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　SMD RGB
产品型号 MODEL	DYWH-12-23C/R6GHB7W/2T
版本号 VERSION NO	A1.0

厂址(Add)：广东省广州市番禺区石基镇海涌路 3 号 10 号厂房 2 楼

电话(Tel)：0755-88367730

传真(Fax)：020-39966833

网址(Net)：www.tonyuled.cn　www.tonyuled.com

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

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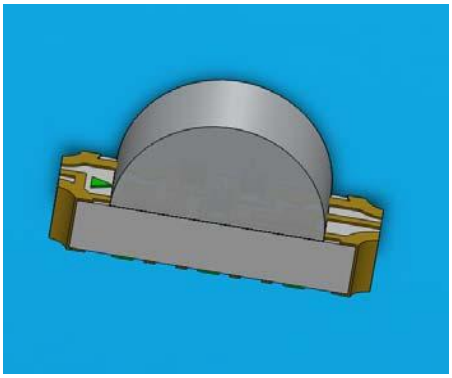
DYWH-12-23C/R6GHB7W/2T



产品描述 Descriptions

- 外观尺寸：3.0*1.0*1.5mm ，红、蓝、翠绿全彩贴片发光二极管

产品特性 Features

- 发光强度高，功耗低 (High Luminous Intensity ,Low Power Dissipation,)
- 可靠性好，使用寿命长 (Good Reliability and Long Life)
- 无铅 (Pb free)
- 符合 RoHS 要求 (This product itself will remain within RoHS compliant version)

产品应用 Applications

- 办公室和家庭设备的指示灯 (Indicatorand back light in office and family equipment.)
- LCD 背光源 (LCD Back Light)
- 光管应用 (Light pipe application）
- 一般应用 (General use)

包装方式 Packing Quantity Specification

- 编带 2000 个/卷 (2000PCS/rolls)

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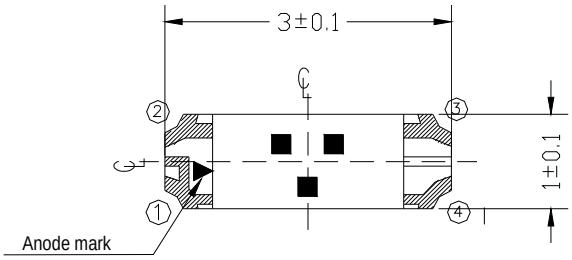
一、外形图 Outline dimensions：



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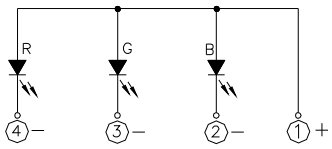
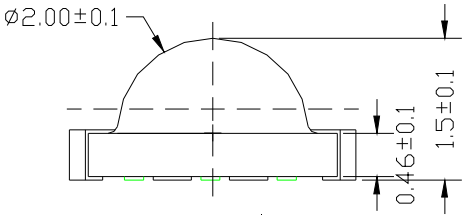
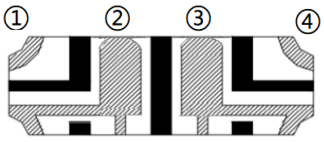


Polarity



Side

Recommend Sodering Pad



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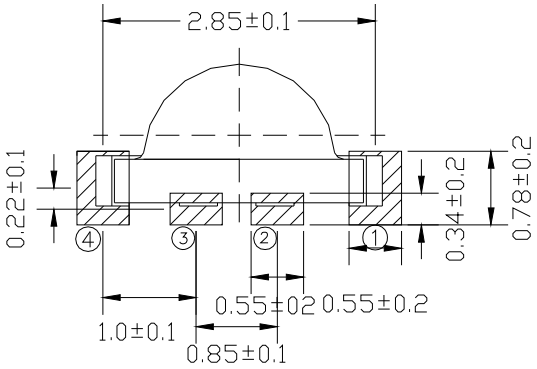

Suggested pad dimension is just for reference only.
Please modify the pad dimension based on individual need.

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	AlGaInP	Red	Water diffused
mm	±0.1mm	InGaN	Green	
mm	±0.1mm	InGaN	Blue	

※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.

