深圳东裕光大电子有限公司
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	红外发射管贴片　SMD InfraRed Emitting Diode
产品型号 MODEL	DYWH-IR24061C-E01
版本号 VERSION NO	A1.0

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客户确认 CUSTOMER CONFIRMATION	审　核 CHECKED BY	编　制 PREPARED BY
	周毅兴	陈少龙

DYWH-IR24061C-E01

产品描述 Descriptions

- 红外发光二极管（DYWH-IR24061C-E01）是一种高辐射强度的二极管，模制在一个透明的塑料封装中。并带有侧面透镜。
  (This Infrared Emitting diode in miniature SMD package which is molded in a water clear plastic with Side View lens.)
- 可适配光敏三极管、光敏二极管、红外接收头、红外接收模块等。
  (The device is spectrally matched with phototransistor, photodiode and infrared receiver module.)

产品特性 Features

- 峰值波长 λp=940nm (Peak wavelength λp=940nm)
- SMD LED (SMD LED)
- 适用于自动贴片机 (Compatible With SMT Automatic Equipment)
- 适用于红外线回流焊制程 (Compatible With Infrared Reflow Solder Process)
- 低功耗 （Low forward voltage）
- 无铅 (Pb free)
- 符合 RoHS 要求 (This product itself will remain within RoHS compliant version)

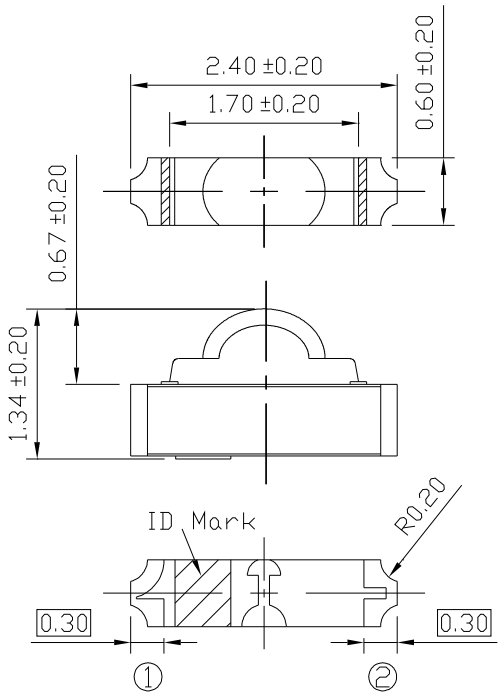
产品应用 Applications

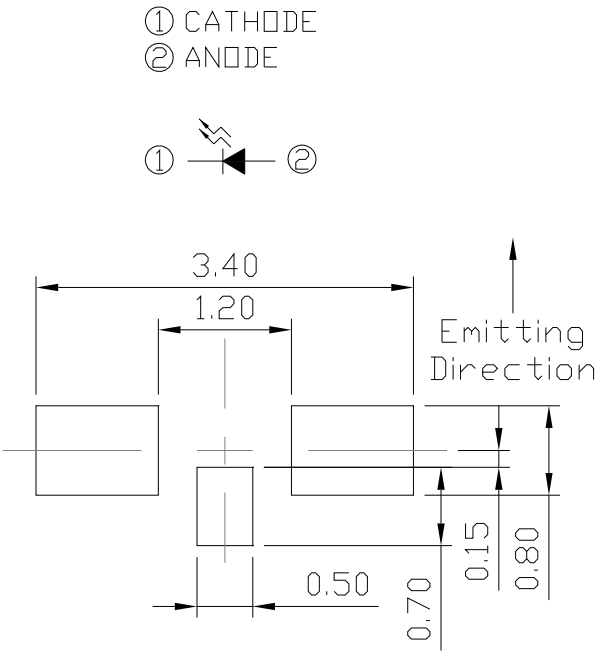
- 红外应用系统 (Infrared applied system)

包装方式 Packing Quantity Specification

- 编带 4000 个/卷 (4000PCS/rolls)

