

SPECIFICATION 产品规格书

REFOND P/N 产品型号

RF-P**HI32DS-AF-N-Y

R&D 研发

Mass Product 量产供货

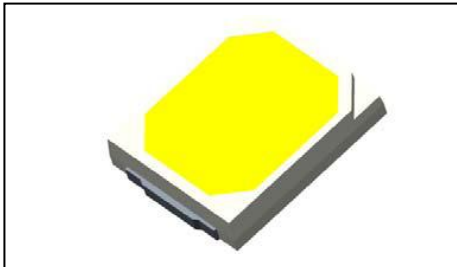
Contents 目录

1. Description 产品介绍	3
1.1 General Description 产品描述	3
1.2 Features 产品特征	3
1.3 Application 产品应用	



1. Description 产品介绍

1.1 General Description 产品描述



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

Product Package: 2.75mmX3.5mmX0.7mm.

该产品为白光 LED，是由蓝光芯片激发荧光粉而形成。 2.75mmX3.5mmX0.7mm。

1.2 Features 产品特征

PLCC-2 Package.封装

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

Available on tape and reel.适用于载带及卷轴

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

Indoor display.室内显示

Tubular light application.用于日光灯管

General use.其他应用

Not suitable for lexible strip.不适用于软灯条

1.4 Package Dimension 封装尺寸

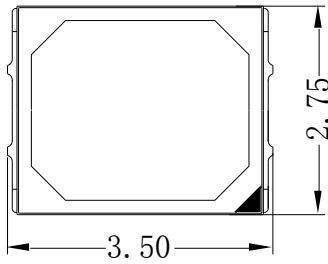


Fig.1-1 Top view 正面视图

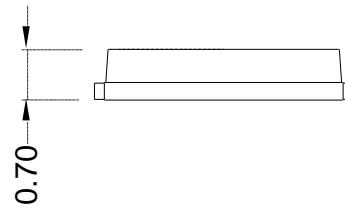


Fig.1-2 Side view 侧面视图

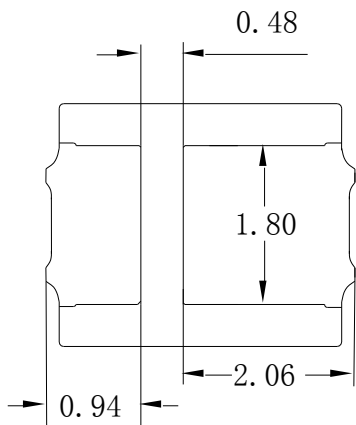


Fig.1-3 Bottom view 背面视图

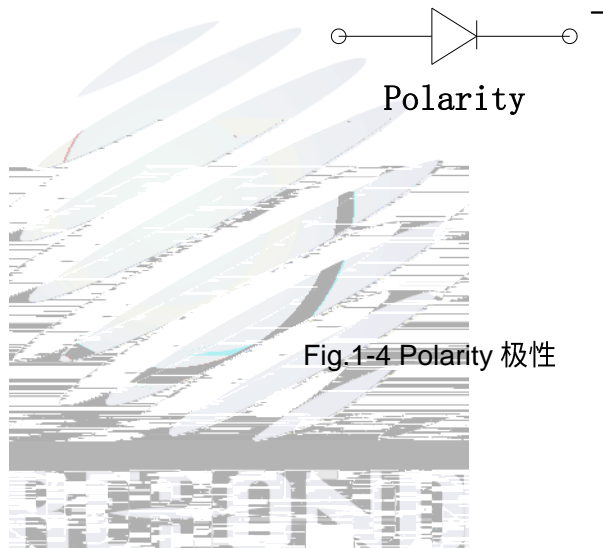


Fig.1-4 Polarity 极性

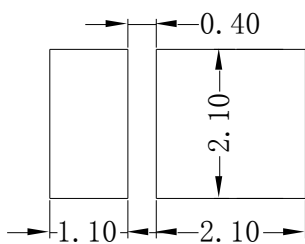


Fig.1-5 Soldering patterns 堆焊焊盘

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 $\pm 0.05\text{mm}$ unless otherwise noted. 除特别标注外, 所有尺寸公差为 ± 0.05 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	Symbol 符号	Test Condition 测试条件	Value			Unit 单位
			Min. (最小值)	Typ (典型值)	Max. (最大值)	
Forward Voltage (正向电压)	VF	IF=60mA	3.0	3.12	3.4	V
Reverse Current (漏电流)						



