

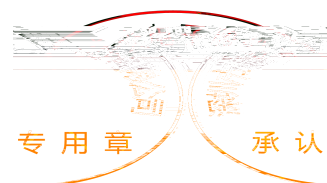
SPECIFICATION



REFOND P/N

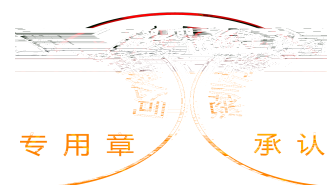
RF-YMRB14TS-AA

Mass Production



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1.4 Package Dimension 封装尺寸

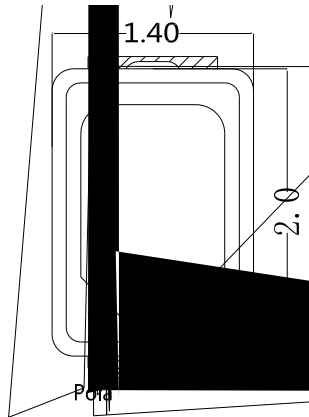


Fig.1-1 Top View

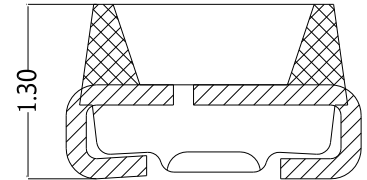


Fig.1-2 Side View

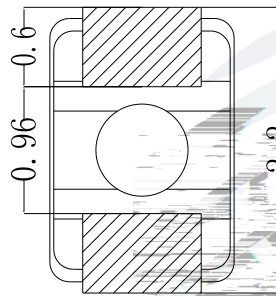


Fig.1-3 Bottom View



Fig.1-4 Polarity

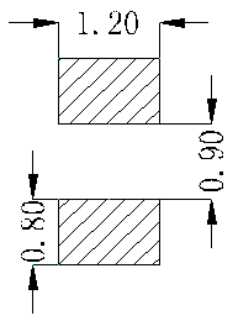
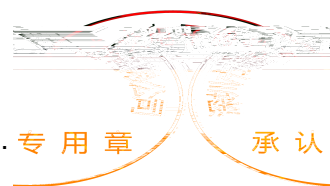


Fig.1-5 Soldering Patterns

Notes

- All dimensions units are millimeters.
- All dimensions tolerances are $\pm 0.2\text{mm}$ unless otherwise noted.



1.5 Product Parameters

Table 1-1 Electrical / Optical Characteristics at $T_s=25^{\circ}\text{C}$

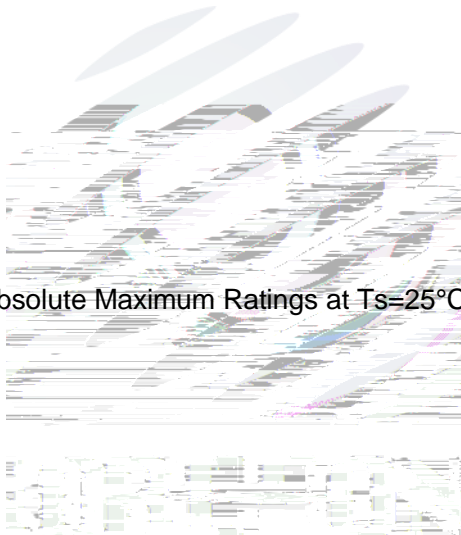


Table 1-2 Absolute Maximum Ratings at $T_s=25^{\circ}\text{C}$

Notes

1. 1/10 Duty cycle, 10ms pulse width. , h , ,
2. The above forward voltage measurement allowance tolerance is $\pm 0.1V$.
3. The above color coordinates measurement allowance tolerance is 0.005. 0
4. The above luminous intensity measurement allowance tolerance $\pm 10\%$.
5. Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product.
6. All measurements were made under the standardized environment of Refond.
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 G
8. ESD yield is over 90% at 8000V ESD (HBM). ESD protection during products handling is needed. 4 G
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1.6Bin Range Of Forward Voltage and Luminous Intensity (IF=20mA) 电压与发光强度分 BIN 范围(IF=20mA)

