



# SPECIFICATION



REFOND P/N

RF-WMRA30DS-HH-BZ

Mass Production





---

## Contents

### 1. Description

#### 1.1 General Description

#### 1.2 Features

#### 1.3 Application

#### 1.4 Package Dimension

#### 1.5 Product Parameters

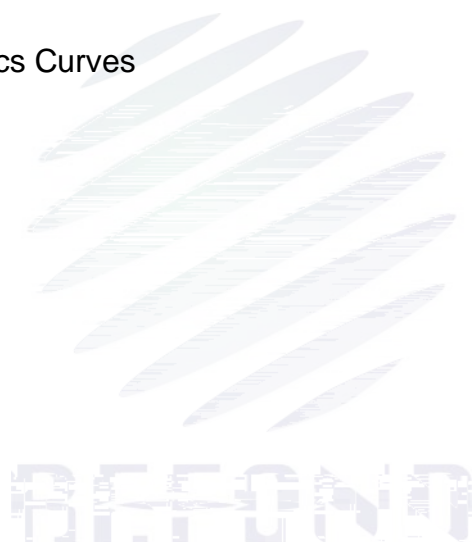
#### 1.6 Bin Range Of Forward Voltage and Luminous Intensity (IF=5mA)

BIN (IF=5mA)

#### 1.7 Typical Optical Characteristics Curves

### 2. Packaging

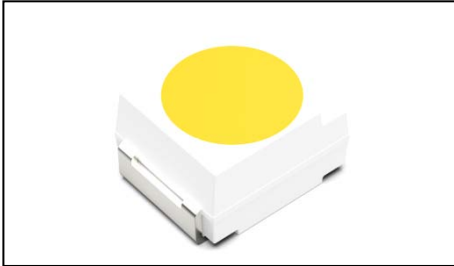
#### 2.1 Packaging Specification





## 1. Description

### 1.1



The Yellow LED, which was fabricated by using a blue chip and the phosphor.  
Product Package:3.50mmX2.80mmX1.84mm.

3.50mmX2.80mmX1.84mm

### 1.2 Features

PLCC Package.

Extremely wide viewing angle.

Suitable for all SMT assembly and solder process.

Available on tape and reel.

Moisture sensitivity level: Level 2.

RoHS compliant.

Qualifications: The product qualification test plan is based on the guidelines of AEC-Q101  
Stress Test Qualification for Automotive Grade Discrete Semiconductors

### 1.3 Application

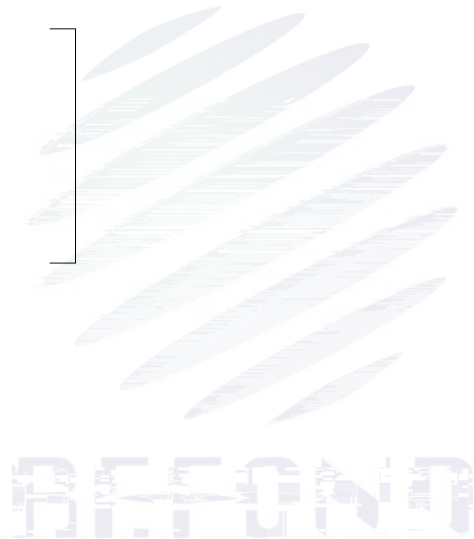
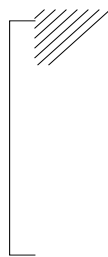
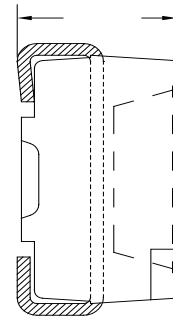
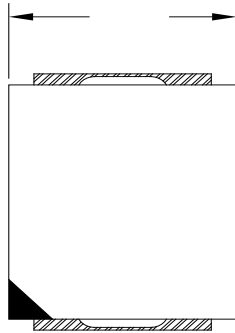
Automotive Interior Lighting.

Switches.





