



洲光源
CHAULIGHT

产品规格书 SPECIFICATION

客户名称: _____

Customer Name

产品类型: _____ 插件式光电接收管

Product Name

产品型号: _____ ZALS234C-7091-1401

Part No.

☐ 技术参考 Technical Reference		☐ 样品 Sample		☐ 量产供货 Mass Product	
客户审核（加盖公章） Client approval（Stamp）		洲光源审核 Chaulight approval			
核准 Approval	确认 Checked	核准 Approval	确认 Checked	制作 Edited	
		刘峰斌	郝三强	付世雄	
☐ 接收 Qualified		☐ 不接收 Disqualified		日期 Date: 2022.06.27	

联系电话(Tel): 0760-88504720

传真(Fax): 0760-88504721

地址(Add): 广东省中山市东升镇联胜南路 3 号洲光源科技园

No.3,Lian Sheng South Road ,Dong Sheng Town,Zhongshan City,Guang Dong Province.

本规格书仅用于双方交流用需经双方签订后方可生效，自签订后有效期为两年，期满后需以书面形式续签。最终解释权为洲光源所有。

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广东洲光源红外半导体有限公司
Guangdong Chaulight Infrared Semiconductor Co.,Ltd.

ZALS234C-7091-1401 红外环境光感测器是一款高灵敏度的光敏传感器，插件式外型封装，体积小，高可靠性，既节能又环保，应用领域广，可取代传统 CDS 使用，也可以用于产品对射及反射使用。

ZALS234C-7091-1401 infrared ALS is a high sensitivity of the photosensitive sensor, Plug-in-type package, small size, high reliability, energy saving and environmental protection, wide application field, it can replace the traditional CDS use, can also be used for product use on the radio and reflection.



特性 Feature

--感应速度快、感光度强

Fast response time、High photo sensitivity

--无铅材料、RoHS 认证

Pb.Free、RoHS compliant version

--感光峰值波长 540nm

Peak wavelength $\lambda_p=540\text{nm}$

应用 Application

--红外应用系统、光电开关、复印机、扫描仪、洗衣机

Infrared applied system、Optoelectronic switch、Copiers、Scanners、Amusement machines

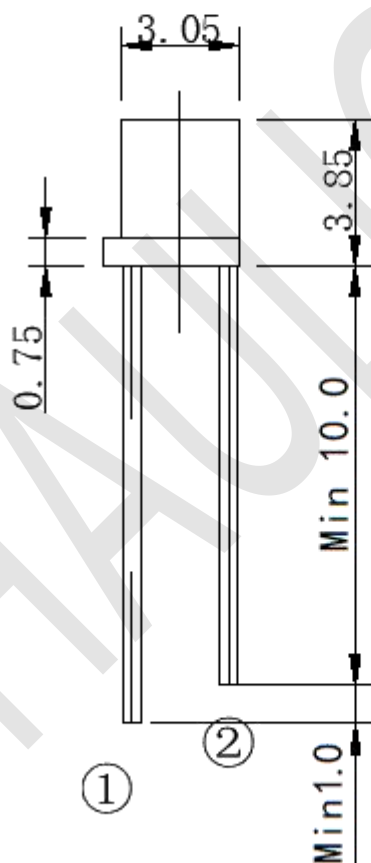
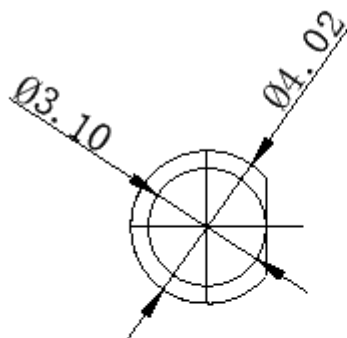
最大额定值 Absolute Maximum Ratings

测试项目 Parameter (Ta=25℃) *21	符合 Symbol	范围 Ratings	单位 Unit
电源电压 Supply Voltage	V _{CC}	0.7-15.0	V
输出电压 Output Voltage	V _{OUT}	≤V _{CC}	V
输出电流 Output Current	I _O	5	mA
工作温度 Operating Temperature	T _{opr}	-40~+85	℃
储存温度 Storage Temperature	T _{stg}	-40~+100	℃
焊接温度 Lead Soldering Temperature*2	T _{sol}	260	℃