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

Notes 备注:

1. 1/10 Duty cycle, 0.1ms pulse width. 脉宽0.1ms,占空比1/10.
2. The above forward voltage measurement allowance tolerance is $\pm 0.05V$. 以上所示电压测量误差 $\pm 0.05V$.
3. The above color coordinates measurement allowance tolerance is ± 0.005 . 以上所示坐标测量误差 ± 0.005
4. The above luminous intensity measurement allowance tolerance $\pm 10\%$. 上述发光强度的测试允许公差为 $\pm 10\%$.
5. 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。
6. 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。
7. 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 使用的是大电流需要根据散热条件确定, 结温不能超过最大值。
8. ESD yield is over 90% at 2000V ESD (HBM). ESD protection during products handing is needed. 90%的LED 通过人体模式ESD2000V 测试, 在操作时请注意静电防护。

1.6 Bin Range Of Forward Voltage and Luminous Flux (IF=60mA)电压与流明分BIN 范围(IF=60mA)

Table 1-3

V _F V	H1	H2	I1	I2
	3.0-3.1	3.1-3.2	3.2-3.3	3.3-3.4
Im	QIA			
	26-28			

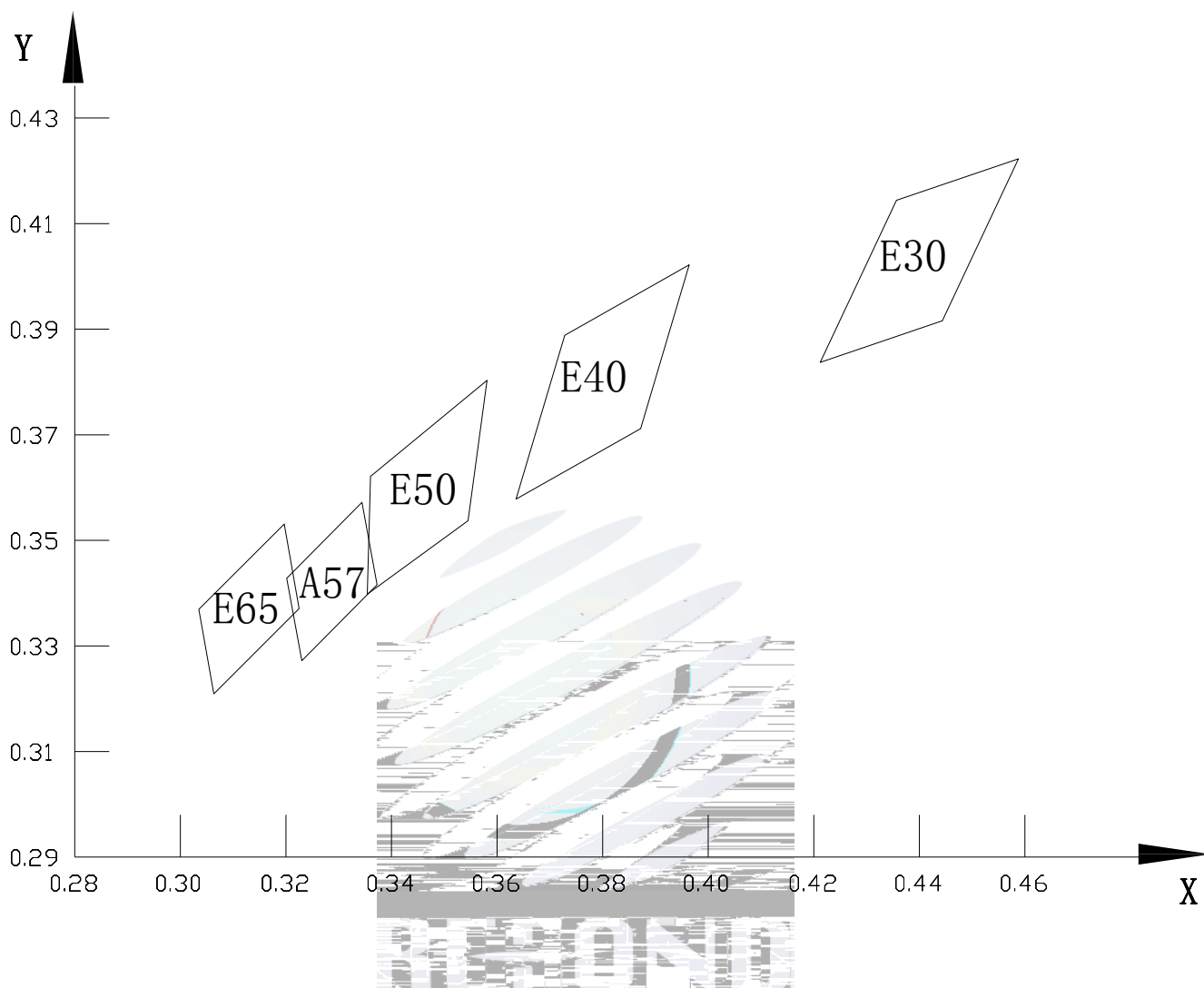


Fig 1-6 The C.I.E Chromaticity Diagram CIE色度图

Table 1-4

BIN CODE	X1	Y1	X2	Y2	X3	Y3	X4	Y4
E30	0.4357	0.4144	0.4212	0.3837	0.4443	0.3916	0.4588	0.4223
E40	0.3636	0.3578	0.3872	0.3712	0.3964	0.4022	0.3728	0.3888
E50	0.3360	0.3621	0.3354	0.3398	0.3545	0.3537	0.3581	0.3803
A57	0.3344	0.3572	0.3202	0.3428	0.3230	0.3272	0.3373	0.3416
E65	0.3197	0.3531	0.3035	0.3369	0.3063	0.3209	0.3225	0.3371

