

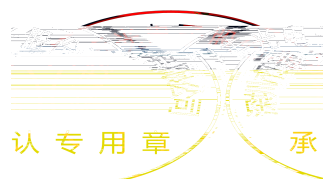
产品 书

REFOND P/N 产品型号

RF-OUB190TS-CF

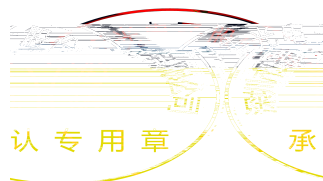
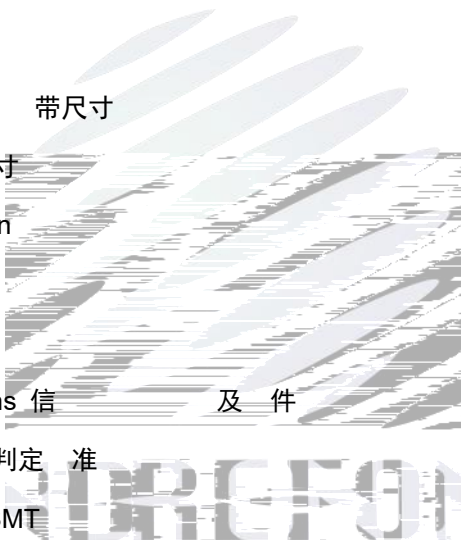
☐ R&D 发

☒ Mass Product 产供

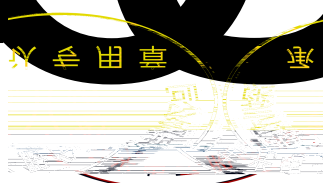


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 - 4.1 Handling Precautions 产品使 事



产品

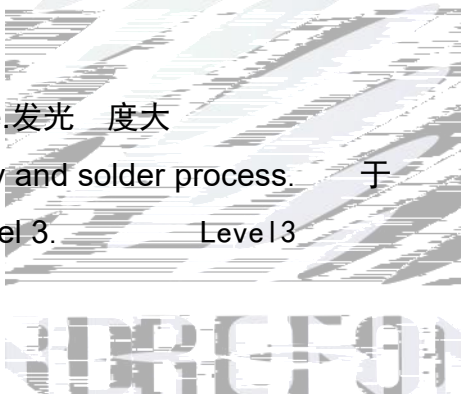


The Colour LED which was fabricated using a orange chip, Package Dimension : 1.6mmX0.8mmX0.7mm.

产品为 光 LED, 光 封 形 , 产品尺寸: 1.6mmX0.8mmX0.7mm。

产品 征

- ▶ Extremely wide viewing angle. 发光 度大
- ▶ Suitable for all SMT assembly and solder process. 于 SMT 和 工
- ▶ Moisture sensitivity level: Level 3. Level 3
- ▶ RoHS compliant. RoHS



