



洲光源
CHAULIGHT

产品规格书 SPECIFICATION

客户名称: _____

Customer Name

产品类型: 红外接收头

Product Name

产品型号: ZSIRM-Z1QN86

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	
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☐ 接收 Qualified		☐ 不接收 Disqualified		日期 Date: 2020.08.14	

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ZSIRM-Z1QN86 是一种红外接收器，用于远程控制和其他需要改进环境光抑制的应用。单独的 PIN 二极管和前置放大器 IC 电路组装在单个引线框架上。环氧树脂包装包含一个特殊的红外过滤器。该模块即使在受干扰的环境光应用中也具有良好的性能，并提供保护，防止不受控制的输出脉冲。

The ZSIRM-Z1QN86 is infrared receivers for remote control and other applications requiring improved ambient light rejection.

The separate PIN diode and preamplifier IC are assembled on a single leadframe. The epoxy package contains a special IR filter.

This module has excellent performance even in disturbed ambient light applications and provides protection against uncontrolled output pulses.

特性 Feature

--光电探测器和前置放大器放在一个包中

Photo detector and preamplifier in one package

--PCM 频率的内部滤波器

Internal filter for the PCM frequency

对环境光的高免疫力

High immunity against ambient light

改进了对电场干扰的屏蔽能力

Improved shielding against electric field disturbance

3.0 伏供电电压；低功耗

3.0-Volt supply voltage; low power consumption

TTL 和 CMOS 兼容性

TTL and CMOS compatibility

应用 Application

--电视,录像机,音响设备,空调,汽车立体声收音机,玩具,家庭电脑,所有需遥控设备

TV, VCR, audio equipment, air conditioning, car stereo radio, toys, home computer, all require remote control equipment

最大额定值 Absolute Maximum Ratings

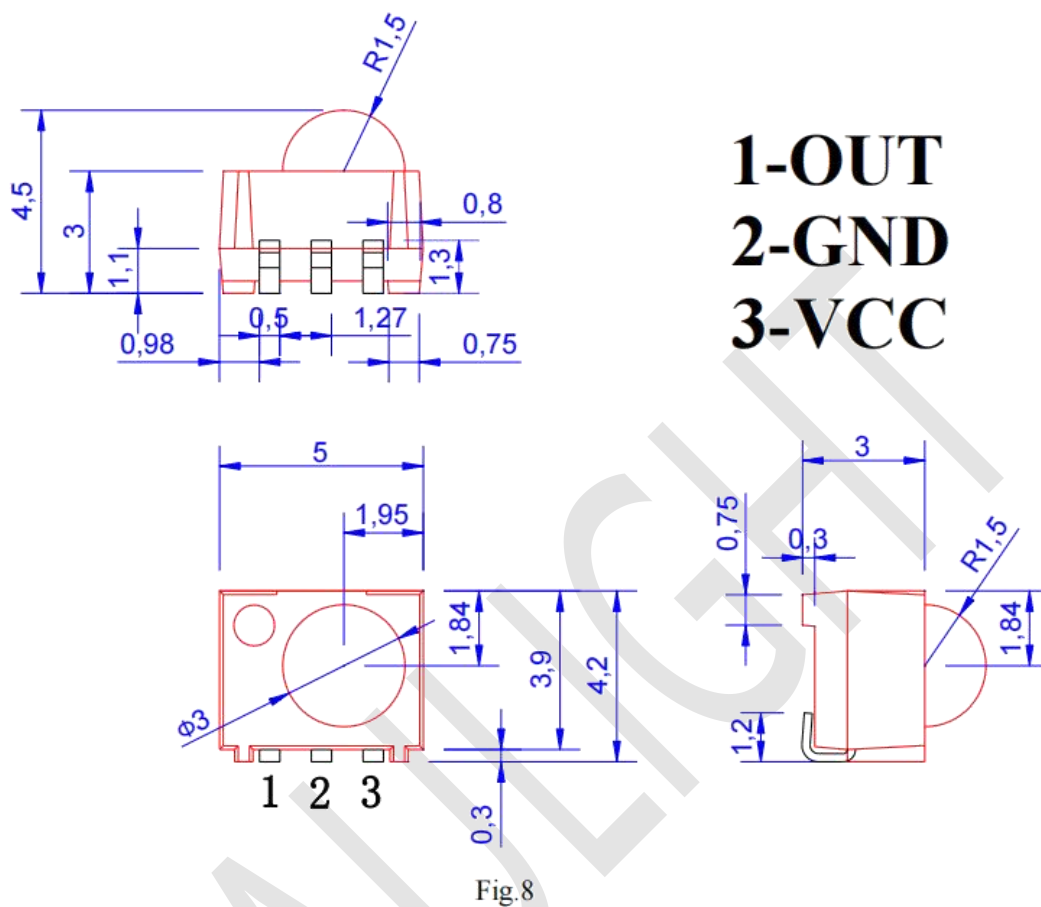
测试项目 Parameter (Ta=25℃)	符合 Symbol	范围 Ratings	单位 Unit
电源电压 Supply voltage	Vcc	7	V
工作温度 Operating Temperature	Topr	-20~+85	℃
储存温度 Storage Temperature	Tstg	-40~+125	℃
焊接温度 Lead Soldering Temperature*3	Tsol	260 (<5s)	℃