Table 1-3

| V _F (V) @20mA | B1 | B2 | C1 | C2 | D1 | D2 |
|--------------------------|---------|---------|---------|---------|---------|---------|
| | 1.8-1.9 | 1.9-2.0 | 2.0-2.1 | 2.1-2.2 | 2.2-2.3 | 2.3-2.4 |
| IV(mcd) @20mA | K6 | L3 | L4 | L5 | | |

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

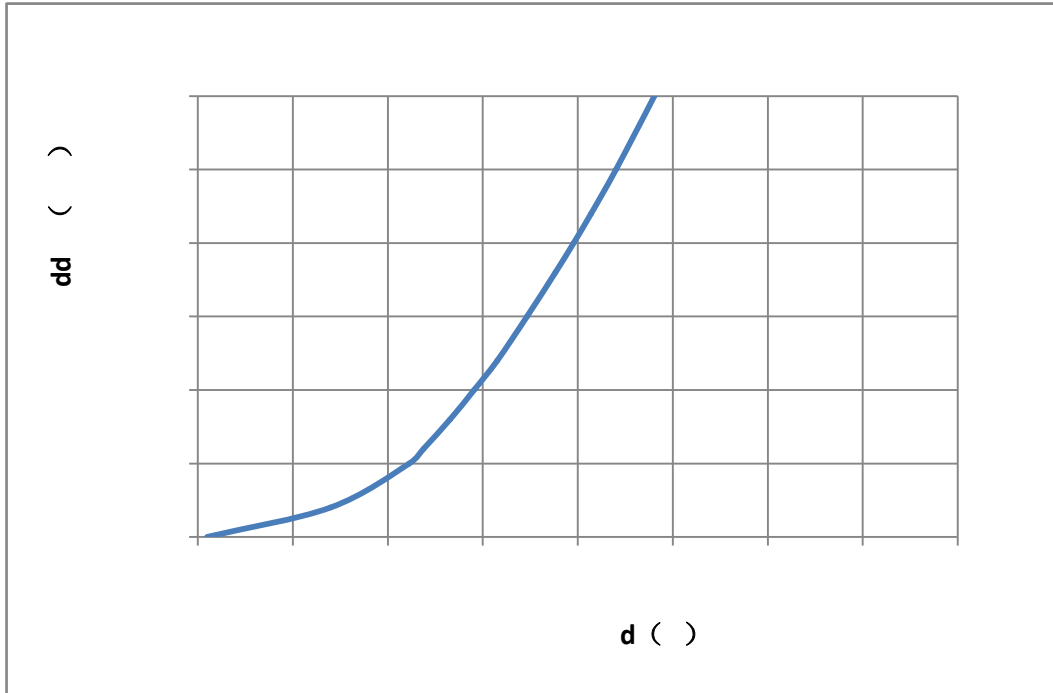


Fig. 1-7 Forward Voltage Vs Forward Current

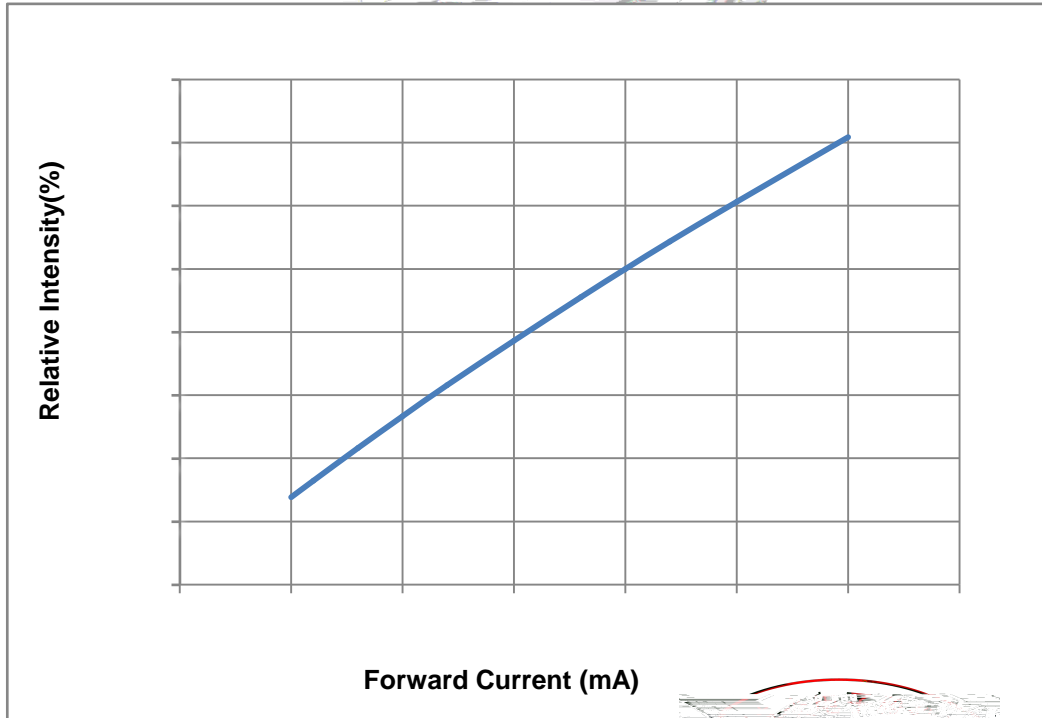
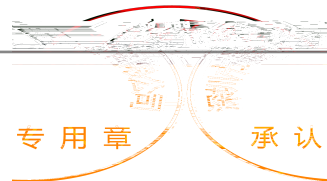