封 尺寸

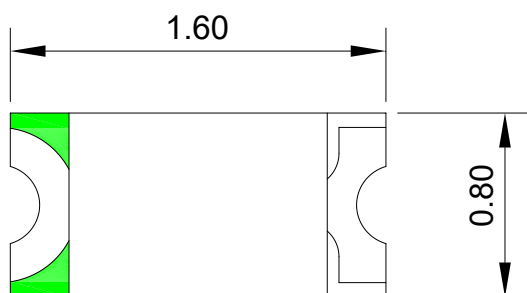


Fig.1-1 Top view 图

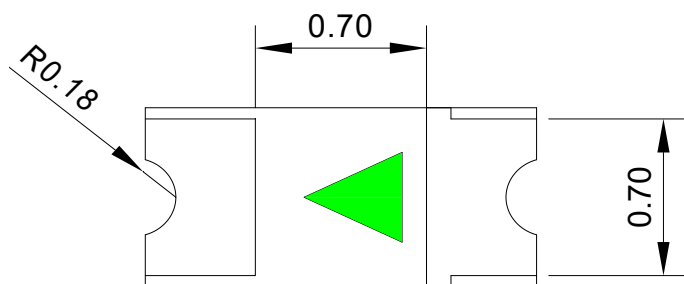


Fig.1-2 Bottom view 图

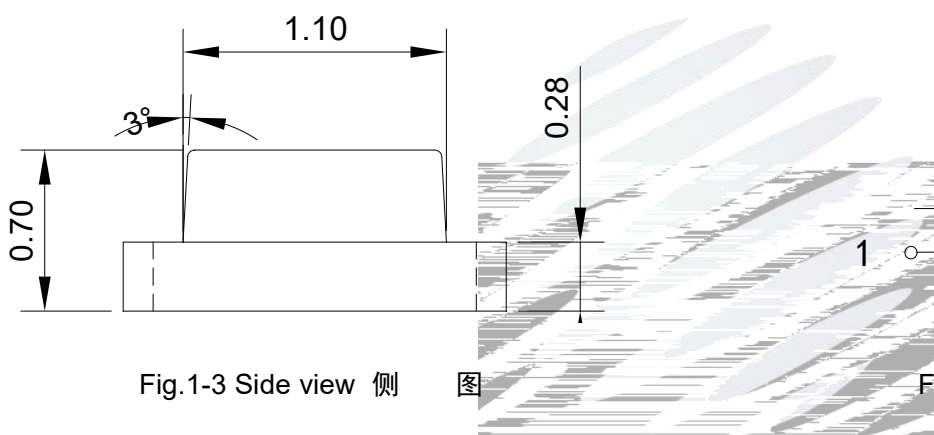


Fig.1-3 Side view 侧 图



Fig.1-4 Polarity

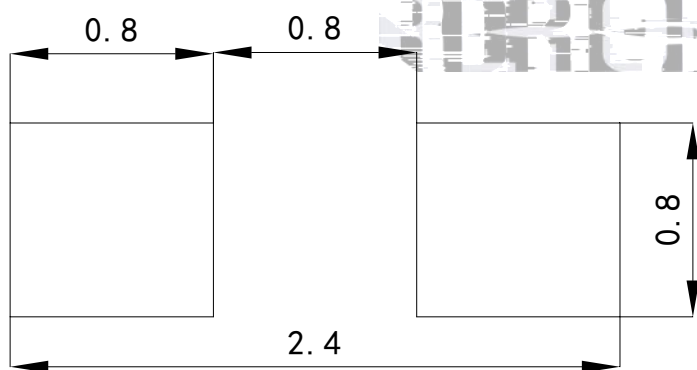
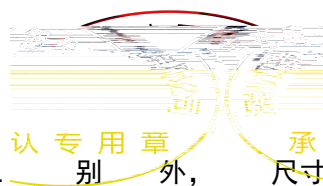


Fig.1-5 Soldering patterns

Notes 备 :

1. All dimensions units are millimeters. 尺寸 单位为

All dimensions tolerances are $\pm 0.2\text{mm}$ unless otherwise noted. 别 外, 尺寸公差为 ± 0.2



产品参

Table 1-1 Electrical / Optical Characteristics at Ts=25°C 与光学

Item	Test Condition 件	Symbol 号	Value	Unit
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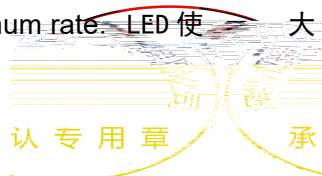
Notes 备 : $V_R=5V$ For test conditions. $V_R=5V$ 为 分 件。

Table 1-2 Absolute Maximum Ratings at Ts=25°C 对 大值

Parameter (参)	Symbol (号)	Rating (值)	Units (单位)
Power Dissipation (功)	P_d	72	mW
Forward Current (向)	I_F	30	mA
Peak Forward Current Of Pulse (冲峰值)	I_{FP}	60	mA
Electrostatic Discharge (HBM) ()	E_{SD}	2000	V
Operating Temperature (作度)	T_{opr}	-40 ~ +85	
Storage Temperature (储存度)	T_{stg}	-40 ~ +85	
Junction Temperature ()	T_j	95	

Notes 备 :

- 1/10 Duty cycle, 0.1ms pulse width. 宽0.1ms, 占 1/10.
- The above forward voltage measurement allowance tolerance is $\pm 0.1V$. 以上 压 差 $\pm 0.1V$.
- The above dominant wavelength measurement allowance tolerance is 2nm. 以主 差 $\pm 2nm$.
- The above luminous intensity measurement allowance tolerance $\pm 10\%$. 上 发光强度 允 公差为 $\pm 10\%$.
- Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product. 使 功 不 定 大值。
- All measurements were made under the standardized environment of Refond. 基于 丰 准 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 大 件 定, 不 大值。



