

SPECIFICATION 产品规格书

REFOND P/N 产品型号
RF-WNM190DS-DB-B

R&D 研发
 Mass Product 量产供货



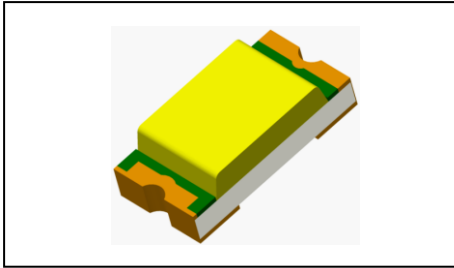
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1. Description 产品介绍

1.1 General Description 产品描述



The White LED, which was fabricated by using a blue chip and the phosphor.

Product Package: 1.6mmX0.8mmX0.4mm.

该产品为白光 LED，是由蓝光芯片激发荧光粉而形成，产品尺寸：1.6mmX0.8mmX0.4mm。

1.2 Features 产品特征

- ▶ Extremely wide viewing angle. 发光角度大
- ▶ Suitable for all SMT assembly and solder process. 适用于所有的 SMT 组装和焊接工艺
- ▶ Moisture sensitivity level: Level 3. 防潮等级 Level 3
- ▶ RoHS compliant. 满足 RoHS 要求

1.3 Application 产品应用

- ▶ Optical indicator. 光学指示
- ▶ Switch and Symbol, Display. 开关和标识、显示器等
- ▶ General use. 其他应用



1.4 Package Dimension 封装尺寸

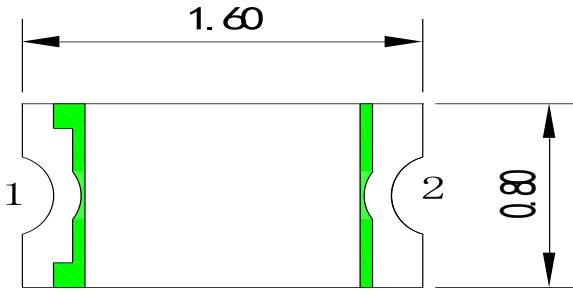


Fig.1-1 Top view 正面视图

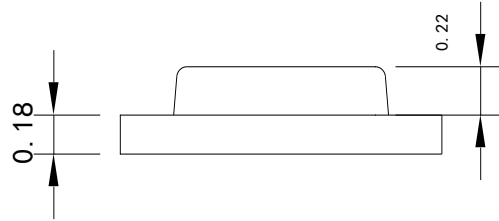


Fig.1-2 Side view 侧面视图

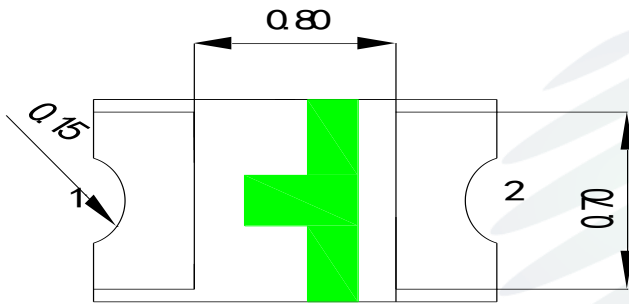


Fig.1-3 Bottom view 背面视图

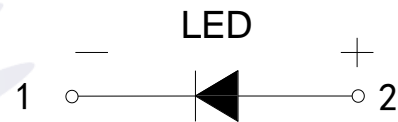


Fig.1-4 Polarity 极性

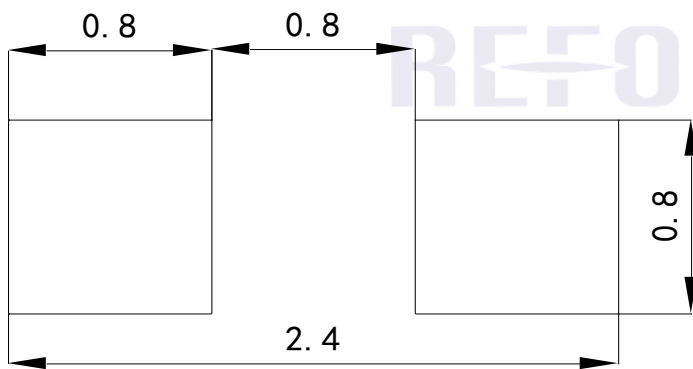


Fig.1-5 Soldering patterns 推荐焊盘

Notes 备注:

1. All dimensions units are millimeters. 所有尺寸标注单位为毫米
2. All dimensions tolerances are $\pm 0.2\text{mm}$ unless otherwise noted. 除特别标注外, 所有尺寸公差为 ± 0.2 毫米



1.5 Product Parameters 产品参数

Table 1-1 Electrical / Optical Characteristics at Ts=25°C 电性与光学特性

Item 项目	Test Condition 测试条件	Symbol 符号	Value			Unit 单位	
			Min. (最小值)	Typ. (典型值)	Max. (最大值)		
Forward Voltage 正向电压	I _F =5mA	V _F	F1	2.6	--	2.7	V
			F2	2.7	--	2.8	V
			G1	2.8	--	2.9	V
			G2	2.9	--	3.0	V
			H1	3.0	--	3.1	V
			H2	3.1	--	3.2	V
			I1	3.2	--	3.3	V
			I2	3.3	--	3.4	V
			J1	3.4	--	3.5	V
Luminous Intensity 发光强度	I _F =5mA	I _v	1AP	90	--	120	mcd
			G20	120	--	150	mcd
			1AW	150	--	200	mcd
			1AX	200	--	250	mcd
			1AY	250	--	300	mcd
Viewing Angle 发光角度	I _F =5mA	2θ _{1/2}	--	140	--	deg	
Reverse Current 漏电流	V _R =5V/10ms	I _R	--	--	10	μA	
Thermal Resistance. 热阻	I _F =5mA	R _{THJ-S}	--	--	450	°C/W	

Notes 备注: V_R=5V For test conditions. V_R=5V 为测试分选条件。



Table 1-2 Absolute Maximum Ratings at Ts=25°C 绝对最大值

Parameter (参数)	Symbol (符号)	Rating (值)	Units (单位)
Power Dissipation (功耗)	P_d	105	mW
Forward Current (正向电流)	I_F	30	mA
Peak Forward Current Of Pulse (脉冲峰值电流)	I_{FP}	60	mA
Electrostatic Discharge (HBM) (静电)	E_{SD}	1000	V
Operating Temperature (操作温度)	T_{opr}	-40 ~ +85	°C
Storage Temperature (储存温度)	T_{stg}	-40 ~ +85	°C
Junction Temperature (结温)	T_j	95	°C

Notes 备注:

- 1/10 Duty cycle, 0.1ms pulse width. 脉宽0.1ms, 占空比1/10.
- The above forward voltage measurement allowance tolerance is $\pm 0.1V$. 以上所示电压测量误差 $\pm 0.1V$.
- The above color coordinates measurement allowance tolerance is ± 0.005 . 以上所示坐标测量误差 ± 0.005 .
- The above luminous intensity measurement allowance tolerance $\pm 10\%$. 上述发光强度的测试允许公差为 $\pm 10\%$.
- Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product. 使用功率不能超过规定的最大值。
- All measurements were made under the standardized environment of Refond. 所有测试都是基于瑞丰现有的标准测试平台。
- When the LEDs are in operation the maximum current should be decided after measuring the package temperature, junction temperature should not exceed the maximum rate. LED使用的最大电流需要根据散热条件确定, 结温不能超过最大值。