*1、在 25 摄氏度的环境中测试 below 25 Free Air Temperature

*2、离胶体 2mm 以上焊接 5s 内 2mm form body for 5 seconds

产品尺寸 Package Dimension



①: Vcc
②: Vout

备注 Notes:

--所有尺寸为毫米标识

All dimensions are in millimeters

--未标识尺寸正负公差为 0.3mm

Tolerances unless dimensions $\pm 0.3\text{mm}$

光电特性 Electro-Optical Characteristics

电性参数 (温度=25℃) Parameter (Ta=25℃)	符号 Symbol	条件 Condition	最小值 Min.	典型值 Typ.	最大值 Max.	单位 Units
峰值光谱响应 Peak Spectral Response	λ_{PR}	Daylight light source	--	540	--	nm
温度系数 Temperature Coefficient	T_C	$T_A = 20^\circ\text{C} \sim 80^\circ\text{C}$, $E_V = 100\text{ Lux}$	--	0.2	--	%/°C
光电流 Photo current	I_{O1}	$E_V = 10\text{ Lux}$	14	21	28	uA
	I_{O2}	$E_V = 100\text{ Lux}$	140	210	280	uA
饱和输出电压 Saturation Output Voltage	$V_{O(sat)}$	$E_V = 100\text{ Lux}$, $R_{LOAD} = 75K$	2.2	2.35	--	V
暗电流 Dark current	I_{DARK1}	$E_V = 0\text{ Lux}$, $T_A = 25^\circ\text{C}$	--	--	90	nA
	I_{DARK2}	$E_V = 0\text{ Lux}$, $T_A = 85^\circ\text{C}$	--	1.5	--	uA

备注 Notes:

1、 $V_{CC} = 3V$.

2、白光 LED (色温 5700K) 作为测试光源。

White light LED (color temperature 5700K) serves as the test light source.

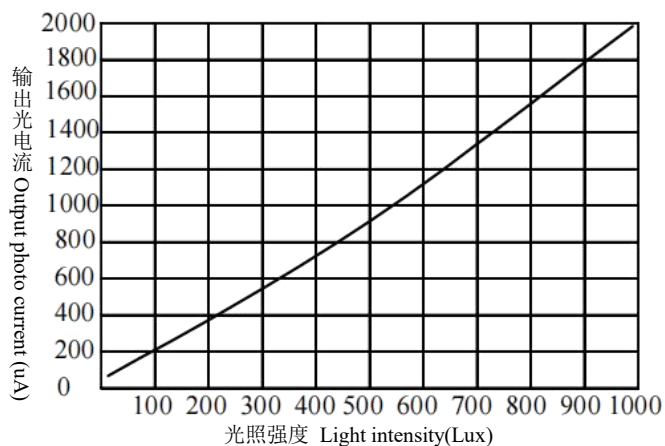
3、测试参数误差在 $\leq 15\%$ ，均在规格范围内。

The error of the test parameters within 15% is within the specification range.