典型光学

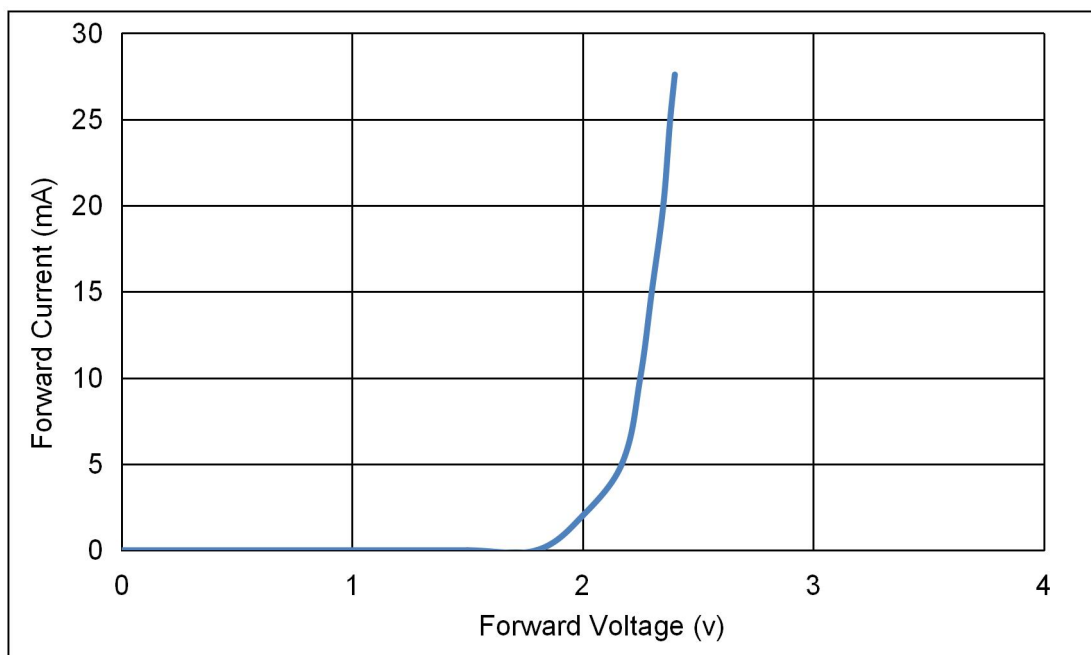


Fig 1-6 Forward Voltage Vs. Forward Current 伏安

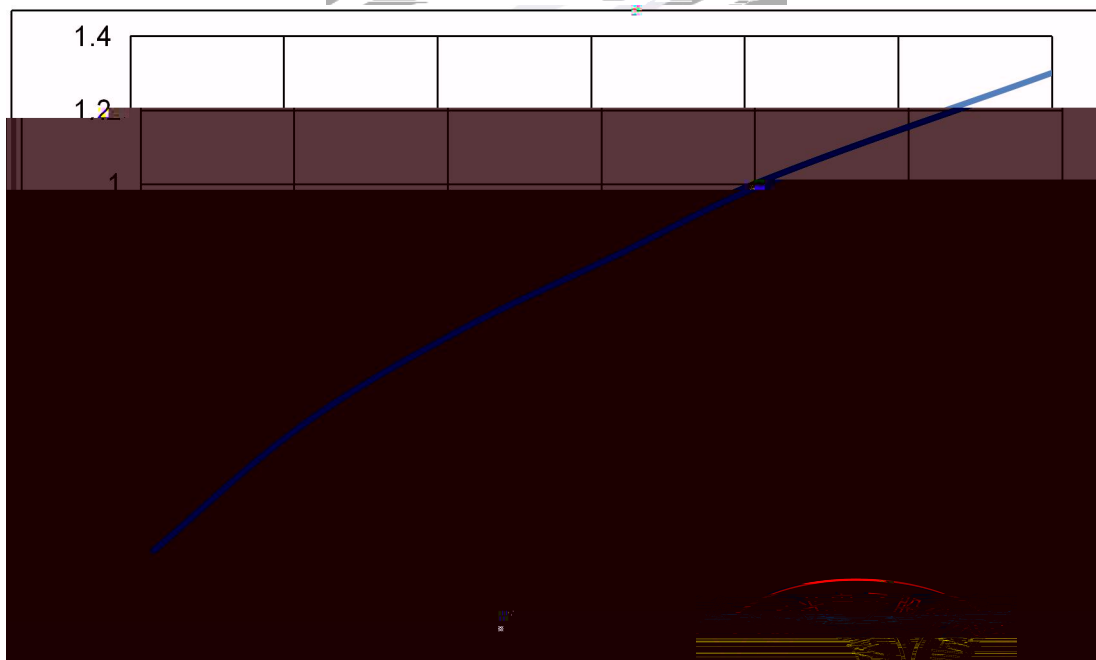


Fig 1-7 Forward Current Vs. Relative Intensity

认专用章 向与对光强 承

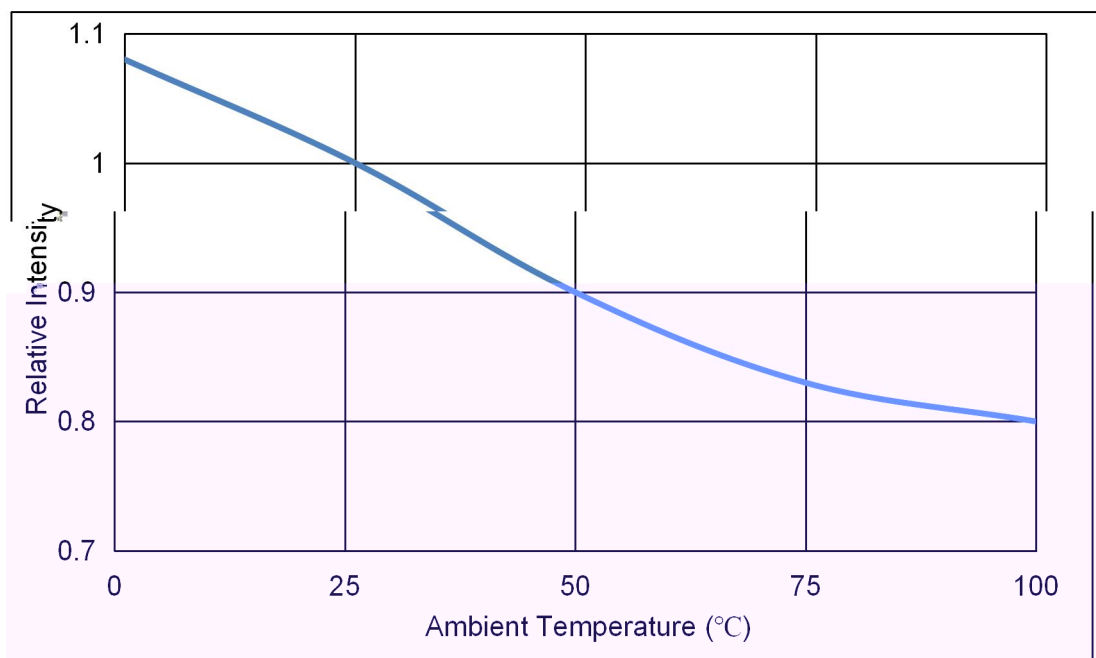