Fig. 1-8 Forward Current Vs Relative Intensity



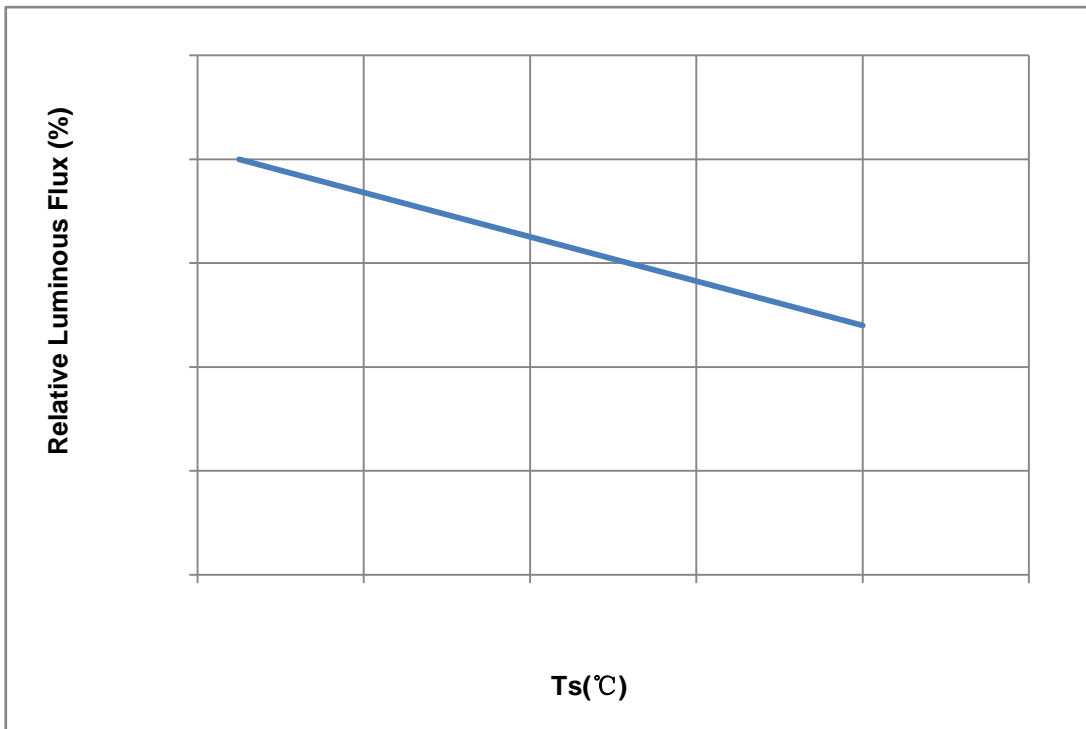


Fig. 1-9 Solder Temperature Vs Relative Intensity

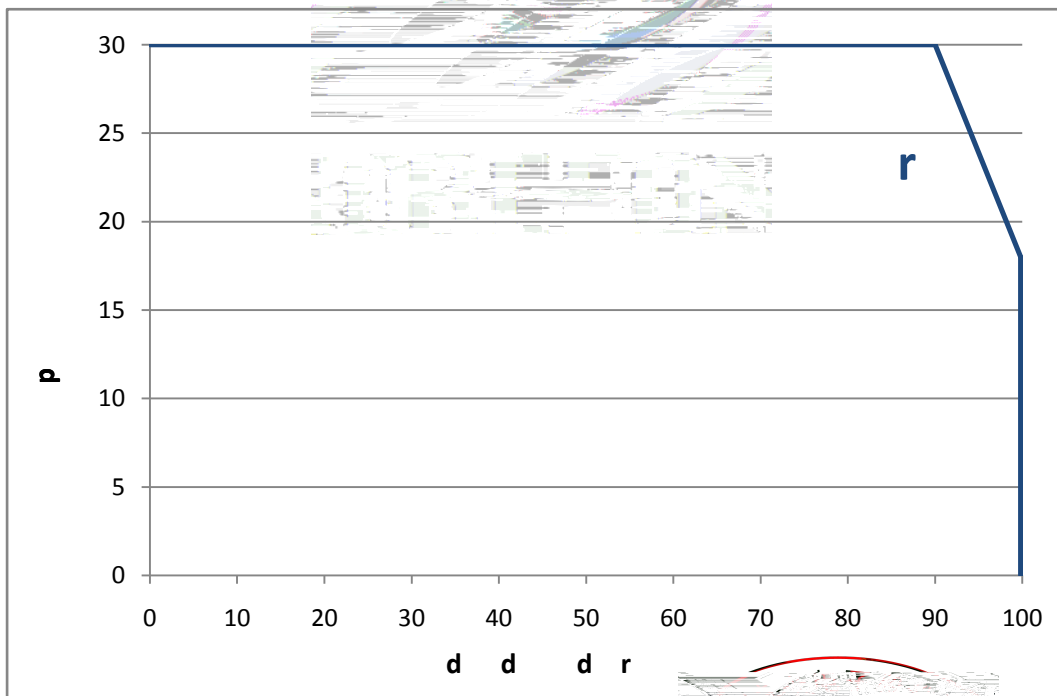