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

*2、脉宽少于等于 100us，占空比 1% Pulse width ≤ 100μs, Duty cycle= 1%

*3、离胶体 2.5mm 以上焊接 5s 内 2.5mm form body for 5 seconds

产品尺寸 Package Dimension



备注 Notes:

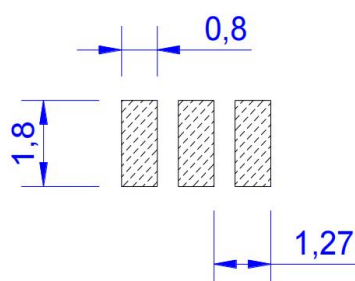
--所有尺寸为毫米标识

All dimensions are in millimeters

--未标识尺寸正负公差为 0.3mm

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

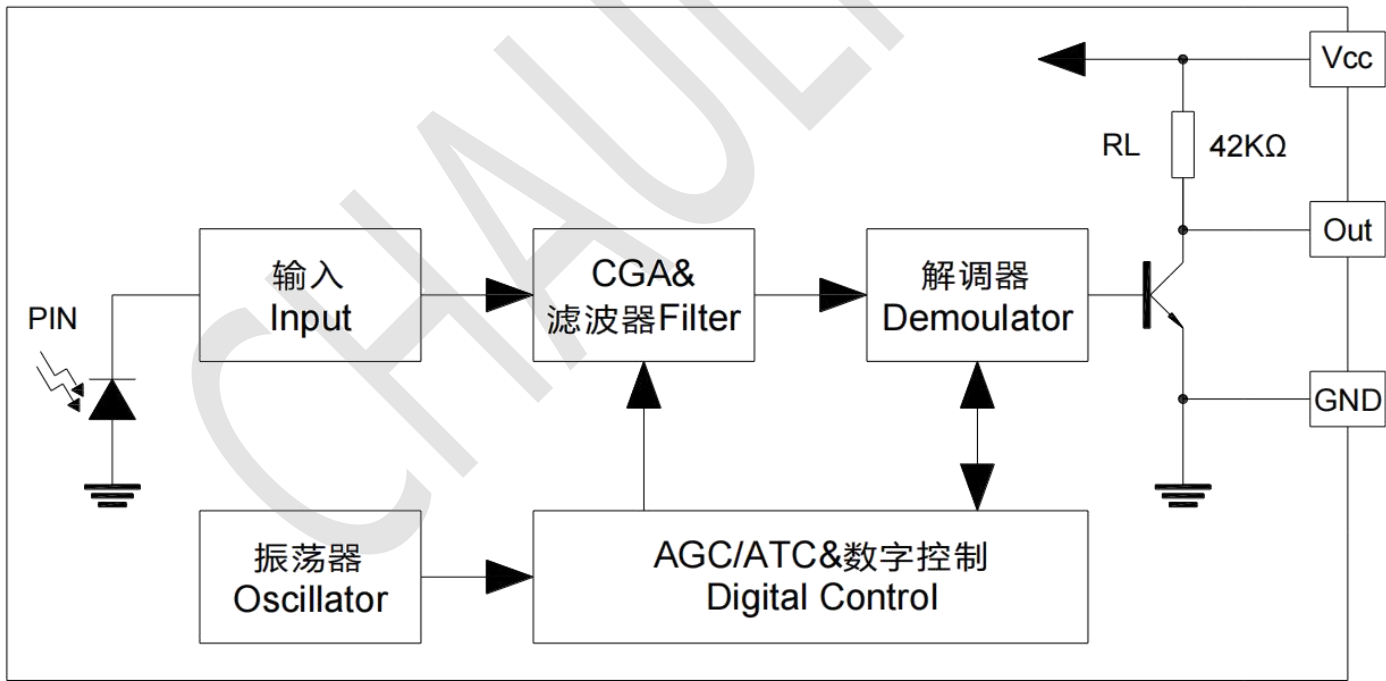
Proposed pad layout(For reference only)