Fig 1-8 Pin Temperature Vs Relative Intensity 溫度與光強

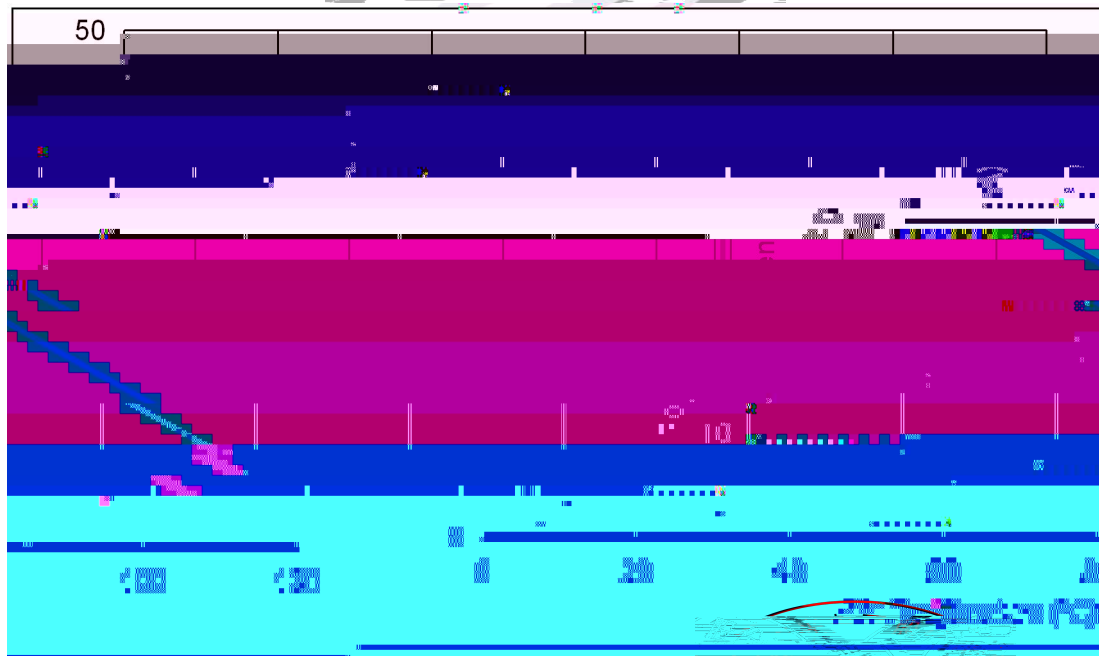


Fig 1-9 Pin Temperature Vs Forward Current 溫度與電流

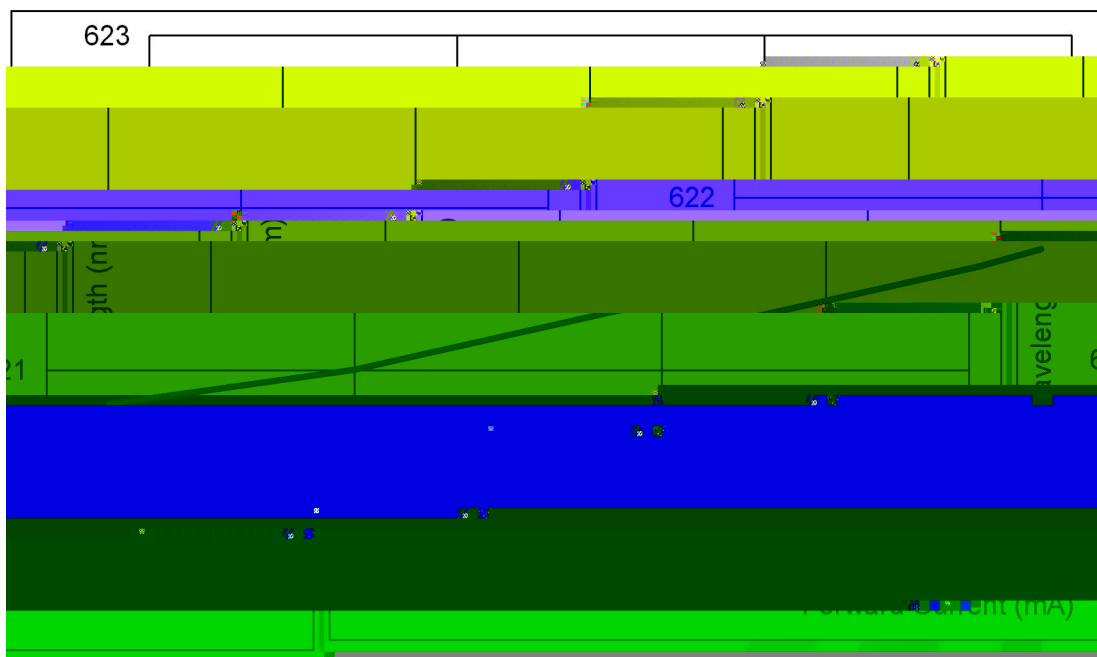


Fig 1-10 Forward Current Vs. Dominate Wavelength ($T_a=25^\circ\text{C}$) 向 与主 关

