



洲光源
CHAULIGHT

产品规格书

SPECIFICATION

客户名称: _____

Customer Name

产品类型: _____ 对射式光电开关

Product Name

产品型号: _____ ZOS-T1303-02

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	
☐ 接收 Qualified		☐ 不接收 Disqualified		日期 Date:	

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.

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广东洲光源红外半导体有限公司

Guangdong Chaulight Infrared Semiconductor Co.,Ltd.

ZOS-T1303-02 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 ZOS-T1303-02 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 $\lambda_p=940\text{nm}$

--无铅材料、Rosh 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	最大功率 Power Dissipation * ₁	Pd	75	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}	1	A
输出端接收极 Output Detector	最大功率 Power Dissipation * ₁	Pd	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)}	30	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%

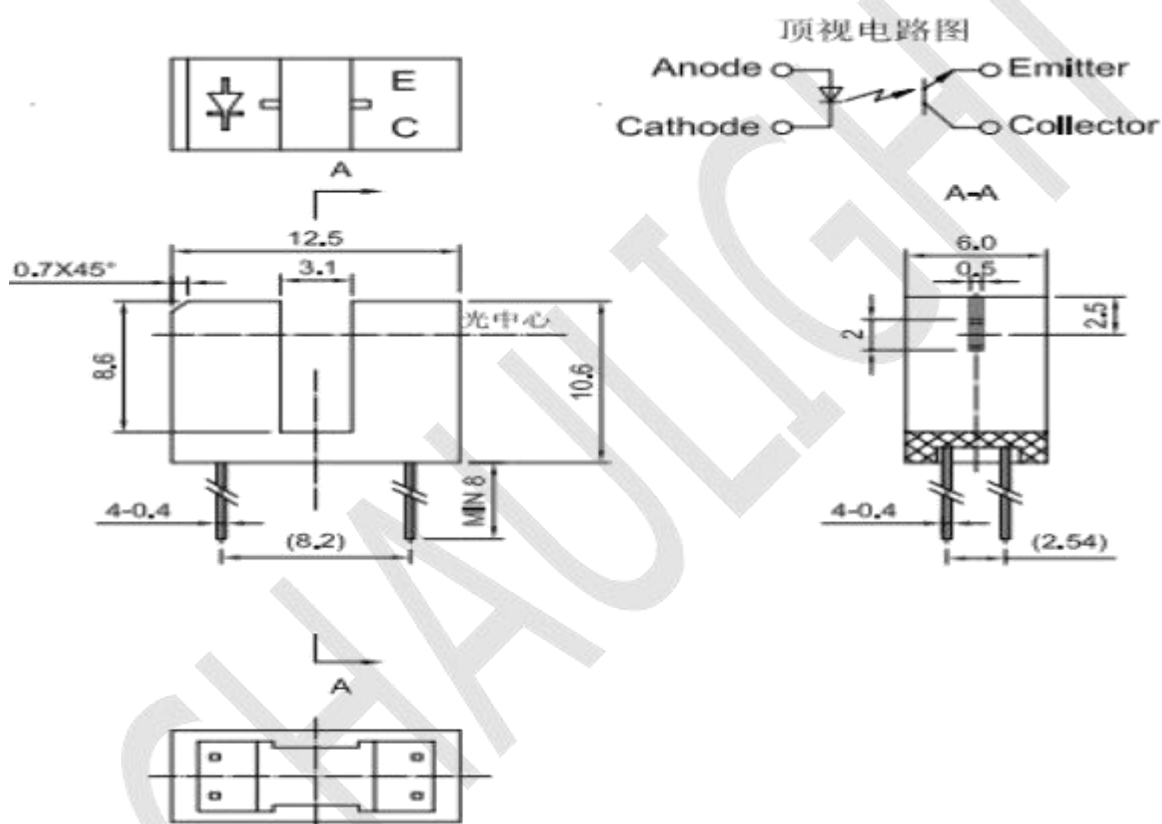
*3、离胶体 2mm 以上焊接 5s 内 2mm form body for 5 seconds