光电特性 Electro-Optical Characteristics

电性参数 (温度=25℃) Paramete (Ta=25℃)	符号 Symbol	条件 Condition	最小值 Min.	典型值 Typ.	最大值 Max.	单位 Units
工作电压 working voltage	Vcc	--	2.7	--	5.5	V
静态电流 Supply Current	Icc	Vcc=5.0v	--	0.4	0.6	mA
载波频率 B.P.F. Center Frequency	fo	--	--	37.9	--	kHz
峰值波长 Peak Wavelength	λ p	--	--	940	--	nm
低电平输出 Low Level Output Voltage	Vol	--	--	0.20	0.40	mV
高电平输出 High Level Output Voltage	Voh	Vcc=5.0v	4.5	5.5	--	V
脉冲宽度 pulse width	Tpw	--	400	--	800	μ S
接收距离 Arrival Distance	L1	(θ =0)	20	--	--	m
	L2	(θ =45°)	10	--	--	m
半角 Half angle	2 θ 1/2	--	--	±45	--	Deg

方框图 Block Diagram



试验方法 Test Method

Fig.1 Transmitter Wave Form

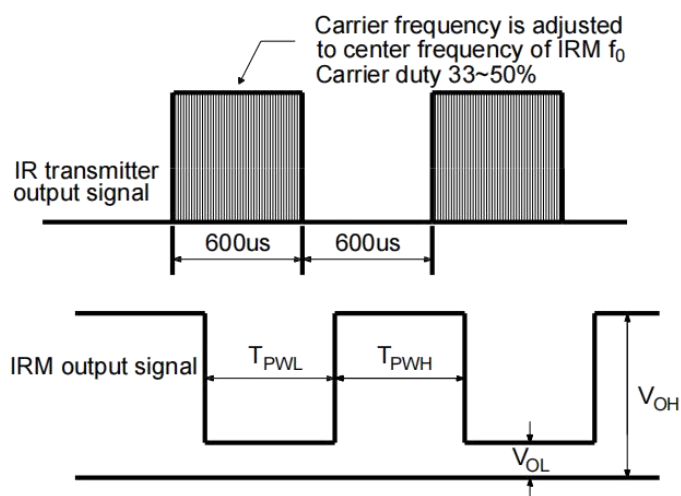


Fig.2 Standard transmitter calibration

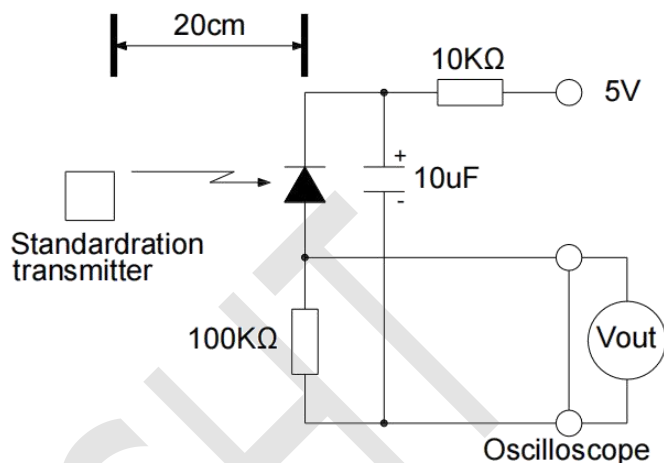
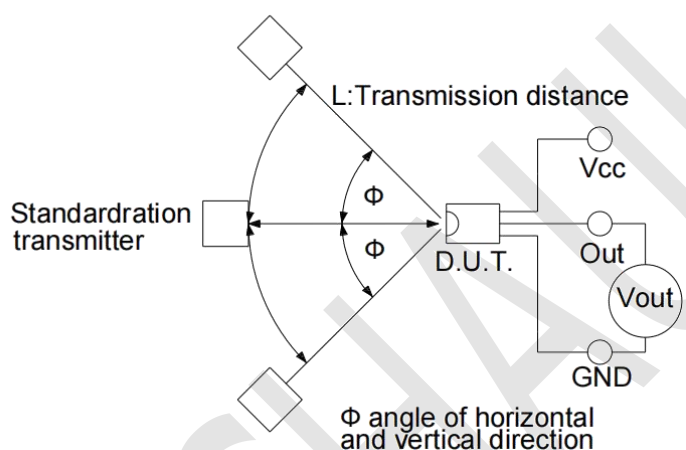
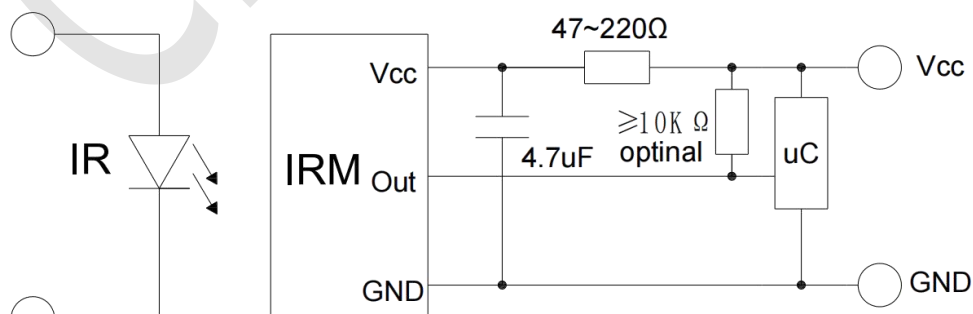


Fig.3 Receive distanced incidence angle test



应用电路 Application Circuit

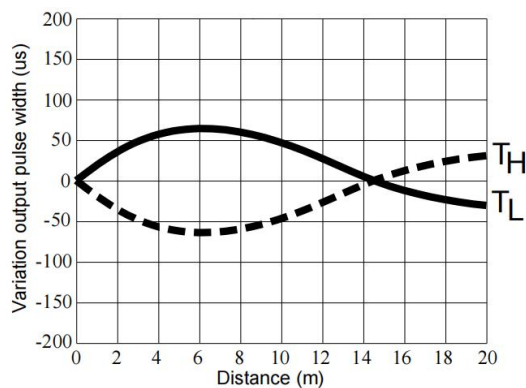


The RC Filter must be connected as close as possible to Vcc and GND pins.