典型光电特性曲线图 Typical Electro-Optical Characteristics Curves

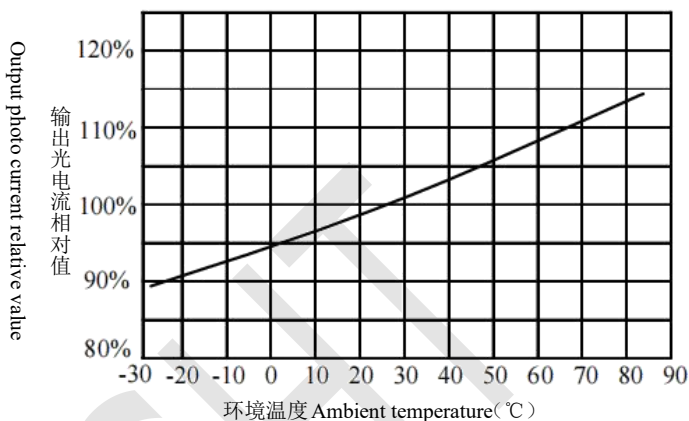
输出光电流与光照强度的关系

Output photo current vs. Light Intensity



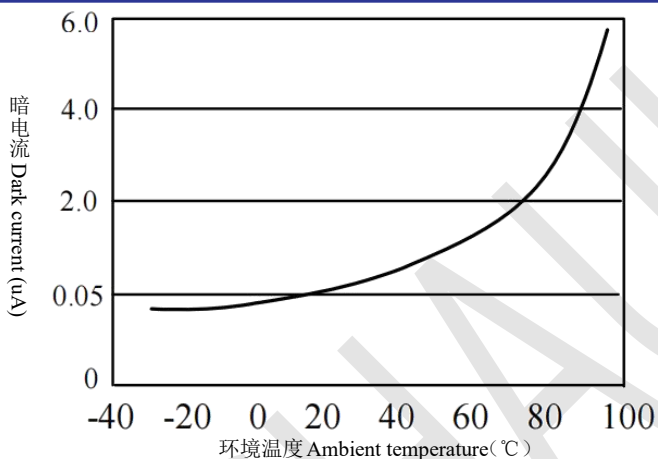
相对输出光电流与环境温度的关系

Relative output photo current vs. Ambient Temperature



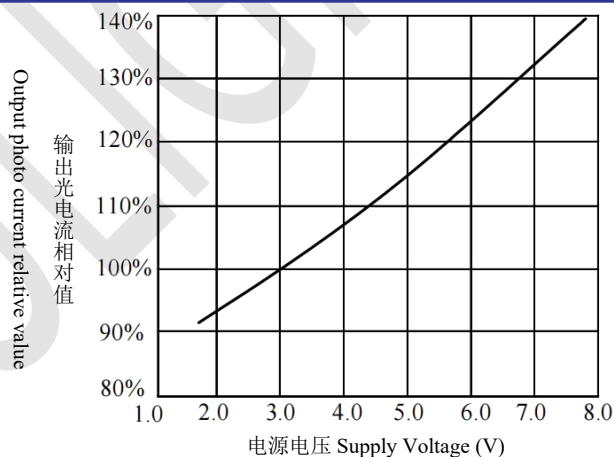
暗电流与环境温度的关系

