洲光源
CHAULIGHT

# 产品规格书
# SPECIFICATION

客户名称：_____
Customer Name

产品类型：反射式光电开关
Product Name

产品型号：ZSOS-R1006-07
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）<br>Client approval（Stamp） | | 洲光源审核<br>Chaulight approval | | |
| 核准 Approval | 确认 Checked | 核准 Approval | 确认 Checked | 制作 Edited |
| | | 郝三强 | 王乐 | 付世雄 |
| ☐ 接收 Qualified ☐ 不接收 Disqualified | | 日期 Date：2020-12-31 | | |

地址(Add)：深圳市宝安区航城街道航空路 36 号华盛泰科技大厦 D 栋 502
No.502, Building D, Huashengtai Science and Technology Building, No. 36, Hangcheng Street, Bao'an District, Shenzhen.

ZSOS-R1006-07 由红外发射二极管和 NPN 硅光晶体管组成，它们并排封装在黑色热塑性外壳中的汇聚光轴上。光电晶体管只接收来自 IR 的辐射。这是正常情况。但当物体在中间时，光电晶体管不能接收辐射。有关更多组件信息，请参阅 IR 和 PT。

The ZSOS-R1006-07 consist of an infrared emitting diode and an NPN silicon phototransistor, encased side-by-side on converging optical axis in a black thermoplastic housing.The phototransistor receives radiation from the IR only .This is the normal situation. But when an object is in between , phototransistor could not receives the radiation.For additional component information , please refer to IR and PT.

## 特性 Feature

--可靠性高、辐射强度高、低电压驱动
High reliability、High radiant intensity、Low forward voltage、
--感应速度快、感光度强
Fast response time、High photo sensitivity
--截止感应波长 940nm
Cut-off visible wavelength λp=940nm
--无铅材料、Rohs 认证
Pb.Free、RoHS compliant version

## 应用 Application

--打印机、非接触开关
Printer、Non-contact Switching
--智能电子产品
Intelligent Electronic Products
--工业机械设备
Industrial Intelligent Equipment
--安防防护应用
Safety Application Products

## 最大额定值 Absolute Maximum Ratings

| 测试项目 Parameter（Ta=25℃） | | 符合 Symbol | 范围 Ratings | 单位 Unit |
|---|---|---|---|---|
| 输入端发射极 Input Emitter | 功率 Power Dissipation *1 | Pd | 75 | mW |
| | 反向电压 Reverse Voltage | $V_R$ | 5 | V |
| | 持续正向电流 Forward Current | $I_F$ | 50 | mA |
| | 脉冲正向电流 Peak Forward Current *2 | $I_{FP}$ | 1 | A |
| 输出端接收极 Output Detector | 功率 Power Dissipation *1 | Pc | 75 | mW |
| | 集电极-发射极电压 Collector-Emitter Voltage | $V_{CEO}$ | 30 | V |
| | 发射极-集电极电压 Emitter-Collector Voltage | $V_{ECO}$ | 5 | V |
| | 集电极电流 Collector Current | $I_{C(ON)}$ | 50 | mA |
| 工作温度 Operating Temperature | | Topr | -25~+85 | ℃ |
| 储存温度 Storage Temperature | | Tstg | -40~+85 | ℃ |
| 焊接温度 Lead Soldering Temperature*3 | | Tsol | 260 | ℃ |

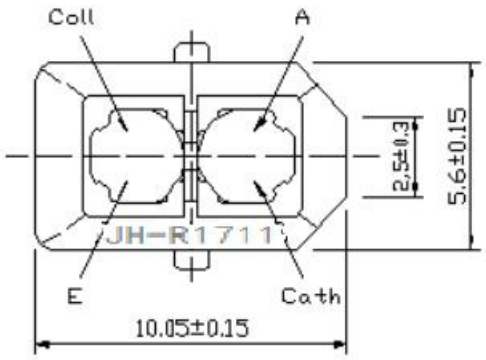
*1、 在 25 摄氏度的环境中测试 below 25 Free Air Temperature
*2、脉宽少于等于 100us， 占空比 1% Pulse width≦100μs,Duty cycle= 1%
*3、离胶体 2mm 以上焊接 5s 内 2mm form body for 5 seconds

