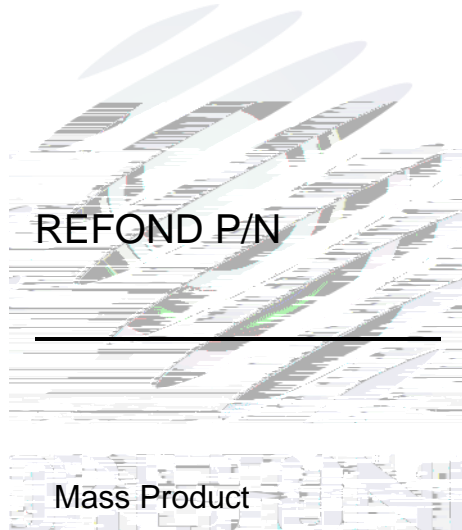


# SPECIFICATION



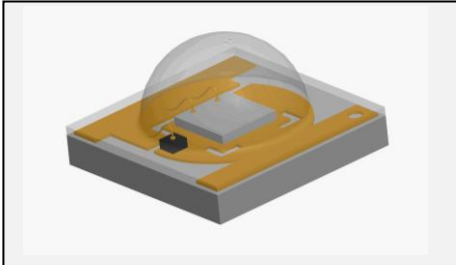
## Contents

### 1. Description



## 1. Description

### 1.1 General Description

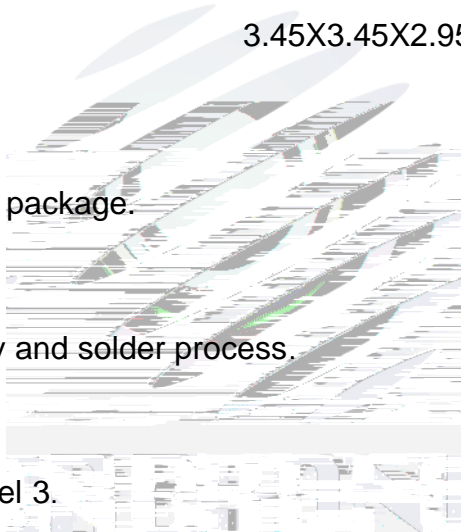


This production use the ceramics and Silicone molding package outline size 3.45X3.45X2.95mm

3.45X3.45X2.95mm

### 1.2 Features

- ▶ Ceramic and silicone molding package.
- ▶ Viewing angle:60° .
- ▶ Suitable for all SMT assembly and solder process.
- ▶ Available on tape and reel.
- ▶ Moisture sensitivity level: Level 3.
- ▶ RoHS compliant.



### 1.3 Application

- ▶ UV Curing.
- ▶ UV Ink Curing.
- ▶ Ultraviolet disinfection.
- ▶ Medical treatment and health.
- ▶ General use.