1.6 Bin Range Of Forward Voltage and Luminous Flux (IF=5mA)电压与流明分BIN 范围(IF=5mA)

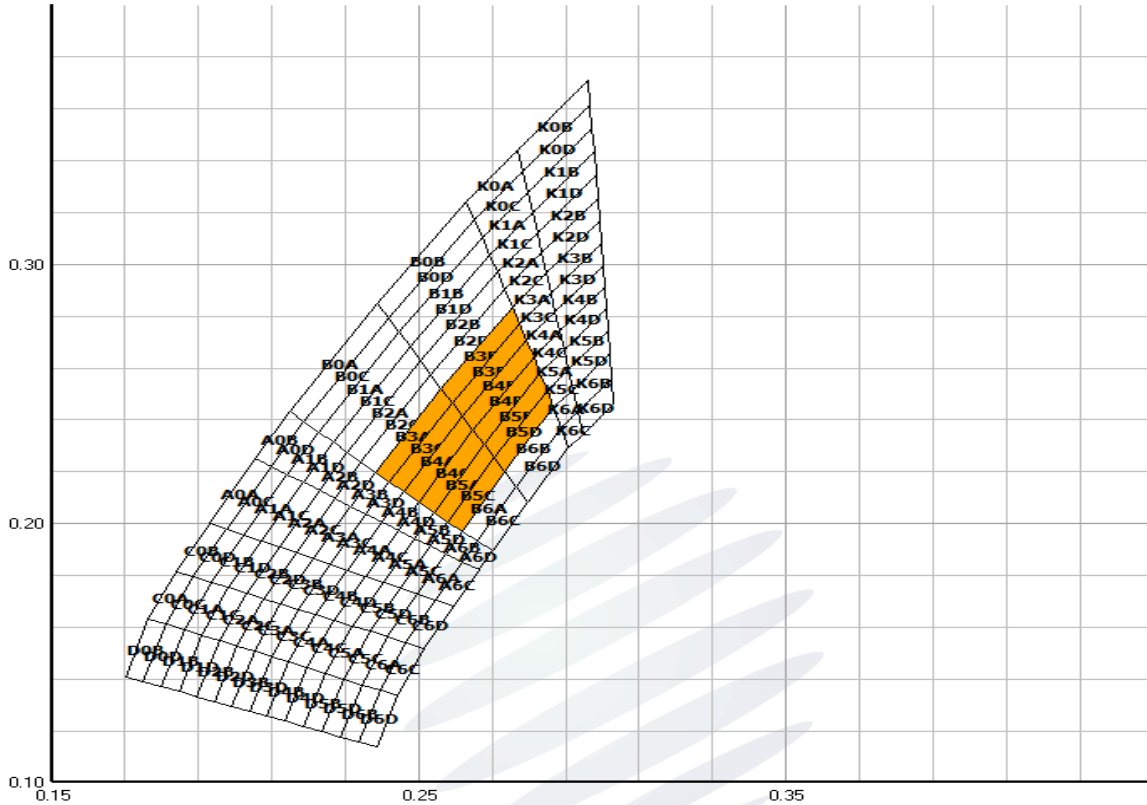


Fig. 1-6 The C.I.E Chromaticity Diagram CIE色度图

Table 1-3 Bin Date Bin数据

BIN CODE	CIE-X1	CIE-Y1	CIE-X2	CIE-Y2	CIE-X3	CIE-Y3	CIE-X4	CIE-Y4
B3a	0.2417	0.2158	0.2379	0.2196	0.2560	0.2518	0.2589	0.2465
B3b	0.2589	0.2465	0.2560	0.2518	0.2752	0.2834	0.2772	0.2770
B3c	0.2456	0.2119	0.2417	0.2158	0.2589	0.2465	0.2617	0.2412
B3d	0.2617	0.2412	0.2589	0.2465	0.2772	0.2770	0.2792	0.2706
B4a	0.2498	0.2078	0.2456	0.2119	0.2617	0.2412	0.2646	0.2358
B4b	0.2646	0.2358	0.2617	0.2412	0.2792	0.2706	0.2811	0.2643
B4c	0.2538	0.2040	0.2498	0.2078	0.2646	0.2358	0.2675	0.2304
B4d	0.2675	0.2304	0.2646	0.2358	0.2811	0.2643	0.2829	0.2579
B5a	0.2576	0.2003	0.2538	0.2040	0.2675	0.2304	0.2703	0.2252
B5b	0.2703	0.2252	0.2675	0.2304	0.2829	0.2579	0.2848	0.2512
B5c	0.2616	0.1967	0.2576	0.2003	0.2703	0.2252	0.2731	0.2199
B5d	0.2731	0.2199	0.2703	0.2252	0.2848	0.2512	0.2865	0.2445