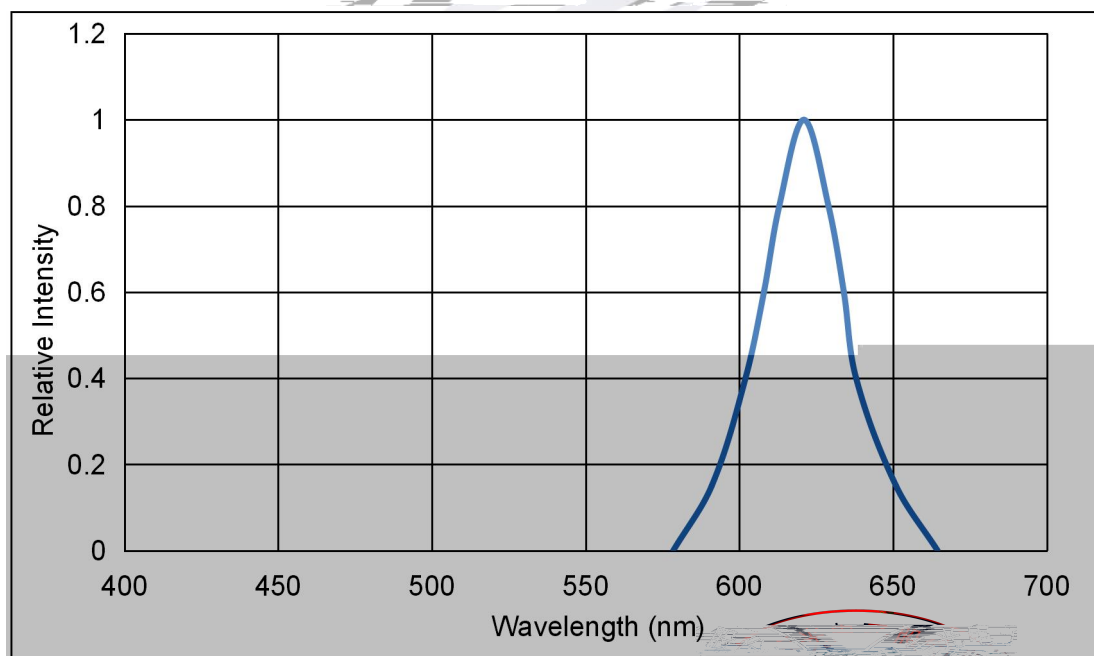
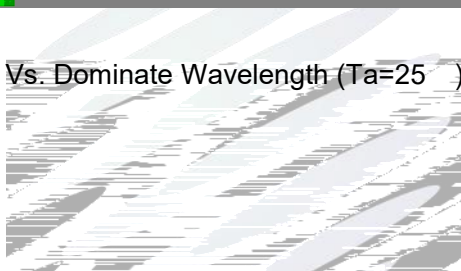


Fig 1-11 Relative Intensity Vs. Wavelength ($T_a=25^\circ\text{C}$) 对光强与 关承

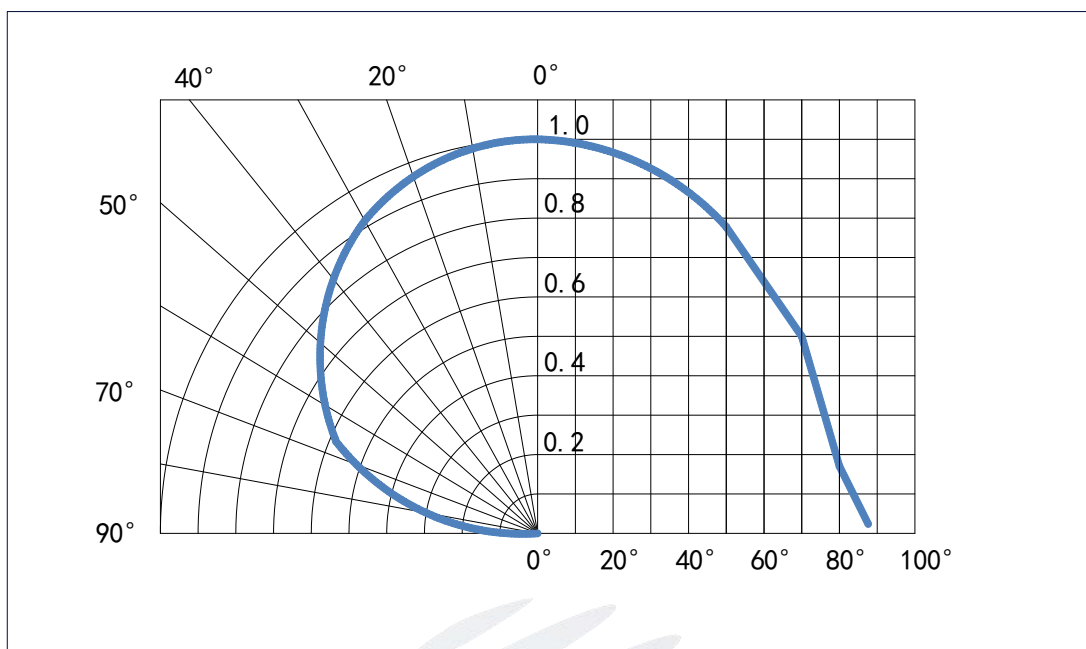
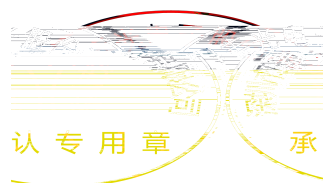