一、外形图 Outline dimensions：





Recommended Soldering Pattern
for Side Looker

Notes: 1. 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	GaAlAs	—	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：

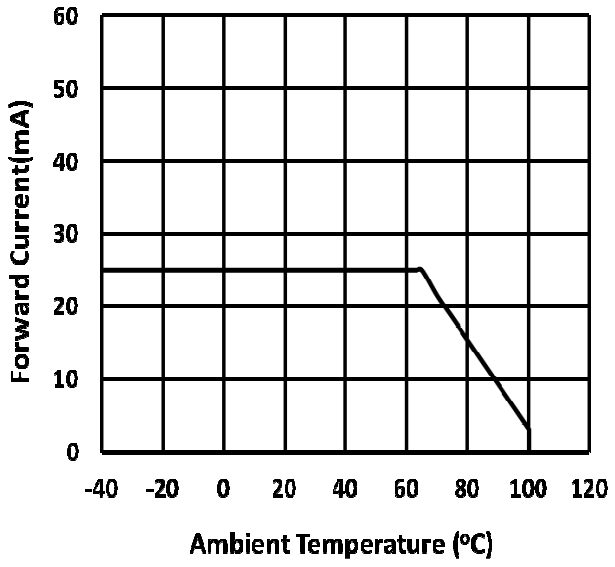
（环境温度 Ambient temperature：25℃，环境湿度 Humidity：RH60%）

项目 Item	符号 Symbol	测试条件 Test condition	最小值 Min.	典型值 Type	最大值 Max..	单位 Unit.
正向电压 Forward voltage	VF	IF=20mA	-	1.20	1.50	V
反向电流 Reverse current	IR	VR=5V	-	-	10	μA
辐射强度 Radiant intensity	Ee	IF=20mA	0.5	1.0	-	mW/sr
光谱半值宽 Spectral band width	Δλ	IF=20mA	-	30	-	nm
峰值波长 Peak wavelength	λp	IF=20mA	-	940	-	nm
视 角 Viewing Angle	2θ1/2	IF=20mA（X）	-	150	-	deg
		IF=20mA（Y）	-	160	-	deg

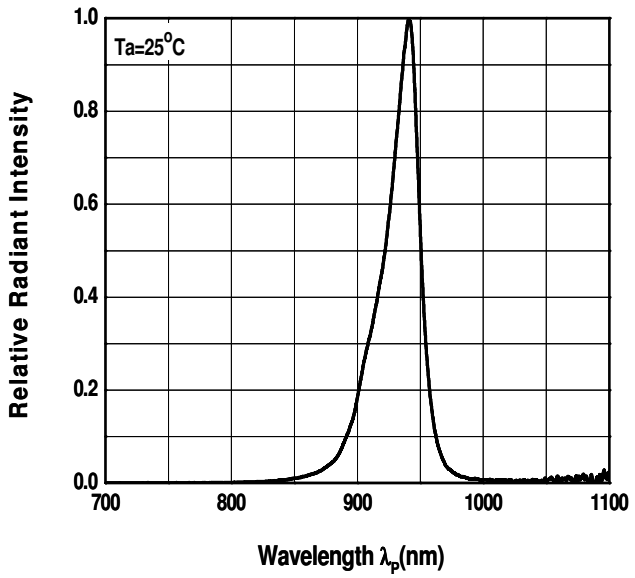
Notes)：*正向电压公差范围(Forward voltage tolerance)：±0.1v
*辐射强度公差范围 Radiant intensity tolerance)：±10%