Dark current vs. Ambient Temperature



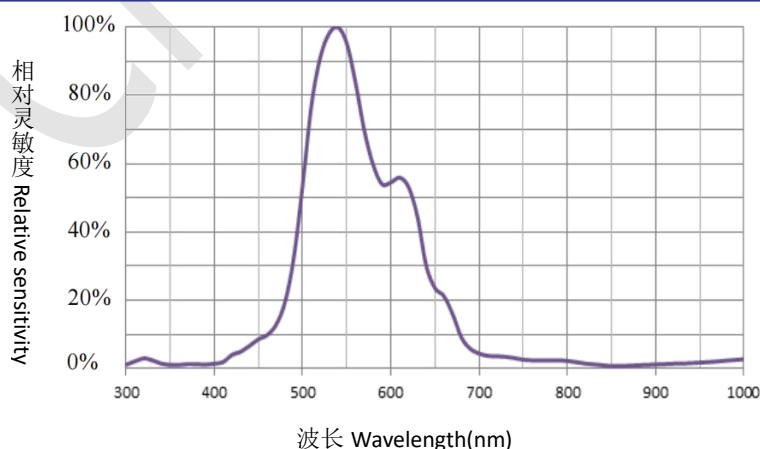
相对输出光电流与电源电压的关系

Relative output photo current vs. Supply Voltage

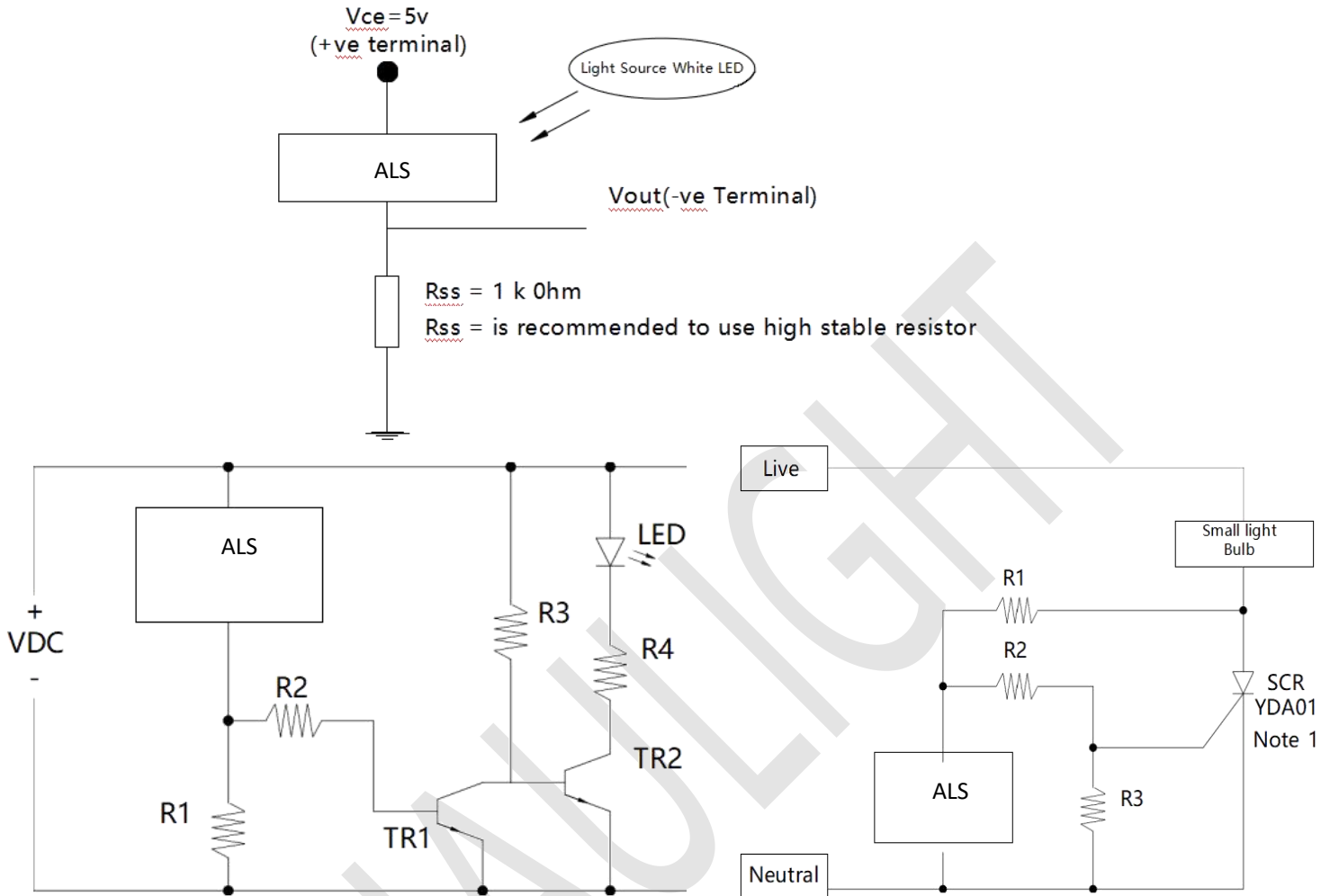


光谱响应曲线

Spectral Response Curve



应用电路 Applying the circuit



- (1) 当光照低于光照阈值时， $TR1$ 三极管关闭， $TR2$ 三极管导通，LED 导通
- (2) 当环境光照大于光照阈值时， $TR1$ 降低的电流并使 $TR2$ 截止，LED 不导通