》 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
			I _F =100mA * ₂	--	1.4	1.85	
			I _F =1A * ₂	--	2.6	4.0	
	峰值波长 Peak Wavelength	λ _p	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/cm ² 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/cm ²	--	--	0.4	V
转换特性 Transfer Characteristics	上升时间 Rise Time	t _r	V _{CE} =5V I _C = 1mA	--	5	--	μS
	下降时间 Fall Time	t _f	R _L = 1000Ω	--	5	--	
	光电流 Collector Current	I _{C(ON)}	I _F =10mA V _{CE} =5V	0.5	--	--	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



备注 Notes:

--所有尺寸为毫米标识

All dimensions are in millimeters

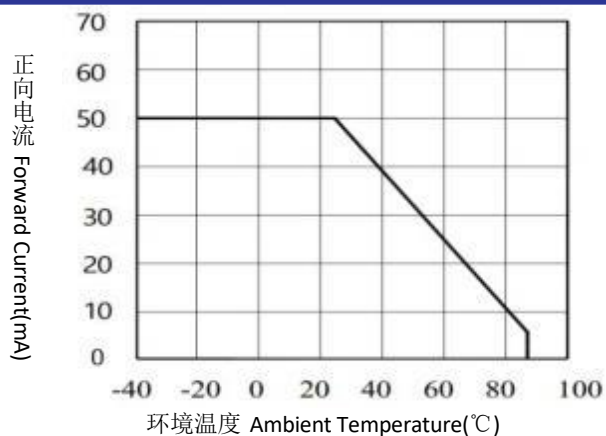