Fig. 1-10 Solder Temperature Vs Forward Current

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Fig. 1-11 Forward Voltage Vs Solder Temperature

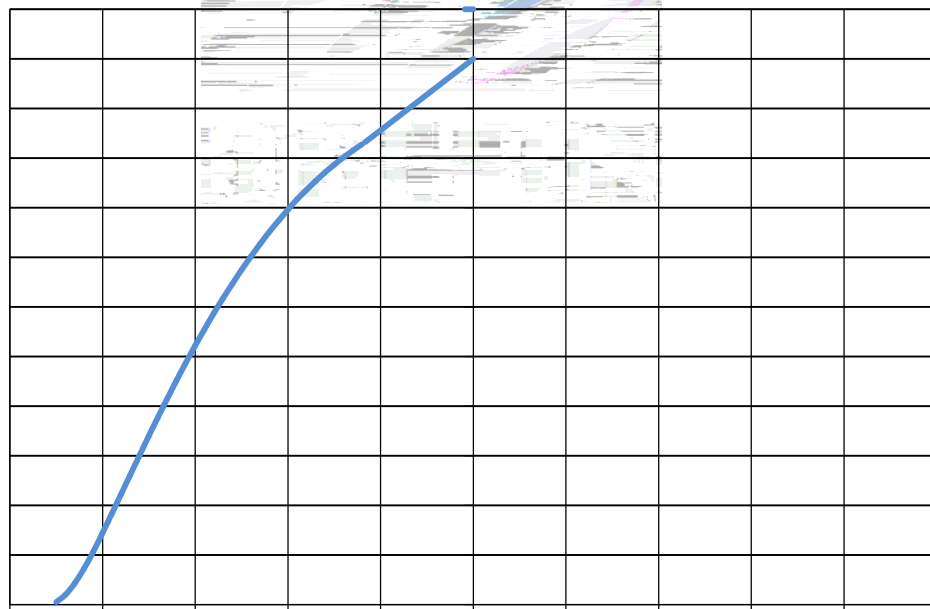
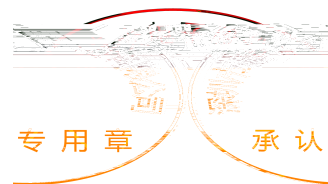


