

SPECIFICATION

REFOND P/N

RF-YMRA30TS-AF-Z

R&D

Mass Production

REFOND



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 Flux (IF=20mA)	BIN (IF=20mA)
1.7 Typical Optical Characteristics Curves	
2. Packaging	
2.1 Packaging Specification	
2.1.1 Carrier Tape Dimension	11
2.1.2 Reel Dimension	11
2.1.3 Label Form Specification	12
2.2 Moisture Resistant Packing	
2.3 Cardboard Box	
2.4 Reliability Test Items And Conditions	
2.5 Criteria For Judging Damage	
3. SMT Reflow Soldering Instructions SMT	
3.1 SMT Reflow Soldering Instructions SMT	
4. Handling Precautions	
4.1 Handling Precautions	



1. Description

1.1

The Yellow source color devices are made with AlGaInP on Substrate Light Emitting Diode .
 Product Package:3.50mmX2.80mmX1.84mm.

LED

3.50mmX2.80mmX1.84mm

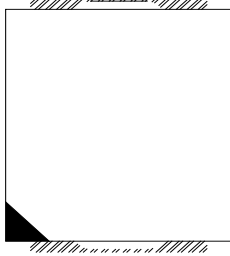
1.2 Features

PLCC2 Package.

age. L L f f



1.4 Package Dimension



Notes

All dimensions units are millimeters.

All dimensions tolerances are 0.2mm unless otherwise noted.

±

1.5 Product Parameters

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

Item	Symbol	Test Condition	Value			Unit
			Min.	Typ.	Max.	
Forward Voltage	V _F	I _F =20mA	1.8	2.1	2.4	V
Reverse Current	I _R	V _R =5V	---	---	10	uA
Luminous Intensity	I _V	I _F =20mA	650	850	1200	mcd
Dominant wavelength	W _d	I _F =20mA	585	589	595	nm
Viewing Angle	2 1/2	I _F =20mA	---	120	---	deg
Thermal Resistance.	R _{THJ-S}	I _F =20mA	---	---	280	°C/W

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

Parameter	Symbol	Rating	Units
-----------	--------	--------	-------

Notes

1. 1/10 Duty cycle,10ms pulse width.
2. The above forward voltage measurement allowance tolerance is $\pm 0.1V$. $\pm 0.1V$.
3. The above color coordinates measurement allowance tolerance is ± 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.
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
8. ESD yield is over 90% at 8000V ESD (HBM). ESD protection during products handling is needed. 90% LED
ESD 000V

1.6Bin Range Of Forward Voltage and Luminous Flux (IF=20mA)

BIN (IF=20mA)

Table 1-3

V _F (V)	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()	K2	L1	L2			
	650-800	800-1000	1000-1200			
WD(nm)	D1	D2	E1	E2		
	585-587.5	587.5-590	590-592.5	592.5-595		