1.7 Typical optical characteristics curves 典型光学特性曲线

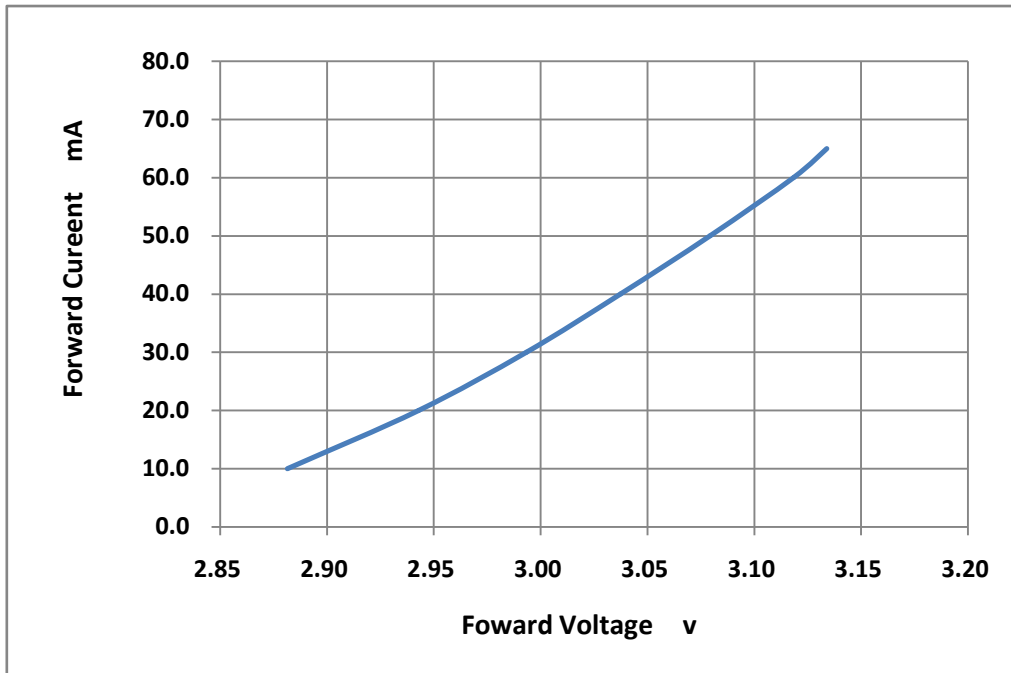


Fig 1-7 Forward Voltage Vs. Forward Current 伏安特性曲线

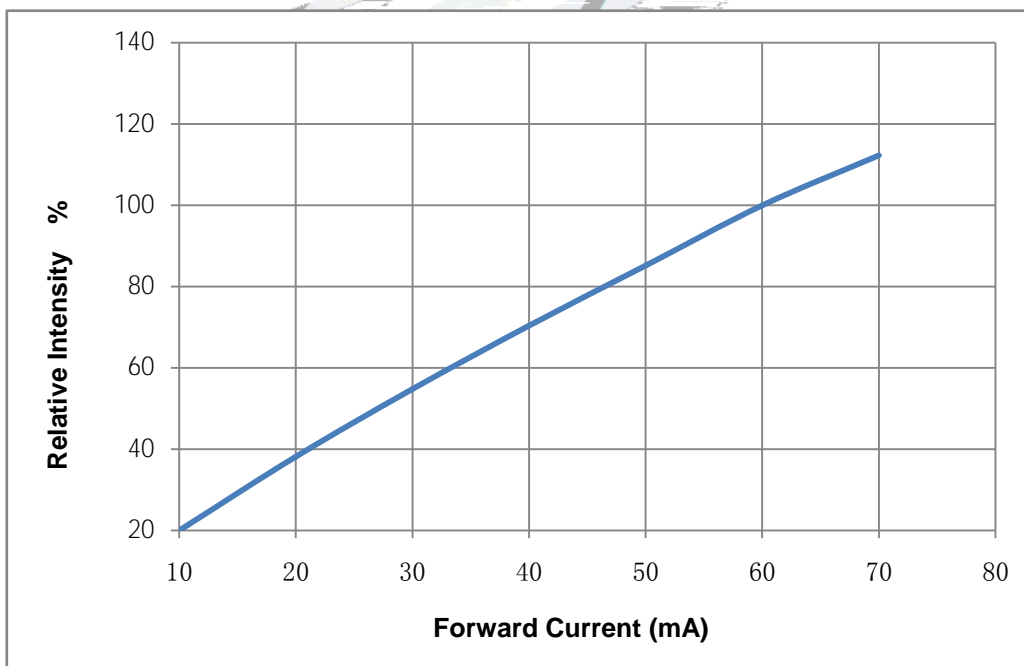


Fig 1-8 Forward Current Vs. Relative Intensity 正向电流与相对光强特性

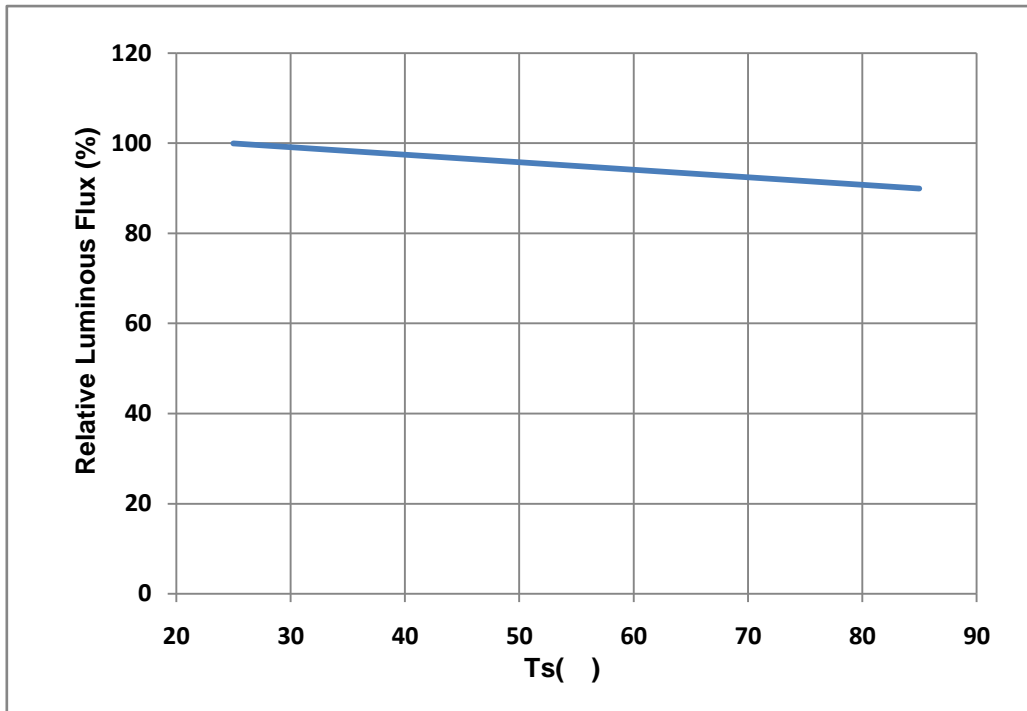


Fig 1-9 Pin Temperature Vs Relative Intensity 管脚温度与相对光强特性曲线