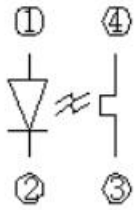
## 光电特性 Electro-Optical Characteristics

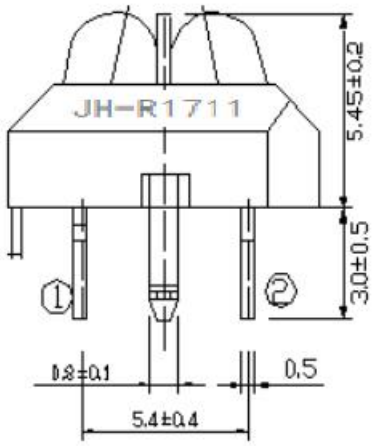
| 电性参数（温度=25℃） Parameter（Ta=25℃） | | 符号 Symbol | 条件 Condition | 最小值 Min. | 典型值 Typ. | 最大值 Max. | 单位 Units |
|---|---|---|---|---|---|---|---|
| 输入端 Input | 正向电压 Forward Voltage | $V_F$ | $I_F$=20mA | -- | 1.2 | 1.5 | V |
| | | | IF=100mA*2 | -- | 1.4 | 1.85 | |
| | | | IF=1A *2 | -- | 2.6 | 4.0 | |
| | 峰值波长 Peak Wavelength | λp | $I_F$=20mA | -- | 940 | -- | nm |
| | 反向电流 Reverse Current | $I_R$ | $V_R$=5V | -- | -- | 10 | μA |
| 输出端 Output | 暗电流 Dark Current | $I_{CEO}$ | Ee=0mW/cm² $V_{CE}$=20V | -- | -- | 100 | nA |
| | 集电极-发射极的工作电压 C-E Saturation Voltage | $V_{CE(SAT)}$ | $I_C$=2mA Ee=1mW/cm² | -- | -- | 0.4 | V |
| 转换特性 Transfer Characteristics | 上升时间 Rise Time | $t_r$ | $V_{CE}$=5V $I_C$=1mA $R_L$=1000Ω | -- | 15 | -- | μS |
| | 下降时间 Fall Time | $t_f$ | | -- | 15 | -- | |
| | 光电流 Collector Current | $I_{C(ON)}$ | Ee=1mW/cm² $V_{CE}$=5V | 0.1 | -- | -- | mA |

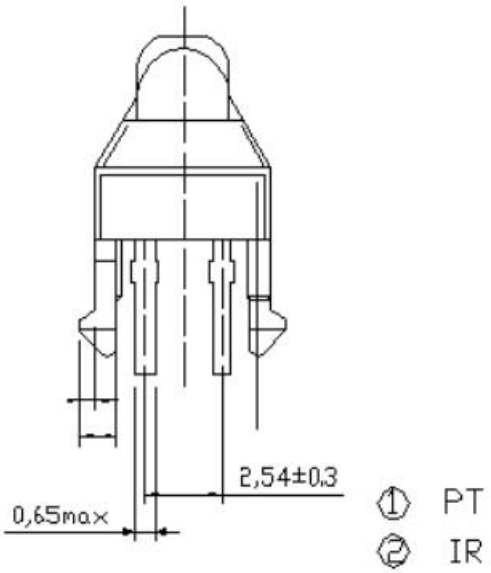
*2、脉宽少于等于 100us， 占空比 1% Pulse width≦100μs,Duty cycle= 1%