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

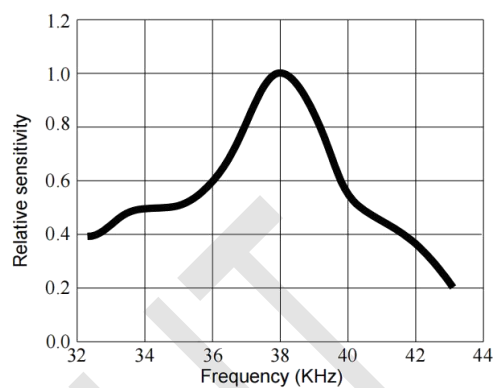
变化输出脉冲宽度与距离关系

Variation output pulse width vs. Distance



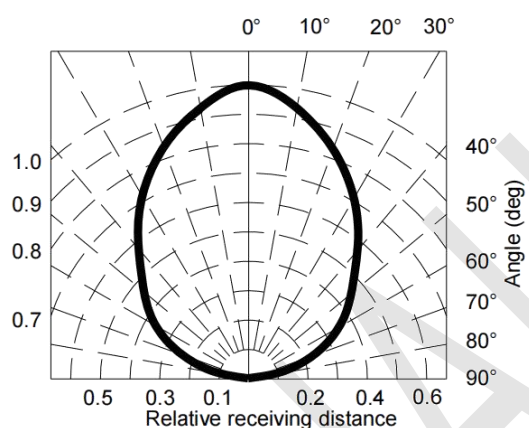
相对灵敏度与频率

Relative sensitivity VS. Frequency



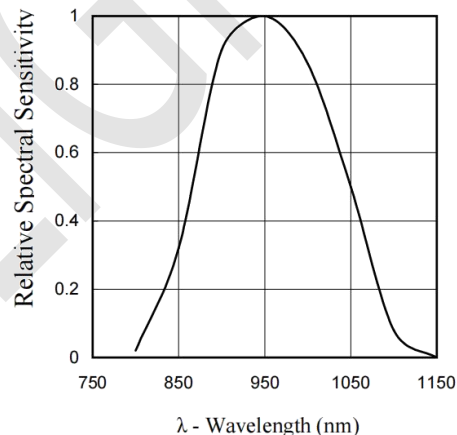
相对光强度与角位移的关系

Relative Light Intensity vs. Angular Displacement



波长曲线图

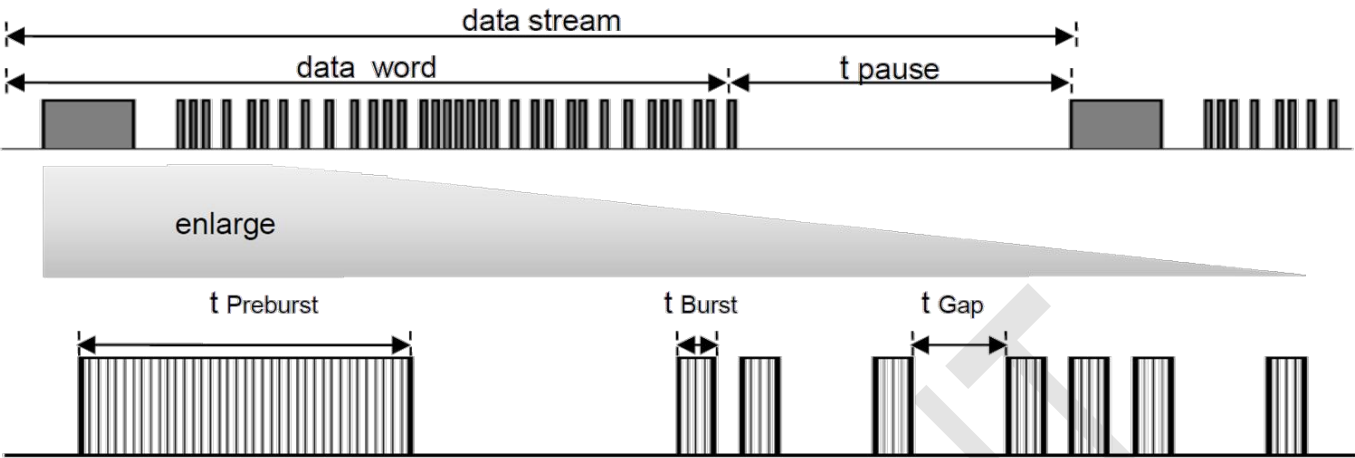
Spectral Distribution



代码信息 Code information

Data Format	Suitable	Data Format	Suitable
NEC	Yes	Sony 12Bit	Yes
RC5_Philips	Yes	Sony 15Bit	No
RC6_Philips	No	Sony 20Bit	No
Toshiba	Yes	XMP/RCMM Code	No