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二、光电参数 Electro-Optical Characteristics：

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

Parameter	Symbol	Code	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv		112	-----	450	mcd	
Viewing Angle	$2\theta_{1/2}$		-----	110	-----	Deg	
Peak Wavelength	λ p	R6	-----	632	-----	nm	
		GH	-----	518	-----		
		B7	-----	468	-----		
Dominant Wavelength	λ d	R6	-----	624	-----	nm	R6:I_F=2.28mA GH:I_F=2.28mA B7:I_F=2.27mA
		GH	-----	525	-----		
		B7	-----	470	-----		
Spectrum Radiation Bandwidth	△ λ	R6	-----	20	-----	nm	
		GH	-----	35	-----		
		B7	-----	25	-----		
Forward Voltage	V_F	R6	1.55	-----	2.15	V	
		GH	2.15	-----	3.05		
		B7	2.15	-----	3.05		
Reverse Current	I_R	R6	-----	-----	10	μA	V_R=5V
		GH	-----	-----	50		
		B7	-----	-----	50		

注(Notes)：*正向电压公差范围(Forward voltage tolerance)：±0.1v

*光强度公差范围(Light intensitytolerance range)：±11%

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三、光电参数分 BIN 规格/Photoelectric parameters are divided into BIN specifications

3.1.光强度亮度分BIN 规格/ Bin Range of Luminous Intensity

Bin	Min	Max	Unit	Condition
R1	112	140	mcd	R6:IF=2.28mA GH:IF=2.28mA B7:IF=2.27mA
R2	140	180		
S1	180	225		
S2	225	285		
T1	285	360		
T2	360	450		

Notes: Tolerance of Luminous Intensity: ± 11%

3.2.红光电压分BIN 规格/ Red light Bin Range of Forward Voltgae

Bin	Min	Max	Unit	Condition
00	1.55	1.75	V	IF = 2.28mA
0	1.75	1.95		
1	1.95	2.15		

Notes: Tolerance of Forward Voltage: ± 0.05V

3.3.；绿光电压分BIN 规格/ Green light Bin Range of Forward Voltgae

Bin	Min	Max	Unit	Condition
2	2.15	2.35	V	IF = 2.28mA
3	2.35	2.55		
4	2.55	2.75		
5	2.75	3.05		

Notes: Tolerance of Forward Voltage: ± 0.05V

3.4.蓝光电压分BIN 规格/ Blue light Bin Range of Forward Voltgae

Bin	Min	Max	Unit	Condition
2	2.15	2.35	V	IF = 2.27mA
3	2.35	2.55		
4	2.55	2.75		
5	2.75	3.05		

Notes: Tolerance of Forward Voltage: ± 0.05V

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3.5 色区分 BIN 规格/Color distinguishes Bin specifications

Bin Code	CIE_x	CIE_y	Condition
C0	0.1320	0.2540	R6:I_F=2.28mA GH:I_F=2.28mA B7:I_F=2.27mA
	0.1320	0.2960	
	0.1570	0.3060	
	0.1570	0.2640	
C1	0.1570	0.2640	
	0.1570	0.3060	
	0.1820	0.3160	
	0.1820	0.2740	
C2	0.1820	0.2740	
	0.1820	0.3160	
	0.2070	0.3260	
	0.2070	0.2840	
C3	0.2070	0.2840	
	0.2070	0.3260	
	0.2320	0.3360	
	0.2320	0.2940	
C4	0.2320	0.2940	
	0.2320	0.3360	
	0.2570	0.3460	
	0.2570	0.3040	
D0	0.1320	0.2960	
	0.1320	0.3380	
	0.1570	0.3480	
	0.1570	0.3060	
D1	0.1570	0.3060	
	0.1570	0.3480	
	0.1820	0.3580	
	0.1820	0.3160	
D2	0.1820	0.3160	
	0.1820	0.3580	
	0.2070	0.3680	
	0.2070	0.3260	
D3	0.2070	0.3260	
	0.2070	0.3680	
	0.2320	0.3780	
	0.2320	0.3360	
D4	0.2320	0.3360	
	0.2320	0.3780	
	0.2570	0.3880	
	0.2570	0.3460	

Notes:
1.The C.I.E. 1931 chromaticity diagram (Tolerance ±0.01).
2.The products are sensitive to static electricity and care must be fully taken when handling products.

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色区分 BIN 规格/Color distinguishes Bin specifications

Bin Code	CIE_x	CIE_y	Condition
E0	0.1320	0.3380	R6:I_F=2.28mA GH:I_F=2.28mA B7:I_F=2.27mA
	0.1320	0.3800	
	0.1570	0.3900	
	0.1570	0.3480	
E1	0.1570	0.3480	
	0.1570	0.3900	
	0.1820	0.4000	
	0.1820	0.3580	
E2	0.1820	0.3580	
	0.1820	0.4000	
	0.2070	0.4100	
	0.2070	0.3680	
E3	0.2070	0.3680	
	0.2070	0.4100	
	0.2320	0.4200	
	0.2320	0.3780	
E4	0.2320	0.3780	
	0.2320	0.4200	
	0.2570	0.4300	
	0.2570	0.3880	
F0	0.1320	0.3800	
	0.1320	0.4220	
	0.1570	0.4320	
	0.1570	0.3900	
F1	0.1570	0.3900	
	0.1570	0.4320	
	0.1820	0.4420	
	0.1820	0.4000	
F2	0.1820	0.4000	
	0.1820	0.4420	
	0.2070	0.4520	
	0.2070	0.4100	
F3	0.2070	0.4100	
	0.2070	0.4520	
	0.2320	0.4620	
	0.2320	0.4200	
F4	0.2320	0.4200	
	0.2320	0.4620	
	0.2570	0.4720	
	0.2570	0.4300	