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

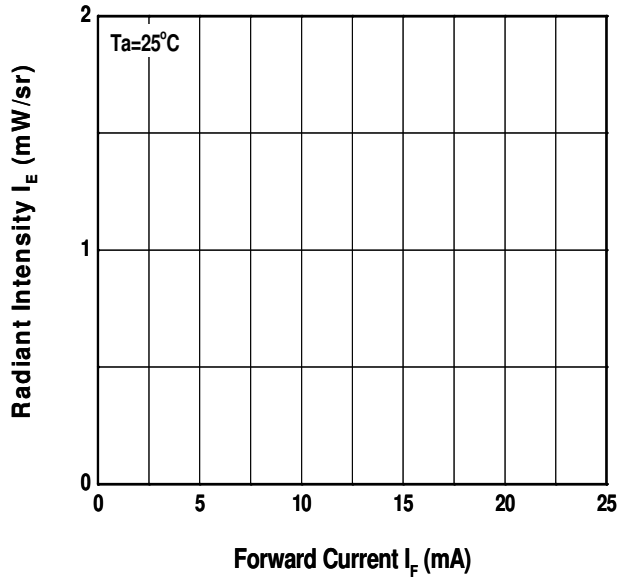
Forward Current vs. Ambient Temperature



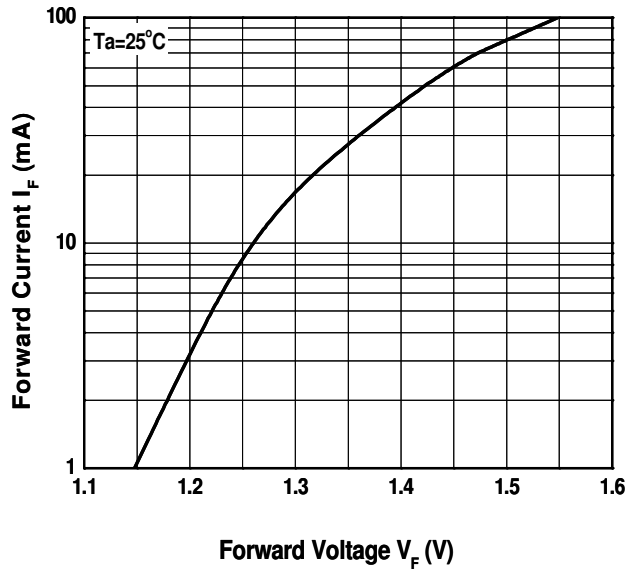
Spectral Distribution



Relative Intensity vs. Forward Current

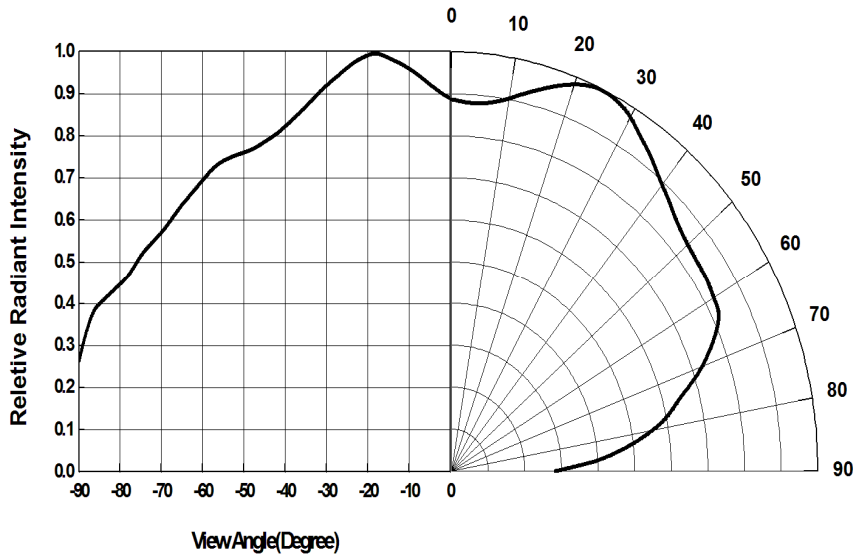


Forward Current vs. Forward Voltage

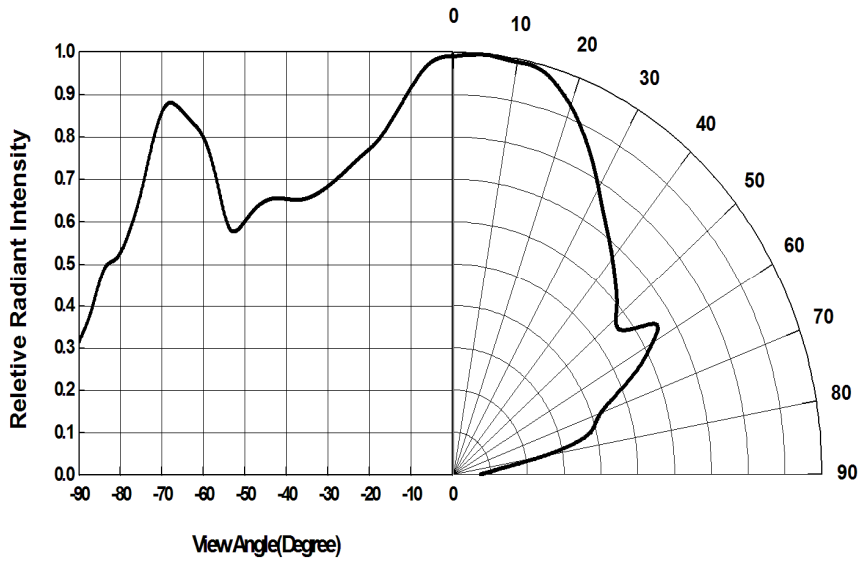


典型光电特性曲线图 Typical photoelectricity characteristic curve chart：

Relative Light Current vs. Angular Displacement (X-position)



Relative Light Current vs. Angular Displacement (Y-position)