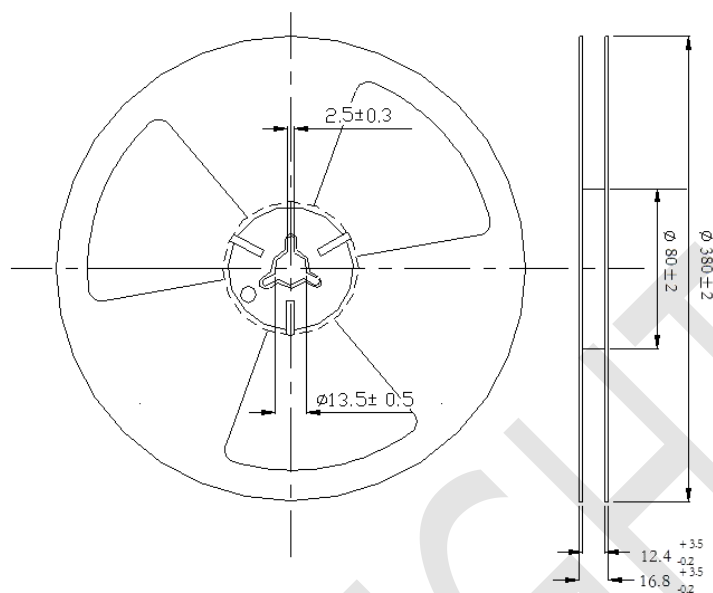
信号格式 Suitable signal format



Item	Suitable	limitation
Minimum burst length	T Burst	240 μ s
Minimum gap time after each burst	T Gap	320 μ s
Minimum data pause time	T Pause-min	20ms
Required data pause time	T Pause	> (Total Data Burst Time / 4) + 18ms