## 1.4 Package Dimension

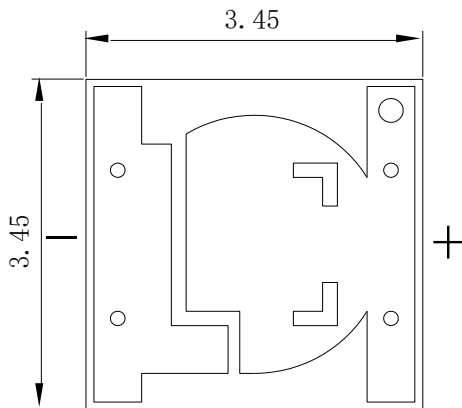


Fig.1-1 Top view

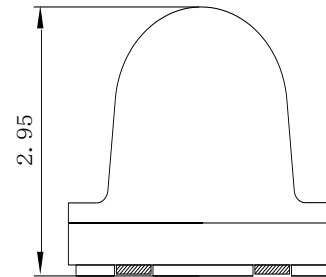


Fig.1-2 Side view

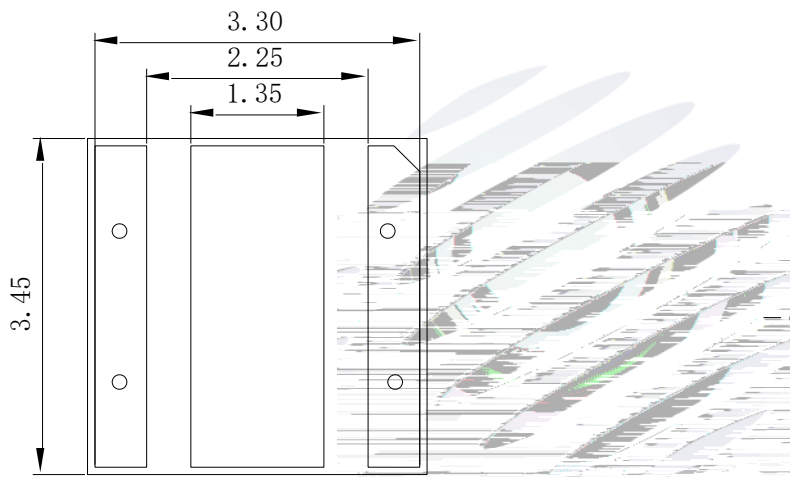


Fig.1-3 Bottom view

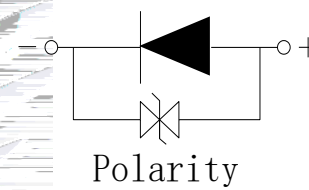


Fig.1-4 Polarity

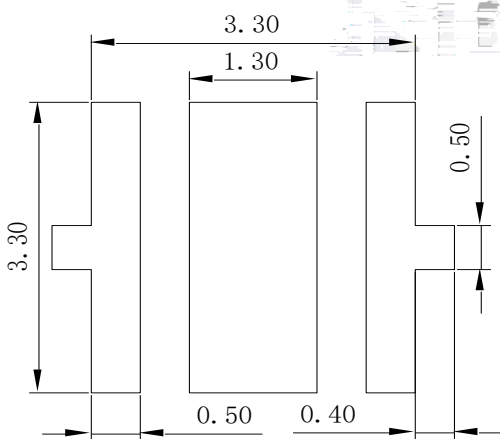


Fig.1-5 Soldering patterns

### 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 Ts=25°C

Item	Symbol	Test Condition	Code	Value			Unit
				Min.	Typ	Max.	
Forward Voltage	$V_F$	$I_F=500/700mA$	B11	3.0	---	3.2	V
			B12	3.2	---	3.4	
			B13	3.4	---	3.6	
			B14	3.6	---	3.8	
Reverse Current	$I_R$	$V_R=5V$	---	---	---	5	uA
Total radiant flux RC35E6-UBE-AR (365-370nm)	$\Phi_e$	$I_F=500mA$	1E47	575	---	675	mW
			1E48	675	---	800	
			1E49	800	---	940	
Total radiant flux RC35E6-UEE-AR (380-390nm)	$\Phi_e$	$I_F=700mA$	1E50	940	---	1110	mW
			1E51	1110	---	1310	
			1E52	1310	---	1545	

Total radiant flux

RC35E6

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

Parameter	Symbol	Item	Rating	Units
Maximum Power Dissipation	P <sub>D</sub>	365-370nm	1.9	W
		380-410nm	2.6	
Peak Forward Current	I <sub>FP</sub>	365-370nm	500	mA
		380-410nm	700	
Reverse Voltage	V <sub>R</sub>	ALL	5	V
Electrostatic Discharge (HBM)	E <sub>SD</sub>	ALL	2000	V
Operating Temperature	T <sub>OPR</sub>	ALL	-20 ~ +65	
Storage Temperature	T <sub>OPR</sub>	ALL	-20 ~ +80	
Junction Temperature	T <sub>J</sub>	ALL	105	

Notes

- 1/10 Duty cycle, 0.1ms pulse width.
- The above forward voltage measurement allowance tolerance is  $\pm 0.1V$ .
- The above wavelenth measurement allowance tolerance is  $\pm 2nm$ .  $\pm$
- The above radiation flux measurement allowance tolerance  $\pm 10\%$ .
- Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product.
- All measurements were made under the standardized environment of Refond.
- 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
- ESD yield is over 90% at 2000V ESD (HBM). ESD protection during products handing is needed.



