



深圳市拓展光电有限公司

TuoZhan Optoelectronics Company Limited

产品规格书

Product Specification

产品料号/ Part No.	P2-0603PT8WS2-06T-001		
产品名称/ Product Name	0603雾状接收管		
客户名称/ Customer Name			
客户料号/ Customer No			
生效日期/ Effective Date			
制作 Prepared	审核 Checked	核准 Approved	业务 Sales
客户确认（盖章） Customer confirmation（Stamp）			

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注：如中英译文有冲突请以中文为准。

Note: In case of any conflict between Chinese and English translations, the Chinese version shall prevail.

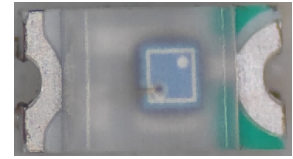


版本	修订日期	文件修订内容	备注
A0	2022/05/12	首次发行	田在松

制作	田在松	日期	2022年05月12日	
核准	韦启贵	日期	2022年05月12日	
版本号	A0	受控日期	2022年05月12日	



P2-0603PT8WS2-06T-001 Datasheet



0603三极管 是一种小型 SMD 封装的光电晶体管。该器件与可见光和红外发射二极管光谱匹配。

0603 ALS is a phototransistor in miniature SMD . The device is Spectrally matched to visible and infrared emitting diode.

This part has a footprint that is compatible to most of LEDs with similar size.

此器件可与大部份外形尺寸相似的LED兼容使用

FEATURES/特点

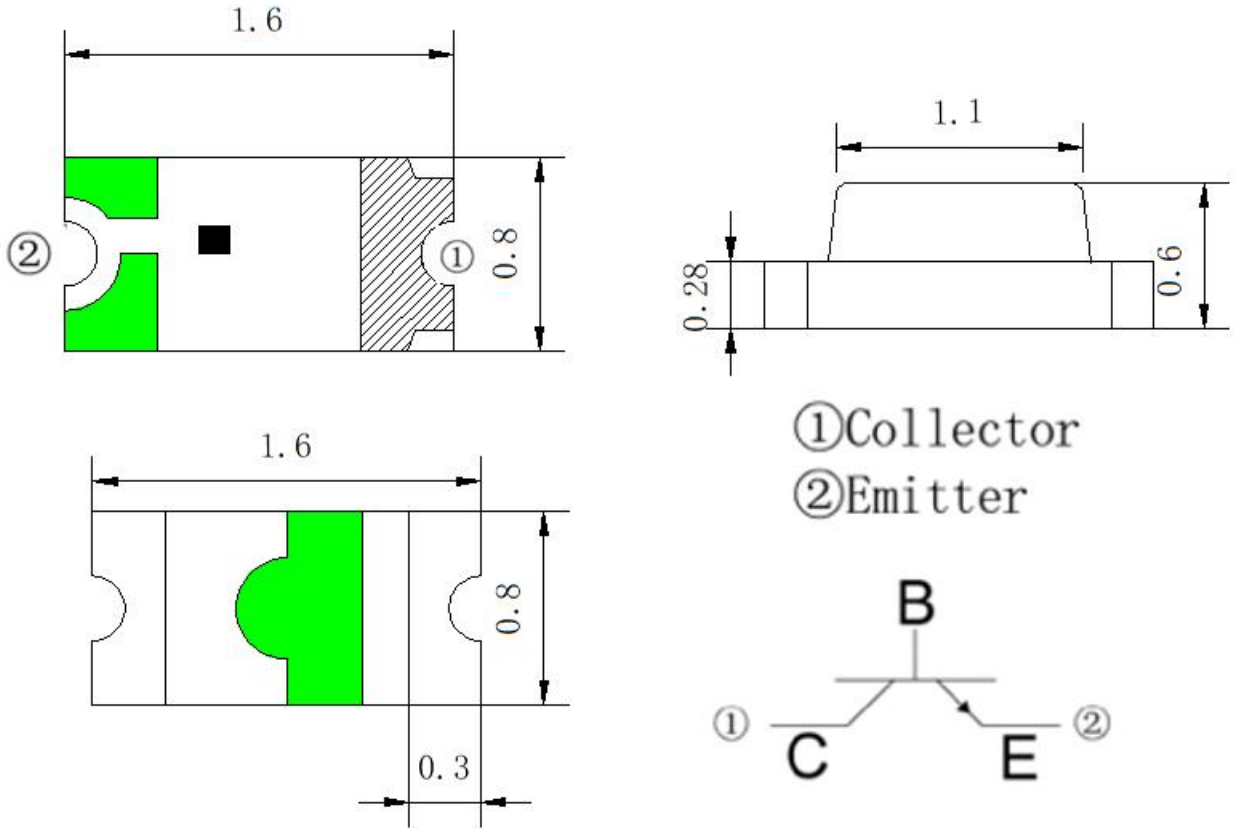
- sturdy and durable/坚固耐用
- Long operation life/寿命长
- Epoxy resin package/环氧树脂封装
- Environmental friendly, RoHS compliance
材质环保，符合RoHS要求

