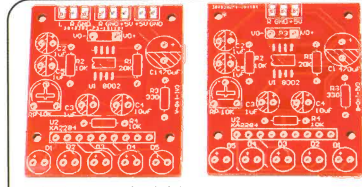


小音箱安装教程(CAI-140) Installation tutorial of small speaker box

元件清单 Part list

序号 Serial	型号 Value	数量 Quant	安装位置 Designator
1	电路板A、电路板B PCB-A;PCB-B	2	
2	8002A 功放IC Power Amplifier 8002A	2	U1
3	10K 1/4W 电阻器 10K 1/4W Resistor	5	R1、R4
4	20K 1/4W 电阻器 20K 1/4W Resistor	3	R1
5	330Ω 1/4W 电阻器 330R 1/4W Resistor	3	R3
6	KA2284 电平指示IC Led Level Meter Driver	2	U2
7	φ5mmLED-Blue*10 ; Red*2	12	D1-D5
8	470uF电解电容 Electrolytic capacitors	2	C1
9	1uF电解电容 Electrolytic capacitors	6	C2、C5、C3
10	10uF电解电容 Electrolytic capacitors	2	C4
11	10K电位器 (103) Potentiometer	2	RP
12	PA1.7*7自攻螺丝 Screws	16	
13	PA1.7*5自攻螺丝 Screws	8	
14	6-4*5尼龙柱 Nylon pillar	8	
15	透明线6cm Wire	2	VO-VO+
16	尼龙扎带 Cable Tie	2	
17	3芯线 3 Core electric wire	1	
18	USB供电线 USB Plug wires	1	
19	3.5mm音频线 Jack 3.5mm Audio cable	1	
20	52mm4Q3W 扬声器 4Ω 3W Speaker	2	
21	塑料外壳 Plastic box	2	



电路板A、电路板B PCB-A; PCB-B



8002A 功放IC Power Amplifier 8002A



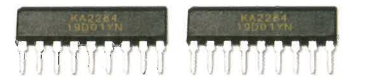
10K 1/4W 电阻器 10K 1/4W Resistor



20K 1/4W 电阻器 20K 1/4W Resistor



330Ω 1/4W 电阻器 330R 1/4W Resistor



KA2284 电平指示IC Led Level Meter Driver



φ5mmLED-Blue*10 ; Red*2



470uF电解电容 Electrolytic capacitors



1uF电解电容 Electrolytic capacitors



10uF电解电容 Electrolytic capacitors



10K电位器 (103) Potentiometer



PA1.7*7自攻螺丝 Screws



PA1.7*5自攻螺丝 Screws



6-4*5尼龙柱 Nylon pillar



透明线6cm Wire



尼龙扎带 Cable Tie



3芯线 3 Core electric wire



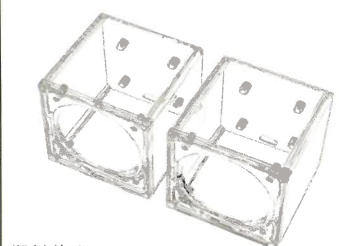
USB供电线 USB Plug wires



3.5mm音频线 Jack 3.5mm Audio cable



52mm4Q3W 扬声器 4Ω 3W Speaker



塑料外壳 Plastic box

焊接方法 How to Solder

1 先给一个焊盘上锡 Add Solder tin to the bonding pad

2 固定一个引脚 Finish the welding of one end of the IC

3 焊接其它引脚 Weld the other end with solder tin

4 引脚焊接完成 Weld the completed IC

1 预热焊盘 Heat Part and Pad 1-2 sec

2 送入焊锡熔化 Add Solder

3 撤离电烙铁 Continue Heating 1-2 sec

4 焊接完成 Let Cool Don't Blow

标准焊点 Perfect!

焊锡太多 Too Much Solder

焊锡太少 Not Enough Solder

温度太低 Cold Joint

温度太高 Too Much Heat

两焊点短路 Short

USB

L R G

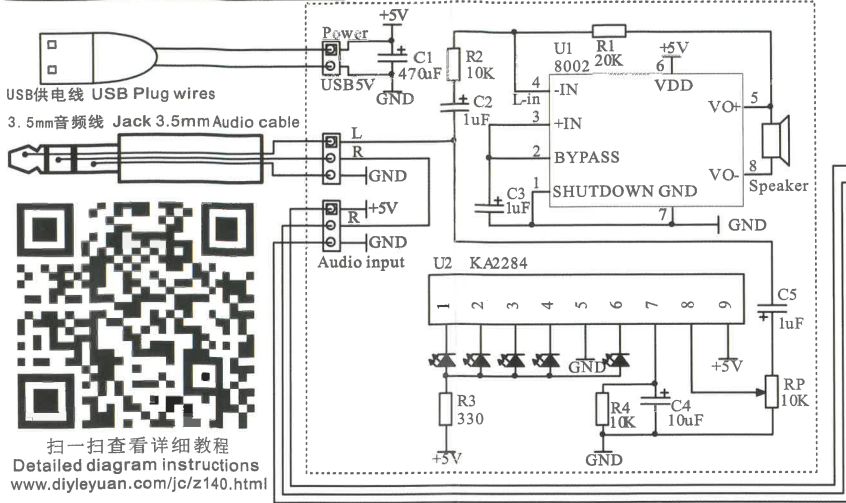
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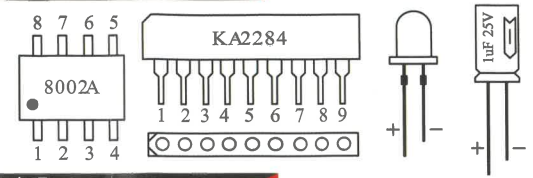
接线图 Wiring diagram

导线颜色以实物为准, 用万用表测量导线的颜色定义。
The color of the wire is based on the real goods, use a multimeter to measure the color definition of the wire.