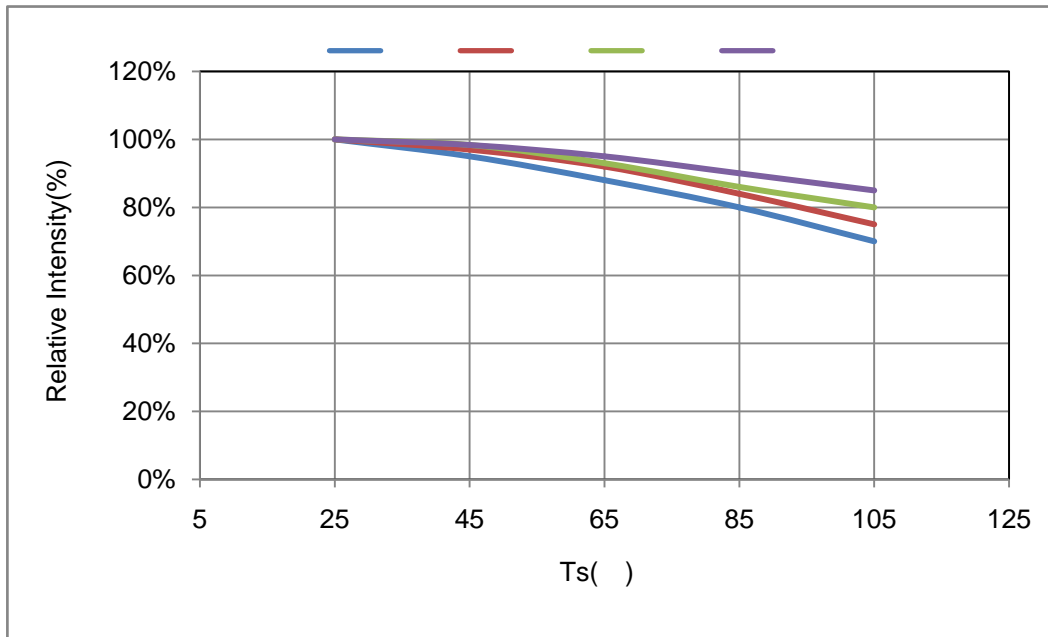


Fig.3-Solder Temperature VS. Relative Power

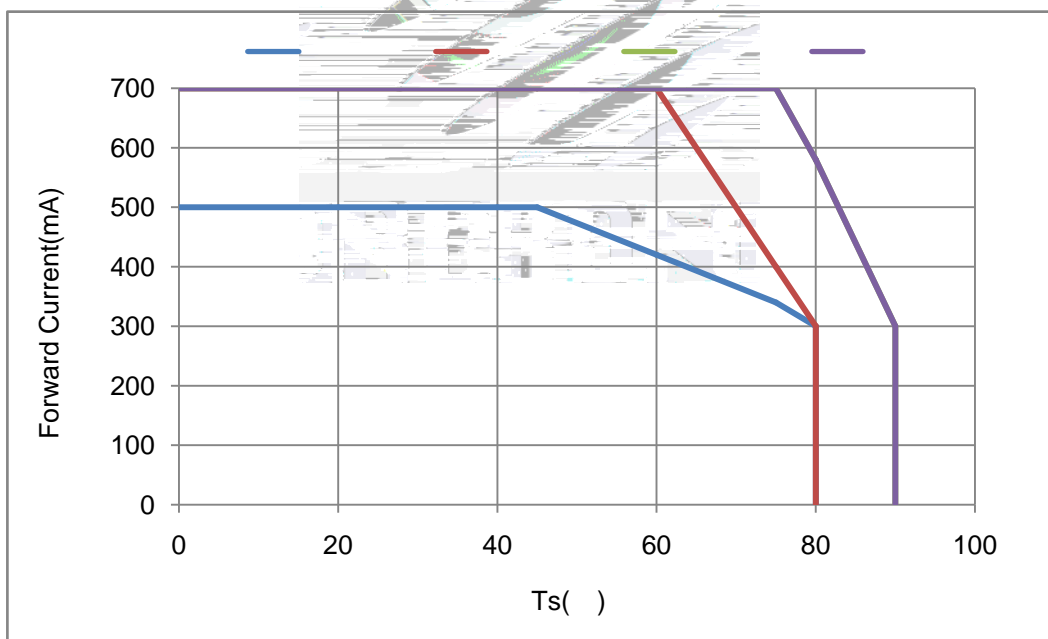


Fig.4-Ts Temperature VS. Forward Current



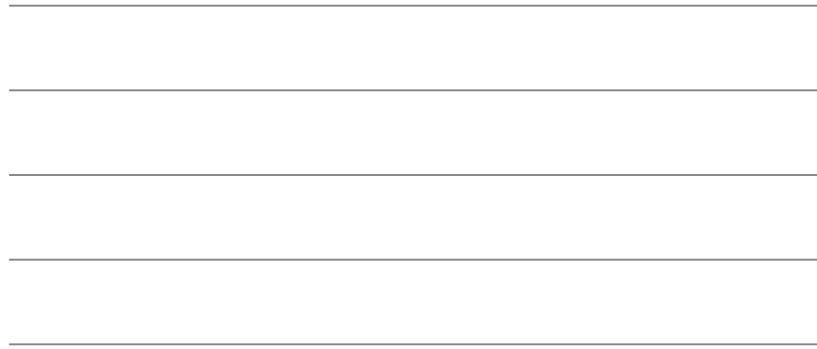


Fig.5-Spectrum Distribution

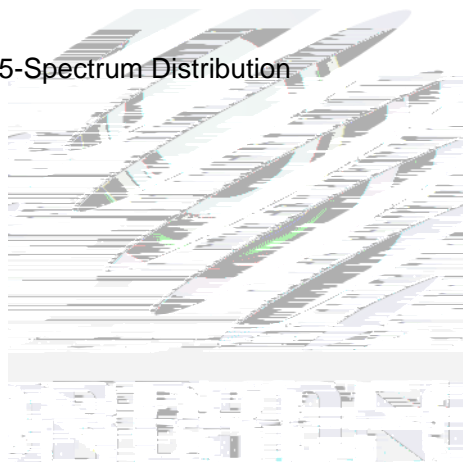