## 产品尺寸 Package Dimension



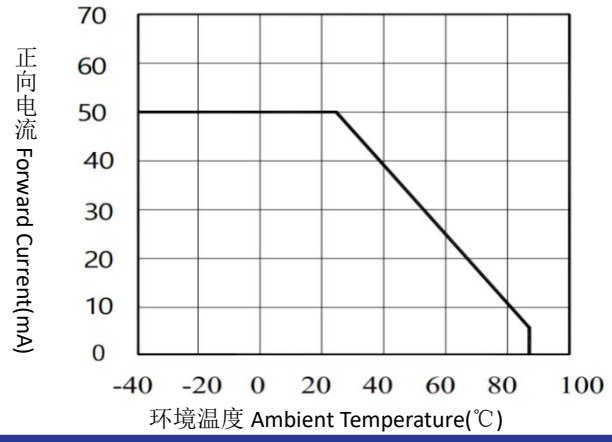



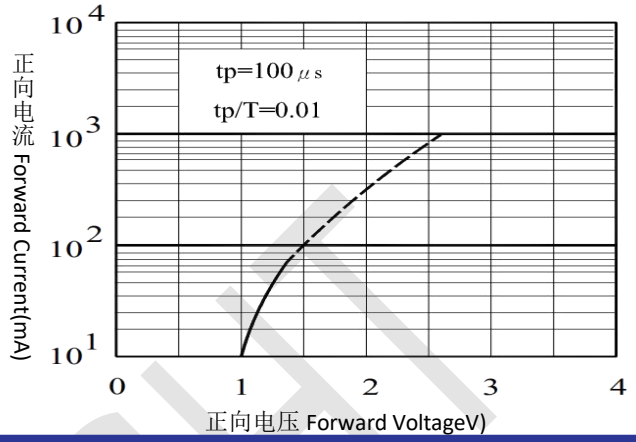

--所有尺寸为毫米标识
All dimensions are in millimeters
--未标识尺寸正负公差为 0.3mm
Tolerances unless dimensions ±0.3mm

# 发射管特性曲线图 Typical Electro-Optical Characteristics Curves-IR

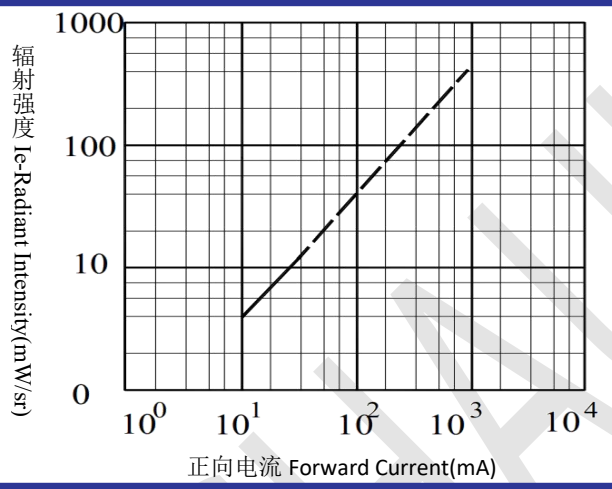
## 正向电流与环境温度的关系
## Forward Current vs. Ambient Temperature