Fig 1-12 Diagram characteristics of radiation 射



产品包

兴全通嘉

嘉

包

Package:4000pcs/reel.包 卷 4000pcs。

2.1.1 Carrier Tape Dimension 带尺寸

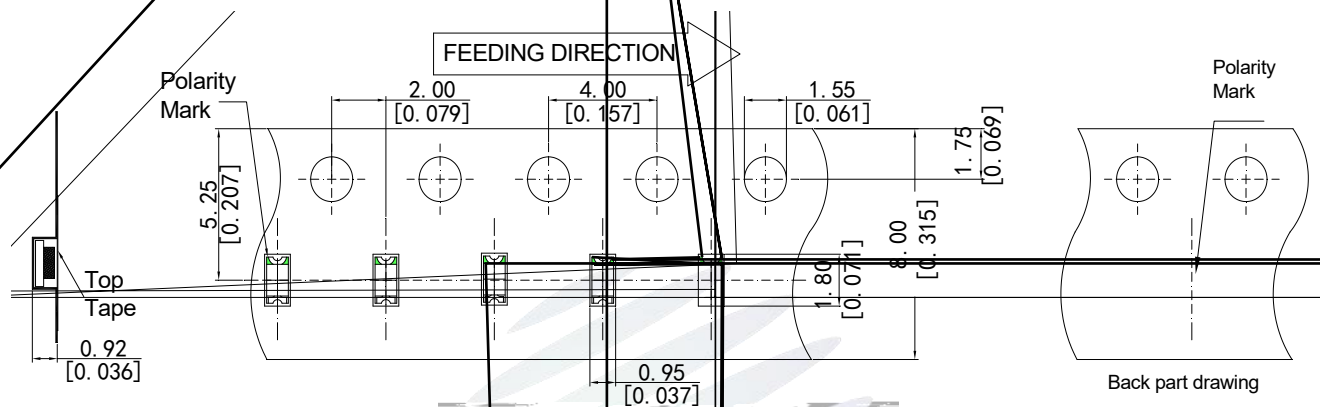


Fig.2-1 Carrier Tape Dimension 带尺寸

2.1.2 Reel Dimension 卷 尺寸

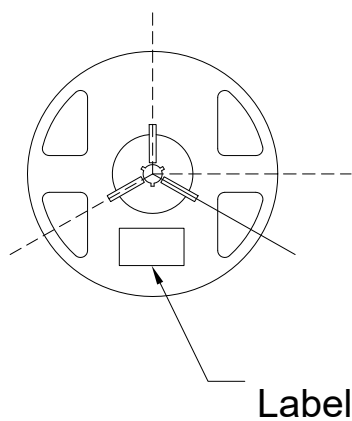


Fig.2-2 Reel Dimension 卷 尺寸

Table 2-1 Dimension 尺寸

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

Notes 备 :

The tolerances unless mentioned ±0.1mm. Unit : mm : 公差为±0.1 , 尺寸单位: 。

包

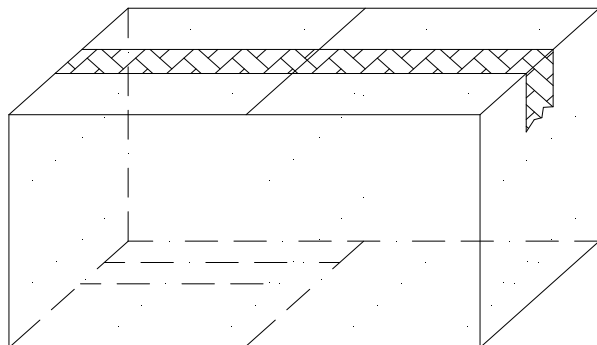


Fig.2-5 Cardboard Box 包

信 及 件

Table 2-3 Reliability Test Items And Conditions 信 及 件

Test Items	Ref.Standard 参 准	Test Condition 件	Time	Quantity	Ac/Re /
Reflow 回	JESD22-B106	Temp:260°Cmax T=10 sec	2 times	22Pcs.	0/1
Temperature Cycle 度 循	JESD22-A104	100°C 30 min ↑↓5 min -40°C 30 min	100 cycles	22Pcs.	0/1
Thermal Shock 冷 冲击	JESD22-A106	-40°C 15min ↑↓ 100°C 15min	300 cycles	22Pcs.	0/1
High Temperature Storage 保存	JESD22-A103	Temp:100°C	1000 hrs.	22Pcs.	0/1
Low Temperature Storage 低 保存	JESD22-A119	Temp:-40°C	1000 hrs.	22Pcs.	0/1
Life Test 常	JESD22-A108	T _a =25°C I _F =20mA	1000 hrs.	22Pcs.	0/1