Fig.6- Radiation Diagram

## 2. Packaging

### 2.1 Packaging Specification

Package:500pcs/reel.

#### 2.1.1 Carrier Tape Dimension

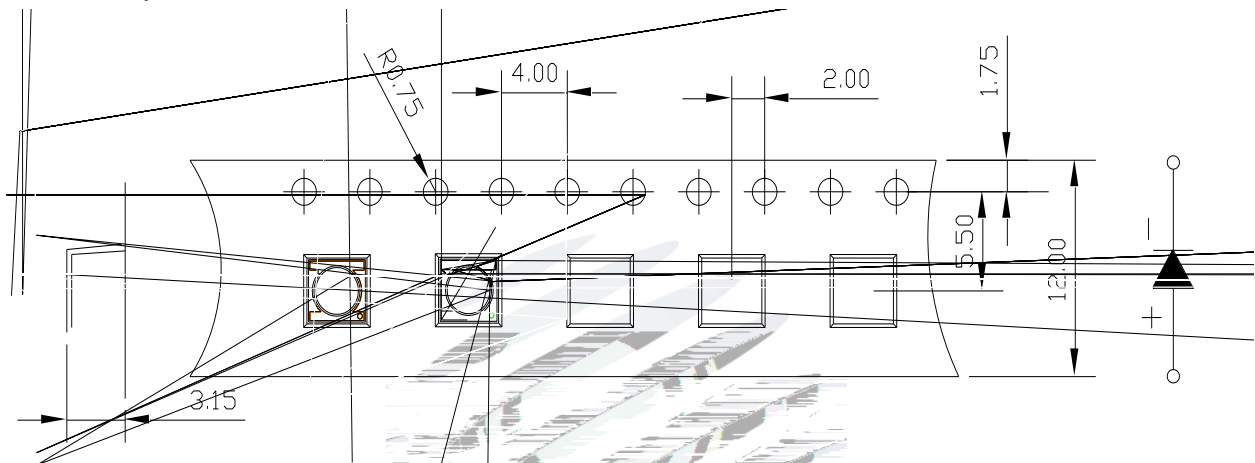
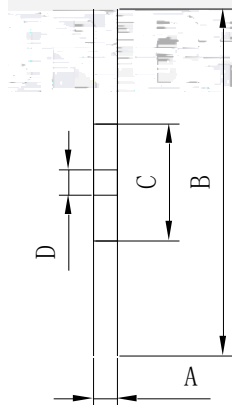
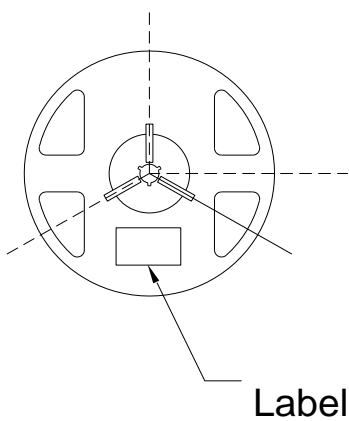