--未标识尺寸正负公差为 0.3mm

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

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

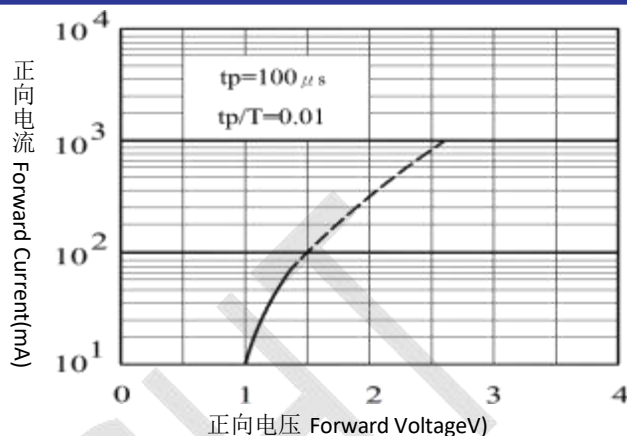
正向电流与环境温度的关系

Forward Current vs. Ambient Temperature



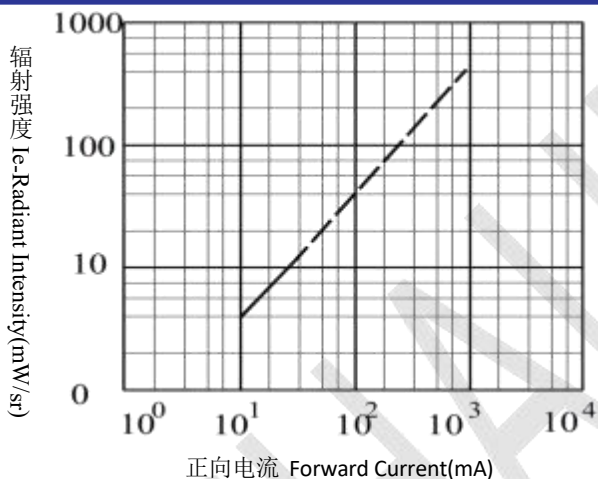
正向电流与正向电压的关系

Forward Current vs. Forward Voltage



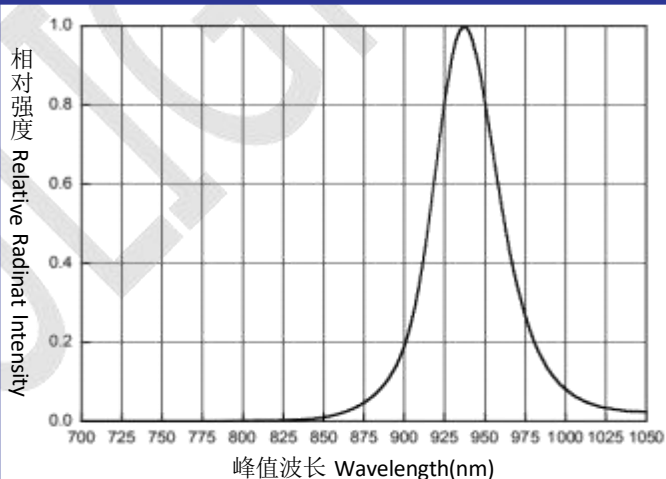
辐射强度与正向电流的关系

Radiant Intensity vs. Forward Current



波长曲线图

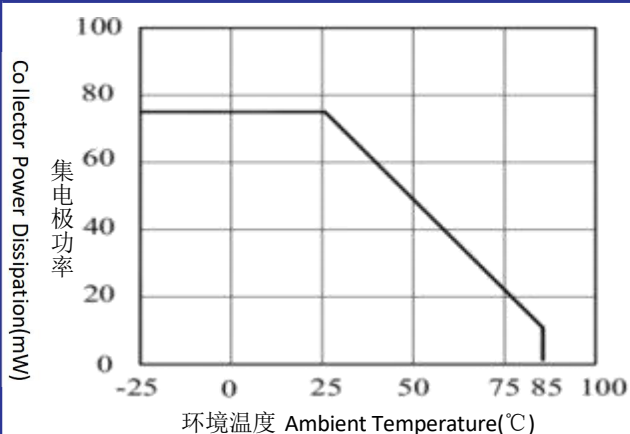
Spectral Distribution



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

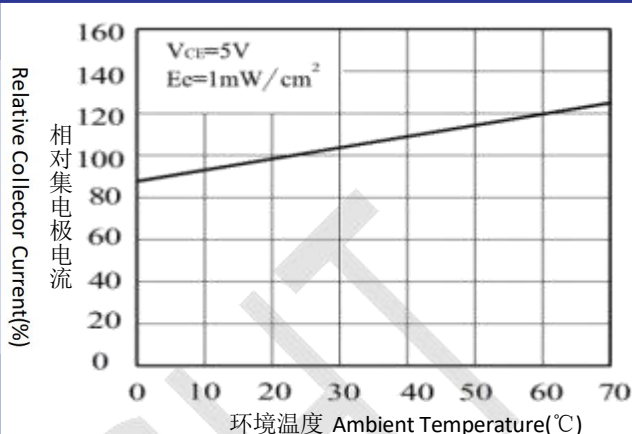
集电极功率与环境温度的关系

Collector Power Dissipation vs. Ambient Temperature