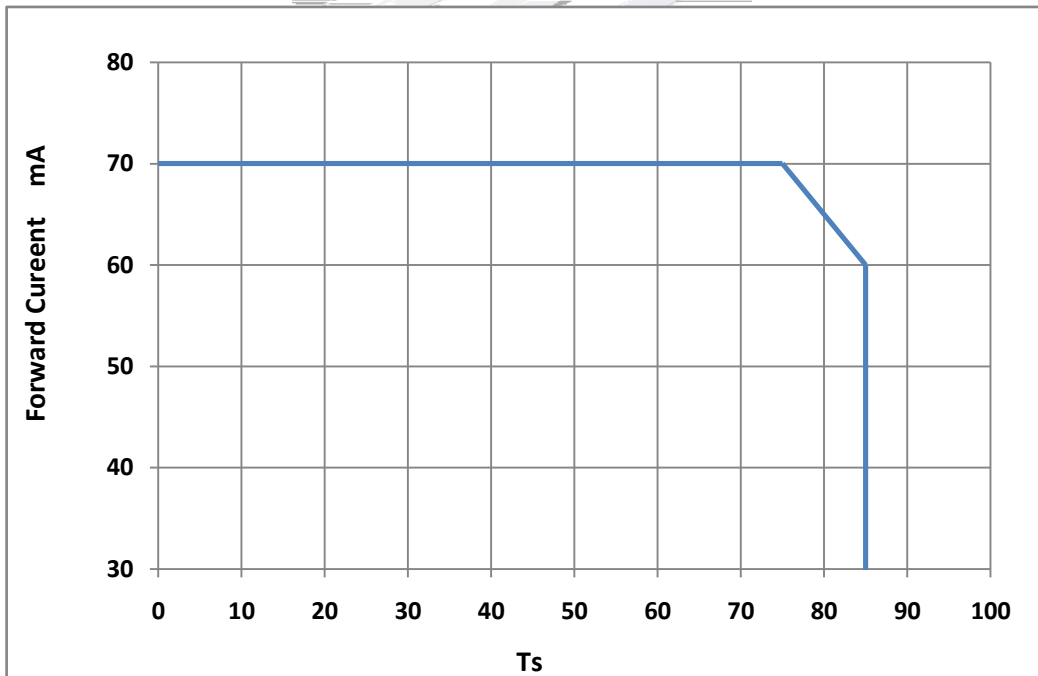


Fig 1-10 Pin Temperature Vs Forward Current 管脚温度与正向电流特性曲线

$T_j \leq 110^\circ\text{C}$

Fig 1-11 Forward Voltage Vs Pin Temperature 正向电压与管脚温度特性曲线



Fig 1-12 Radiation diagram 辐射特性曲线





2. Packaging 产品包装

2.1 Packaging Specification 包装规格

Package: 23000pcs/reel. 包装每卷 23000pcs。