Fig. 1-12 Radiation diagram



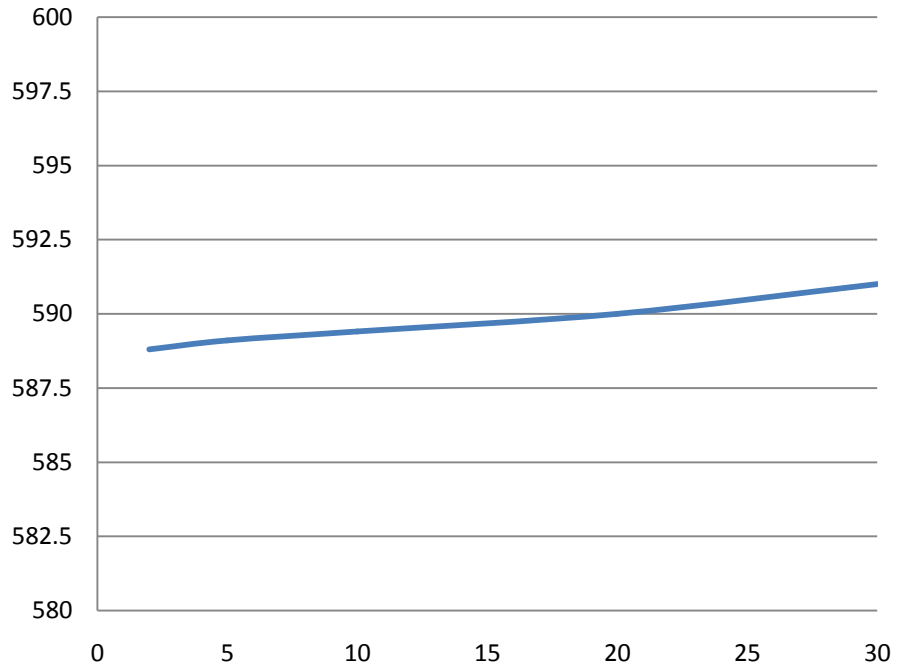


Fig. 1-13 Forward current vs. Dominate wavelength

(Ts=25°C)

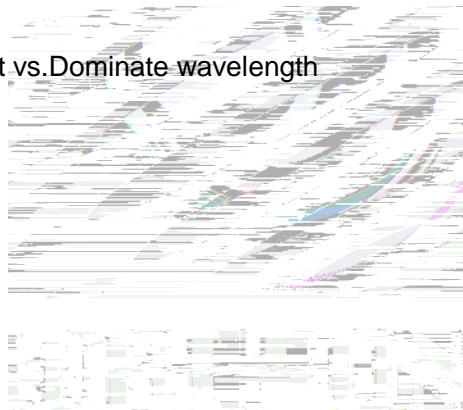
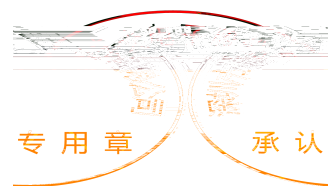