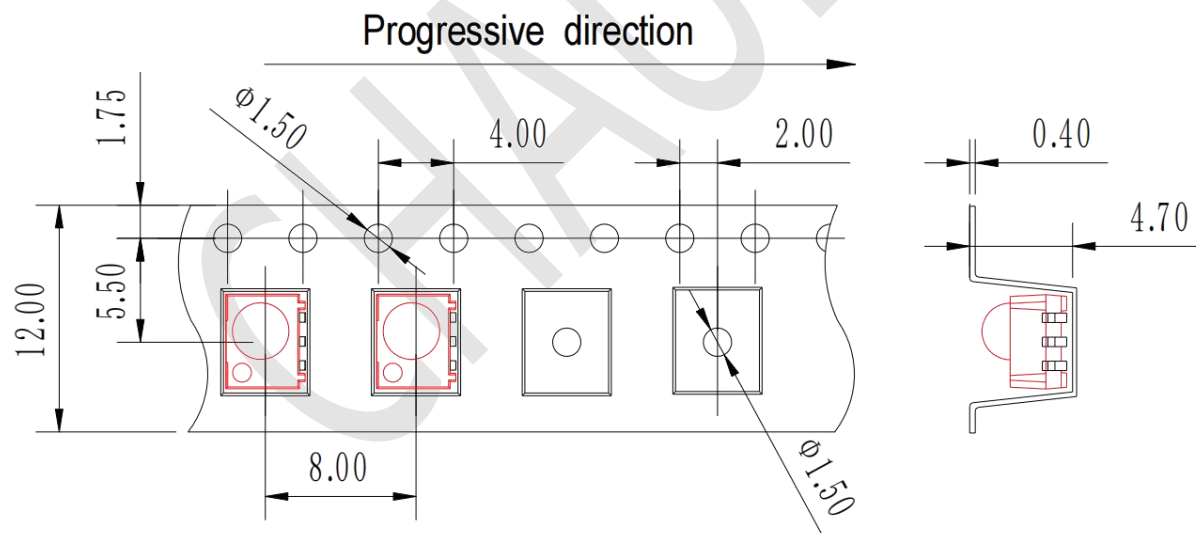
包装规格 Packing Specification

--卷轴包装尺寸 Package Dimensions



--载带编带的尺寸 Carrier Tape Dimensions

进料方向 Progressive Direction



--装载数量 Loaded Quantity

2000 个/盘 pcs/reel

--备注 Note

所有的尺寸公差最少是正负 0.1 毫米 The tolerances unless mentioned is $\pm 0.1\text{mm}$

► 注意事项 Note

--过流保护 Over-current-proof

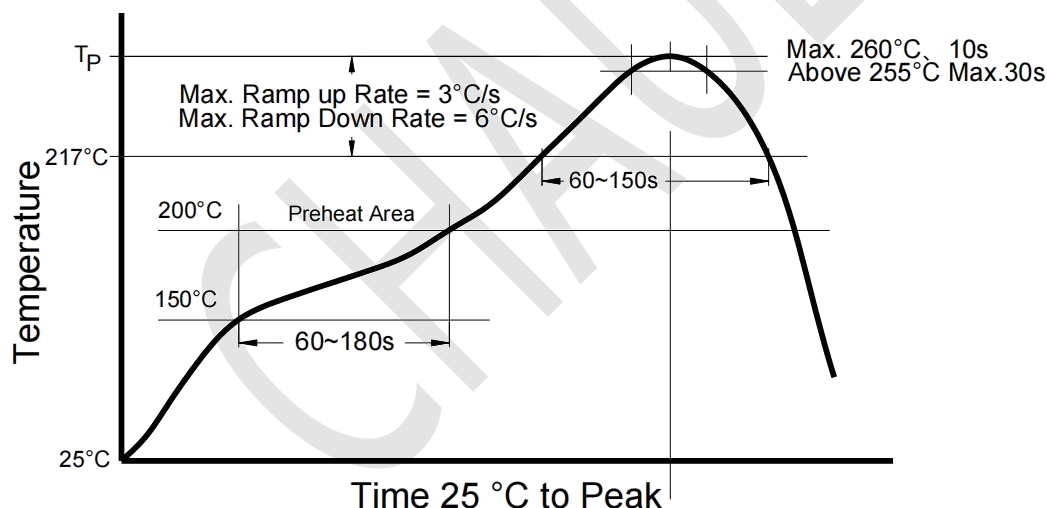
1、客户必须应用电阻进行保护，否则会造成轻微电压偏移大电流变化（烧毁将发生）。Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

--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°C~30°C 和 90%RH 或以下。Before opening the package, the LED should be kept at 10°C~30°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°C~30°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°C~30°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° C±5° 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°C ± 5°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



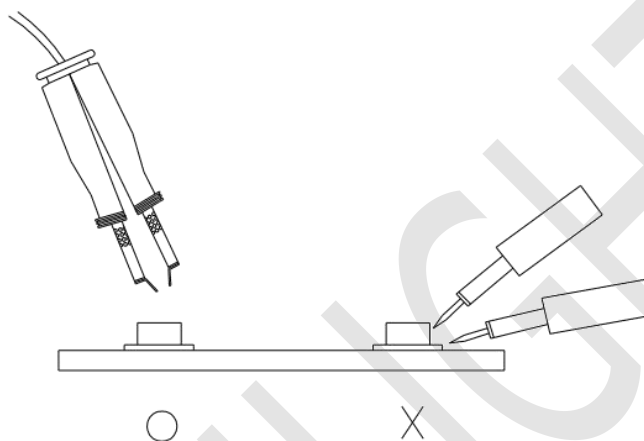
- 2、回流焊不应做两次以上。Reflow soldering should not be done more than two times.
- 3、焊接时，不要在加热过程中对 LED 施加压力。When soldering, do not put stress on the LEDs during heating.
- 4、焊接后，不要使电路板翘曲。After soldering, do not warp the circuit board.

--烙铁条件 Soldering Iron

每个端子都要去烙铁尖端温度低于 350℃为 3 秒内一次少于烙铁功率 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	2020-08-14	新版本发布 New Edition	谢育国	郝三强