四、极限参数 Absolute Maximum Rating：

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

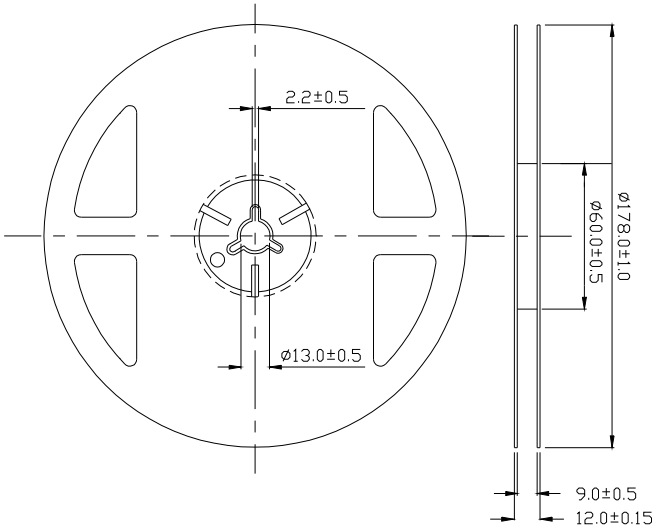
项目 Item	符号 Symbol	数值 Value	单位 Unit	备注 Remark
正向电流 Forward Current	IF	25	mA	---
反向耐压 Reverse Voltage	VR	5	V	---
耗散功率 Power Dissipation	Pd	80	mW	---
工作环境温度 Operation temperature	Tamb	-40 至+100	℃	---
贮藏温度 Storage temperature	Tstg	-40 至+100	℃	---
焊接温度*2 Soldering temperature	Tsol	260	℃	回流焊 Reflow soldering : 260 ℃ for 5 sec. 手工焊 Hand soldering：300°C for 3 sec.
Notes*1: IFP Conditions-Pulse Width≤100μs and Duty≤1% ***2:*** Solding time ≤5 seconds.				