失 判 定 准

Table 2-4 Criteria For Judging Damage 失 判 定 准

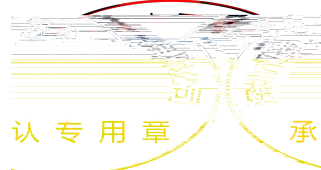
Test Items	Symbol 号	Test Condition 件	Criteria For Judgement 判定 准	
				Max. 大
Forward Voltage 向 压	V_F	$I_F=20\text{mA}$	-	$U.S.L^*) \times 1.1$
Reverse Current	I_R	$V_R=5\text{V}$	-	$U.S.L^*) \times 2.0$
Luminous Flux 光	Φ	$I_F=20\text{mA}$	$L.S.L^*) \times 0.7$	-

Notes 备 :

1.U.S.L: Upper standard level 上 L.S.L: Lower standard level 下

2.The above reliability tests is based on the verification of a single/strip LED of Refond's existing experimental platform,the reliability experiment was taken under good heat dissipation conditions. When customers applies the LED to the series and parallel circuit,should take consideration of all the factors such as the current, voltage distribution, heat dissipation and others. 以上可 基于 丰 实 平台单 / LED在 好 件 下 。客 将LED应 于串、并 , 估 、 压分 、 。

3.The technical information shown in the data sheets is limited to the typical characteristics and circuit examples of the referenced products. It does not constitute the warranting of industrial property nor the granting of any license. 以上 仅为产品 典型值, 只作为参 , 不作为任何应 件及应 式 保 。



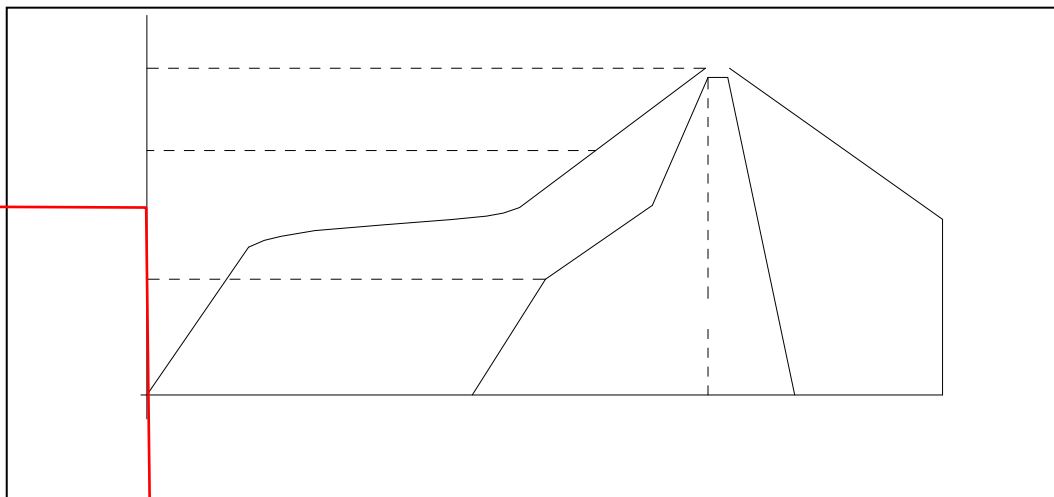
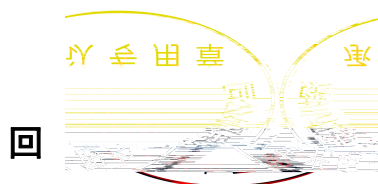


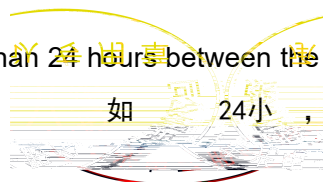
Fig.3-1 SMT Reflow Soldering Instructions SMT 回

Table 3-1 Parameter 参

Average temperature rise speed平均升	度 (T _{max} - T _P)	3 °C/ s Max 3 °C/ s
Preheating: minimum temperature	: 低 度 (T _{min})	150 °C
Preheating: Max temperature	: 度 (T _{max})	200 °C
Preheating: Time	: (T _{min} - T _{max})	60 - 120 60s-120s
Time limited to maintain high temperature: the temperature	: 度 (T _L)	217 °C
Time limited to maintain high temperature: The Time	: (t _L)	多60 Max 60s
Peak /Classification of temperature:峰值 / 分 度 (T _P)		260 °C
Time limit classification of peak temperature time 峰值分 度:	(t _p)	多10 Max 10s
Hold time within 5 ° C with the actual peak temperature (TP) 与实 峰值 度 (T _P) 差 5 °C 以内 保		多30 Max 30s
Cooling speed	度	6 °C/ s Max 6 °C/ s
Needed time from 25 °C to T _p 25 °C 升 峰值 度		多8分 Max 8 minutes

Notes 备 :

(1)Reflow soldering should not be done more than twice. If more than 24 hours between the two solderings , LED will be damaged. 回 不可以 两 , 两 回 如 24小 , LED可 于吸 坏。



(2)When soldering , do not put stress on the LEDs during heating.当 , 不 在 受 力压 体 。

