广州市东裕光电科技有限公司

产品规格书
SPECIFICATION

客户名称 CUSTOMER	
产品名称 PRODUCTION	贴片光敏二极管　Photot Diode SMD
产品型号 MODEL	DYWH-PD70-01C/1T
版本号 VERSION NO	A1.0

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DYWH-PD70-01C/1T

产品描述 Descriptions

- DYWH-PD70-01C/1T 由一个顶部接收式 PIN 硅光电二极管组成的 SMD 封装器件.

（DYWH-PD70-01C/1T consists Of a PIN silicon photo diode SMD package which is flat top view.）

产品特性 Features

- SMD 光电二极管 (SMD Photodiode)
- 响应时间快 (Fast response time)
- 高灵敏度 (High photo sensitivity)
- 无铅 (Pb free)
- 符合 RoHS 要求 (This product itself will remain within RoHS compliant version)

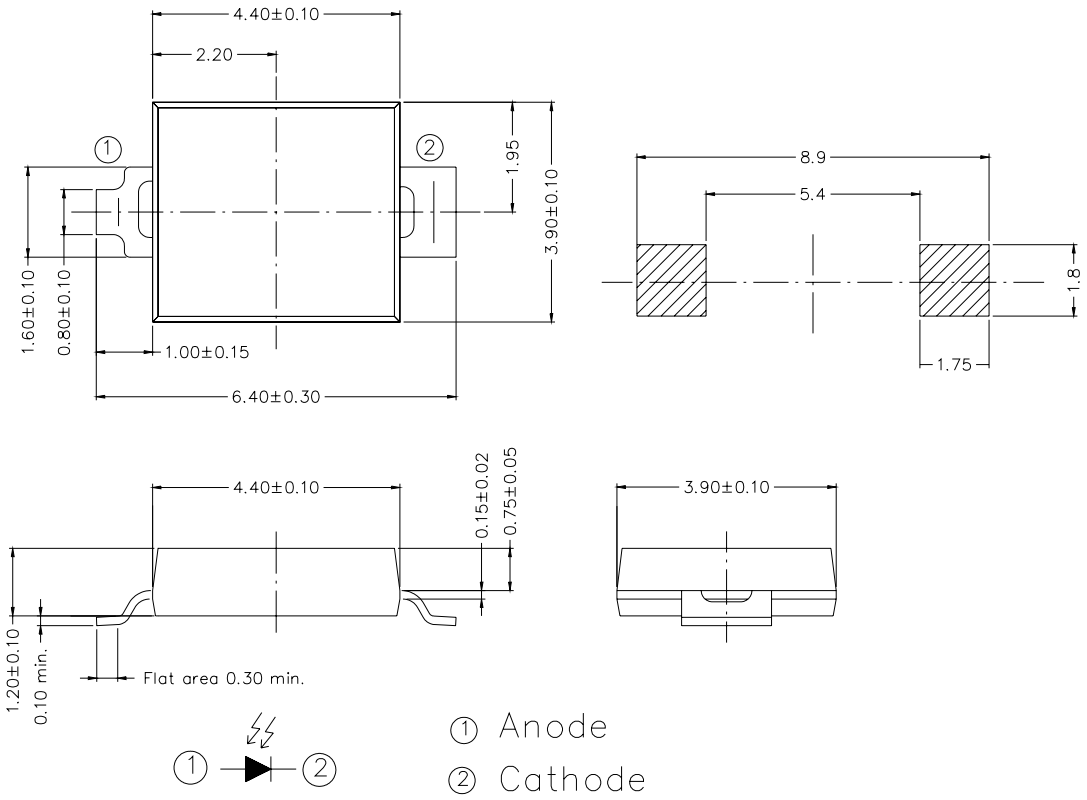
产品应用 Applications

- 水平仪 (Gradienter)
- 光电开关 (Optoelectronic switch)
- 电焊帽 (Welding helmet)
- 红外键盘 (nfrared keyboard)
- 烟感 (Smoke detector)
- 红外应用系统 (Infrared applied system)

包装方式 Packing Quantity Specification

- 编带 1000 个/卷 (1000 PCS/reel)

一、外形图 Outline dimensions：



注：所有尺寸均为毫米，除非另有说明，公差为±0.1。
Notes: All dimensions are in mm, tolerance is ±0.1 unless otherwise noted.