电路原理图 Circuit schematic

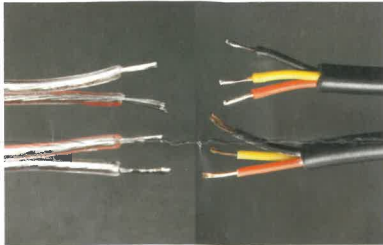


引脚定义 Pin Assignment

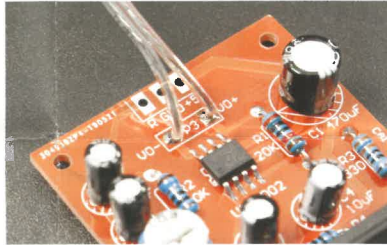


安装步骤 Installation steps

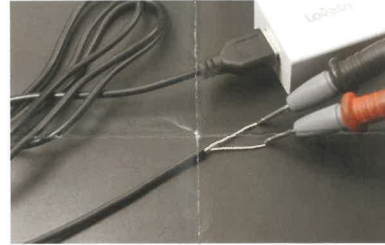
1. 先焊接功放IC，再安装电阻电容等元件。电容的长脚为正极，短脚为负极，负极对应电路板上的阴影部分。
 2. RP为LED音乐电平指示灵敏度调节电位器，调节它可以改变LED的灵敏度，先调节好合适的显示效果再安装外壳。
 3. 电路板供电用USB线上5V供电，接上音频线，同时用一根3芯的线将两电路板的R、GND、+5V连接起来。
1. Weld power amplifier IC first and then install the resistance capacitance and other components. The long pin of the capacitor is positive pole, the short pin is the negative pole, and the negative pole corresponds to the shadow part of the circuit board.
 2. RP is the LED music level display sensitivity adjustment potentiometer, and adjusting it can change the sensitivity of LED.
 3. Connect a 5V electric power supply with a USB wire, solder the audio wire, and connect the R, GND, and +5V of the two PCB with a 3-core wire.



将导线剥出5mm左右的铜线，并上锡。
Remove the copper wire of about 5mm and add solder.



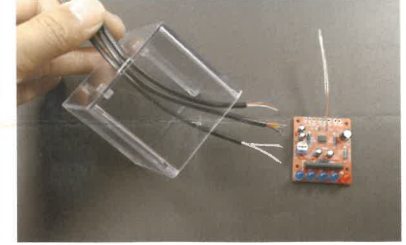
将透明导线焊接在P3位置，红线接VO+，透明线接VO-。
Solder the transparent wire to the position of P3, connect the red wire to VO+, and the transparent wire to VO-.



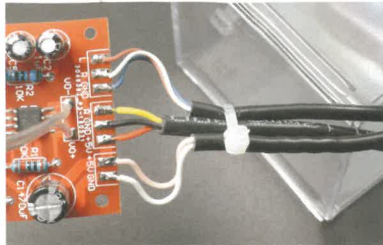
将USB插入USB供电头，用万用表电压档测量两根导线的正负极。
Insert the USB into the USB power supply head, and measure the positive and negative poles of the two wires with the multimeter voltage range.



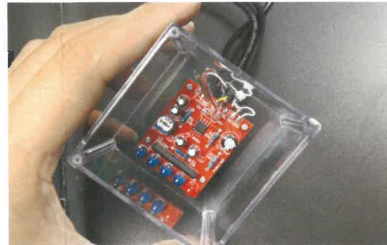
参照电路原理图，测量音频线对应的线路。
Refer to the circuit schematic diagram and measure the corresponding line of the audio wire.



先将导线穿入外壳，再焊接导线。
Pass the wire into the shell before soldering the wire.



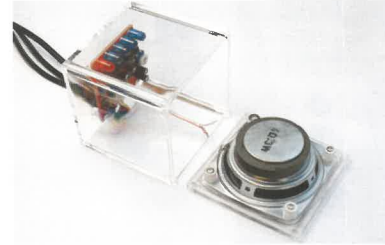
将导线排列整齐，用尼龙扎带将导线扎紧。
Arrange the wires neatly and fasten the wires with nylon cable ties.



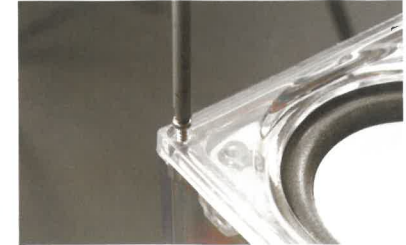
用镊子和带磁性的螺丝刀辅助安装电路板。先固定一个螺丝，不用拧紧，再安装其它螺丝，最后拧紧螺丝。
Use tweezers and a magnetic screwdriver to auxiliary install the PCB. First fix one screw without tightening, then install other screws, and finally tighten the screws.



如图所示，用尼龙柱和螺丝固定扬声器。
As the picture shows, fix the loudspeaker with nylon posts and screws.



将扬声器的导线焊接上，红线接+，透明线接-。
Solder the wires of the loudspeaker, connect the red wire to +, and the transparent wire to -.



用螺丝将外壳固定好，螺丝拧到到位即可，用力过度会损坏壳体。
Fix the shell with screws, just screw in place, excessive force can damage the shell.