



洲光源
CHAULIGHT

产品规格书 SPECIFICATION

客户名称: _____

Customer Name

产品类型: _____ 红外发射管

Product Name

产品型号: _____ ZSIR-3020C-23A-Z6

Part No.

<input type="checkbox"/> 技术参考 Technical Reference		<input type="checkbox"/> 样品 Sample		<input type="checkbox"/> 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	
		谢小金	杨培续	赖华棋	
<input type="checkbox"/> 接收 Qualified		<input type="checkbox"/> 不接收 Disqualified		日期 Date: 2020-05-15	

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

ZSIR-3020C-23A-Z6 是一种高辐射发光二极管，透明的封胶外形。 该材料与光电晶体管、光电二极管和红外接收模块进行配对。

ZSIR-3020C-23A-Z6 is an infrared emitting diode in miniature SMD package which is molded in a water clear plastic with spherical top view lens. The device is spectrally matched with silicon photodiode and phototransistor.



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

--发射波长 940nm

Peak wavelength $\lambda_p=940\text{nm}$

--无铅材料、Rosh 认证

Pb.Free、RoHS compliant version

应用 Application

--红外摄像头、遥控器、光电开关、打印机

Camera、Remote、switch、printer

最大额定值 Absolute Maximum Ratings

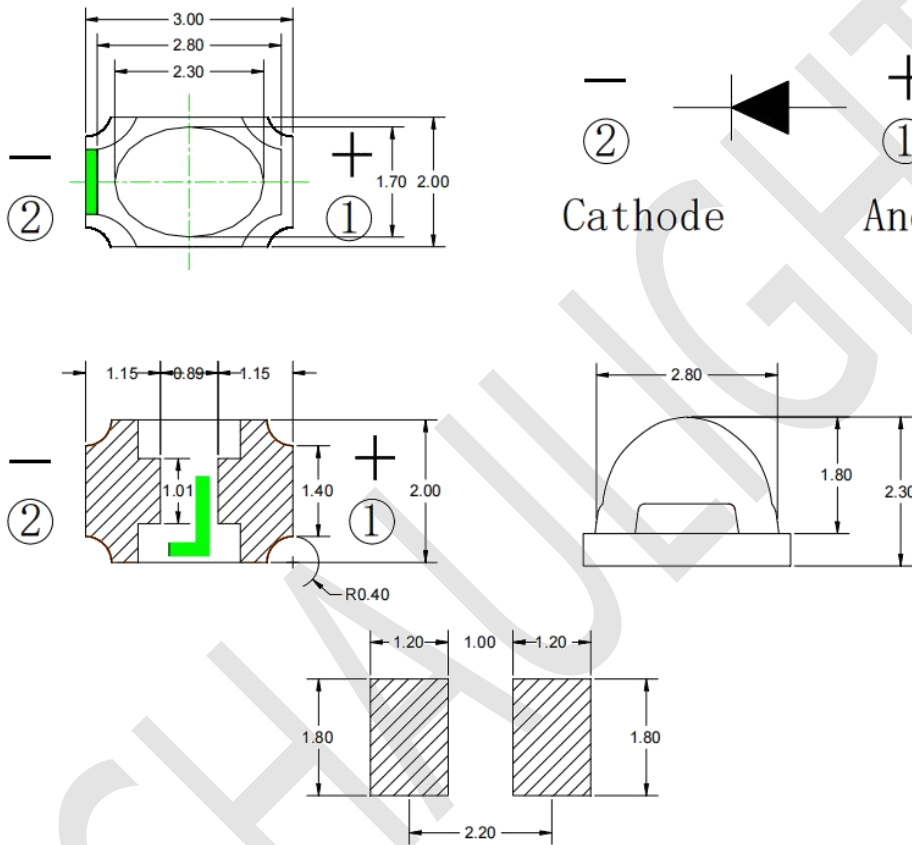
测试项目 Parameter (Ta=25℃)	符合 Symbol	范围 Ratings	单位 Unit
最大功率 Power Dissipation *1	Pd	100	mW
最大反向电压 Reverse Voltage	V _R	5	V
最大持续正向电流 Forward Current	I _F	50	mA
最大脉冲正向电流 Peak Forward Current *2	I _{FP}	500	mA
工作温度 Operating Temperature	Topr	-25~+85	℃
储存温度 Storage Temperature	Tstg	-40~+100	℃
焊接温度 Lead Soldering 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 $\leq 100\mu\text{s}$, Duty cycle= 1%