2.1.1 Carrier Tape Dimension 载带尺寸

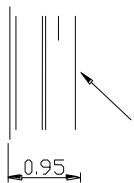


Fig.2-1 Carrier Tape Dimension 载带尺寸

2.1.2 Reel Dimension 卷盘尺寸

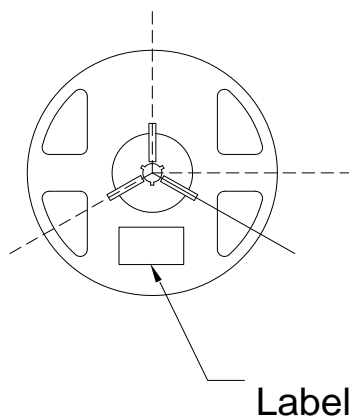


Fig.2-2Title

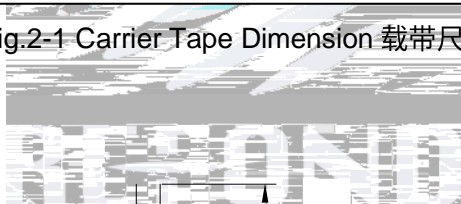


Table 2-1

A	12.4±0.3mm
B	400±2mm
C	100±0.4mm
D	14.3±0.3mm

Notes 备注:

The tolerances unless mentioned ±0.1mm. 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

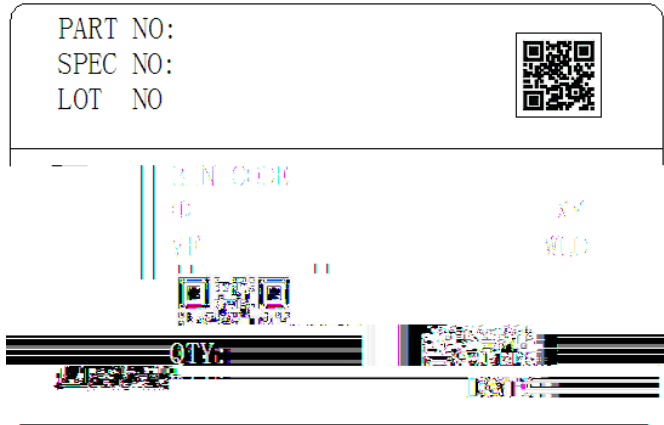


Fig 2-3 Title

Table 2-2 Title

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
	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

2.2 Moisture Resistant Packing 防潮包装

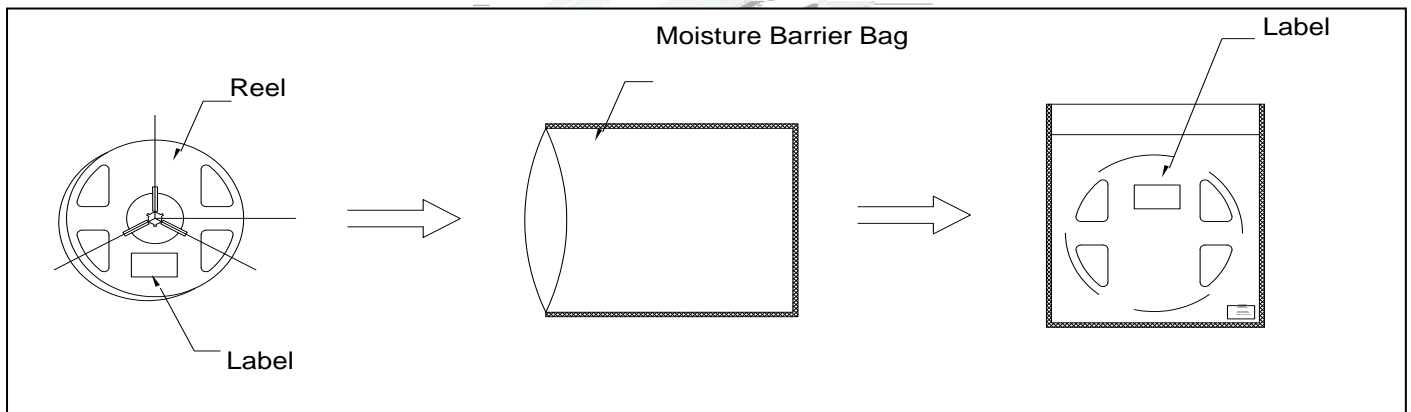


Fig.2-4Title

2.3 Cardboard Box 包装纸箱

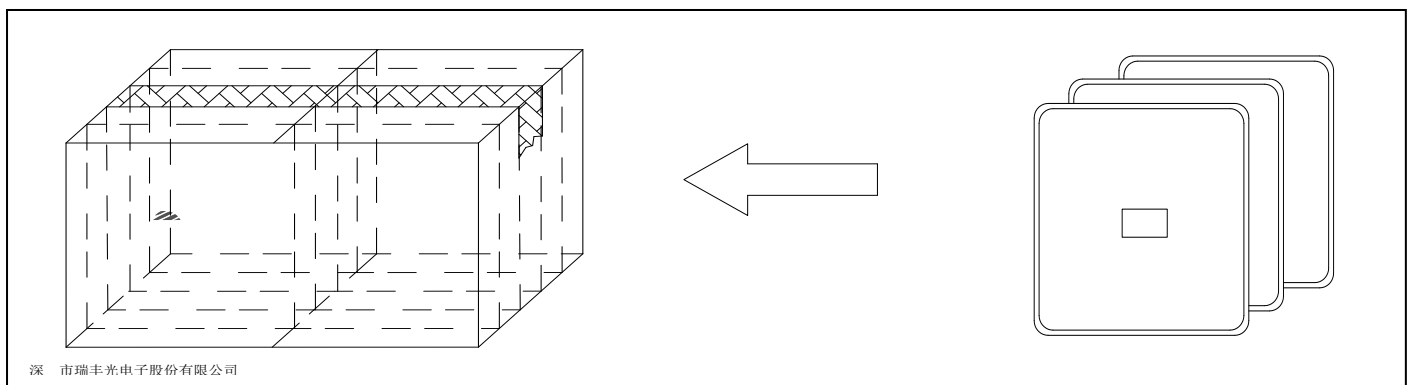


Fig.2-5Title





2.5 Criteria For Judging Damage 失效判定标准

Table 2-4 Title

Test Items 项目	Symbol 符号	Test Condition 测试条件	Criteria For Judgement 判定标准	
			Min. 最小	Max. 最大
Forward Voltage 正向电压	V_F	$I_F=60mA$	-	$(U.S.L^*) \times 1.1$
Reverse Current 反向电流	I_R	$V_R = 5V$	-	$(U.S.L^*) \times 2.0$
Luminous Flux 光通量		$I_F=60mA$	$(L.S.L^*) \times 0.7$	-

Notes 备注:

- 1.U.S.L: Upper standard level 规格上限 L.S.L: Lower standard level 规格下限
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. 以上可靠性测试是基于瑞丰现有实验平台单颗/