单位 Unit	公差 Tolerance	芯片材料 Die material	发光颜色 Emission color	胶体颜色 Lens color
mm	±0.1mm	Silicon	—	Water Clear

※备注：承认书之编号和型号可用于查询，客户如有需要，请提供相应的编号和型号。
Remark：P/N & Model in samples approval sheet can be used to inquire，please provide corresponding P/N & model if customer need.

二、光电参数 Electro-Optical Characteristics：

（环境温度 Ambient temperature：25℃，环境湿度 Humidity：RH60%）

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	---	400	---	1100	nm
Wavelength Of Peak Sensitivity	λ_P	---	---	940	---	nm
Open-Circuit Voltage	V_{OC}	Ee=5mW/cm^2 λ p=940nm	---	0.35	---	V
Short- Circuit Current	I_{SC}	Ee=1mW/cm^2 λ p=940nm	---	35	---	μA
Reverse Light Current	I_L	Ee=1mW/cm^2 λ p=870nm V_R=5V	17	25	---	μA
Reverse Dark Current	I_D	Ee=0mW/cm^2 V_R=10V	---	5	30	nA
Reverse Breakdown Voltage	B_{VR}	Ee=0mW/cm^2 I_R=100 μA	32	170	---	V
Total Capacitance	C_t	Ee=0mW/cm^2 V_R=3V f=1MHz	---	25	---	pF
Rise/Fall Time	t_r/t_f	V_R=10V R_L=1KΩ	---	50/50	---	nS