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

产品尺寸 Package Dimension



推荐焊盘尺寸 Recommend Pad size

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
辐射强度 Radiant Intensity	Ee	I _F =50mA	7	10	15	mW/sr
峰值波长 Peak Wavelength	λ _p	I _F =50mA	--	940	--	nm
光谱带宽 Spectral Bandwidth	Δλ	I _F =50mA	--	46	--	nm
正向电压 Forward Voltage	V _F	I _F =100mA	--	1.4	1.6	V
反向电流 Reverse Current	I _R	V _R =5V	--	--	10	μA
发光角度 View Angle	2θ1/2	I _F =20mA X	62	70	77	deg
		I _F =20mA Y	13	17	22	deg

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

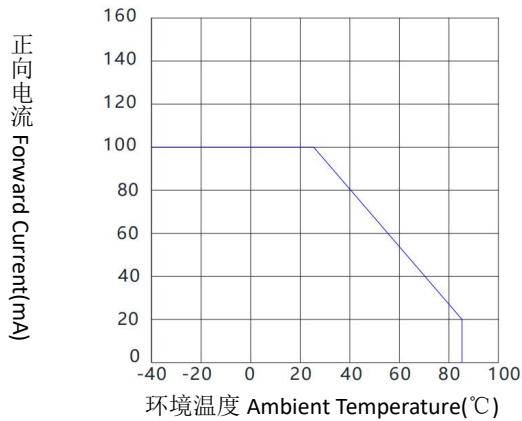
等级档位 Rank

档位 Bin	符号 Symbol	条件 Condition	最小值 Min.	最大值 Max.	单位 Unit
A	Ee	I _F =50mA	11.0	16.0	mW/sr
B	Ee	I _F =50mA	16.0	24.0	mW/sr