3. SMT Reflow Soldering Instructions SMT 回流焊说明

3.1 SMT Reflow Soldering Instructions SMT 回流焊说明

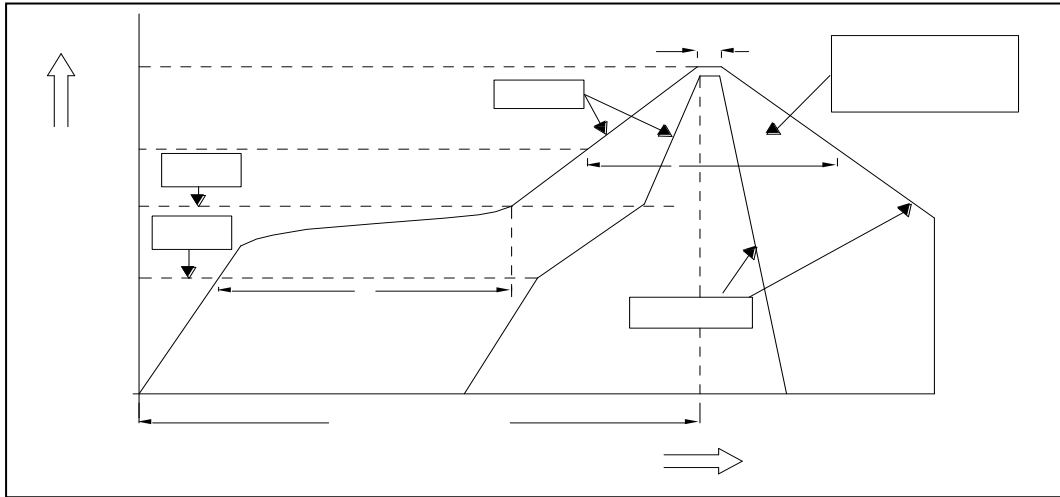


Fig.3-1Title

Table 3-1Title

Average temperature rise speed 平均升温速度 (T _{max} 至 T _p)	最高3 °C/秒 Max 3 °C/ s
Preheating: minimum temperature 预热: 最低温度 (T _{min})	150 °C
Preheating: Max temperature 预热: 最高温度 (T _{max})	200 °C
Preheating: Time 预热: 时间 (T _{min} 至 T _{max})	60 - 120秒 60s-120s
Time limited to maintain high temperature: the temperature 限时维持高温: 温度 (T _L)	217 °C
Time limited to maintain high temperature: The Time 限时维持高温: 时间 (t _L)	最多60秒 Max 60s
Peak /Classification of temperature: 峰值 / 分类温度 (T _p)	260 °C
Time limit classification of peak temperature time 限时峰值分类温度: 时间 (t _p)	最多10秒 Max 10s
Hold time within 5 °C with the actual peak temperature (T _p) 与实际峰值温度 (T _p) 相差 5 °C 以内的保持时间	最多30秒 Max 30s
Cooling speed 降温速度	最高6 °C/秒 Max 6 °C/ s
Needed time from 25 °C to T _p 25 °C 升至峰值温度所需时间	最多8分钟 Max 8 minutes