三、典型光电特性曲线图 Typical photoelectricity characteristic curve chart：

Fig.1 Power Dissipation vs. Ambient Temperature

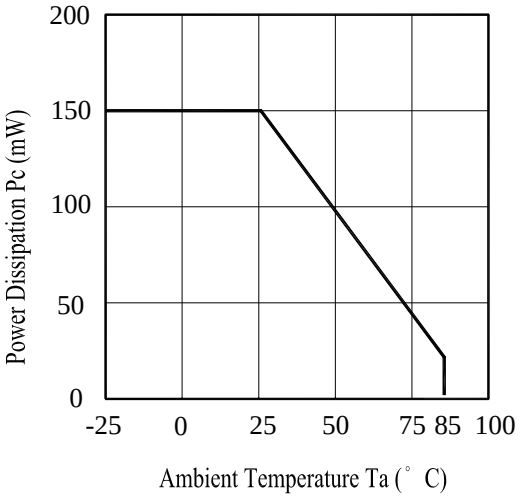


Fig.2 Spectral Sensitivity

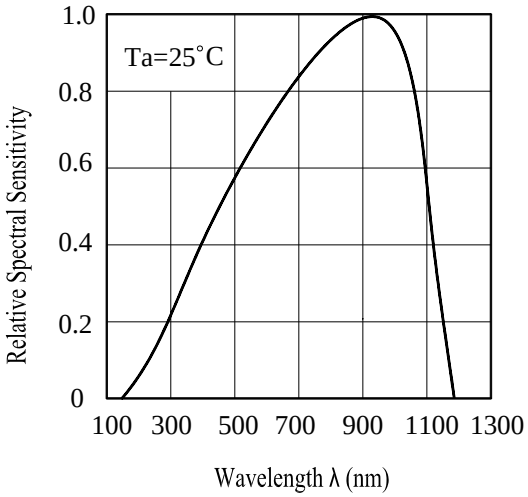


Fig.3 Dark Current vs. Ambient Temperature

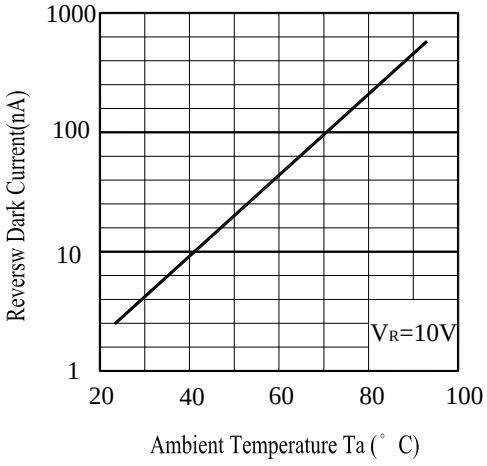


Fig. 4 Reverse Light Current vs. Ee

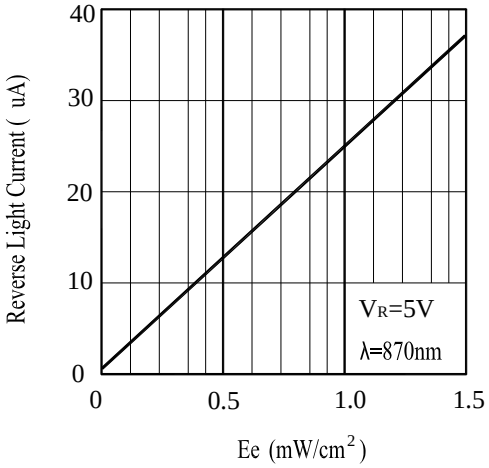


Fig.5 Terminal Capacitance vs. Reverse Voltage

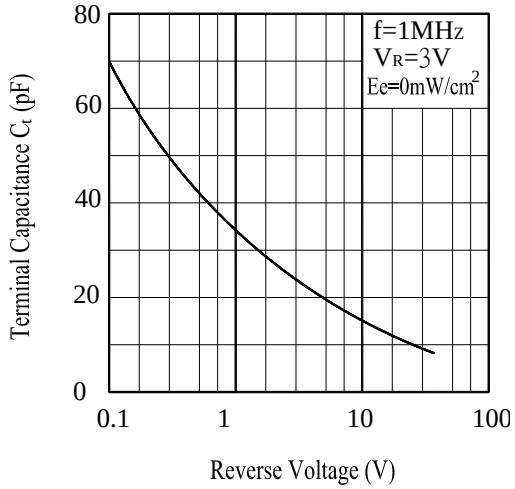
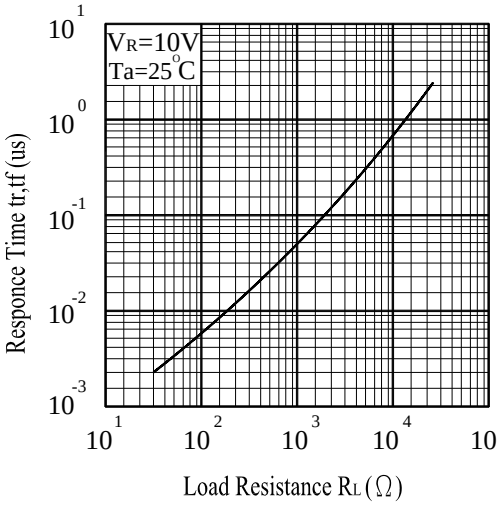


Fig.6 Response Time vs. Load Resistance



四、极限参数 Absolute Maximum Rating：

（环境温度 Ambient temperature：25℃，环境湿度 Humidity：RH60%）

项目 Item	符号 Symbol	数值 Value	单位 Unit	备注 Remark
反向电压 Reverse Voltage	V_R	32	V	---
工作环境温度 Operation temperature	Tamb	-25～+85	℃	---
贮藏温度 Storage temperature	Tstg	-40～+85	℃	---
焊接温度 Soldering temperature	Tsol	260℃ for 5s	℃	Reflow soldering 260 5s max.
耗散功率 Power Dissipation	Pd	100	mW	---
Notes*1: IFP Conditions-Pulse Width≤100μs and Duty≤1%				