1.7 Typical Optical Characteristics Curves

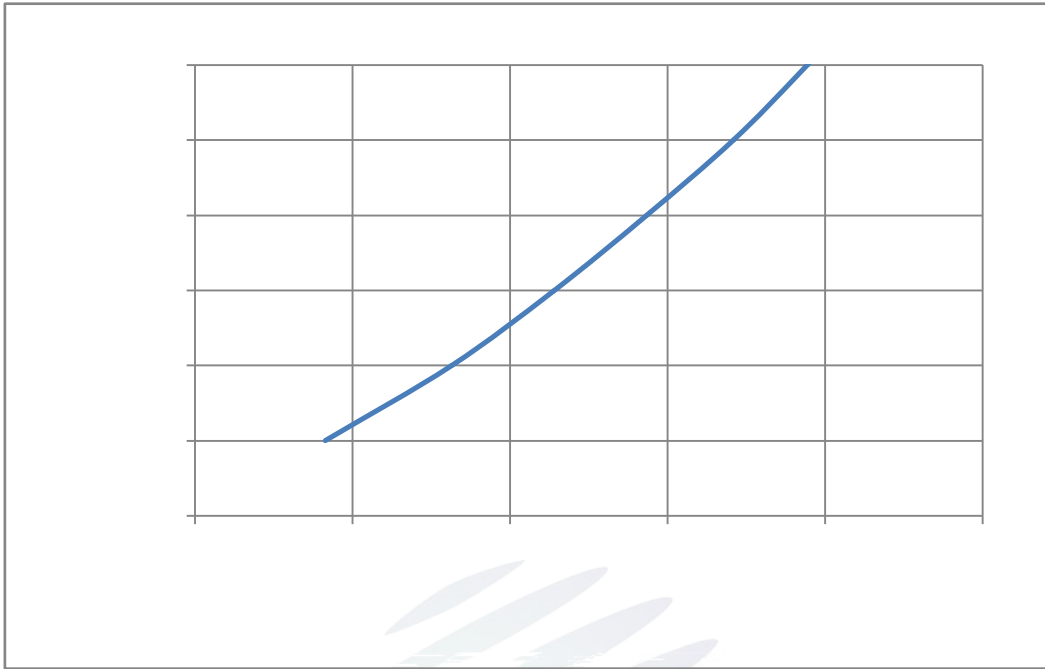


Fig. 1-7 Forward Voltage Vs Forward Current

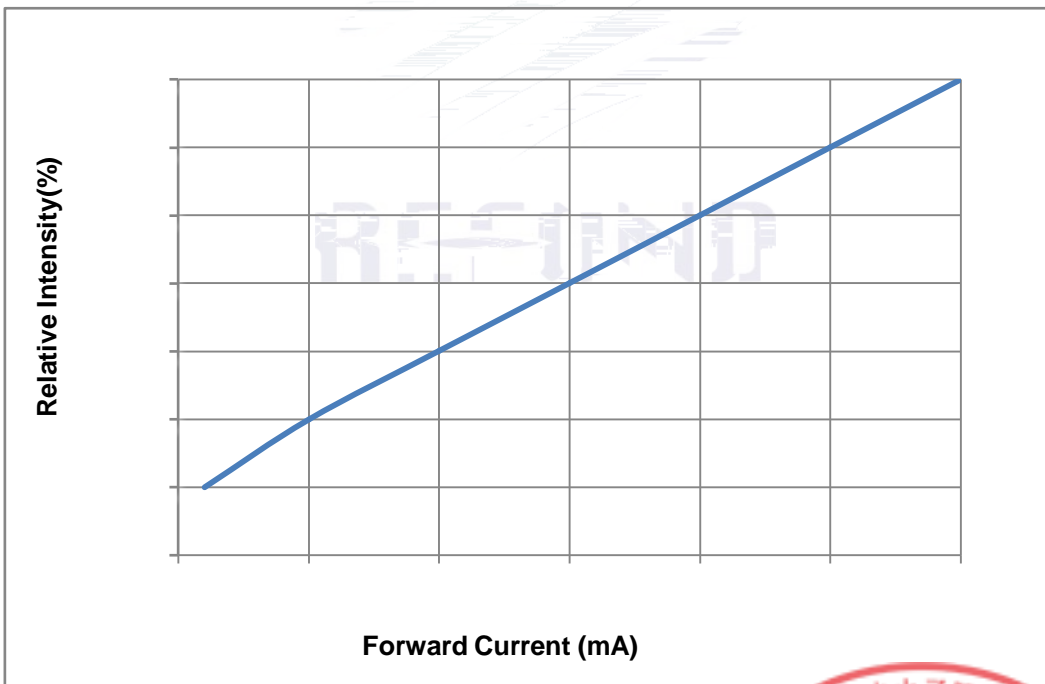