1.7 Typical Optical Characteristics Curves 典型光学特性曲线

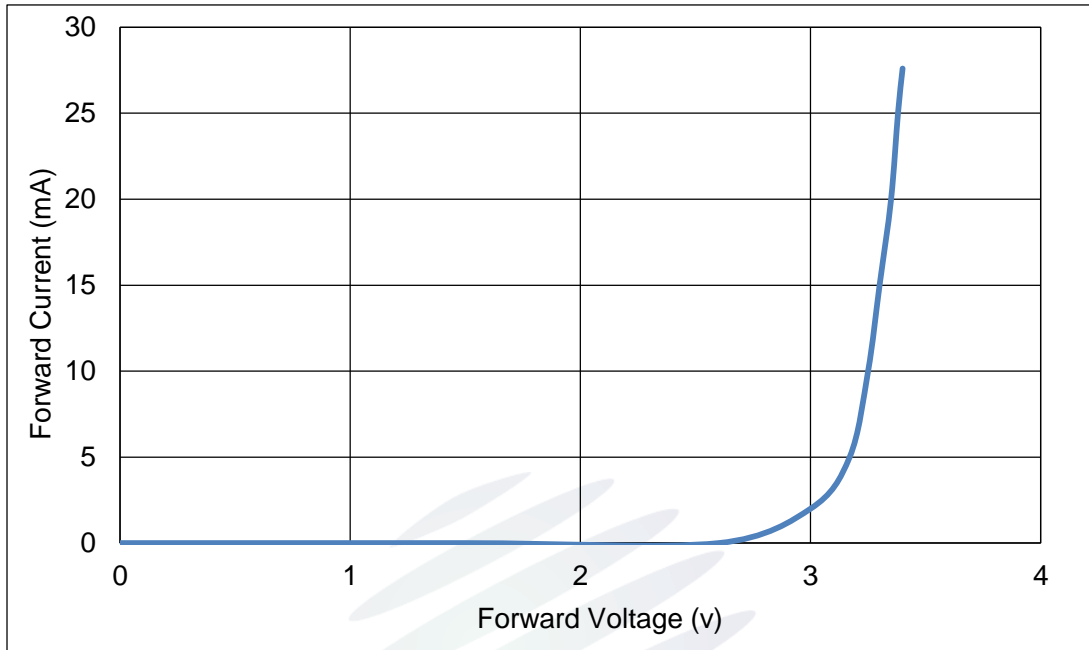


Fig 1-8 Forward Voltage Vs Forward Current 伏安特性曲线

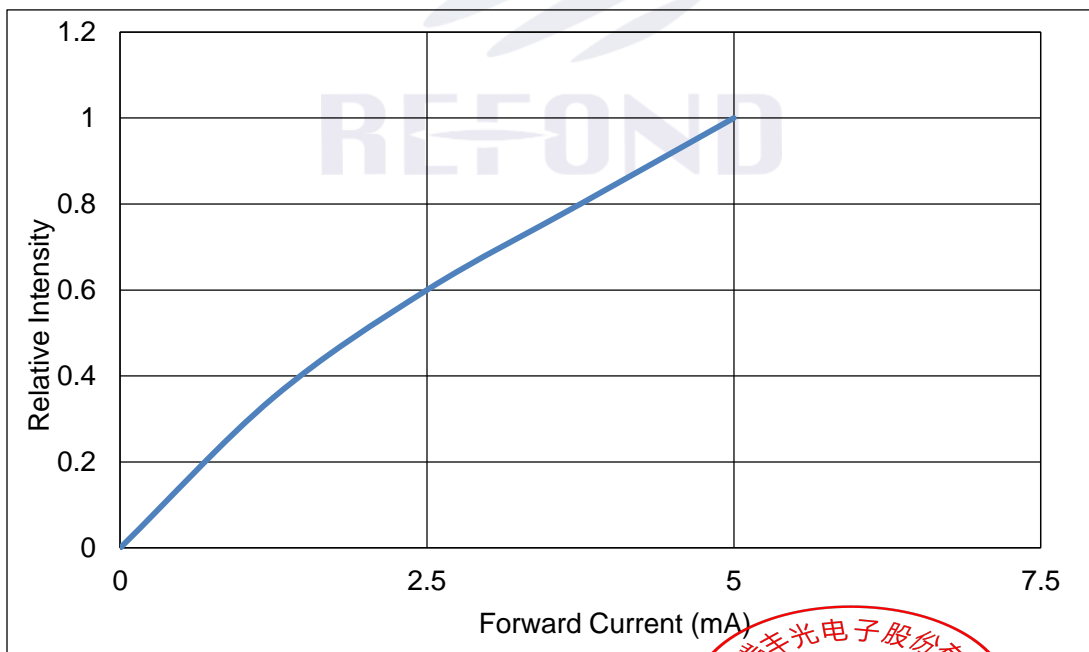


Fig 1-9 Forward Current Vs Relative Intensity 正向电流与相对光强特性曲线

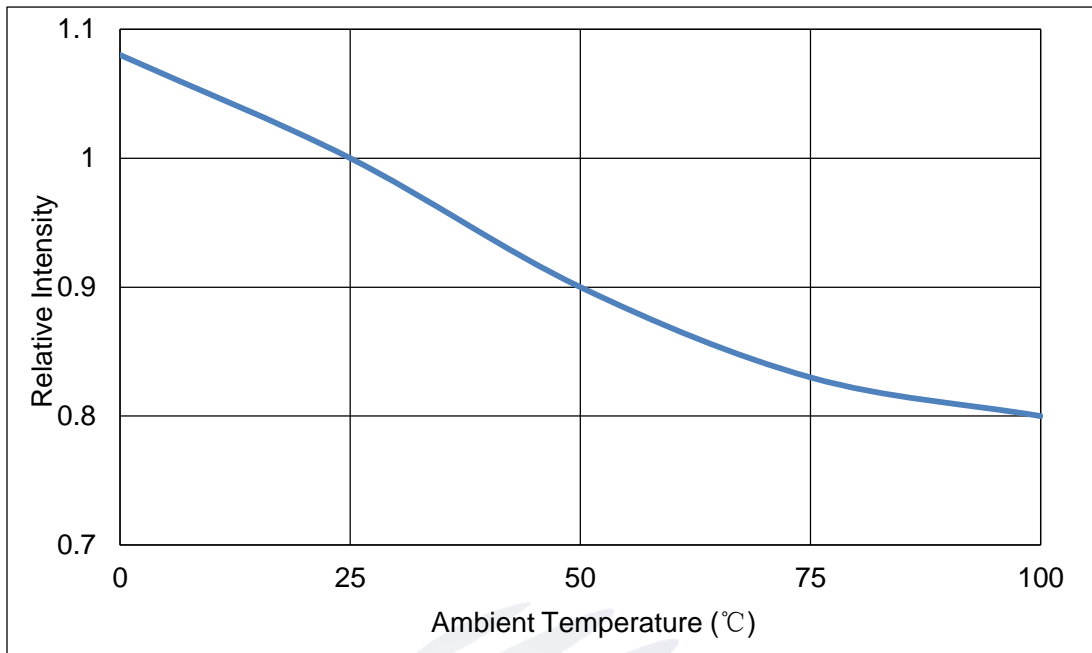


Fig 1-10 Pin Temperature Vs Relative Intensity 引脚温度与相对光强特性曲线