Fig. 1-14 Spectrum Distribution



2. Packaging 产品包装

2.1 Packaging Specification 包装规格

Package:3000pcs/reel. 3000pcs

2.1.1 Carrier Tape Dimension

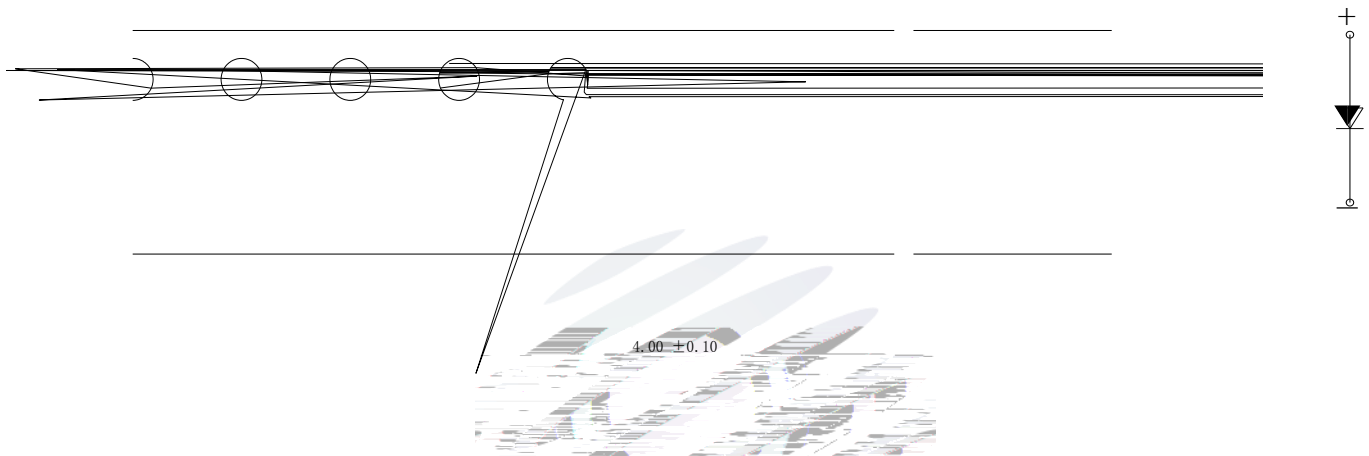
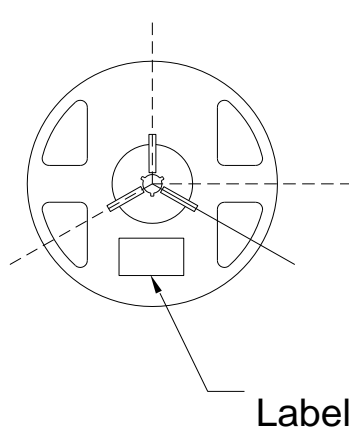