Fig. 1-8 Forward Current Vs Relative Intensity



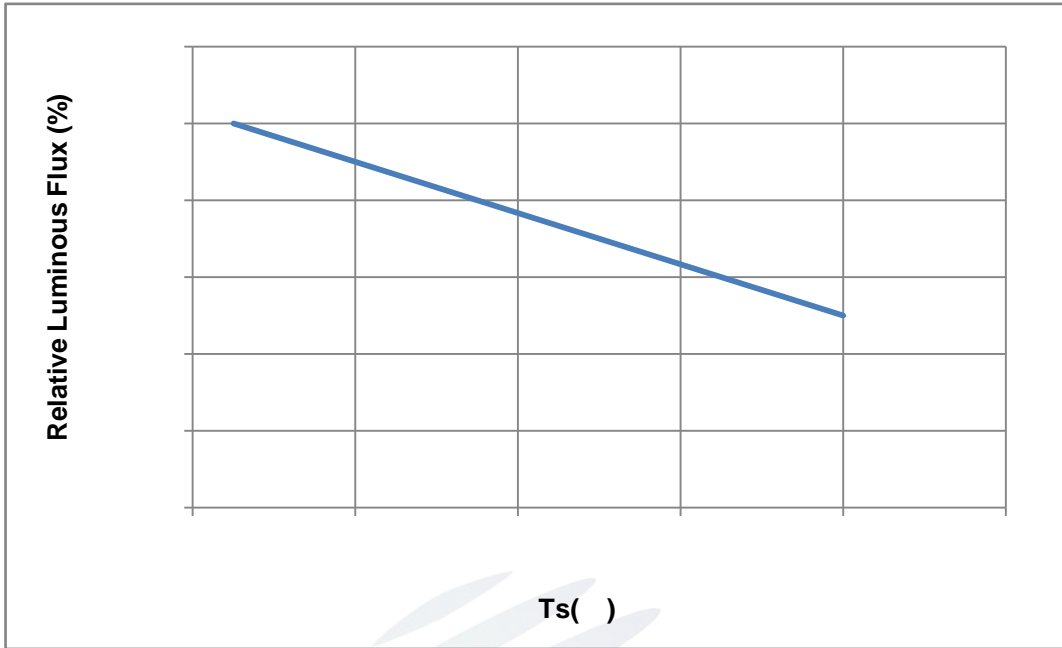


Fig. 1-9 Solder Temperature Vs Relative Intensity

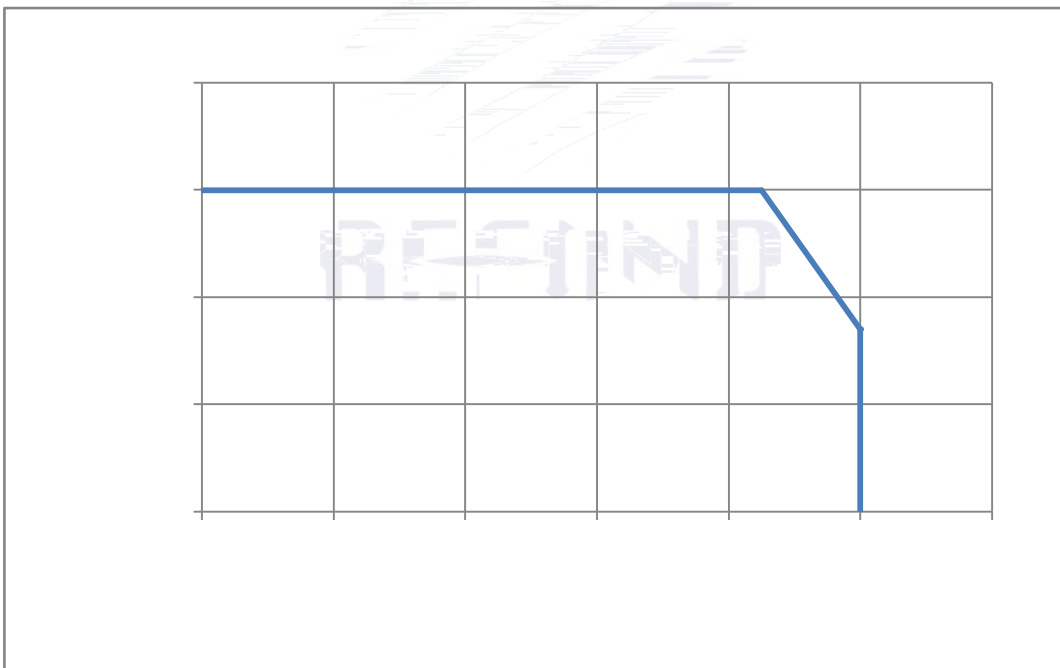


Fig. 1-10 Solder Temperature Vs Forward Current