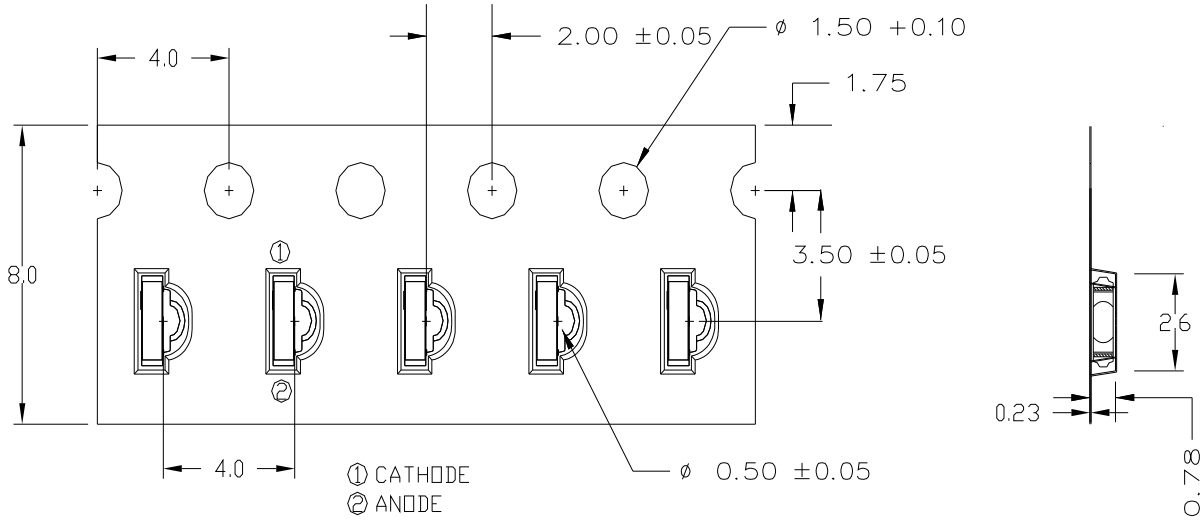
五、可靠性实验项目 Reliability Test Project：

描述 Description	项目 Item	测试标准 Test criterion	测试条件 Test condition	测试时间 Test time	数量 Qty.	失效数量 Fail Qty.
寿命测试 Life test	常温寿命测试 Life test (room temperature)	JIS7021:B4	Ta=25°C±5°C，IF=20mA	1000Hrs	22	0
环境测试 Ambience test	高温存储 High temperature store	JIS7021:B10 MIL-STD-202:210A MIL-STD-750:2031	Ta=85°C±5°C	1000Hrs	22	0
	低温存储 Low temperature store	JIS7021:B12	Ta= -35°C±5°C	1000Hrs	22	0
	高温高湿测试 High temperature/ humidity test	JIS7021:B11 MIL-STD-202:103D	Ta=85°C±5°C RH=85%	1000Hrs	22	0
	冷热冲击测试 Cold / Heat strike test	JIS7021:B4 MIL-STD-202:107D MIL-STD-750:1026	30min -10°C±5°C←→100°C±5°C 5min 5min	50Cycles	22	0
	冷热循环测试 Cold and heat cycle test	JIS7021:A3 MIL-STD-202:107D MIL-STD-705:105E	5min 5min 5min -35°C～25°C～85°C～-35°C 30min 5min 30min 5min	50Cycles	22	0

六、包装方式 Package Bag Dimensions

包装数量：**4000 pcs/卷** **Packing quantity: 4000 PCS/rolls**

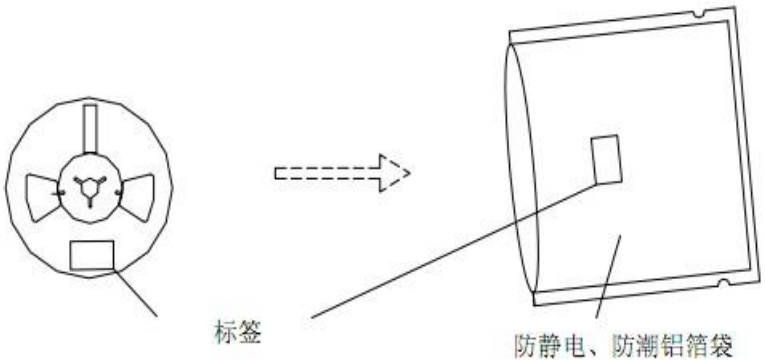




注：所有尺寸均为毫米，除非另有说明，公差为±0.1。

Notes: All dimensions are in mm, tolerance is ±0.1 unless otherwise noted.