APPLICATIONS/应用

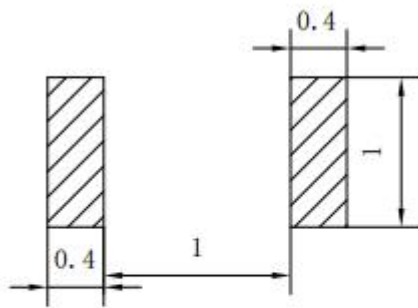
- Automatic door sensor/自动门传感器
- Copier/复印机
- Scanner/扫描仪



外观尺寸及建议焊盘尺寸: **Size of Appearance & Suggested Soldering PAD**



Recommended Solder Pad Design 推荐焊盘设计



For reflow soldering

Notes/ 注:

1. All dimensions in millimeters.所有尺寸单位为mm
2. Tolerance is $\pm 0.1\text{mm}$ unless otherwise noted. 如未特别注明, 默认公差为 $\pm 0.1\text{mm}$



ABSOLUTE MAXIMUM RATINGS最大限定参数 (Ta=25°C)

测试项目 Parameter (Ta=25°C)	符合 Symbol	范围 Ratings	单位 Unit
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)}	20	mA
工作温度 Operating Temperature	Topr	-25~+85	°C
储存温度 Storage Temperature	Tstg	-40~+100	°C
焊接温度 Lead Soldering Temperature*2	Tsol	260	°C

Electro-Optical Characteristics光电特性 (Ta=25°C)

电性参数 (温度=25°C) Parameter (Ta=25°C)	符号 Symbol	条件 Condition	最小值 Min.	典型值 Typ.	最大值 Max.	单位 Units
集电极-发射极的击穿电压 Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C =100μA E _e =0mW/cm ²	85	--	--	V
发射极-集电极的击穿电压 Emitter-Collector Breakdown Voltage	BV _{ECO}	I _C =100μA E _e =0mW/cm ²	8	--	--	V
集电极-发射极的工作电压 Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =2mA I _B =100uA	--	--	0.2	V
集电极暗电流 Collector Dark Current	I _{CEO}	V _{CE} =20V	--	--	5	nA
电流放大倍数	HFE	I _C =2mA V _{CE} =5V	1200	--	1800	
峰值感应波长 Wavelength of Peak Sensitivity	λ _P	--	--	880	--	nm

Notes/注:

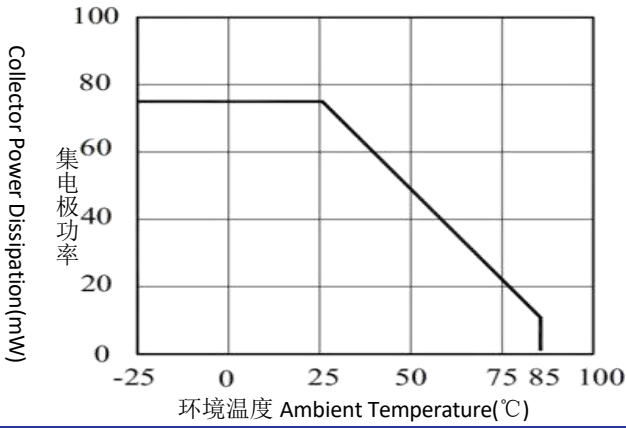
1. peak wavelength is measured with an accuracy of ± 2nm. 峰值波长的测量精度为± 2nm。
2. All measurements were made under the standardized environment of Tuozhan
所有的测量都是在拓展的标准环境下进行的



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

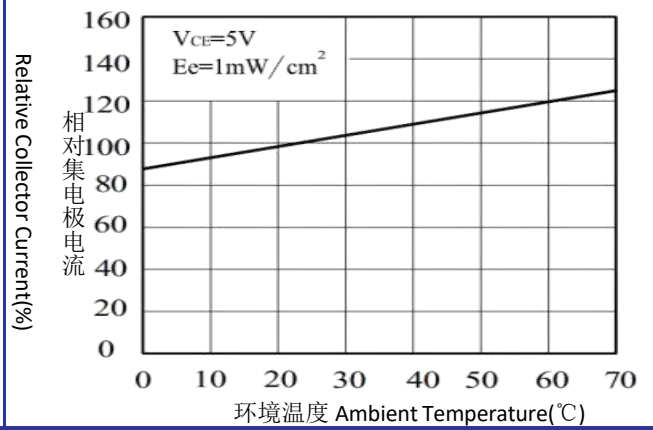
集电极功率与环境温度的关系

Collector Power Dissipation vs. Ambient Temperature



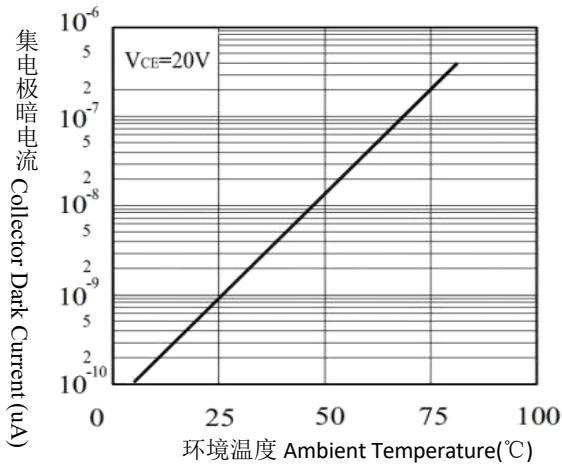
相对集电极电流与环境温度的关系