Notes:
1.The C.I.E. 1931 chromaticity diagram (Tolerance ±0.01).
2.The products are sensitive to static electricity and care must be fully taken when handling products.

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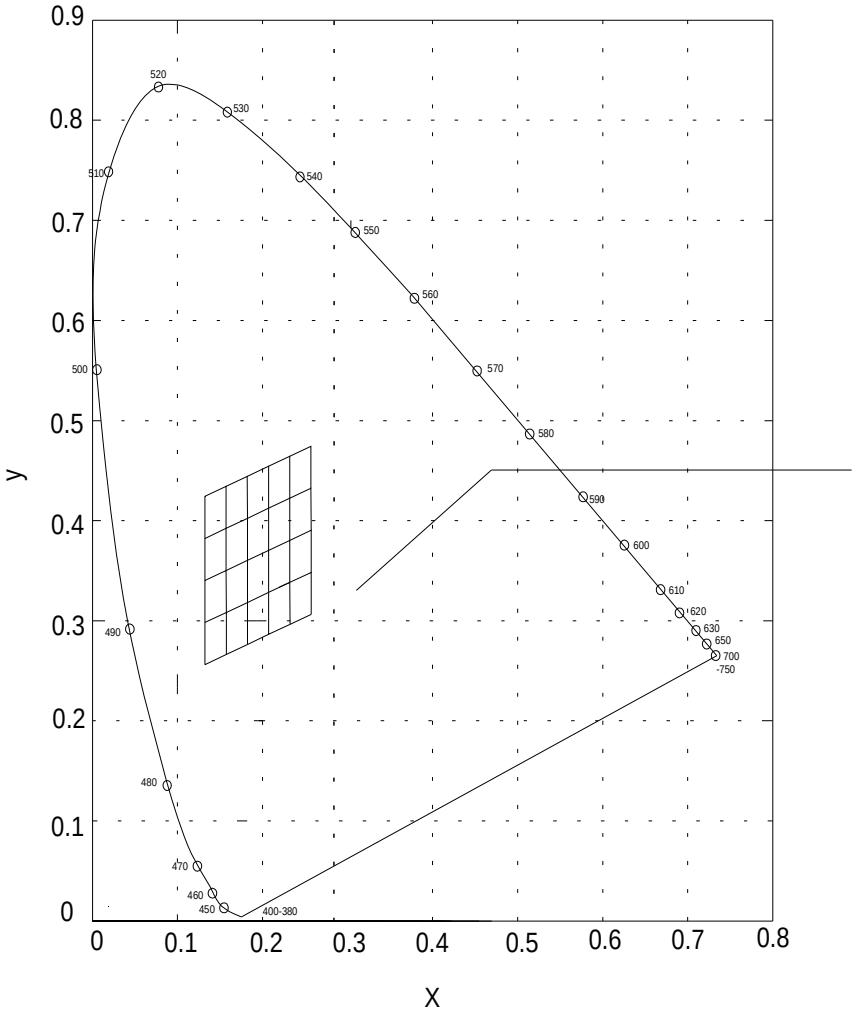
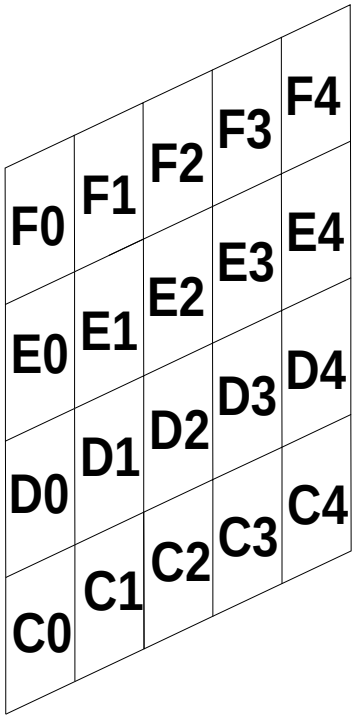
CIE Chromaticity Diagram