Fig.2-1 Carrier Tape Dimension

#### 2.1.2 Reel Dimension



Reel Dimension

A	12 0.1mm
B	178 1mm
C	60 1mm
D	13.0 0.5mm

Fig.2-2 Reel Dimension

#### Notes

The tolerances unless mentioned  $\pm 0.1\text{mm}$ . Unit : mm

### 2.1.3 Label Form Specification

PART NO.  
 SPEC NO.  
 LOT NO.  
 BIN CODE  
 $\Phi_e$   
 $V_F$

WLP

QTY:

DATE:

#### Label Form Specification

PART NO.	Part Number
SPEC NO.	Spec Number
LOT NO.	Lot Number
BIN CODE	Bin Code
$\Phi_e$	Radiation flux
$V_F$	Forward Voltage
WLP	Wavelength
QTY	Packing Quantity
DATE	Made Date

Fig. 2-3 Label Form Specification

### 2.2 Moisture Resistant Packing

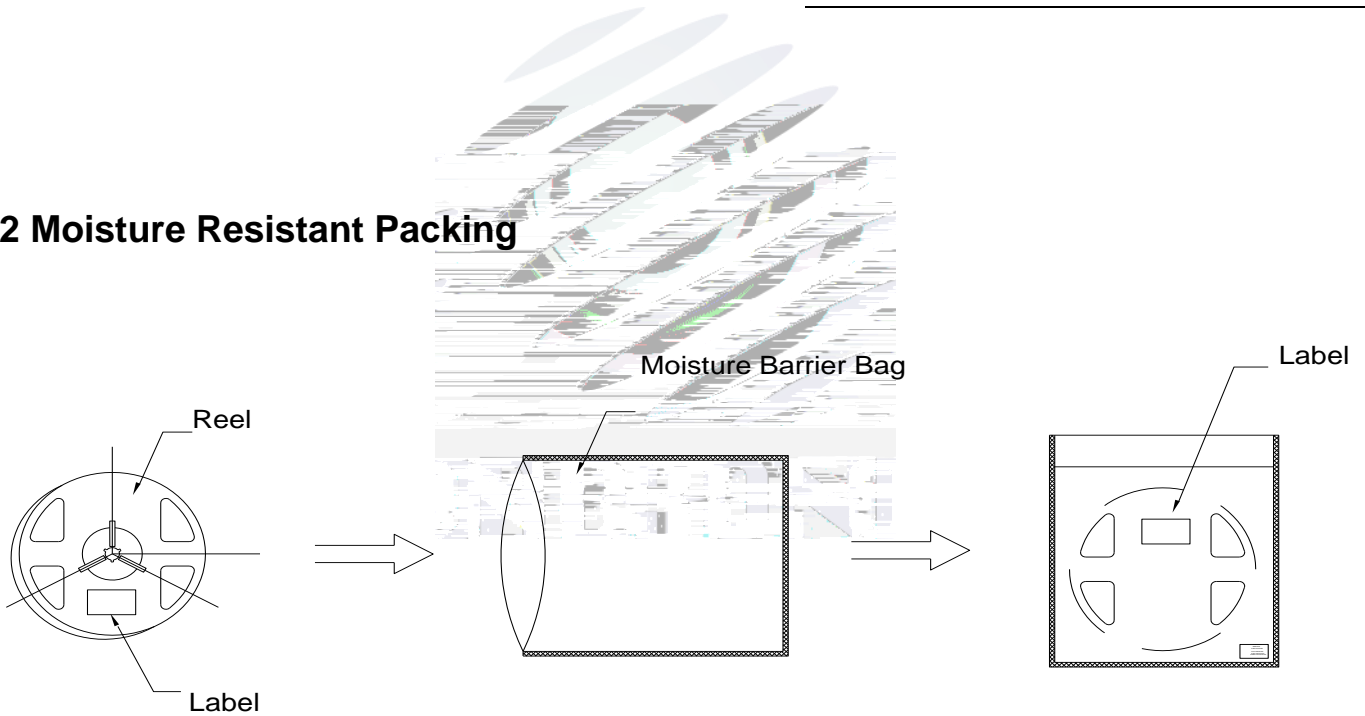


Fig.2-4 Moisture Resistant Packing Process

## 2.3 Cardboard Box

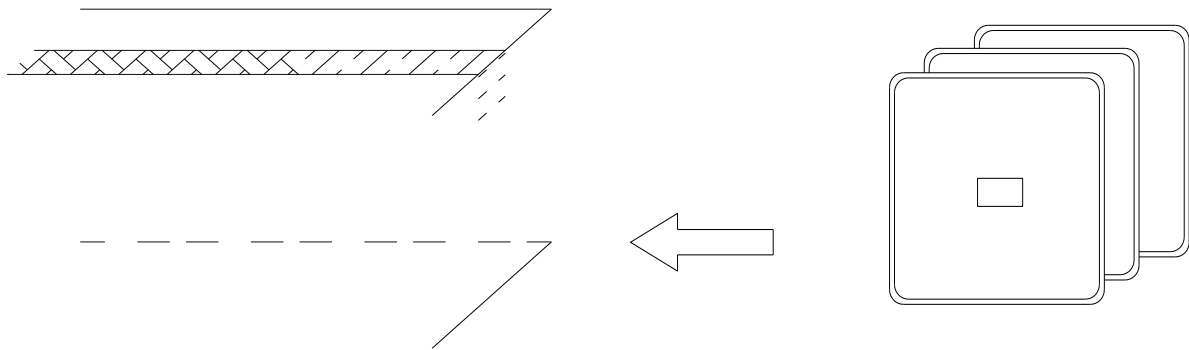


Fig.2-5 Cardboard Box

## 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	3times.	10Pcs.	0/1
Thermal Shock	JESD22-A106	-40 15min ↑↓10s 100 15min	100 Cycles	10Pcs.	0/1
Life Test	JESD22-A108	T <sub>a</sub> =25 I <sub>F</sub> =500/700mA	1000Hrs.	10Pcs.	0/1

## 2.5 Criteria For Judging Damage

Table 2-4 Criteria For Judging Damage

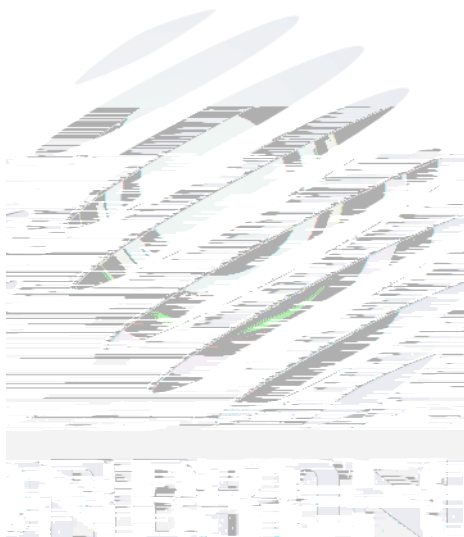
Test Items	Symbol	Test Condition	Criteria For Judgement	
			Min.	Max.
Forward Voltage	$V_F$	$I_F=500/700mA$	-	U.S.L*)x1.1