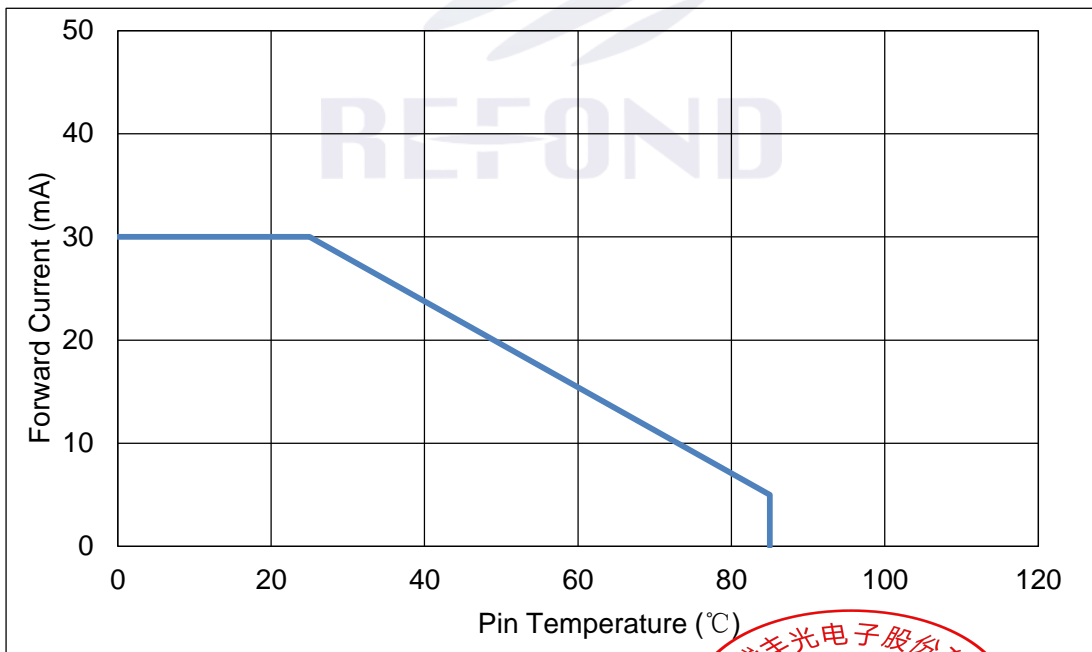


Fig 1-11 Pin Temperature Vs Forward Current 引脚温度与正向电流特性曲线

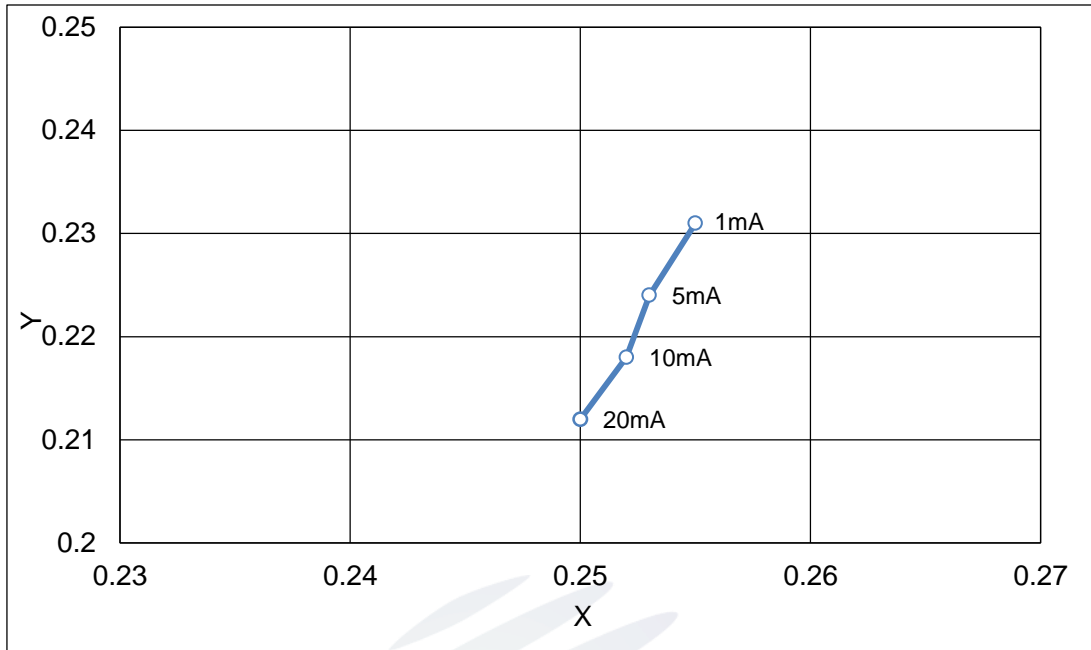


Fig.1-12 Forward Current Vs Dominate Wavelength (Ta=25°C) 正向电流与主波长关系曲线

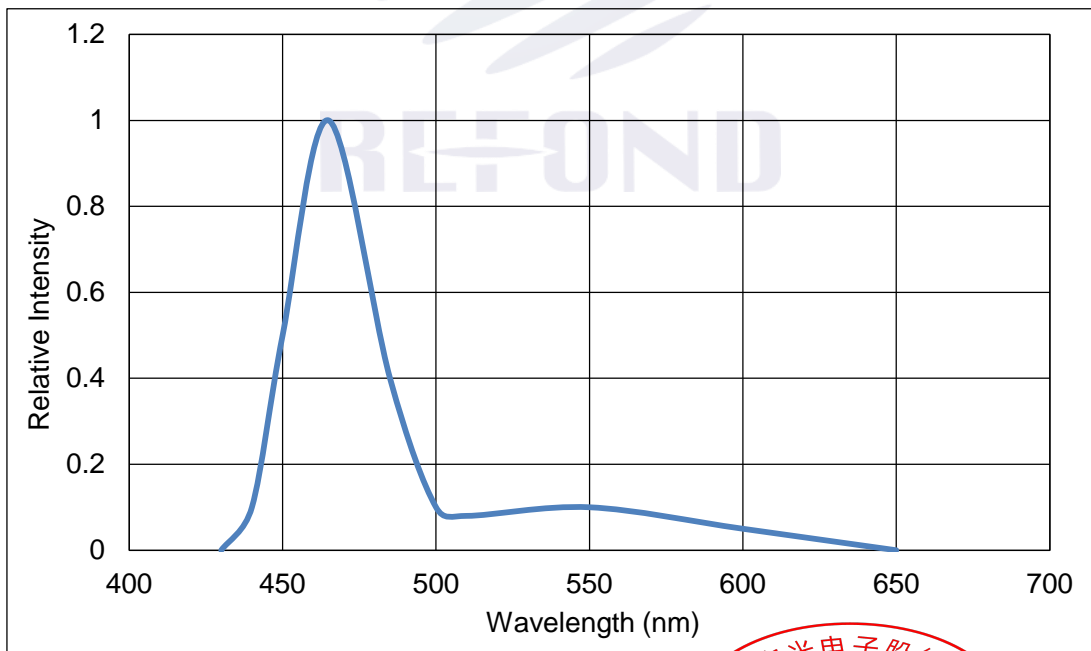


Fig.1-13 Relative Intensity Vs Wavelength (Ta=25°C) 相对光强与波长关系曲线



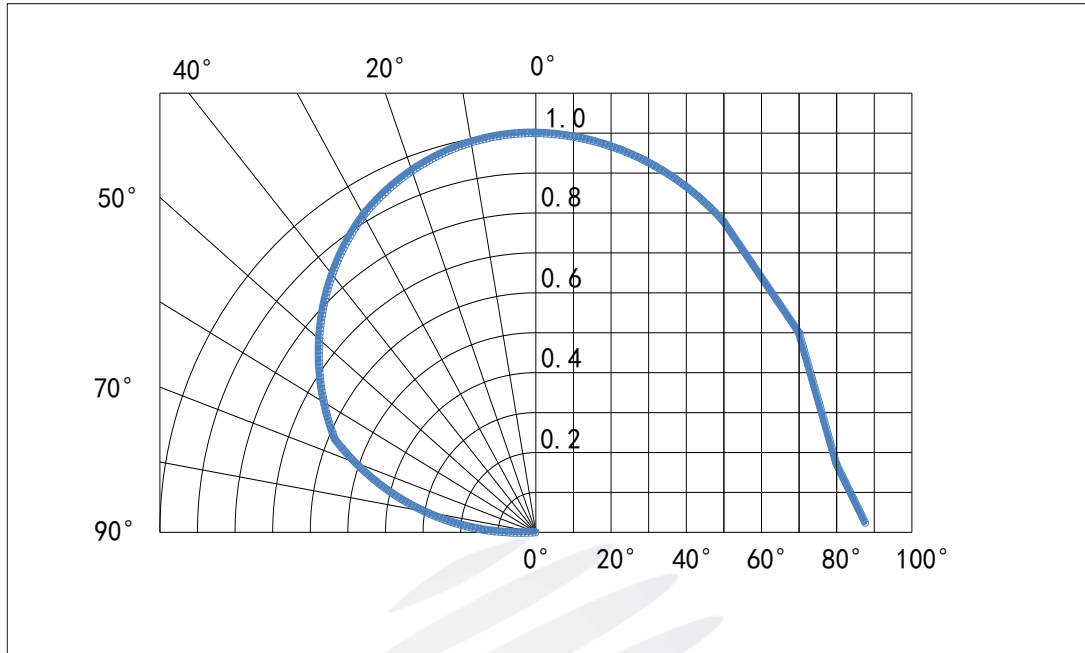