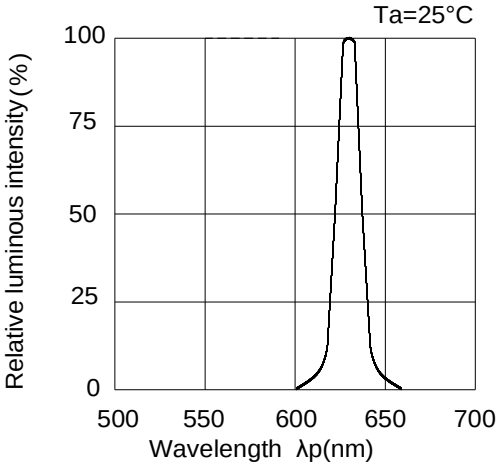




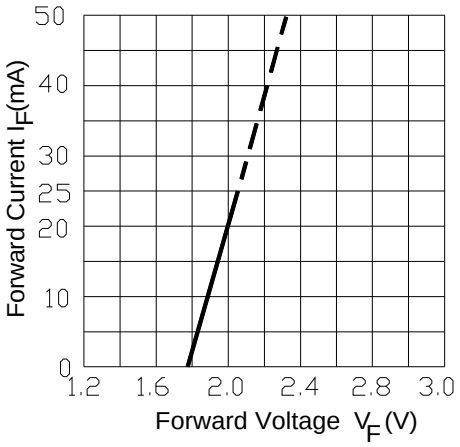
四、典型光电特性曲线图 Typical photoelectricity characteristic curve chart：

Red：

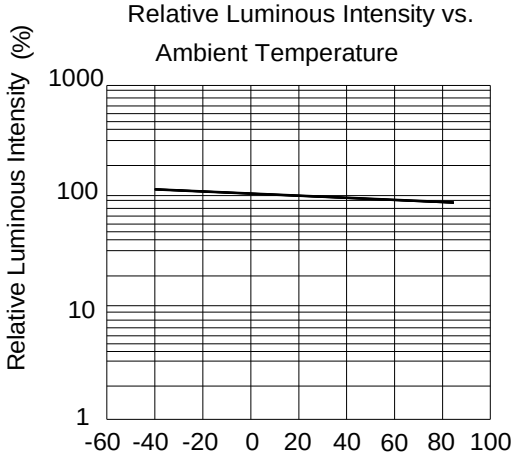
Spectrum Distribution



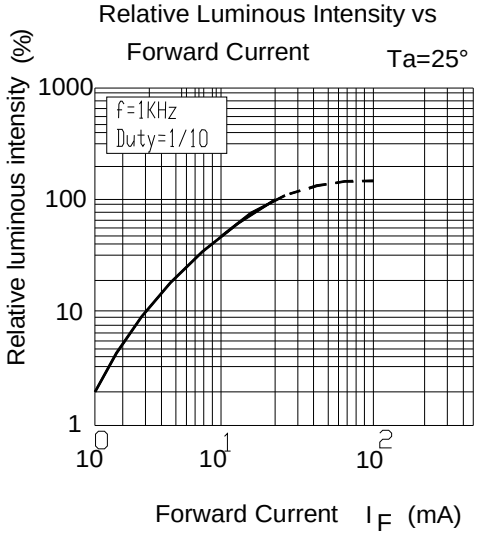
Forward Current vs.
Forward Voltage



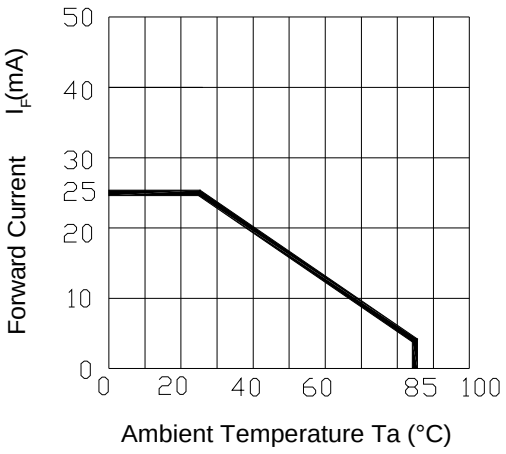
Relative Luminous Intensity vs.
Ambient Temperature



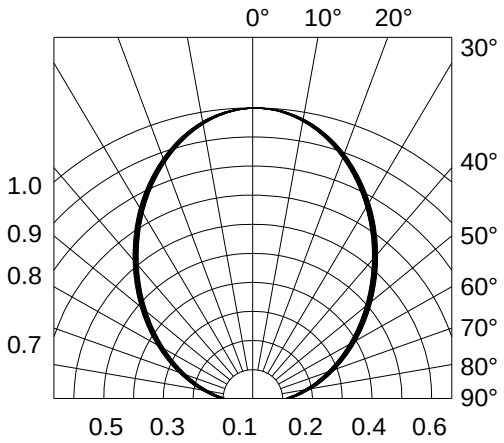
Relative Luminous Intensity vs
Forward Current Ta=25°