Notes 备注:

(1)Reflow soldering should not be done more than two times. In the case of more than 24 hours passed soldering after first, LEDs will be damaged. 回流焊次数不可以超过两次，两次回流焊的时间间隔如果超过24小时，LED可能由于吸湿而损坏。

(2)When soldering , do not put stress on the LEDs during heating.当焊接时，不要在材料受热时用力压胶体表面。

3.1.1 Soldering Iron 烙铁焊接

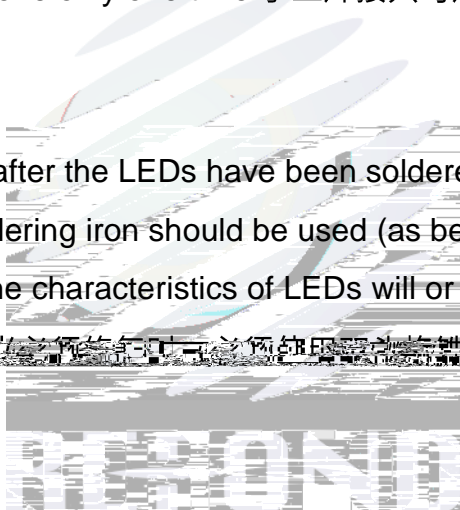
(1) When hand soldering, keep the temperature of iron below less 300°C less than 3 seconds 当手工焊接时，烙铁的温度必须小于300°C，时间不可超过3秒。

(2) The hand solder should be done only one time.手工焊接只可焊接一次。

3.1.2 Repairing 维修

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

LED回流焊后不可再进行维修，维修时建议使用双头烙铁（如下面图片所示），应事先确认LED本身的特性是否会损坏LED本身的特性。



3.1.3 Cautions 注意事项

(1) The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the silicone resin should be proper. LED封装胶为硅胶，表面较软，用力按压胶体表面会影响LED可靠性，因此应采取预防措施避免在按压零件，光发射管嘴时，胶体表面的压力应是恰当的。

(2) Components should not be mounted on warped (non coplanar) portion of PCB. After soldering, do not warp the circuit board.LED 灯珠不要焊接在变曲的PCB 板上，焊接之后，也不要弯折线路板。

other solvents are used, it must be assured that these solvents do not dissolve the package or resin. Ultrasonic cleaning is not recommended. Ultrasonic cleaning may cause damage to the LED. 在其他封装材料相比，硅胶通常较软，表面易吸附脏物，应用时应特别注意。当对产品洁净度有要求时，应采用适当的清洗方式。我们封装材料不含卤素，所以清洗时不能使用含卤素的清洗剂。硅胶清洗剂会对LED 封装材料造成损害。不建议使用超声波清洗。

Table 4-1 Storage 储存

Conditions 种类		Temperature 温度	Humidity 湿度	Time 时间
Storage	Before Opening Aluminum Bag 拆包前	≤30°C	≤75%	Within 1 Year From Date 一年内
	After Opening Aluminum Bag 拆包后	≤30°C	≤60%	24hours 24小时
Baking 烘烤		60±5°C	-	≥24hours 大于24小时

(8) If the package is flatulence or damaged, please notify the sales staff to assist. 如果包装胀气或者破损，请通知销售人员协助处理。

(9) Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS). 像其他的半导体电子器件一样，LED 对静电过流击穿非常敏感，需要做好防护。

(10) Other points for attention, please refer to our relevant information. 其它注意事项请参照瑞丰相关链接。

Version History/修订历史

Date日期	Revisor修订者	Version版本	Verifier审核	Remarks备注
2020-11-19		E/0		





www.refond.com



Declare 申明

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

产品规格书以中英文方式书写，若有冲突以中文版本为准。