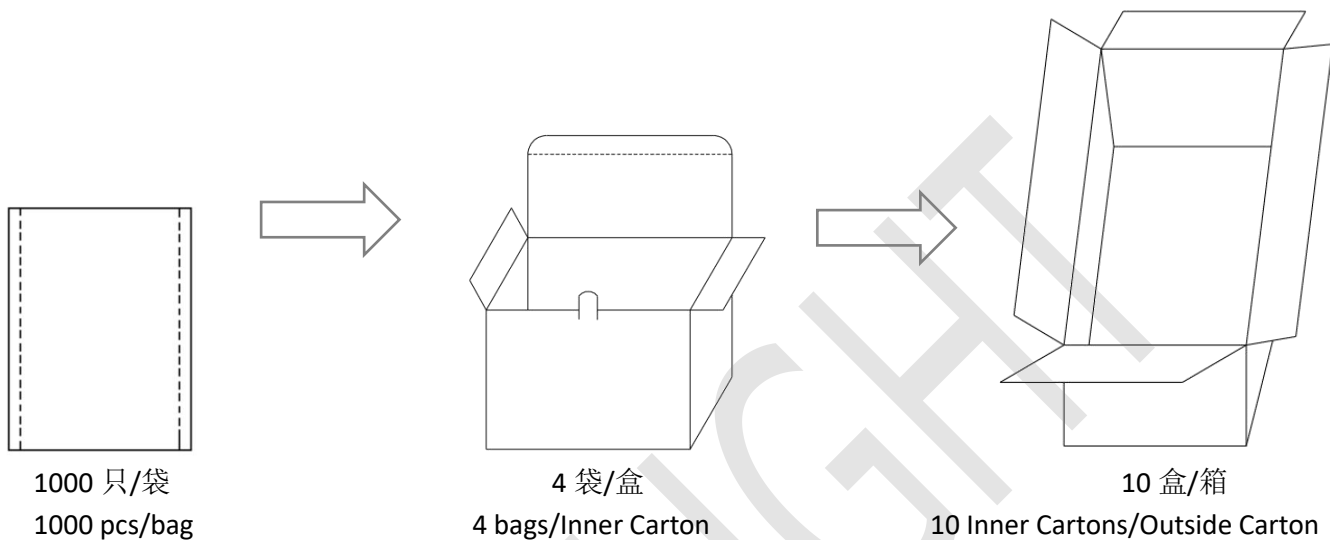
- (1) 该电路需要一个敏感的可控硅，灯泡的电流是由敏感的可控硅开关空置
- (2) 当光量超过阈值时，该 V_c 与 V_e 引脚之间的电流转移了可控硅的栅极电流，光切换阈值可通过选择 $R2$ 和 $R3$ 不同的值进行调整

包装规格 Packing Specification

防静电袋 Anti-electrostatic bag

内包装盒 Inner Carton

外箱 Outside Carton



注意事项 Note

--过流保护 Over-current-proof

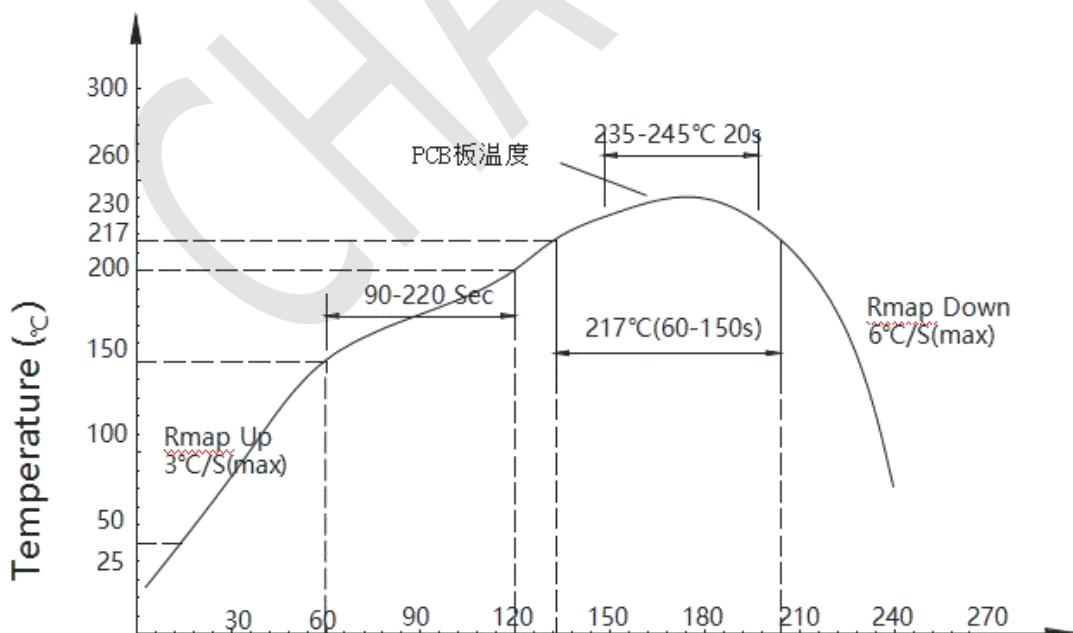
1、客户必须应用电阻进行保护，否则会造成轻微电压偏移大电流变化（烧毁将发生）。Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