Forward Current Derating Curve



Radiation Diagram Ta=25°C



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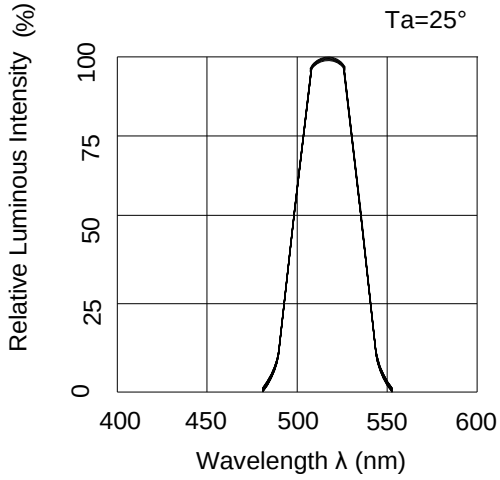
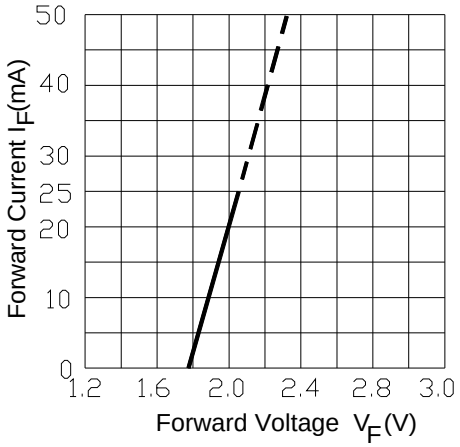
典型光电特性曲线图 Typical photoelectricity characteristic curve chart：

Blue：

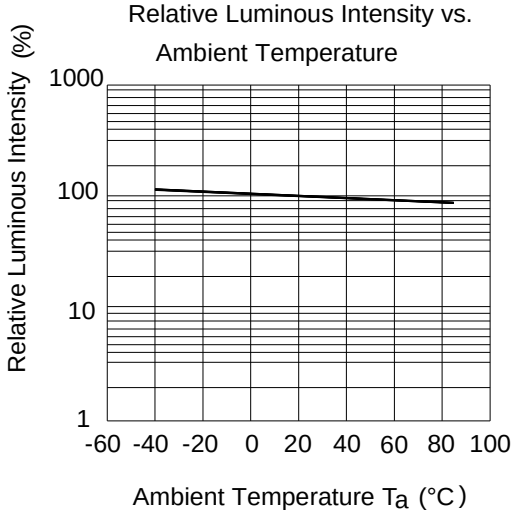
Spectrum Distribution



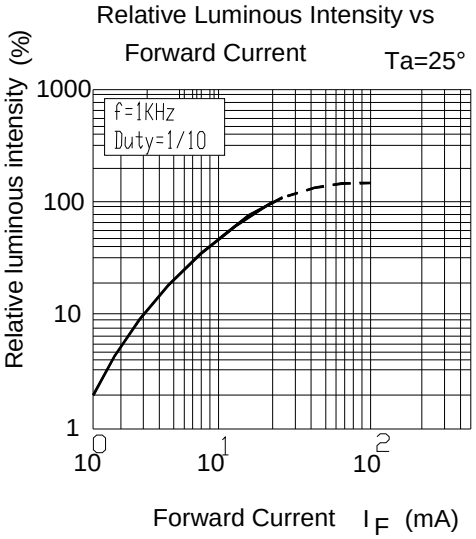
Forward Current vs.
Forward Voltage



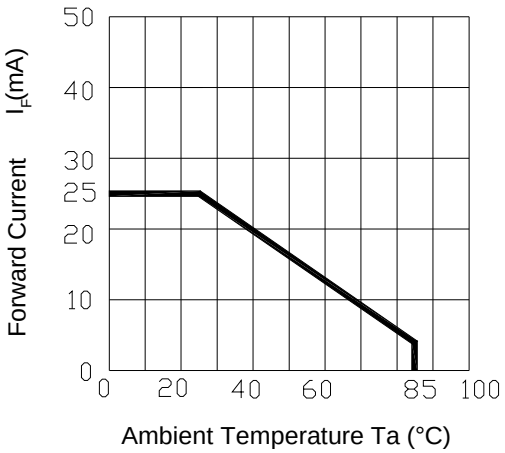
Relative Luminous Intensity vs. Ambient Temperature