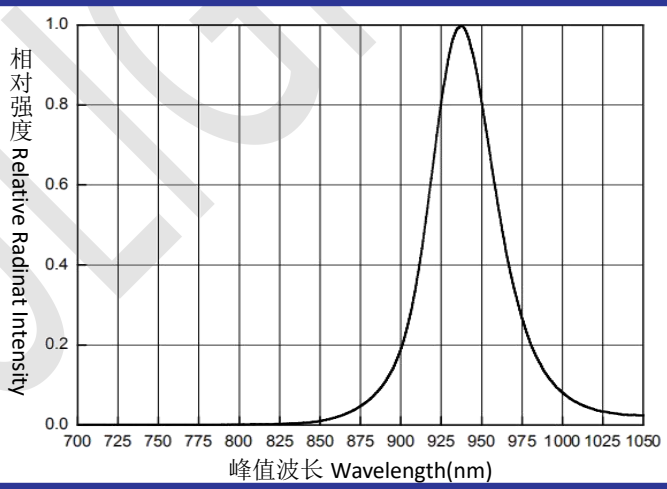

## 正向电流与正向电压的关系
## Forward Current vs. Forward Voltage



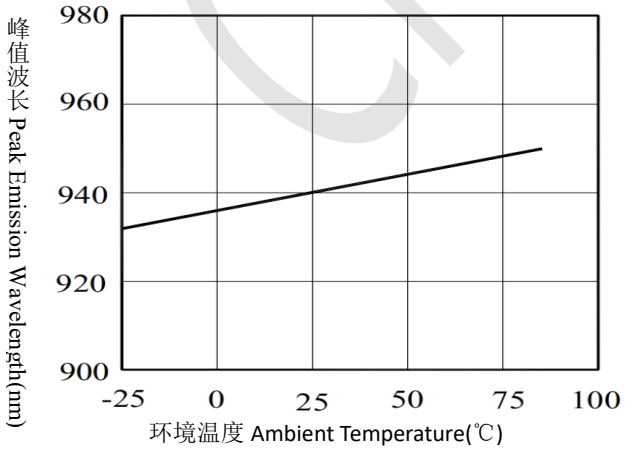

## 辐射强度与正向电流的关系
## Radiant Intensity vs. Forward Current



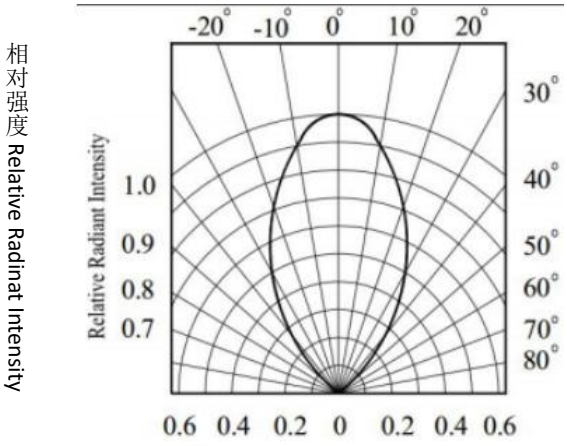

## 波长曲线图
## Spectral Distribution




## 峰值波长与环境温度的关系
## Peak Emission Wavelength vs. Ambient Temperature

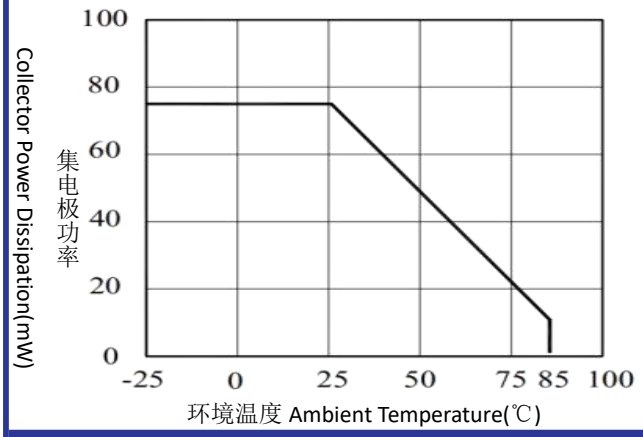