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

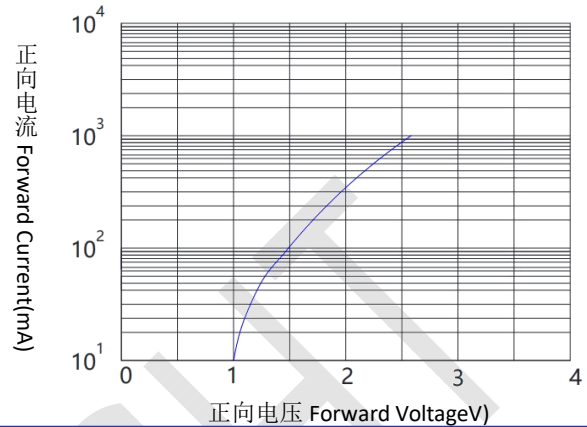
正向电流与环境温度的关系

Forward Current vs. Ambient Temperature



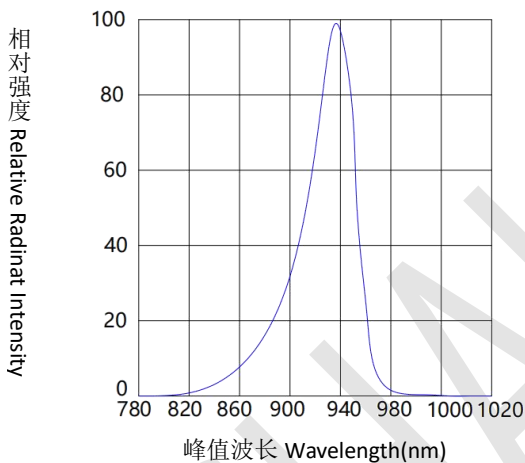
正向电流与正向电压的关系

Forward Current vs. Forward Voltage



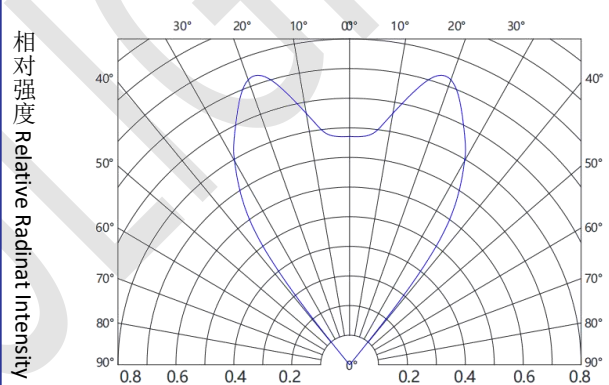
波长曲线图

Spectral Distribution



相对辐射强度与角位移的关系

Relative Radiant Intensity vs. Angular Displacement

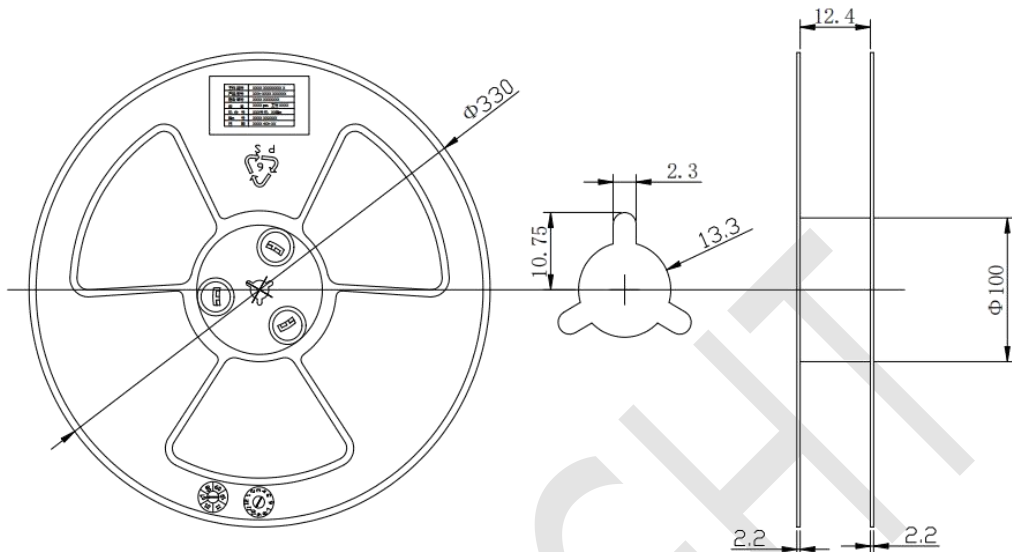


可靠性试验 Reliability Test

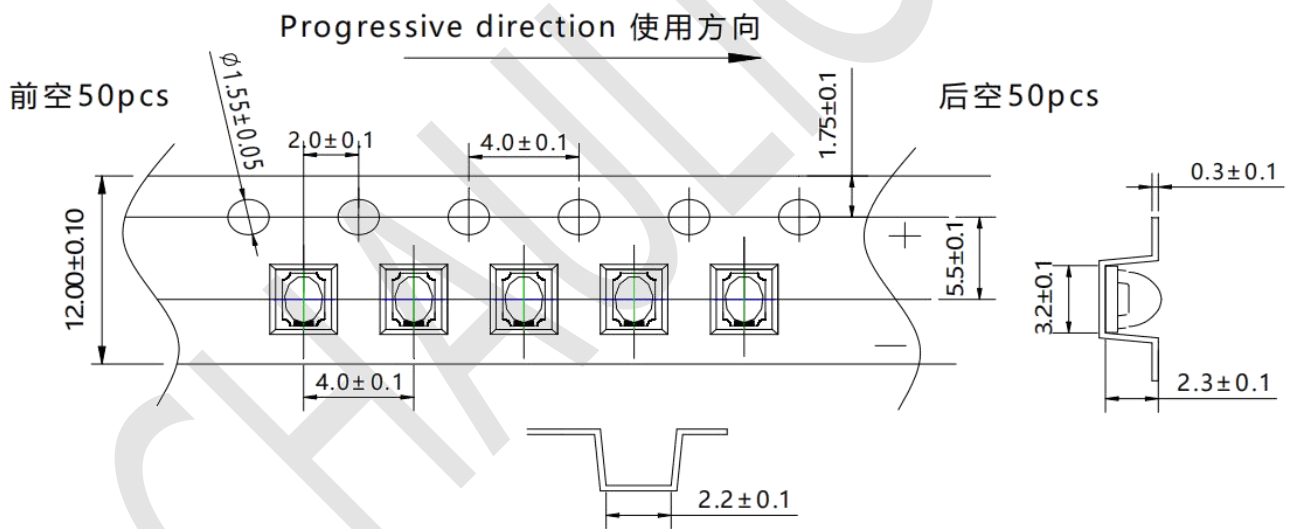
测试项目 Test Parameter	参考标准 Reference Criterion	测试条件 Test Condition	时间 Time	样品数 Quantity	Ac/R e
耐焊接热 Resistance to Soldering Heat	JESD22-B106	260°C±5°C	10 sec	22PCS	0/1
冷热冲击 Thermal Shock	JESD22-A104	+105°C(30min)5min -40°C(30min)	100 cycles	22PCS	0/1
高温储存 High Temperature storage	JESD22-A103	+100°C	1000H	22PCS	0/1
低温储存 Low Temperature storage	JESD22-A119	-40°C	1000H	22PCS	0/1
寿命测试 Life Test	JESD22-A108	IF=50mA	1000H	22PCS	0/1
高温高湿 High Temperature High Humidity	JESD22-A101	TC=85°C RH=85%	1000H	22PCS	0/1