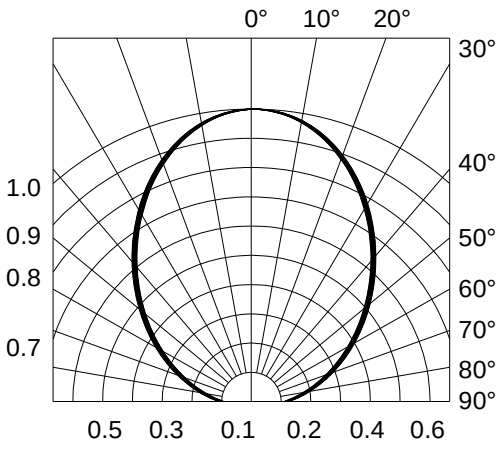
Relative Luminous Intensity vs Forward Current



Forward Current Derating Curve



Radiation Diagram Ta=25°C



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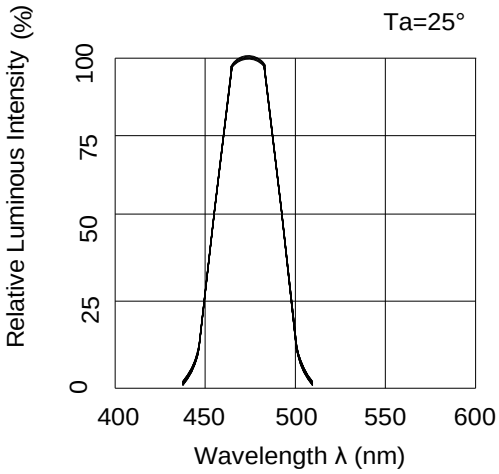
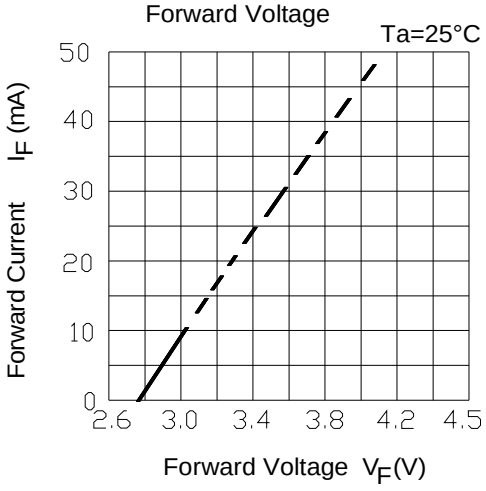
典型光电特性曲线图 Typical photoelectricity characteristic curve chart：

Green：

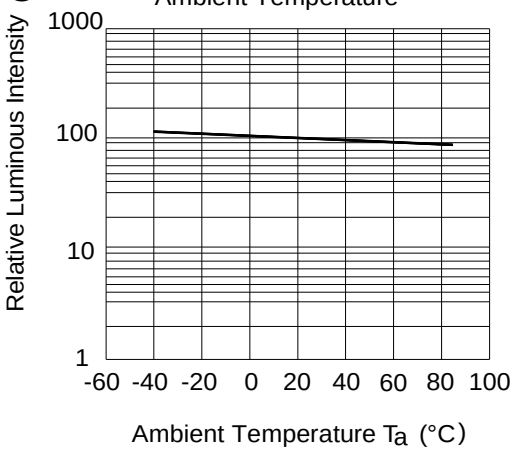
Spectrum Distribution



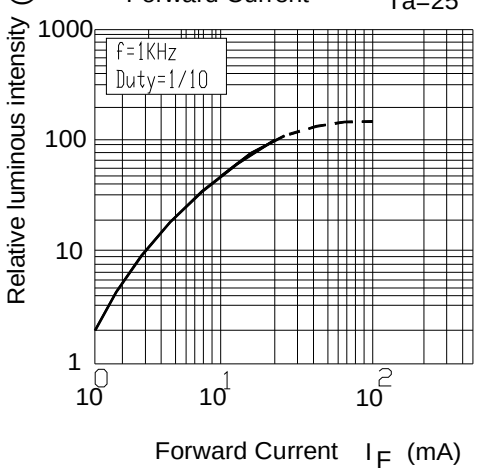
Forward Current vs. Forward Voltage



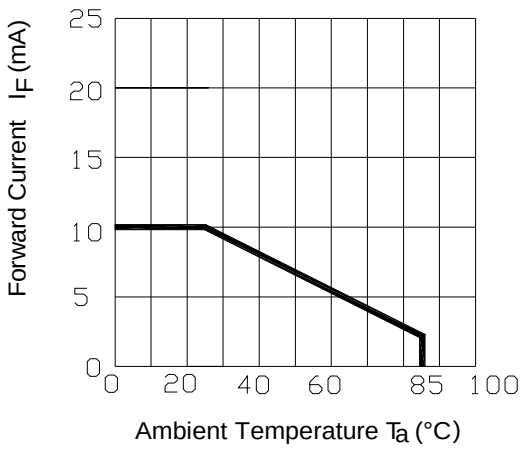
Relative Luminous Intensity vs. Ambient Temperature