Relative Collector Current vs. Ambient Temperature



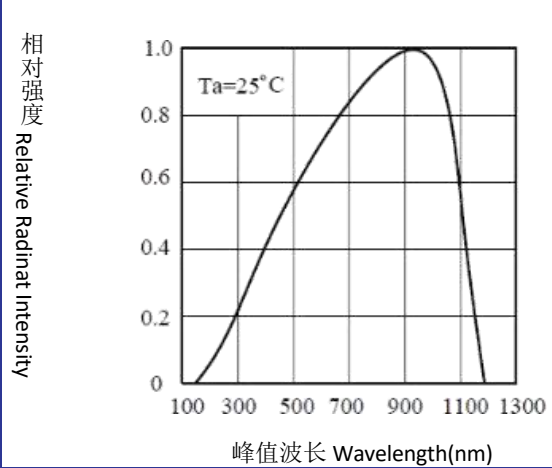
集电极暗电流与环境温度的关系

Collector Dark Current vs. Ambient Temperature



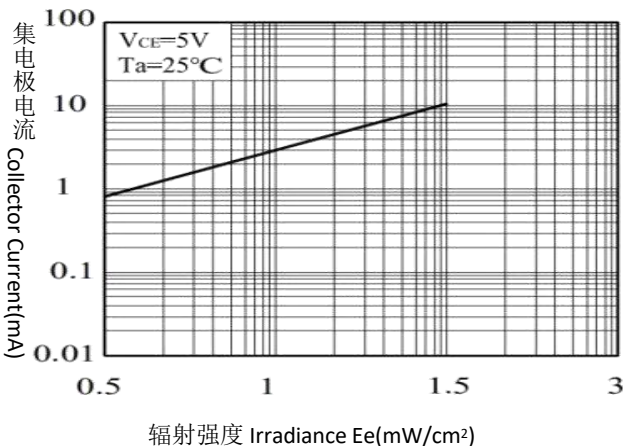
感应波长曲线图

Spectral Sensitivity



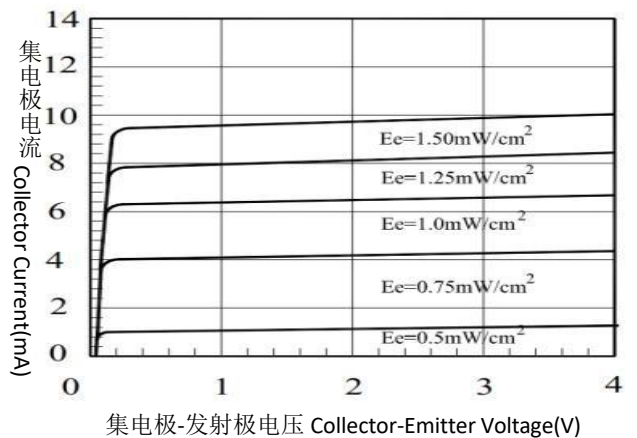
集电极电流与辐射强度的关系

Collector Current vs. Irradiance



集电极电流与集电极-发射极电压的关系

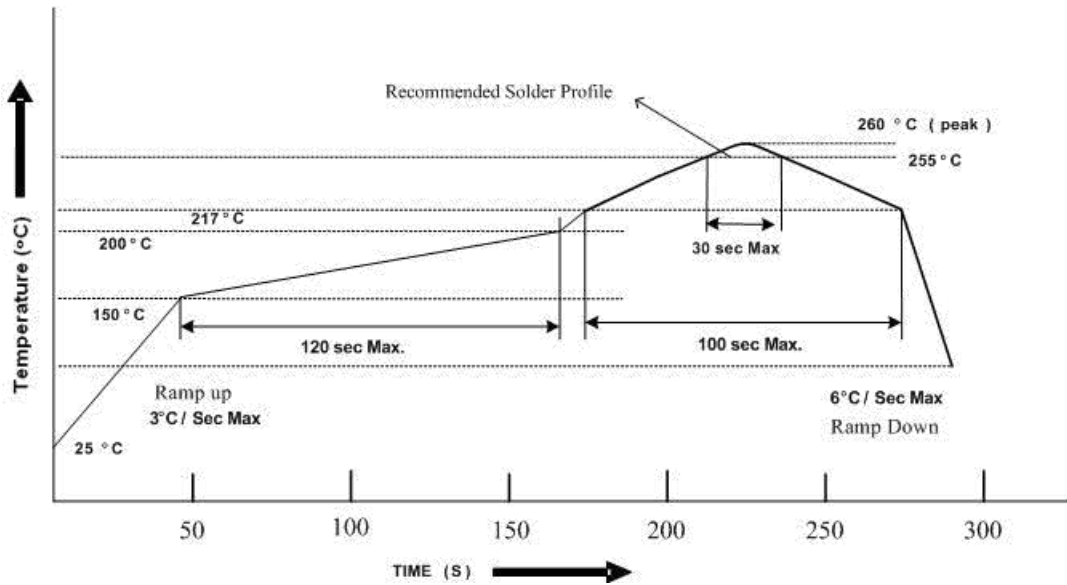
Collector Current vs. Collector-Emitter Voltage