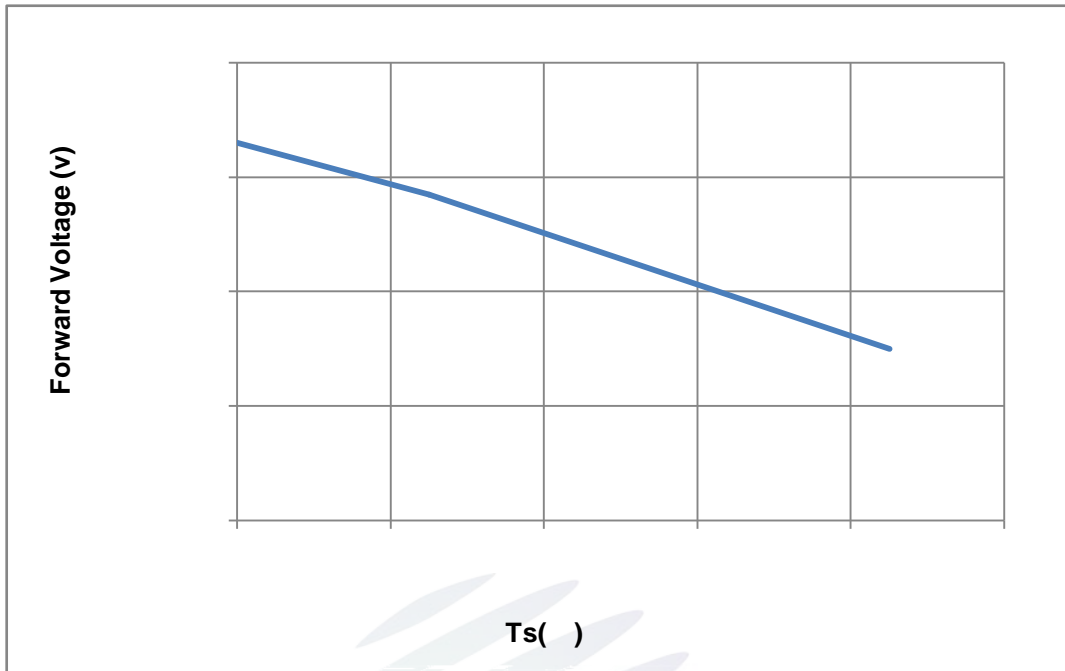


Fig. 1-11 Forward Voltage Vs Solder Temperature

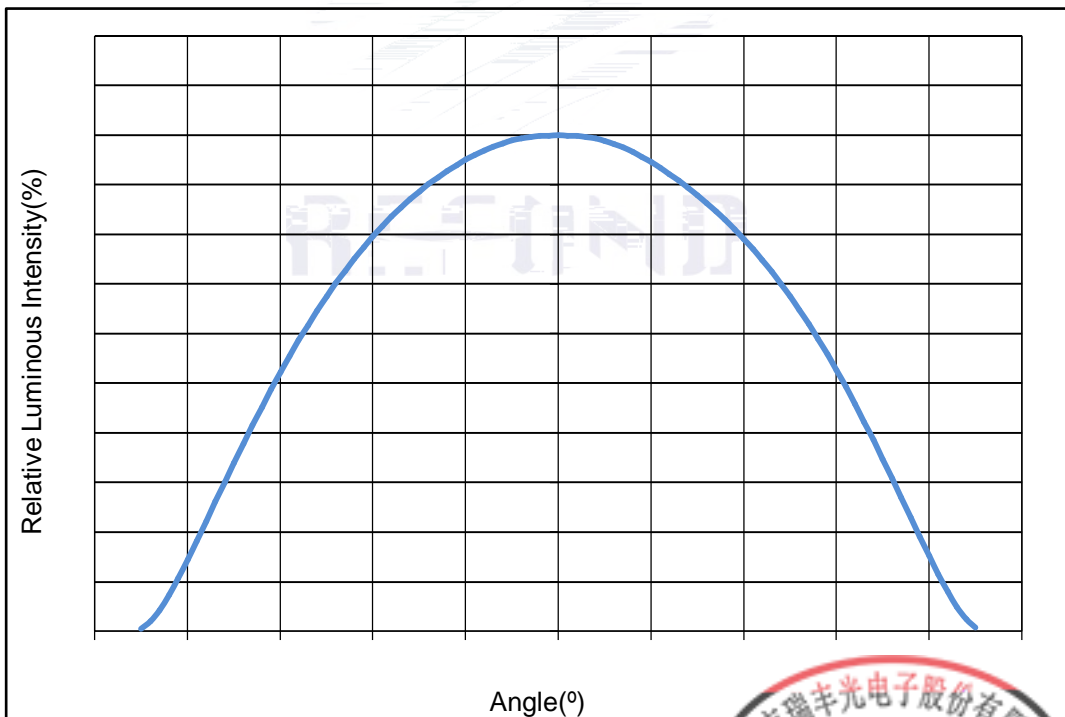
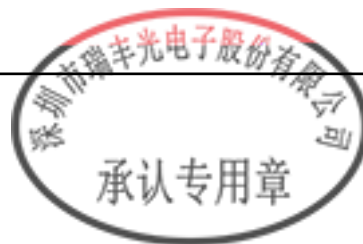