--储存 Storage

- 1、产品准备使用前不要打开防潮袋。Do not open moisture proof bag before the products are ready to use.
- 2、在打开包装之前，二极管应保持在 $10^{\circ}\text{C}\sim 30^{\circ}\text{C}$ 和 90%RH 或以下。Before opening the package, the LED should be kept at $10^{\circ}\text{C}\sim 30^{\circ}\text{C}$ and 90%RH or less.
- 3、二极管建议在一年内使用。The LED suggested be used within one year.
- 4、打开包装后，设备必须存储在 $10^{\circ}\text{C}\sim 30^{\circ}\text{C}$ 和 60%RH，并在 168 小时内使用（地板寿命）。如果未使用的二极管仍然存在，它应储存在防潮包装中。After opening the package, the devices must be stored at $10^{\circ}\text{C}\sim 30^{\circ}\text{C}$ and 60%RH, and used within 168 hours (floor life). If unused LED remain, it should be stored in moisture proof packages.
- 5、如果吸湿材料（干燥剂材料）已褪色或未打开的袋子已超过保质期或设备（袋外）已超过地板寿命，需要烘焙处理。If the moisture absorbent material (desiccant material) has faded or unopened bag has exceeded the shelf life or devices (out of bag) have exceeded the floor life, baking treatment is required.
- 6、如果需要烘焙，请参阅 IPC/JEDECJ-STD-033 进行烘焙程序或建议以下条件：在 $60^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 和 5%RH<96 小时（筛/管/套单位）If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure or recommend the following conditions: 96 hours at $60^{\circ}\text{C}\pm 5^{\circ}\text{C}$ and < 5 % RH (reeled/tubed/loose units)

--焊接条件 Soldering Condition

- 1、铅焊料温度剖面 Lead solder temperature profile
- 2、回流焊不应做两次以上。Reflow soldering should not be done more than two times.
- 3、焊接时，不要在加热过程中对 LED 施加压力。When soldering, do not put stress on the LEDs during heating.
- 4、焊接后，不要使电路板翘曲。After soldering, do not warp the circuit board.

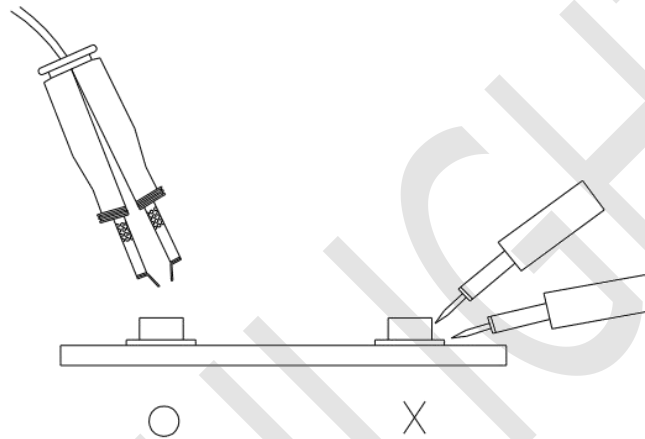


--烙铁条件 Soldering Iron

每个端子都要去烙铁尖端温度低于 350℃ 为 3 秒内一次少于烙铁容量 25W。离开两秒钟然后更多的间隔，并做焊接每个终端。手工焊料通常在开始的时候容易损坏产品。Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

--手工补数 Repairing

修理不应在 LED 焊接后进行。当修理是不可避免的是，应该使用双头烙铁（如下图所示）。应该是事先确认 LED 的特性是否会或不会损坏通过修理。Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



--其他 Other

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更改记录表 Engineering Change Notice-Record

版本 Edition	更改日期 Date	主要更改内容 Main Content	拟 制 Prepared	确 认 Checked
A/0	2022-06-27	新版本发布 New Edition	付世雄	郝三强