## 相对辐射强度与角位移的关系
## Relative Radiant Intensity vs. Angular Displacement

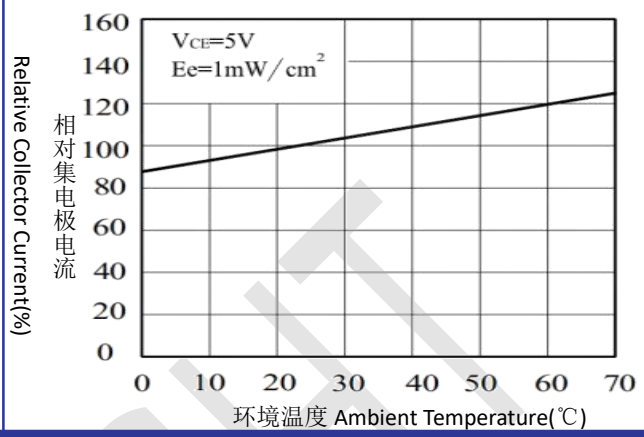


## 接收管特性曲线图 Typical Electro-Optical Characteristics Curves-PT

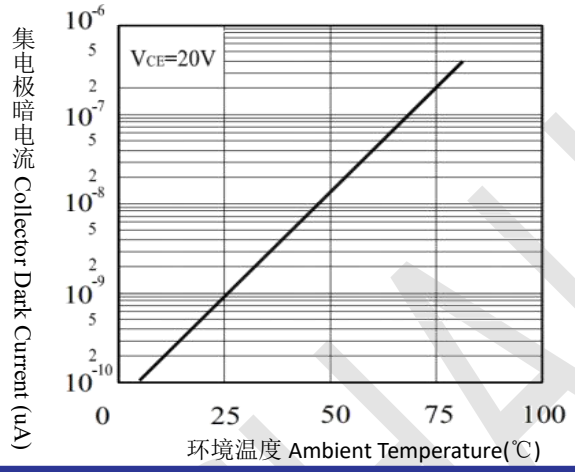
### 集电极功率与环境温度的关系
### Collector Power Dissipation vs. Ambient Temperature