## 1.4 Package Dimension



### 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  $T_s=25^\circ\text{C}$

Item	Symbol	Test Condition	Value		Unit
			Min.	Typ.	

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





---

## Notes

1. 1/10 Duty cycle, 10ms pulse width.      10ms,      1/10.
2. The above forward voltage measurement allowance tolerance is  $\pm 0.1V$ .       $\pm 0.1V$ .
3. The above color coordinates measurement allowance tolerance is  $\pm 0.005$ .       $\pm$
4. The above luminous intensity measurement allowance tolerance  $\pm 10\%$ .       $\pm 10\%$ .
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.



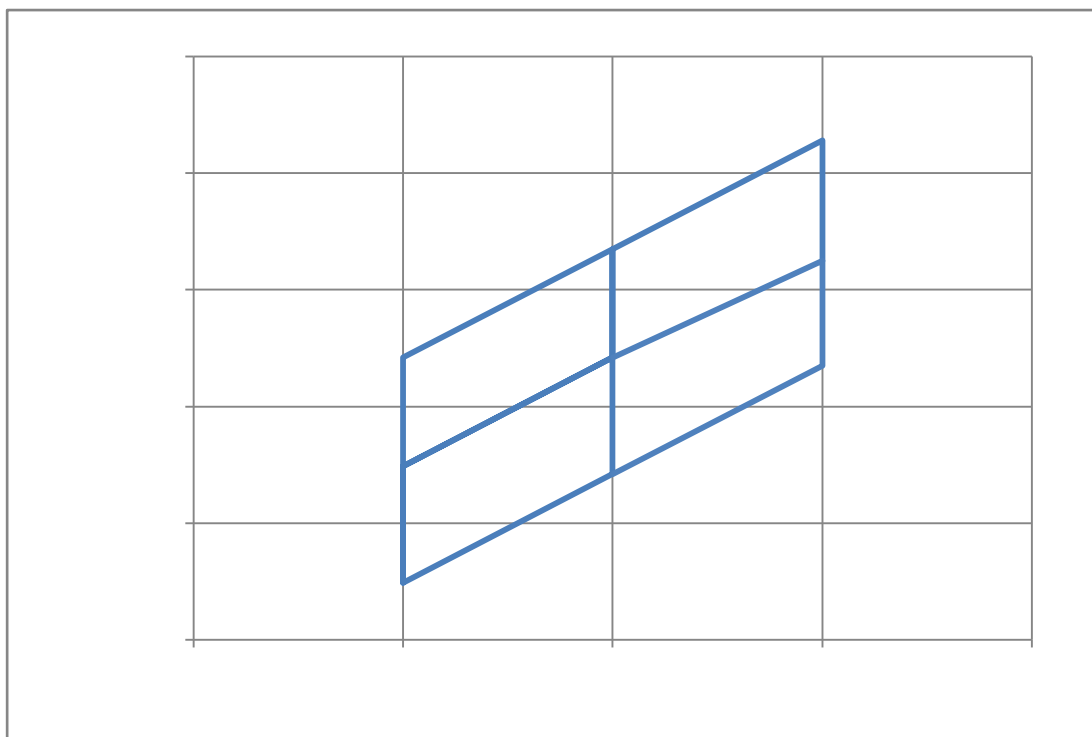


Fig. 1-6 The C.I.E Chromaticity Diagram CIE

Table 1-4







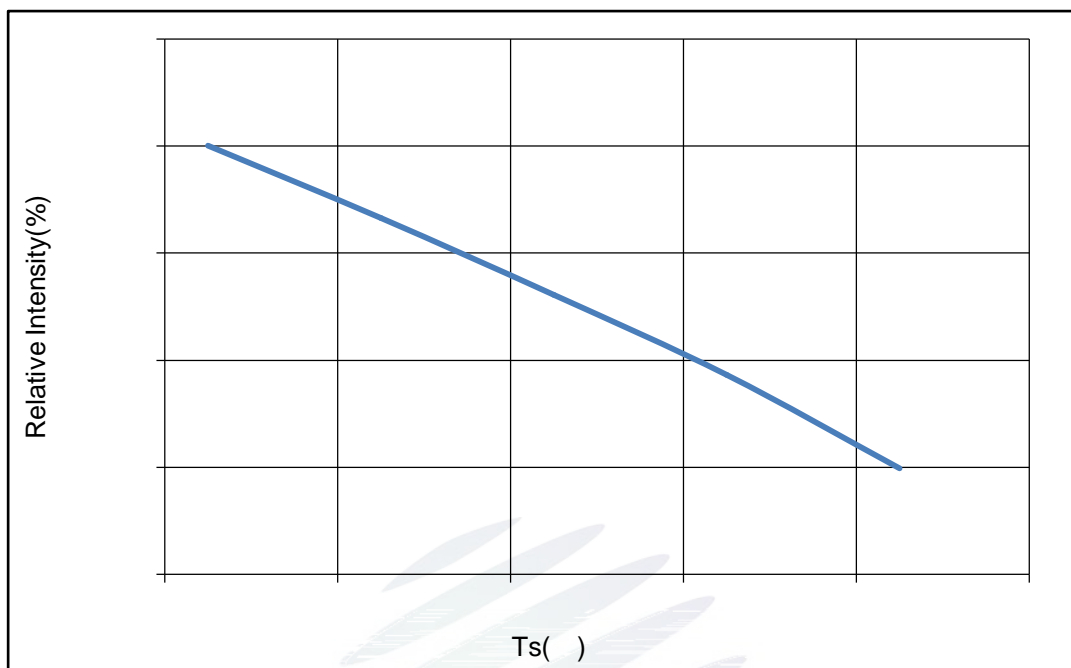



Fig. 1-9 Solder Temperature Vs Relative Intensity

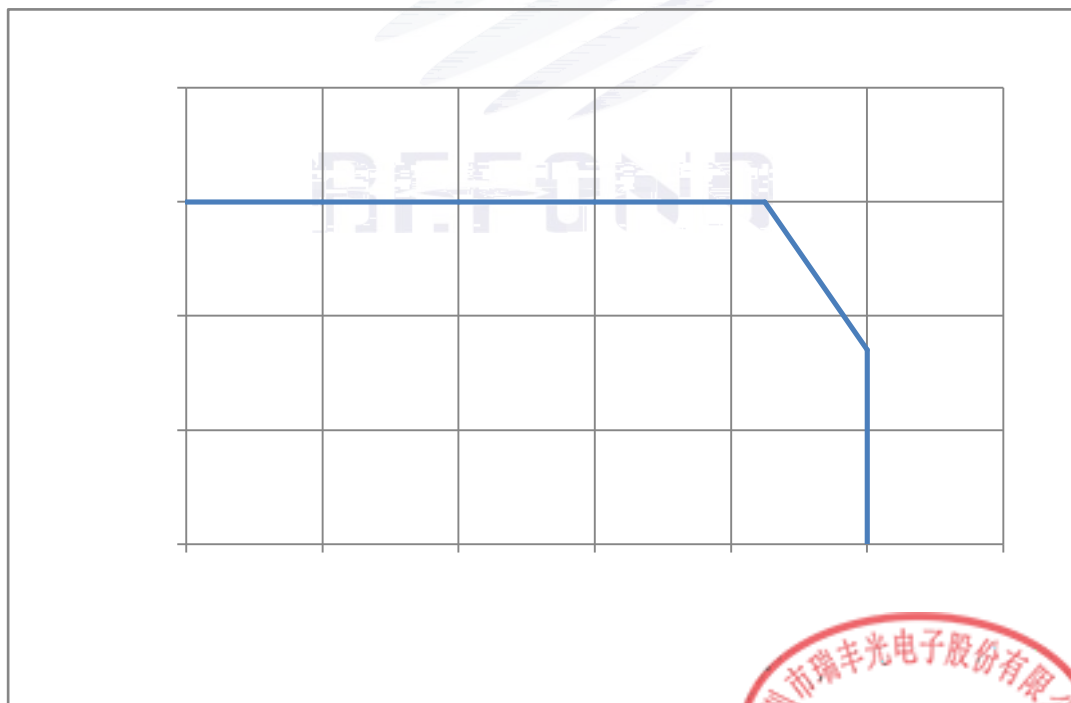


Fig. 1-10 Solder Temperature Vs Forward Current



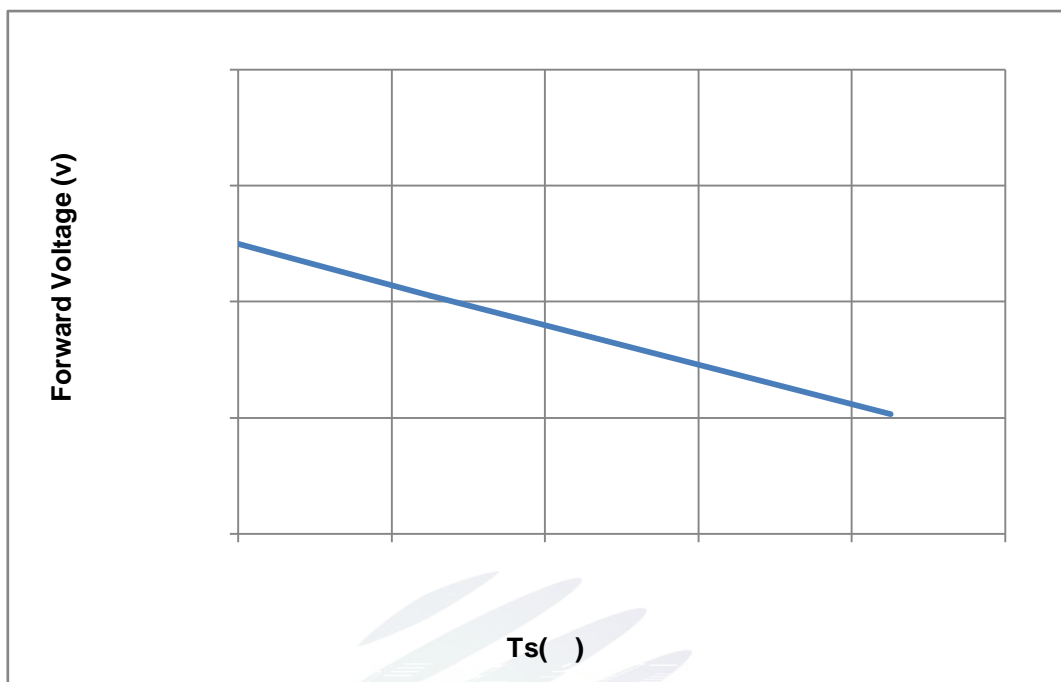


Fig. 1-11 Forward Voltage Vs Solder Temperature

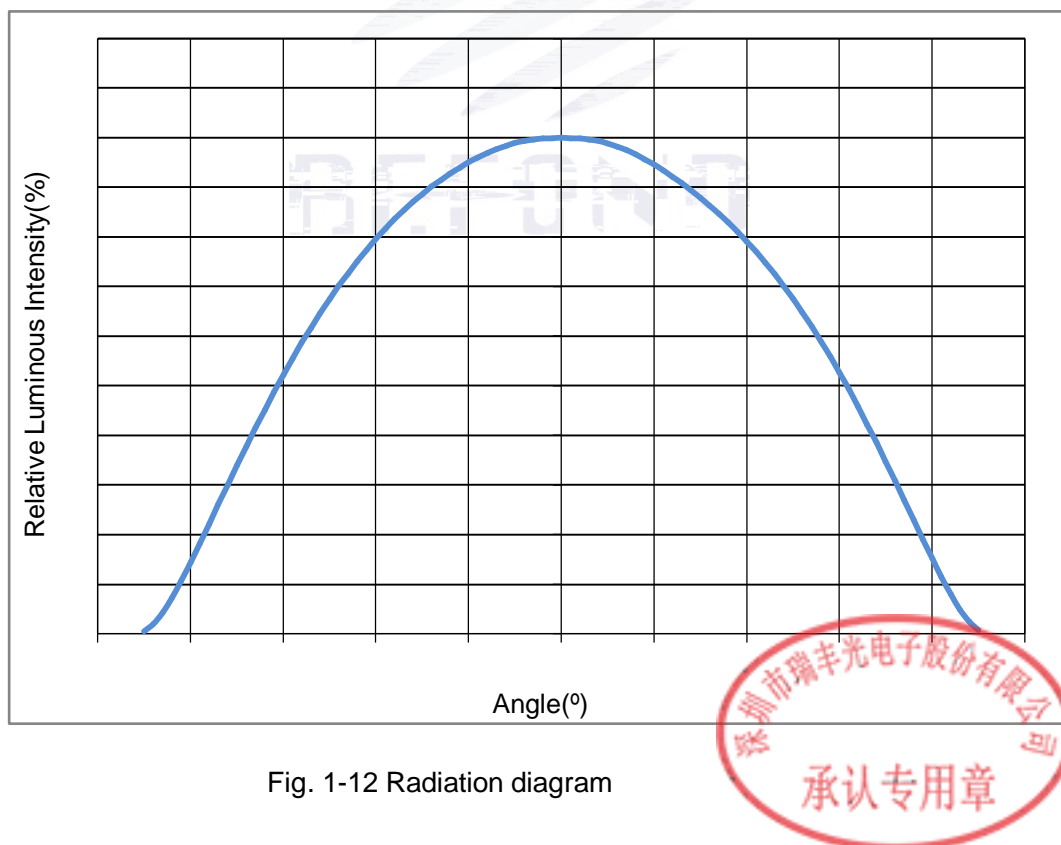


Fig. 1-12 Radiation diagram

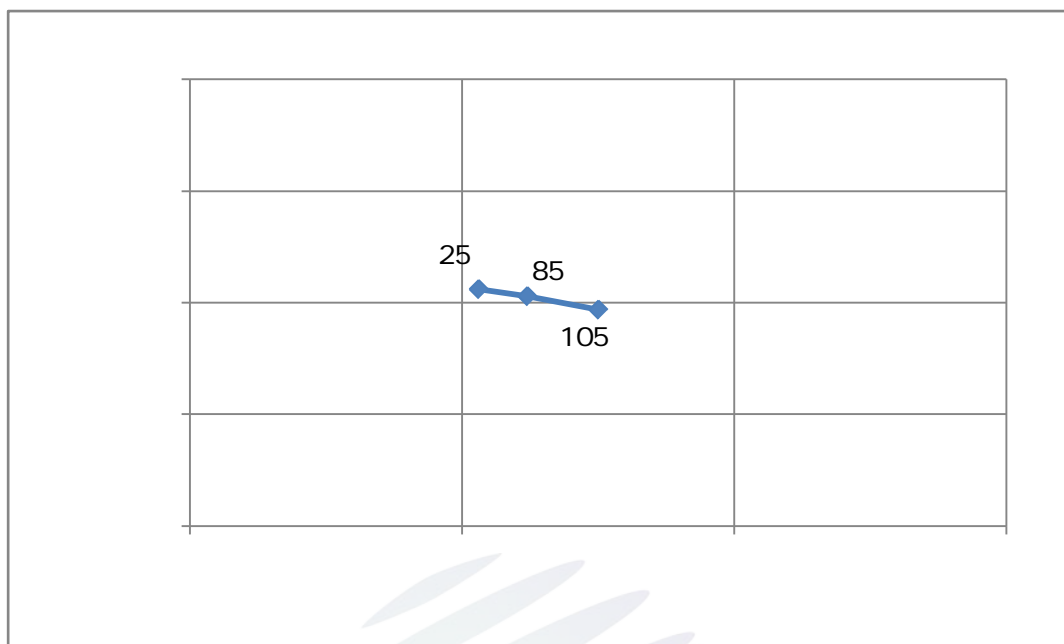


Fig. 1-13 Chromaticity Coordinate Shift Vs Forward Current