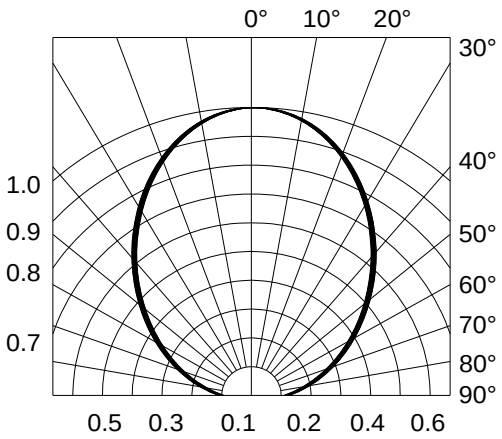
Relative Luminous Intensity vs Forward Current



Forward Current Derating Curve



Radiation Diagram Ta=25°C



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五、极限参数 Absolute Maximum Rating：

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

参 数/ Parameter	符号Symbol	最大额定值/ Rating		单 位/ Unit
消耗功率/ Power Dissipation	Pd	Red	60	mW
		Blue	40	
		Green	95	
最大脉冲电流/ Peak Forward Current (1/10占空比, 0.1ms脉宽)	IFP	Red	60	mA
		Blue	100	
		Green	100	
正向直流工作电流/ DC Forward Current	IF	Red	25	mA
		Blue	10	
		Green	25	
反向电压/Backward Voltage	VR	Red	5	V
		Blue	5	
		Green	5	
静电放电 Electrostatic Discharge	ESD_{HBM}	Red：2000		V
		Blue：150		
		Green：150		
工作温度范围 Operating Temperature Range	Topr	-40°C ~ +85°C		
存储温度范围 Storage Temperature Range	Tstg	-40°C ~ +90°C		
焊接条件 Soldering Condition	Tsol	回流焊/ Reflow soldering : 260°C ， 10s 手动焊/ Hand soldering : 300°C ， 3s		

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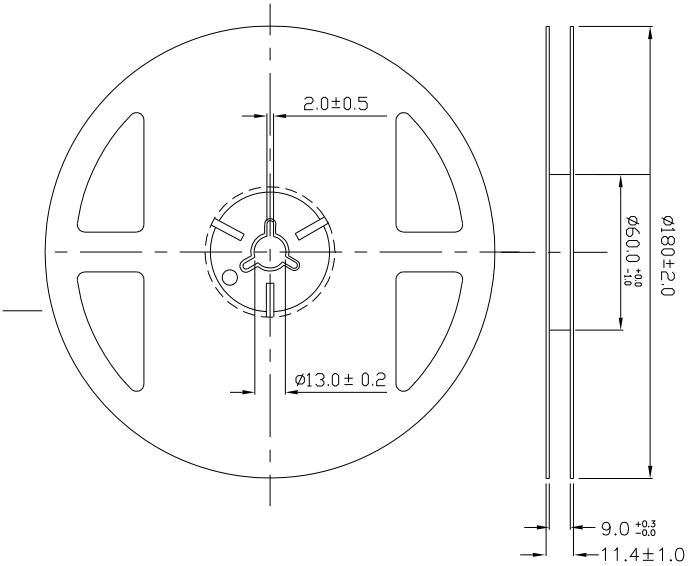
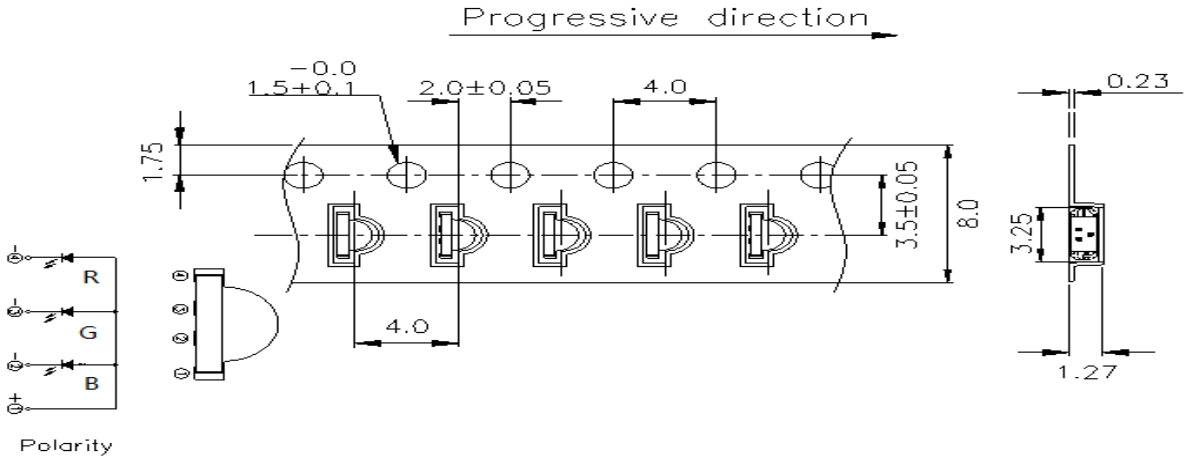
六、包装载带与圆盘尺寸 Package carrier and disk dimensions