标签及标识/ **Label Explanation:**



The label Anti-static, moisture-proof aluminum foil bag

七、使用注意事项 Precautions For Use

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 Phototransistor should be kept at 10°C~30°C and 90%RH or less.

2.3 The Phototransistor suggested be used within one year.

2.4 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 Phototransistor remain, it should be stored in moisture proof packages.

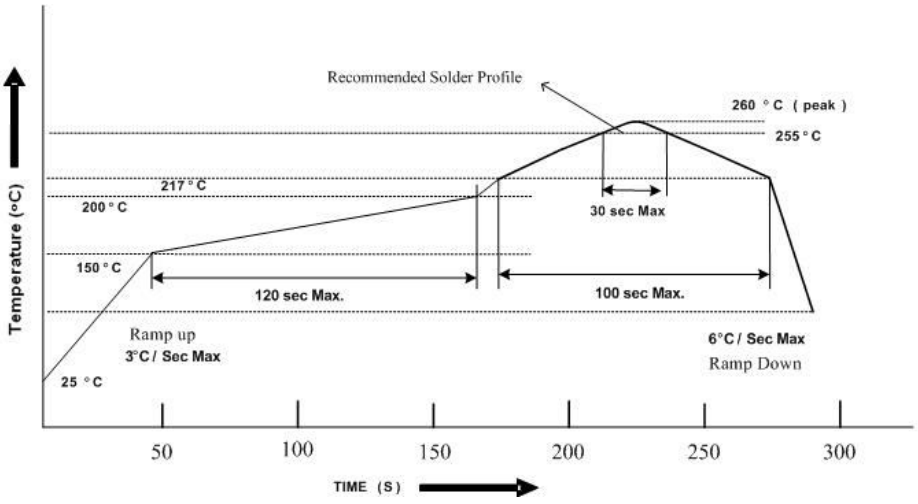
2.5 If the moisture absorbent material (desiccant material) has faded or unopened bag has exceeded the shelf life or devices (out of bag) have exceeded the floor life, baking treatment is required.

2.6 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)

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 Phototransistor during heating.

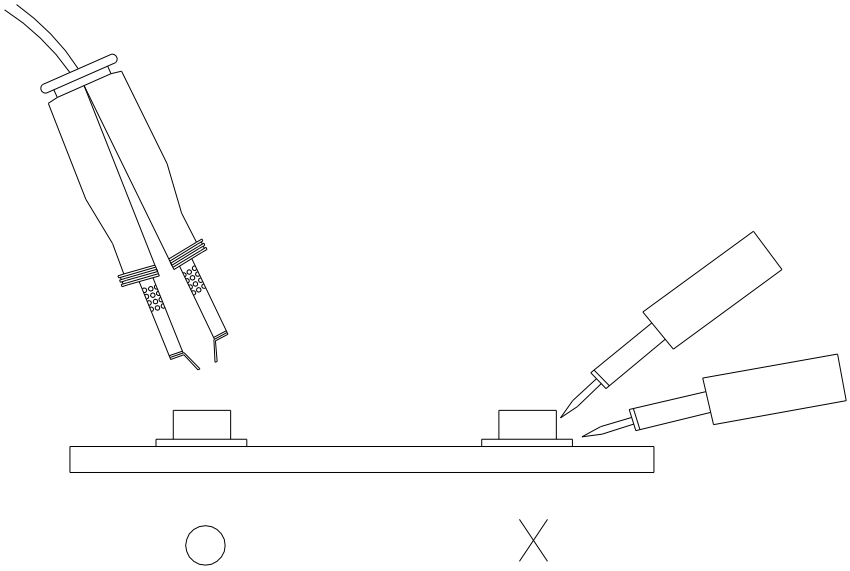
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350℃ 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.



八、免责声明 DISCLAIMER

1. TONYU reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets TONYU published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. TONYU assumes no responsibility for any damage resulting from the 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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