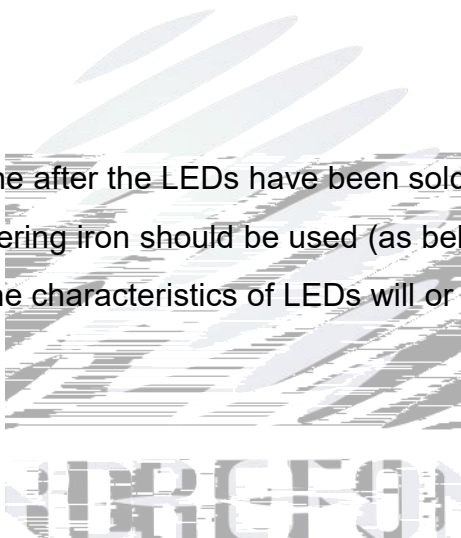
3.1.1 Soldering Iron

(1) When do soldering by hand, keep the temperature of iron below less 300 less than 3 seconds 当 工 , 度必 小于300℃, 不可 3 。

(2) Soldering by hand should be done only one time. 工 只可 一 。

3.1.2 Repairing 修

Repairing 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 in advance whether the characteristics of LEDs will or not be damaged by



产品使用

产品使用

(1) LED operating environment and sulfur element composition cannot be over 100PPM in the LED mating usage material. This is provided for informational purposes only and is not a warranty or endorsement. LED 工作环境及与 LED 元件及化合物不可超过 100PPM。只一个建议，不作任何品保。

(2) In order to prevent external material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM, the single content of Chlorine element is required to be less than 900PPM, the total content of Bromine element and Chlorine element in the external materials of the application products is required to be less than 1500PPM. This is provided for informational purposes only and is not a warranty or endorsement. 为了外入 LED 内以 LED 损伤，处理环境及套件，单一元素含量小于 900PPM，单一元素含量小于 900PPM，元素与元素含量必小于 1500PPM。只一个建议，不作任何品保。

(3) VOCs (Volatile organic compounds) emitted from materials used in the construction of fixtures can penetrate silicone encapsulants of LEDs and discolor when exposed to heat and photonic energy. The result can be a significant loss of light output from the fixture. Knowledge of the properties of the materials selected to be used in the construction of fixtures can help prevent these issues. Refond advises against the use of any chemicals or materials that have been found or are suspected to have an adverse affect on device performance or reliability. To verify compatibility, Refond recommends that all chemicals and materials be tested in the specific application and environment for which they are intended to be used. Attaching LEDs, do not use adhesives that outgas organic vapor. 应套件中发会到 LED 内，在产光子及件下，会导 LED 变，严光，前了套件够免产些。丰反对使任何对 LED 器件可害，不些已实了。仅仅怀害。对定和使境，丰建对和容。在 LED 候，不使产发体剂。

认专用章 承

(4) In designing a circuit, the current through each LED can not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change, burn out may happen. The driving circuit must be designed to allow forward voltage only when it is ON or OFF. If the reverse voltage is applied to LED, migration can be generated resulting in LED damage.

不定大值，同，使保，否则，微小压变化将会引大变化，可导产品。必保只在开启关候出向压变化，不加反压，否则会坏LED。

(5) Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decreased, Color change and so on. Please consider the heat generation of the LEDs when making the system design. LED容因为发和境度变变，度升会低LED发光，影响发光，以在应充分。

(6) Storage

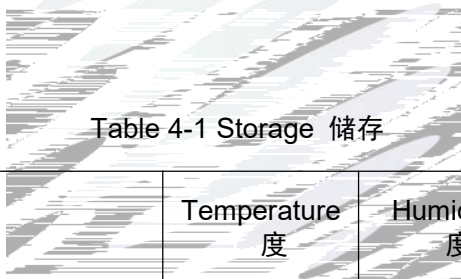


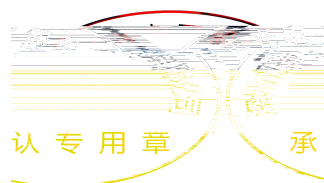
Table 4-1 Storage 储存

Conditions		Temperature 度	Humidity 度	Time
Storage 储存	Before Opening Aluminum Bag 包前	$\leq 30^{\circ}\text{C}$	$\leq 75\%$	Within 1 Year From Date 一年内
	After Opening Aluminum Bag 包后	$\leq 30^{\circ}\text{C}$	$\leq 60\%$	168hours 168小
Baking		$60 \pm 5^{\circ}\text{C}$	-	$\geq 24\text{hours}$ 大于24小

(7) If the moisture absorbent material silica gel has faded away or the LEDs have exceeded the storage time baking treatment should be performed after unpacking and based on the following condition 60 5 for above 24 hours.如干剂包失，产品不合以上变化变储存件，包后，件： $60 \pm 5^{\circ}\text{C}$ ，大于24小。If the package is flatulence or damaged, please notify the sales staff to assist.如包

(8) Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS). 像其他 半导体 子器件一 , LED 对 击 常 , 做好 。

(9) Other points for attention, please refer to our relevant information.其它 事 参 丰 关 。





Declare

This specification is written both in English and in Chinese and the latter is formal.

产品 书以中 式书写, 冲 以中 为准。