Fig.1-14 Diagram characteristics of radiation 辐射特性曲线

REFOND



2. Packaging 产品包装

2.1 Packaging Specification 包装规格

Package:4000pcs/reel.包装每卷 4000pcs。

2.1.1 Carrier Tape Dimension 载带尺寸

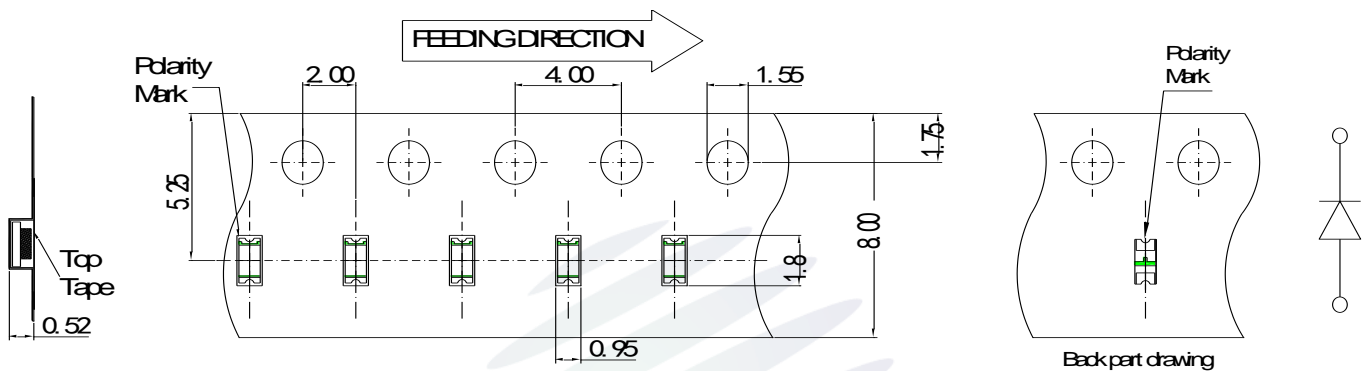


Fig.2-1 Carrier Tape Dimension 载带尺寸

2.1.2 Reel Dimension 卷盘尺寸

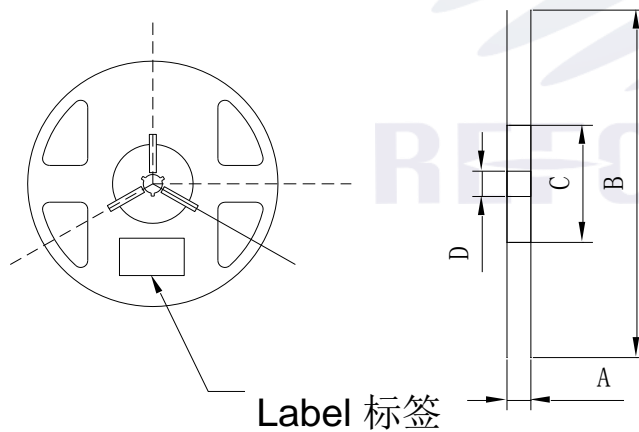


Table 2-1 Dimension 尺寸