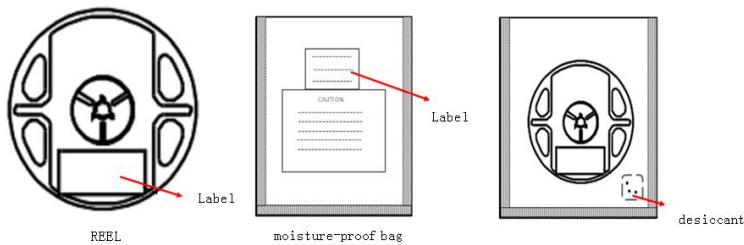
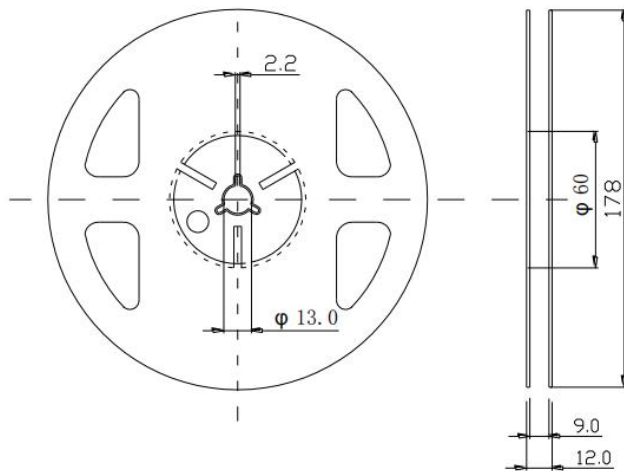
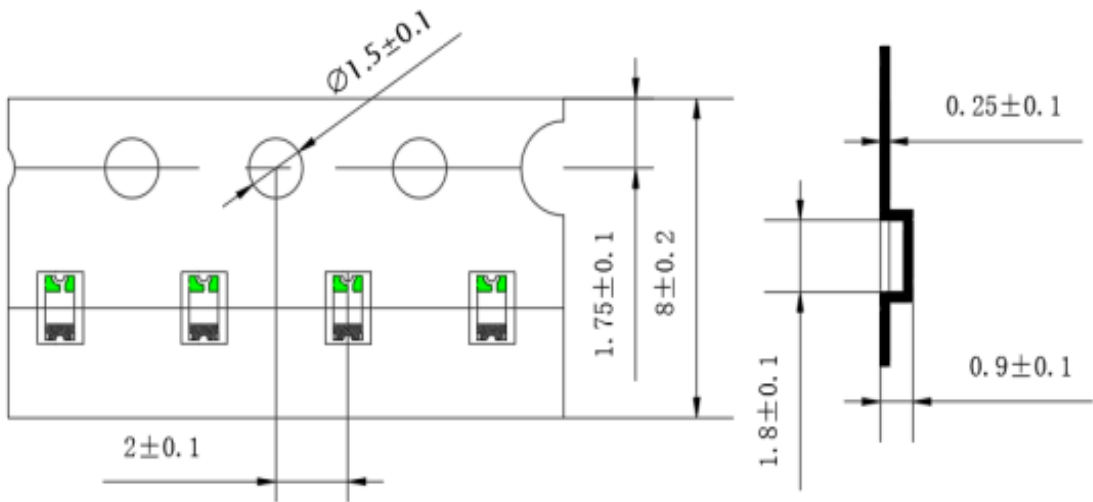
焊接条件 Soldering Condition

- 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.





TAPE AND REEL 编带NO.1



Notes注:

- (1) Quantity : 4,000pcs/Reel
数量: 4000pcs/卷
- (2) Cumulative Tolerance : Cumulative Tolerance/10 pitches to be $\pm 0.2\text{mm}$
累积公差:累积公差/10间距 ± 0.2 毫米
- (3) Adhesion Strength of Cover Tape : Adhesion strength to be 20-40N when the cover tape is turned off from the carrier tape at the angle of 10° to the carrier tape
盖带粘附强度:盖带反向拉, 与载带角度为 10° , 拉力为20-40N
- (4) Package : P/N, Manufacturing data Code No. and quantity to be indicated on a damp proof Package.
包装:品名, 生产数据代码和数量须在防潮包装上注明