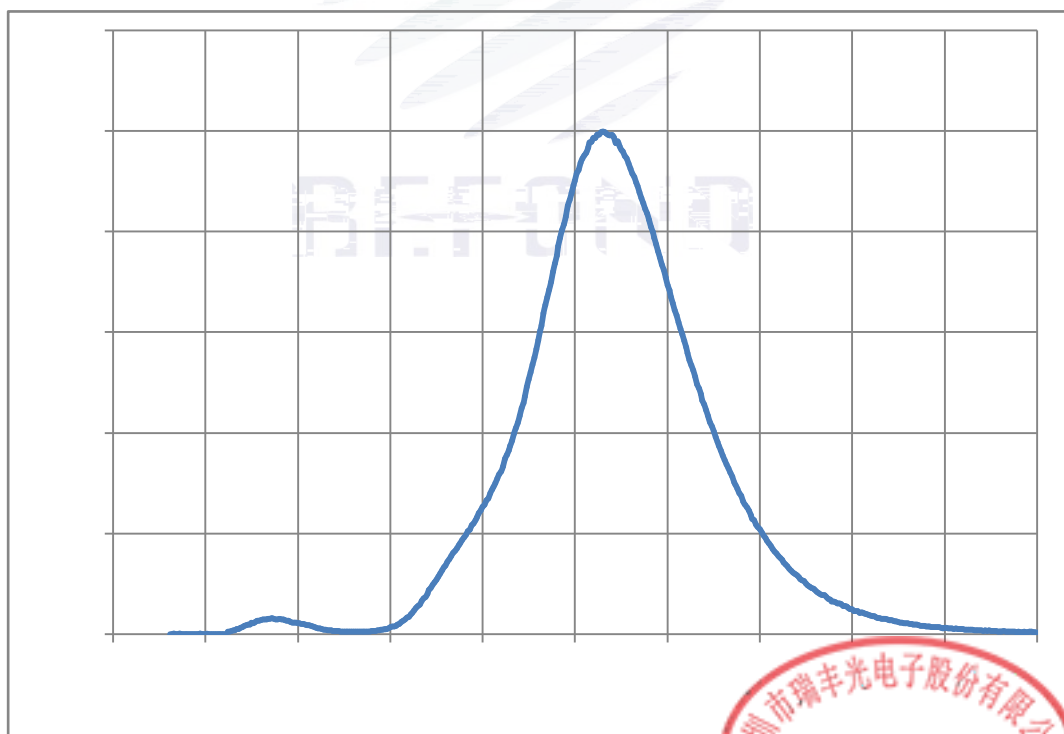


Fig. 1-14 Spectrum Distribution

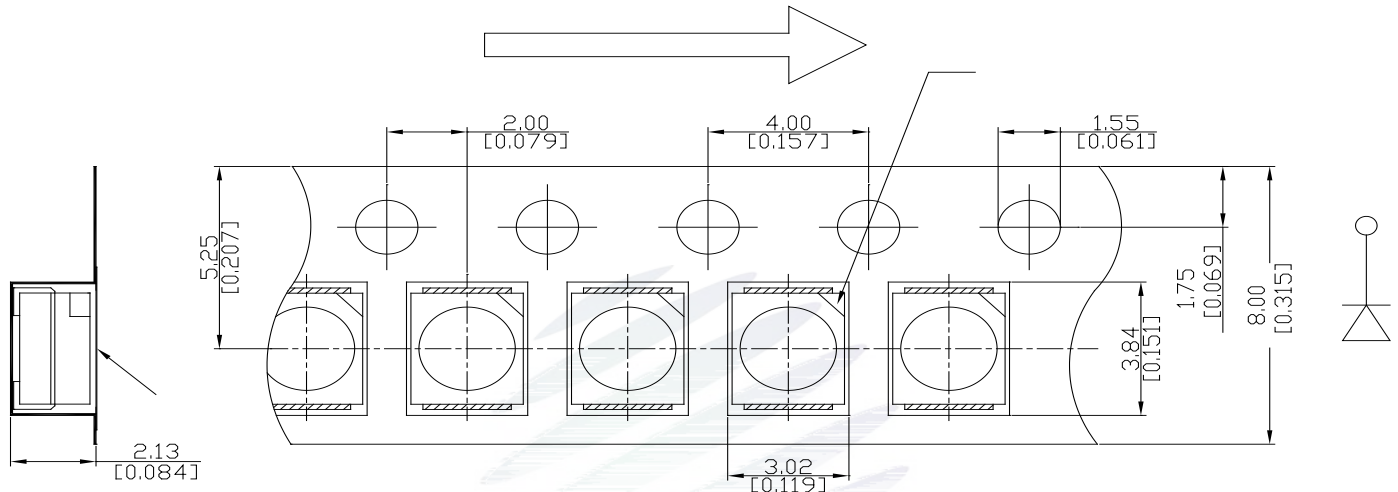


## 2. Packaging

### 2.1 Packaging Specification

Package:2000pcs/reel.

#### 2.1.1 Carrier Tape Dimension



REFOND



## 2.1.3 Label Form Specification

Specification





## 2.4 Reliability Test Items And Conditions

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
MSL2 2	JESD22-A113	85 / 60%RH	168 hrs.	20pcs.	0/1
Thermal Shock	JEITAED-4701 300307	-40 15min 10s 125 15min	1000 cycle	20pcs.	0/1
Life Test	JESD22-A108	Ta=100 If=5mA	1000hrs.	20pcs.	0/1
High Temperature High Humidity Life Test	JESD22-A101	85 / 85%RH If=5mA	1000hrs.	20pcs.	0/1