Fig.2-1 Carrier Tape Dimension

2.1.2 Reel Dimension



Label 标签

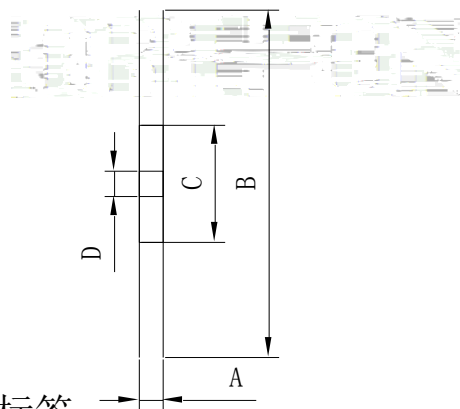


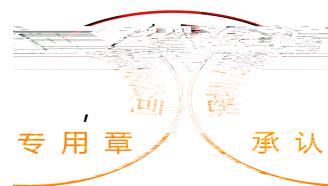
Fig.2-2 Reel Dimension 卷盘尺寸

g - , Reel Dimension 卷盘尺寸

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

Notes

The tolerances unless mentioned ± 0.1 mm. Unit : mm



2.1.3 Label Form Specification

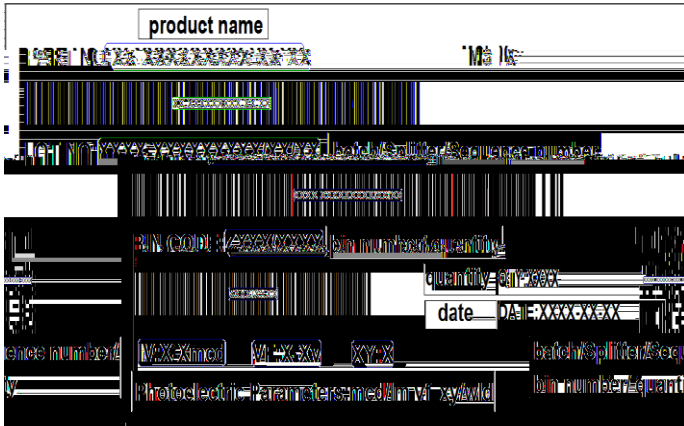


Fig. 2-3 Label Form Specification

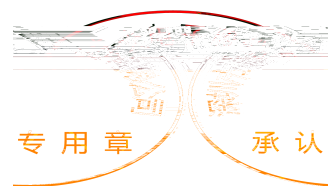
Specification

| | |
|----------------|------------------|
| PART NO. | Part Number |
| SPEC NO. | Spec Number |
| LOT NO. | Lot Number |
| BIN CODE | Bin Code |
| | Luminous flux |
| XY | Chromaticity Bin |
| V _F | Forward Voltage |
| WLD | Wavelength |
| QTY | Packing Quantity |
| DATE | Made Date |

2.2 Moisture Resistant Packing 防潮包装



Fig.2-4 Moisture Resistant Packing 防潮包装



2.3 Cardboard Box 包装纸箱

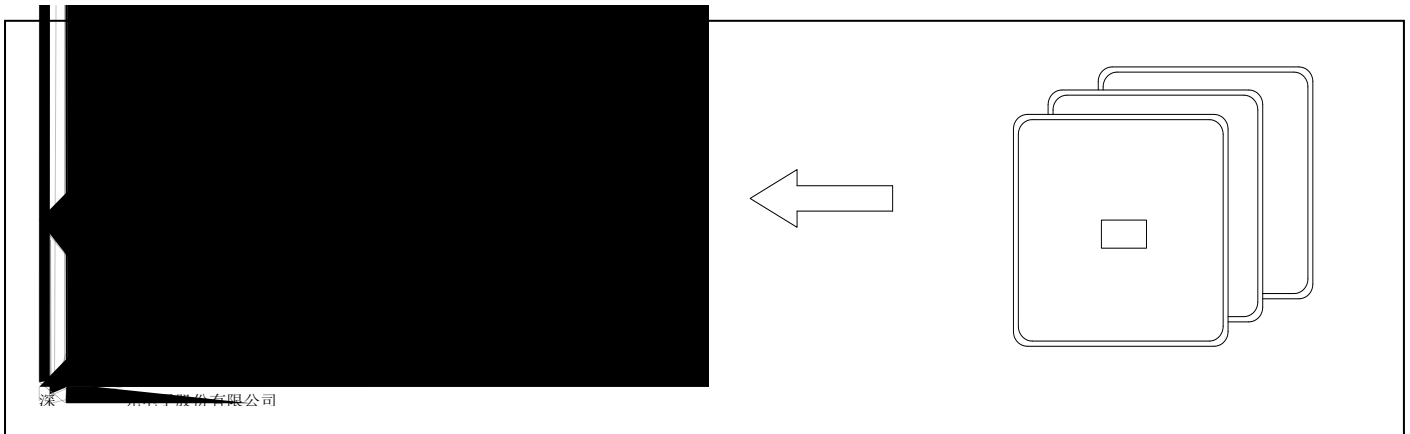


Fig.2-5 Cardboard Box 包装纸箱

2.4 Reliability Test Items And Conditions 信赖性测试项目及条件

Table 2-3 Reliability Test Items And Conditions

| Test Items | Ref. Standard | Test Condition | Time | Quantity | Ac/Re / |
|--------------------------|--------------------------|-------------------------------|------------|----------|---------|
| Reflow | JESD22-B106 | Temp:260 max T=10 sec | 2times | 20pcs. | 0/1 |
| Thermal Shock | JEITAED-4701 300307 | -40 15min 10s 125 15min | 1000 cycle | 20pcs. | 0/1 |
| High Temperature Storage | JEITAED-4701 200 201 | Temp:125 | 1000hrs. | 20pcs. | 0/1 |
| Low Temperature Storage | JEITA ED-4701 200 202 | Temp:-40 | 1000hrs. | 20pcs. | 0/1 |
| Life Test | JESD22-A108 | Ta=25 If=20mA | 1000hrs. | 20pcs. | 0/1 |