Reverse Current	$I_R$	$V_R = 5V$	-	U.S.L*)x2.0
Total radiant flux	$\Phi_e$	$I_F=500/700mA$	L.S.L*)x0.7	-

### 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.
- 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.

### 3. SMT Reflow Soldering Instructions SMT





## 4. Handling Precautions

### 4.1 Handling Precautions

(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

(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.

(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 effect 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.

(4) Handle the component along the side surface by using forceps or appropriate tools; Do not directly touch or handle the silicone lens surface, it may damage the internal circuitry.



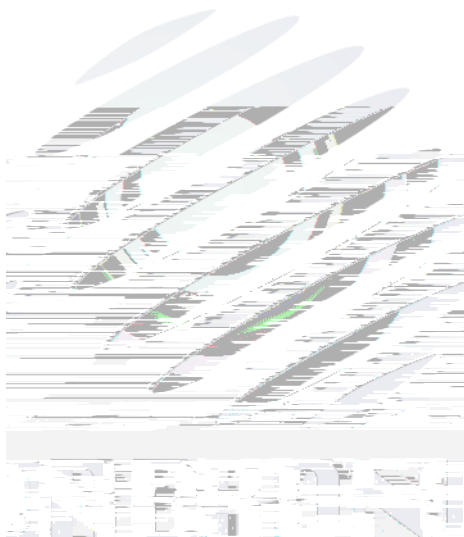


Table 4-1 Storage

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

(8) 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 65 5 for above 24 hours.

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).

(10) When using this product, you need to take good care to prevent it from causing harm to eyes and human body.

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

Version History/

Date	Revisor	Version	Verifier	Remarks
2020-05-20		E4		



Declare

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