五、可靠性实验项目 Reliability Test Project：

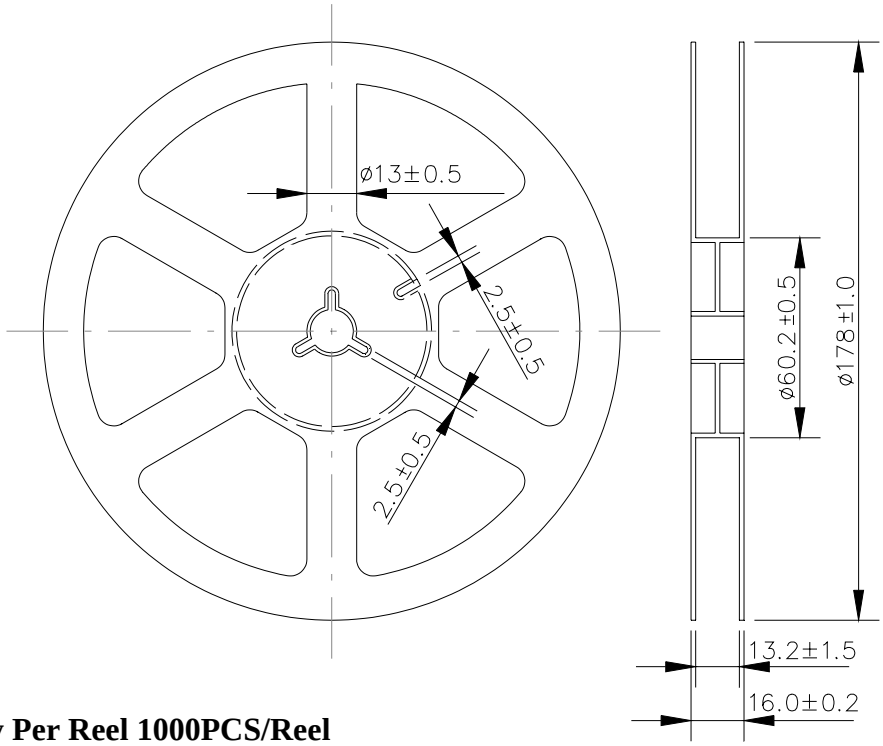
The reliability of products shall be satisfied with items listed below.

Confidence level：90%

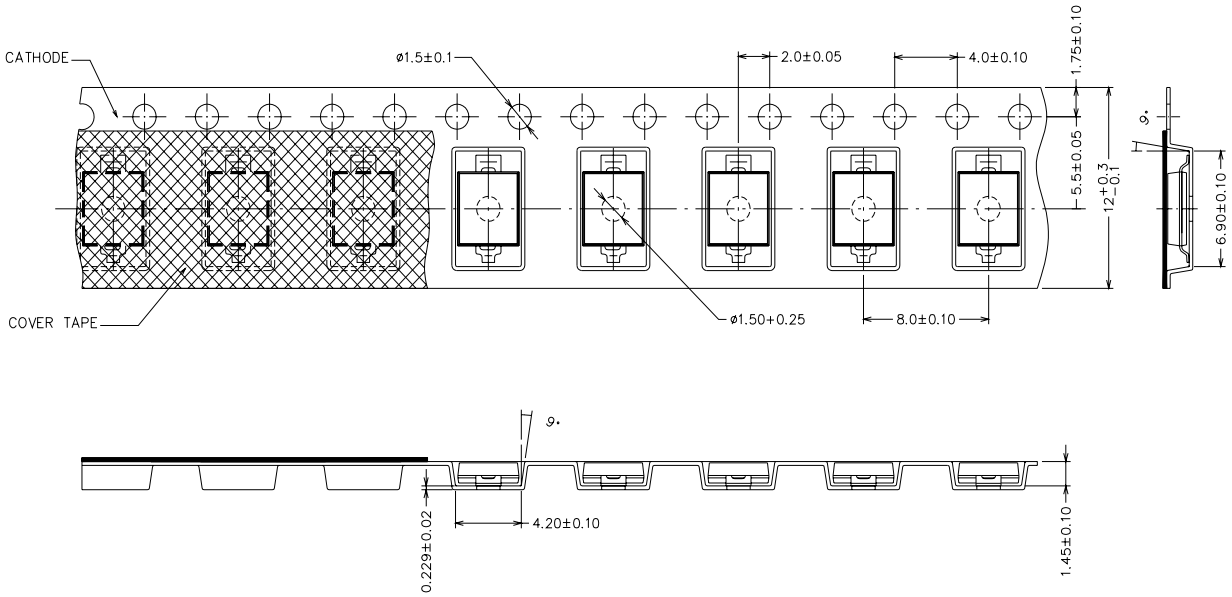
LTPD：10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	REFLOW	TEMP.：260℃±5℃ 5secs	6Mins	22pcs	$I_L \leqq L \times 0.8$ L：Lower Specification Limit	0/1
2	Temperature Cycle	H：100℃ 15mins ↕ 5mins L：-40℃ 15mins	50Cycles	22pcs		0/1
3	Thermal Shock	H：+100℃ 5mins ↕ 10secs L：-10℃ 5mins	50Cycles	22pcs		0/1
4	High Temperature Storage	TEMP.：+100℃	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP.：-40℃	1000hrs	22pcs		0/1
6	DC Operating Life	V_R=5V	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85℃ / 85% R.H	1000hrs	22pcs		0/1