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| | | | | | |
|---|--------------------------|---|----------|--------|-----|
| High Temperature High Humidity Life Test | JESD22-A101 | 85 / 85%RH I _F =20mA | 1000hrs. | 20pcs. | 0/1 |
| Temperature Humidity Storage | JEITA ED-4701 100 103 | T _A =85 R _H =85% | 1000hrs. | 20pcs. | 0/1 |

2.5 Criteria For Judging Damage 失效判定标准

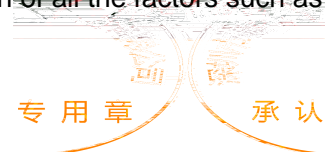
Table 2-4Criteria For Judging Damage

| Test Items | Symbol | Test Condition | Criteria For Judgement | |
|-----------------|----------------|----------------------|------------------------|-------------|
| | | | Min. | Max. |
| Forward Voltage | V _F | I _F =20mA | - | U.S.L*)x1.1 |
| Reverse Current | I _R | V _R = 5V | - | U.S.L*)x2.0 |
| Luminous Flux | | I _F =20mA | L.S.L*)x0.7 | - |

Notes

- 1.U.S.L: Upper standard level L.S.L: Lower standard level
- 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.

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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.



| | | |
|---|-------|---------------|
| Time limit classification of peak temperature time t_p | 10 | Max 10s |
| (T_p) 5 °C Hold time within 5 °C with the actual peak temperature (TP) | 30 | Max 30s |
| Cooling speed | 6 °C/ | Max 6 °C/ s |
| 25 °C Needed time from 25 °C to T_p | 8 | Max 8 minutes |

Notes

(1) Reflow soldering should not be done more than twice. If more than 24 hours between the two solderings, LED will be damaged.

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(2) When soldering, do not put stress on the LEDs during heating.

3.1.1 Soldering Iron

(1) When do soldering by hand, keep the temperature of iron below less 300°C less than 3 seconds.

(2) Soldering by hand should be done only one time.

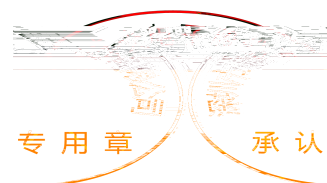
3.1.2 Repairing

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 repairing.

LED

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3.1.3 Cautions



(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 impacted on 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

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(2) Components should not be mounted on warped (non coplanar) portion of PCB. After soldering, do not warp the circuit board.LED

(3) Do not apply mechanical force or excess vibration during the cooling process to normal temperature after soldering. Do not rapidly cool device after soldering.

4. Handling Precautions 产品使用注意事项

4.1 Handling Precautions 产品使用注意事项

(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

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(2) In order to prevent ex-ternal 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 elementis 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.

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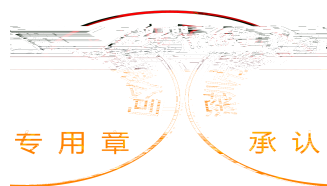
4 H

4 H

, 0 H

(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

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the heat generation of the LEDs when making the system design.LED

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(7) Compared to standard encapsulants, silicone is generally softer, and the surface is more likely to attract dust,requiring special care during processing. In cases where a minimal level of dirt and dust particles cannot be guaranteed, a suitable cleaning solution must be applied to the surface after the soldering of components. Refond suggests using isopropyl alcohol for cleaning. In case 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.

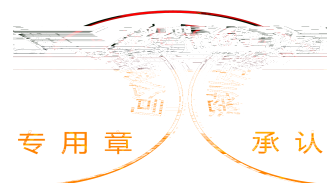
| Conditions | | Temperature | Humidity | Time |
|---------------|-----------------------------|-------------|----------|--|
| Storage 儲存 | Before Opening Aluminum Bag | 30 | 75% | Within 1 Year From Date Recom-3/F560 r78/Lang |
| | After Opening Aluminum Bag | 30 | 60% | |

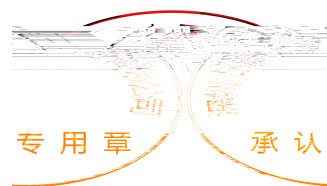


If the package is flatulence or damaged, please notify the sales staff to assist.

(9) Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS). G

(10) Other points for attention, please refer to our relevant information.





Declare

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