Fig. 1-12 Radiation diagram



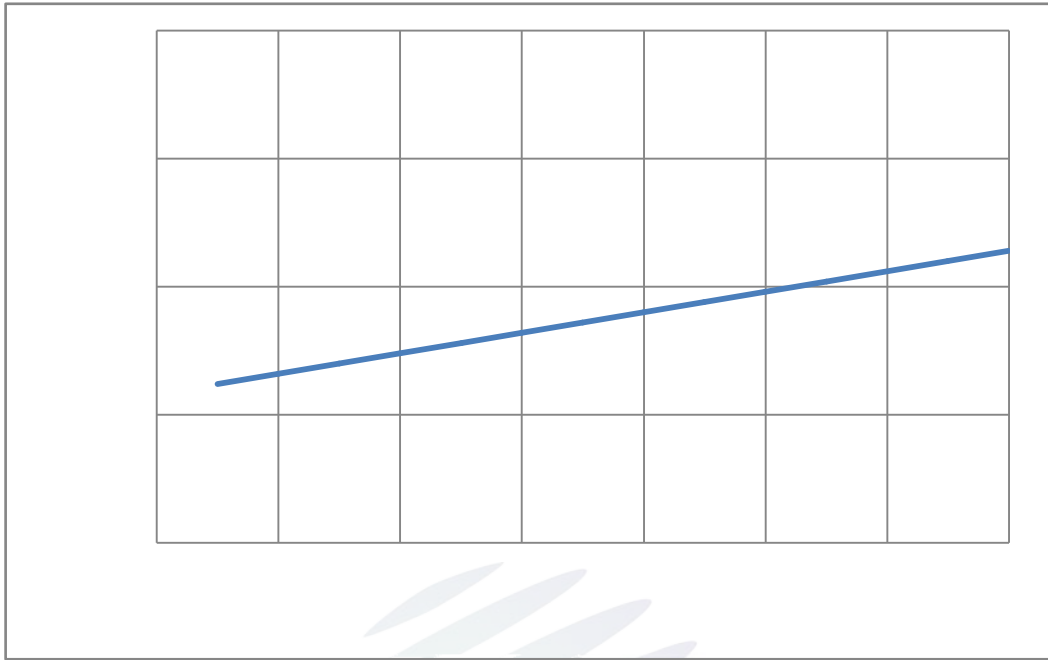


Fig. 1-13 Forward current vs.Dominate wavelength (Ts=25°C)