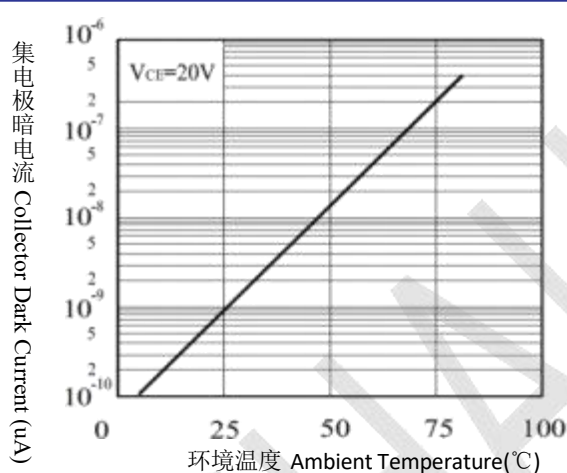
相对集电极电流与环境温度的关系

Relative Collector Current vs. Ambient Temperature



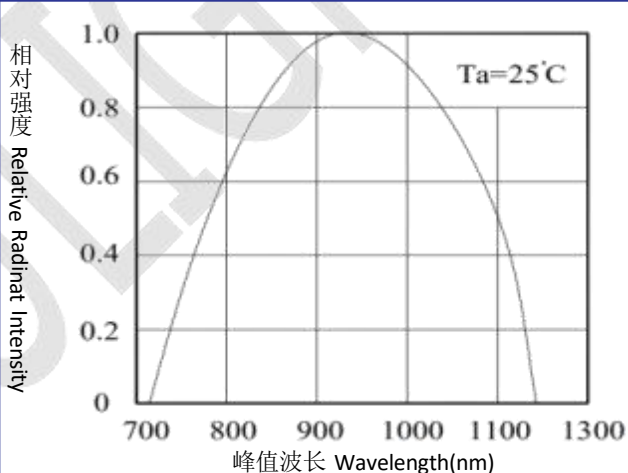
集电极暗电流与环境温度的关系

Collector Dark Current vs. Ambient Temperature



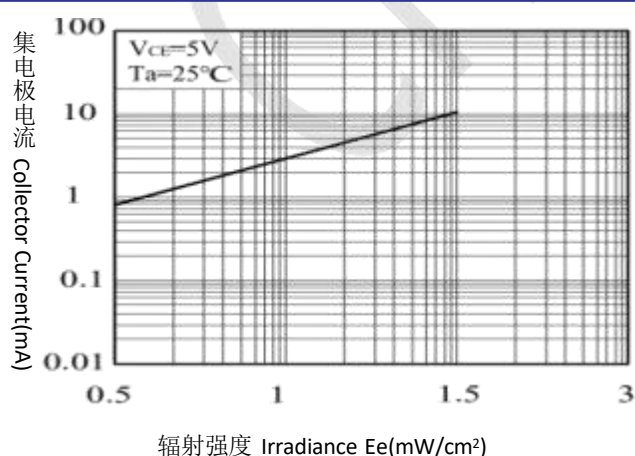
感应波长曲线图

Spectral Sensitivity



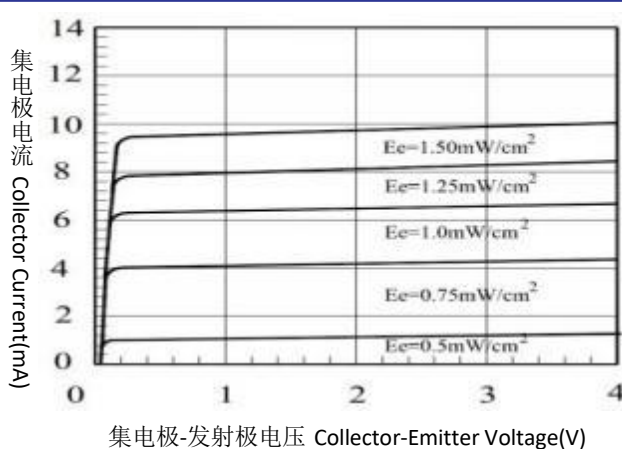
集电极电流与辐射强度的关系

Collector Current vs. Irradiance



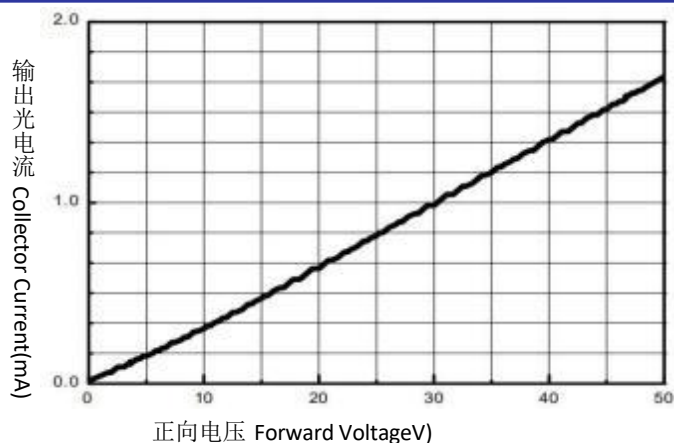
集电极电流与集电极-发射极电压的关系

Collector Current vs. Collector-Emitter Voltage

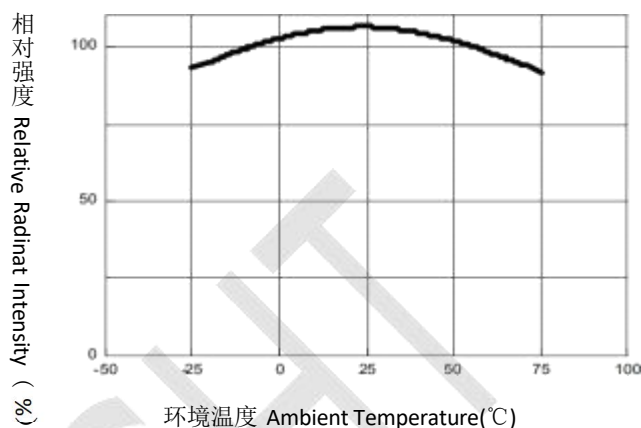


》 光电开关特性曲线图 Typical Electro-Optical Characteristics Curves-ITR