包装数量：**2000 pcs/卷** **Packing quantity: 2000 PCS/rolls**

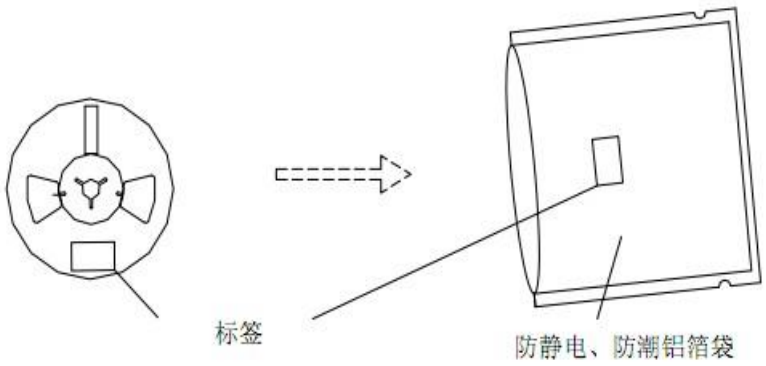




注：所有尺寸均为毫米，除非另有说明，公差为±0.1。

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

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七、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℃±5℃，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℃±5℃	1000Hrs	22	0
	低温存储 Low temperature store	JIS7021:B12	Ta= -35℃±5℃	1000Hrs	22	0
	高温高湿测试 High temperature/ humidity test	JIS7021:B11 MIL-STD-202:103D	Ta=85℃±5℃ 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℃±5℃←→100℃±5℃ 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℃～25℃～85℃～-35℃ 30min 5min 30min 5min	50Cycles	22	0

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八、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).

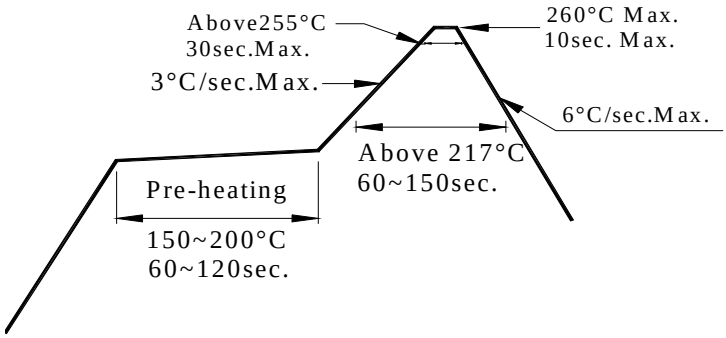
2.1 Do not open moisture proof bag before the products are ready to use.

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

2.3If 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



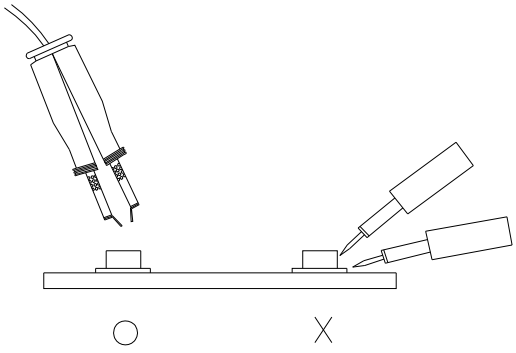
3.2 Reflow soldering should not be done more than two times.

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 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.



Application Restrictions

High reliability applications such as military/aerospace, automotive safety/security systems, and medical equipment may require different product. If you have any concerns, please contact Everlight before using this product in your application. This specification guarantees the quality and performance of the product as an individual component. Do not use this product beyond the specification described in this document.

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