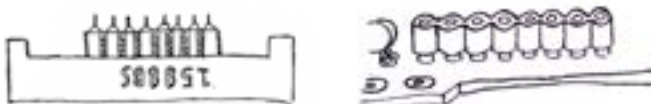
## 5. Switch and Button

There is a switch (6 pins) and a button (2 pins) in the kit. The switch (6 pins) can close/open the circuit, and the button (2 pins) can



## 6. Female Headers

To connect the LED matrix with the base board, we need 2 x 8 pins female headers. They should be located on two lines of soldering pads on the board. Let's use the LED



The spec info is printed on one side of the matrix. Match the side with the digit "1" on the base board when stacking. Female headers are the final components to solder. When finished, you will have a ready-to-shine 8 SQUARE!

which means 100nF. The way to solder a capacitor is the same with that of soldering a resistor.



Type	Location(s)
100nF	C1, C2, C3, C4

## 3. LED

LED is the most commonly used light-emitting component. Its two leads are not the same length. The longer one is the anode(+), and the shorter one is the cathode(-).



Type	Location(s)
Red LED	CH
Green LED	OK

## 4. Battery Holder

Insert the battery holder from the front, and solder it from the back. You can increase the amount of solder



## How to test its function:

The code has been loaded into 8 SQUARE before assembly. Now, let's do the following steps to check its function:

- Flip the switch to "ON". Is there a beating heart showing up?
- Press the button. Is the heart speeding up?
- Press longer for 2s. Does the direction of the heart



Any question? Send me a mail: [littiao@gmail.com](mailto:littiao@gmail.com)