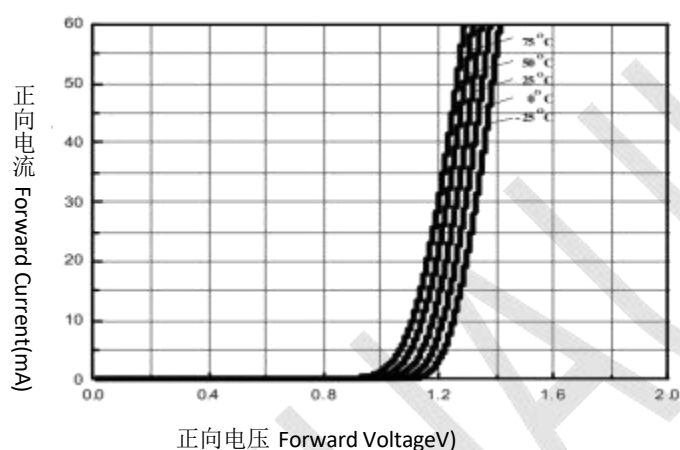
光电流与正向电压的关系
Collector Current vs. Forward Voltage



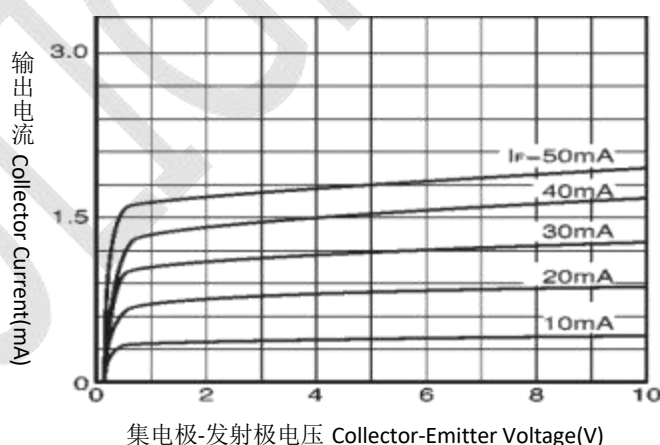
输出强度与环境温度的关系
Relative Output vs. Ambient Temperature



正向电流和正向电压的关系
Forward Current vs. Forward Voltage



输出特性
Output Characteristics



》 注意事项 Note

--其他 Other

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广东洲光源红外半导体有限公司

CHAU LIGHT

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地址(Add): 中山市东升镇联胜南路 3 号

电话(Tel): 0760-88504720 传真(Fax): 0760-88504721

网站(Web): www.zgy-led.com

》 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	2021-1-12	新产品发布 New Production	黄瑞良	郝三强