A	8.0±0.1mm
B	178±1mm
C	60±1mm
D	13.0±0.5mm

Fig.2-2 Reel Dimension 卷盘尺寸

Notes 备注:

The tolerances unless mentioned $\pm 0.1\text{mm}$. Unit : mm 注: 未注公差为 ± 0.1 毫米, 尺寸单位: 毫米。



2.1.3 Label Form Specification 标签规格

Table 2-2 Parameter 参数

PART NO:		
SPEC NO:		
LOT NO		
BIN CODE:		
Φ:	XY:	
VF:	WLD:	
		QTY:
		DATE:

PART NO.	Part Number 品名
SPEC NO.	Spec Number 规格
LOT NO.	Lot Number 批次号
BIN CODE	Bin Code 参数代码
Φ	Luminous flux 光通量
XY	Chromaticity Bin 色区
V _F	Forward Voltage 正向电压
WLD	Wavelength 波长代码
QTY	Packing Quantity 数量
DATE	Made Date 生产日期

Fig. 2-3 Label Form Specification 标签规格

2.2 Moisture Resistant Packing 防潮包装

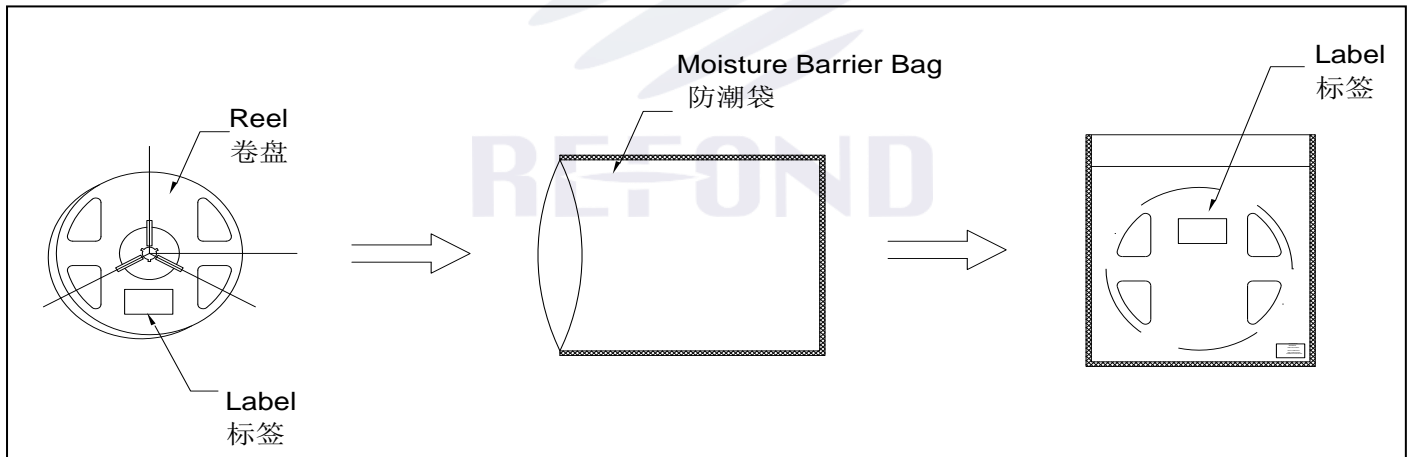


Fig.2-4 Moisture Resistant Packing 防潮包装