包装规格 Packing Specification

--卷轴包装尺寸 Package Dimensions



--载带编带的尺寸 Carrier Tape Dimensions



--装载数量 Loaded Quantity

6500 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 $\pm 0.1\text{mm}$

广东洲光源红外半导体有限公司

CHAULIGHT

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注意事项 Note

--过流保护 Over-current-proof

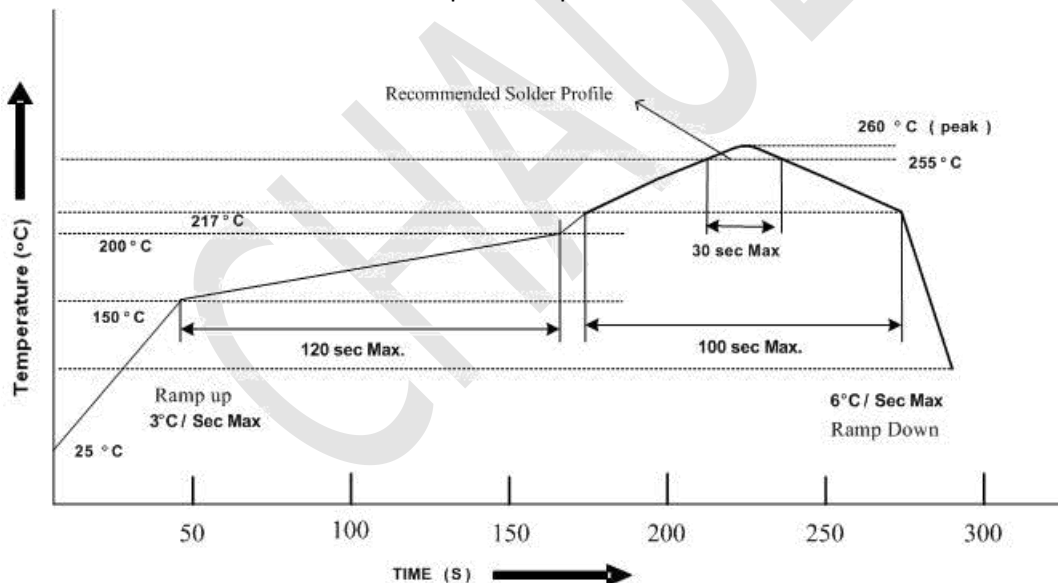
1、客户必须应用电阻进行保护，否则会造成轻微电压偏移大电流变化（烧毁将发生）。Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

--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



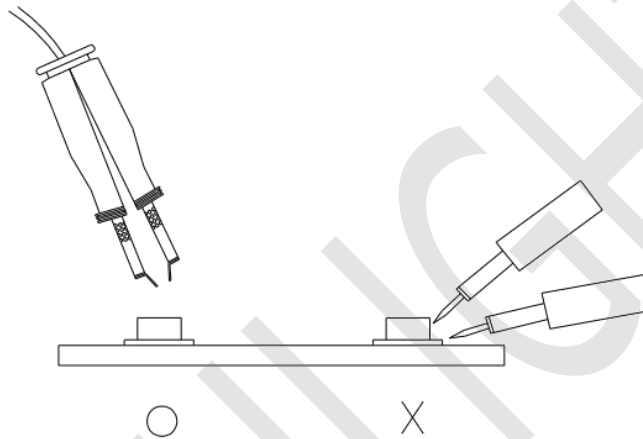
- 2、回流焊不应做两次以上。Reflow soldering should not be done more than two times.
- 3、焊接时，不要在加热过程中对 LED 施加压力。When soldering, do not put stress on the LEDs during heating.
- 4、焊接后，不要使电路板翘曲。After soldering, do not warp the circuit board.

--烙铁条件 Soldering Iron

每个端子都要去烙铁尖端温度低于 350°C 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°C 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
1.0	2020-05-15	新版本发布 New Edition	赖华棋	杨培续