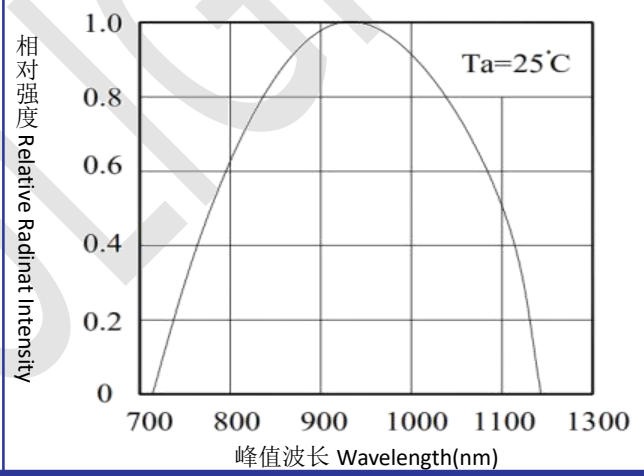

### 相对集电极电流与环境温度的关系
### Relative Collector Current vs. Ambient Temperature



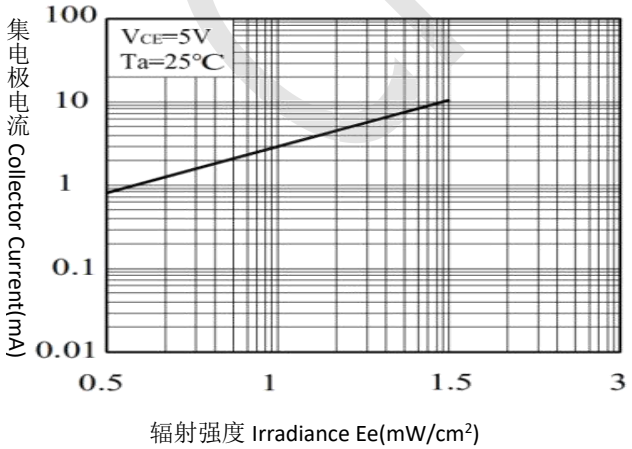

### 集电极暗电流与环境温度的关系
### Collector Dark Current vs. Ambient Temperature



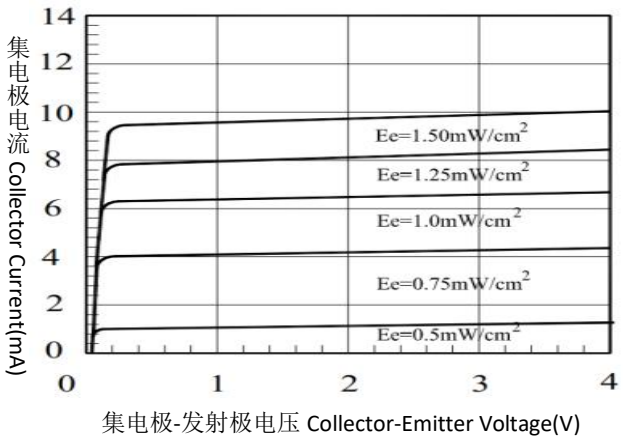

### 感应波长曲线图
### Spectral Sensitivity




### 集电极电流与辐射强度的关系
### Collector Current vs. Irradiance

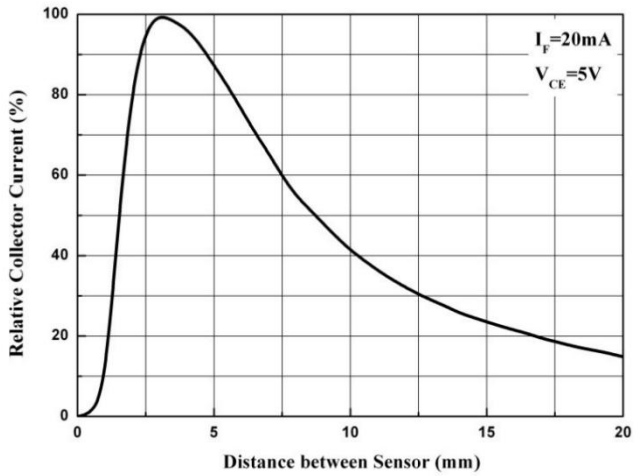


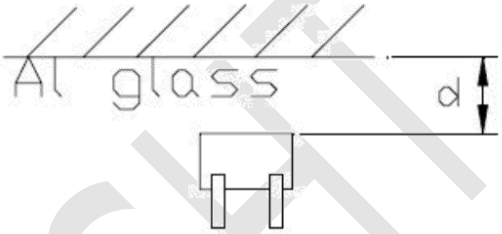

### 集电极电流与集电极-发射极电压的关系
### Collector Current vs. Collector-Emitter Voltage



## 光电开关特性曲线图 Typical Electro-Optical Characteristics Curves-ITR

光电流与感应距离之间的关系 Relative Collector Current vs DIistance Between Sensor



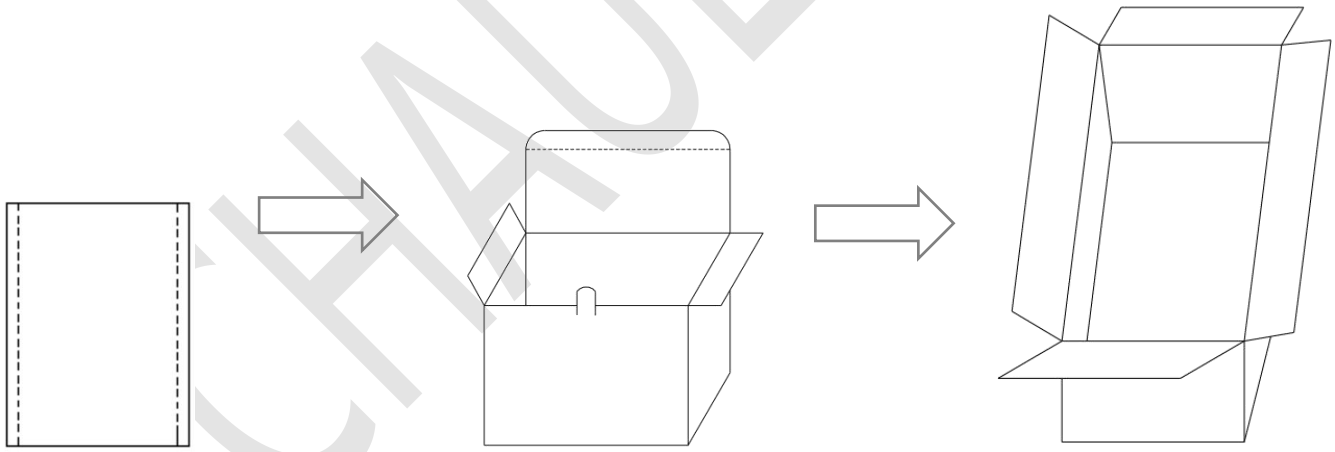




## 包装规格 Packing Specification

防静电袋 Anti-electrostatic bag

内包装盒 Inner Carton

外箱 Outside Carton



150 只/袋
150pcs/bag

5 袋/盒
5bags/Inner Carton

10 盒/箱
10 Inner Cartons/Outside Carton

## 注意事项 Note

**--其他 Other**

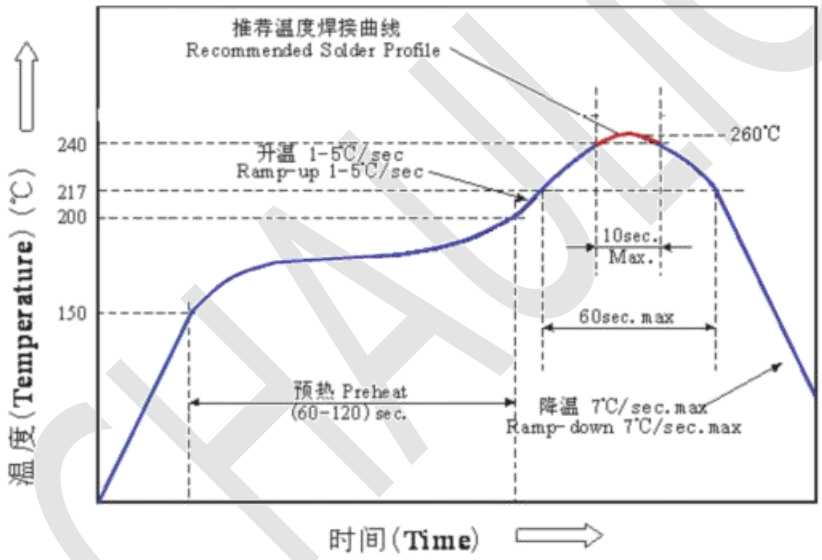
1、以上规格可更改，恕不另行通知。 洲光源将为上述规格的材料变更保留权力 Above specification may be changed without notice. CHAU LIGHT will reserve authority on material change for above specification.

2、当使用此产品时，请观察这些规格表中概述的绝对最大额定值和使用说明。洲光源不承担任何损坏结果的责任从不符合绝对最大额定值的产品的使用和这些规格表中包含的说明 When using this product, please observe the absolute maximum ratings and the instruction for using outlined in these specification sheets. CHAU LIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.

3、此规格书版权属广东洲光源红外半导体有限公司。未经允许不得转载或复印。These specification sheets include materials protected under copyright of CHAU LIGHT corporation.Please don't reproduce or cause anyone to reproduce them without CHAU LIGHT 's consent.

## -焊接条件 Soldering Condition

推荐波峰焊曲线 The wave peak welding curve is recommended:




1、铅焊料温度剖面 Lead solder temperature profile

2、波峰焊不应做一次以上。Peak welding shall not be done more than once.

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.

## 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 |
|---|---|---|---|---|
| 1.1 | 2020-12-31 | 新版本发布 New Edition | 王乐 | 郝三强 |
| | | | | |
| | | | | |
| | | | | |