Reliability Test Items 可靠性测试项目

Test Items 测试项目	Test Duration 测试时长	Number of Damaged 不良数
Steady State Operating Life of High Temperature (HTOL) Ts=85°C, IF=Max 高温稳态老化Ts=85°C, IF=最大值	1000hrs	0/20
Steady State Operating Life of Low Temperature (LTOL) Ta=-40°C, IF=Max 低温稳态老化Ts=85°C, IF=最大值	1000hrs	0/20
Pulse Wet Operating Life of High Temperature (PWHTOL) 高温高湿通断电老化 60°C/90%RH, IF30mins ON/30min OFF	500hrs	0/20
High Temperature Storage (HTS) 高温存储 100°C	1000hrs	0/20
Low Temperature Storage (LTS) 低温存储 -40°C	1000hrs	0/20
Thermal Shock (TS) -45°C~125°C 30min dwell 20sec transfer 冷热冲击-45°C 30min~125°C 30min, 转换时间20秒	300cycles	0/20
Solder Resistance (SR) 265°C, 3X MSL 阻焊测试 (3遍潮气敏感度试验后)	5sec	0/20
Solder Ability (SA) 245°C5sec, 95% coverage 可焊性 95%覆盖	5sec	0/11
Mechanical Shock (MS) 1500G 0.5msec pulse shock 机械冲击(MS) 1500G 0.5毫秒脉冲冲击	Each6 axis	0/6
Random Vibration (RV) 随机振动 6G RMS, 10-2000Hz, 10min	Per axis	0/6
Variable Vibration Frequency (VVF) 10-2000-10Hz, log or linear sweep rate, 20G for 1 min, 1.5mm each apply 3x per axis over 变频振动(VVF) 10-2000-10Hz, 对数或线性扫频, 20G, 1分钟, 1.5mm, 每轴3遍以上	6hrs	0/6
Salt Spread (SS) 35°C, 30g/m2/day 盐雾试验35°C,30克/平方米/天	48hrs	0/11



PRECAUTION FOR USE 使用注意事项

(1) This device should not be used in any type of fluid such as water, oil, organic solvent, etc. When washing is required, IPA should be used.

本器件不得用于水、油、有机溶剂等任何流体中。如需清洁，请使用异丙醇进行清洗。

(2) When the LEDs are illuminating, operating current should be decided after considering the ambient maximum temperature.

当LED发光工作时，应根据环境最高温度来确定工作电流。

(3) LEDs must be stored to maintain a clean atmosphere. If the LEDs are stored for 3 months or more after being shipped from TuoZhan, a sealed container with a nitrogen atmosphere should be used for storage.

LED储存环境须保持清洁。如果LED从拓展发货后需储存3个月或更长时间，则应使用氮气柜进行储存。

(4) The LEDs must be used within seven days after opening the moisture proof packing.

Repack unused Products with anti-moisture packing, fold to close any opening and then store in a dry place.

LED须在打开防潮包装后七天内使用。用防潮包装重新包装未使用的产品，折叠以封住开口，然后存放在干燥的地方。

(5) The appearance and specifications of the product may be modified for improvement without notice.

产品外观及规格如有改进，恕不另行通知。

(6) This LED is sensitive to the static electricity and surge. It is recommended to use a wrist Band or anti-electrostatic glove when handling the LEDs.

LED对静电和浪涌很敏感。在处理LED时，建议使用防静电腕带或防静电手套。

(7) On manual soldering, a solder tip must be needed as grounded for usage. If over voltage which exceeds the absolute maximum rating is applied to LEDs, it will cause damage LEDs and result in destruction. Damaged LEDs will show some unusual characteristics such as leak current remarkably increase, turn-on voltage becomes lower and the LEDs get unlighted at low current.

手工焊接时，焊接头必须接地。如果对led施加超过绝对最大额定值的过电压，会对led造成损坏。损坏的led会出现一些不寻常的特性，如漏电流明显增加，接通电压降低，低电流时led不亮。