六、包装方式 Package Bag Dimensions



Loaded Quantity Per Reel 1000PCS/Reel



Unit :mm

七、注意事项 Note

1. Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the LEDs should be kept at 30℃ or less and 90%RH or less.

2.3 The LEDs should be used within a year.

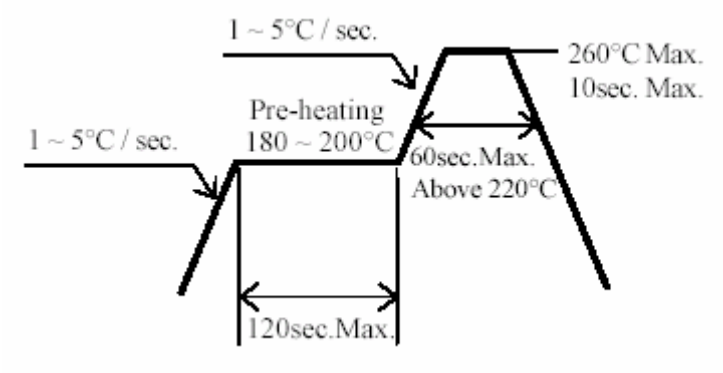
2.4 After opening the package, the LEDs should be kept at 30℃ or less and 70%RH or less.

2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

2.6 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.
Baking treatment : 60±5℃ for 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

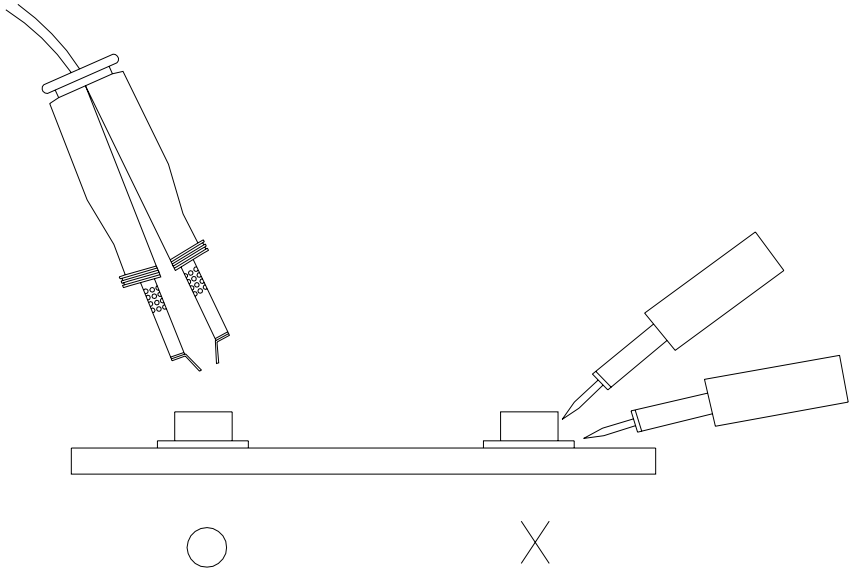
3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 280℃ 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.

5.Repairing

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.



DISCLAIMER

1. Above specification may be changed without notice. TONYU will reserve authority on material change for above specification.
2. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
3. When using this product, please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. TONYU 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.
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