### 3. SMT Reflow Soldering Instructions SMT

#### 3.1 SMT Reflow Soldering Instructions SMT

Fig.3-1 SMT Reflow Soldering Instructions SMT

Table 3-1 Reflow parameters

Average temperature rise speed	T <sub>max</sub> T <sub>P</sub>	3 °C/ s Max 3 °C/ s
Preheating: minimum temperature	(T <sub>min</sub> )	150 °C
Preheating: Max temperature	(T <sub>max</sub> )	200 °C
Preheating: Time	T <sub>min</sub> T <sub>max</sub>	60 - 120 60s-120s
Time limited to maintain high temperature: the temperature	(T <sub>L</sub> )	217 °C
Time limited to maintain high temperature: The Time	(t <sub>L</sub> )	60 Max 60s
Peak /Classification of temperature:	/ (T <sub>P</sub> )	260 °C
Time limit classification of peak temperature time	t <sub>p</sub>	10 Max 10s

(T<sub>P</sub>) 5 °C Hold time within 5 °C with the actual peak temperature (TP) 30 Max 3.32 0.48 31.4





---

## Notes

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

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

### 3.1.1 Soldering Iron

### 3.1.2 Repairing



### 3.1.3 Cautions





---

## 4. Handling Precautions

### 4.1 Handling Precautions

(3) VOCs (Volatile organic compounds) emitted from materials used in the construction of fixtures can

REFOND



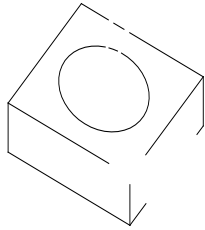


Fig 4-1 Handling Precautions

oltage only when it is ON or OFF.If the reverse voltage is applied to LED, migration





Table 4-1 Storage

Conditions		Temperature	Humidity	Time
Storage	Before Opening Aluminum Bag	30	75%	Within 1 Year From Date
	After Opening Aluminum Bag	30	60%	Recommended for use within 24 hours
Baking		60±5	-	24hours 24

±

±

REFOND

Over Stress (EOS).

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







www.refond.com

REFOND



Declare

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