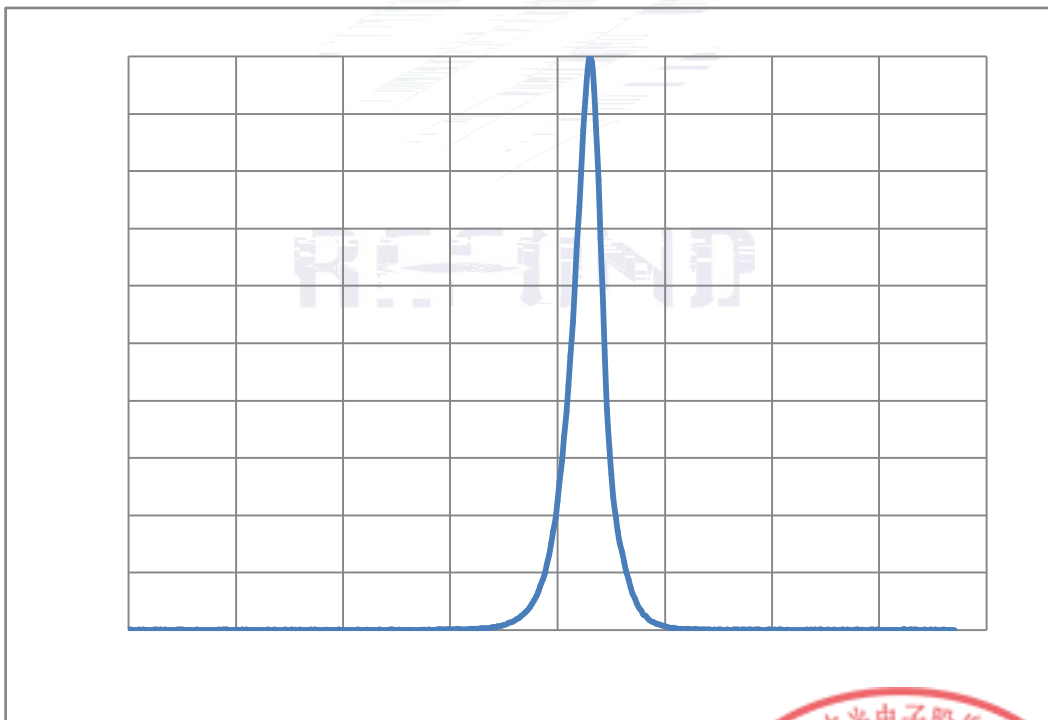


Fig. 1-14 Spectrum Distribution

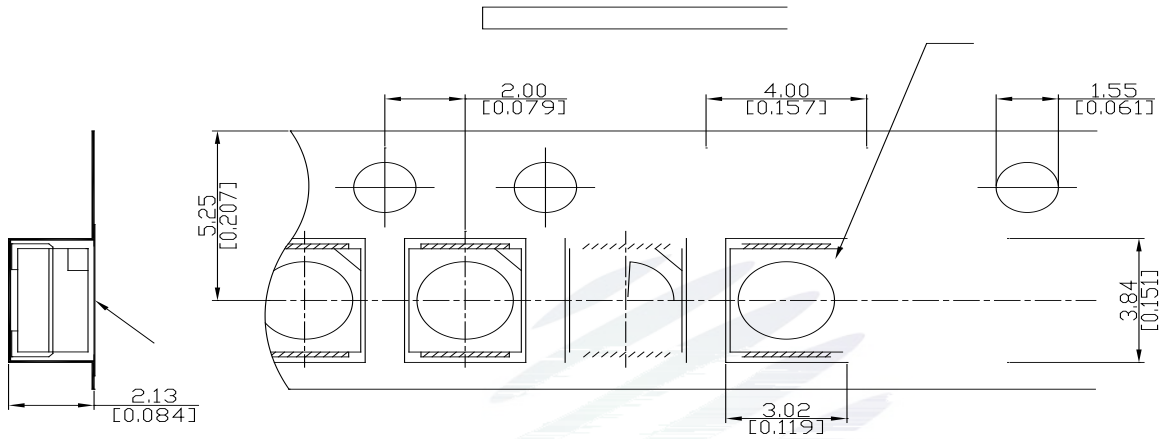


2. Packaging

2.1 Packaging Specification

Package:2000pcs/reel.

2.1.1 Carrier Tape Dimension mm mm



REFOND

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=20mA	1000hrs.	20pcs.	0/1
High Temperature High Humidity Life Test	JESD22-A101	85 / 85%RH If=20mA	1000hrs.	20pcs.	0/1





Notes

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

LED

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

3.1.1 Soldering Iron

3.1.2 Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable,a

cteristics of

I



4. Handling Precautions

4.1 Handling Precautions

(1) LED operating environment and sulfur element composition cannot be over 100PPM in the LED

endorsement.LED

LED

order to prevent ex 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 Br element and Chlorine element in the external of the application products is required to be less

LED

LED

(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 photo 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

Refond

be used. Attaching LEDs, do not use adhesives that outgas organic vapor.

LED

LED

LED

LED



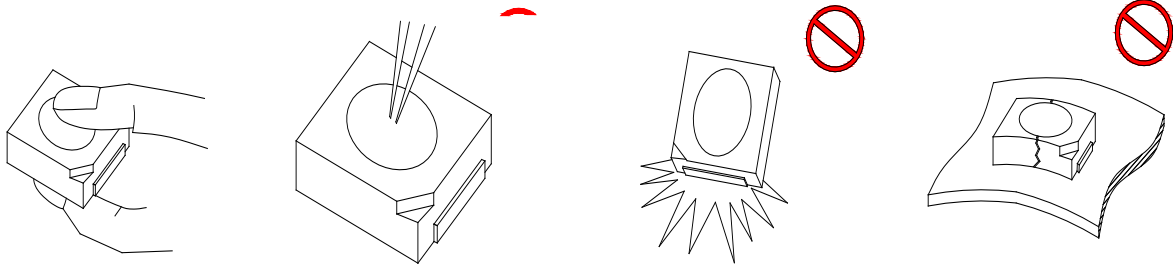


Fig 4-1 Handling Precautions

current through each LED exceed the absolute maximum rating specified for each LED. In the mean

voltage only when it is ON or OFF. If the reverse voltage is applied to LED, migration can be generated resulting in LED damage.

Thermal D

LEDs when making the system design. LED

LED

requir

Refond

cleaning is not recommended. Ultrasonic cleaning may cause damage to the LED.

LED

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

has faded away or the LEDs have exceeded the

±

±

REFOND

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

(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.