

SPECIFICATION

REFOND P/N

RF-YMRA30TS-AF-Z

Mass Production

REFOND



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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.

AlGaInp

3.50mmX2.80mmX1.84mm

1.2Features

PLCC2 Package. PLCC2

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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		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
Power Dissipation			



Notes

1. 1/10 Duty cycle, 10ms pulse width. 10ms, 1/10.
2. The above forward voltage measurement allowance tolerance is $\pm 0.1V$.
3. The above color coordinates measurement allowance tolerance is 0.005. 0.005.
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
8. ESD yield is over 90% at 8000V ESD (HBM). ESD protection during products handling is needed.

8

1.6 Bin 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

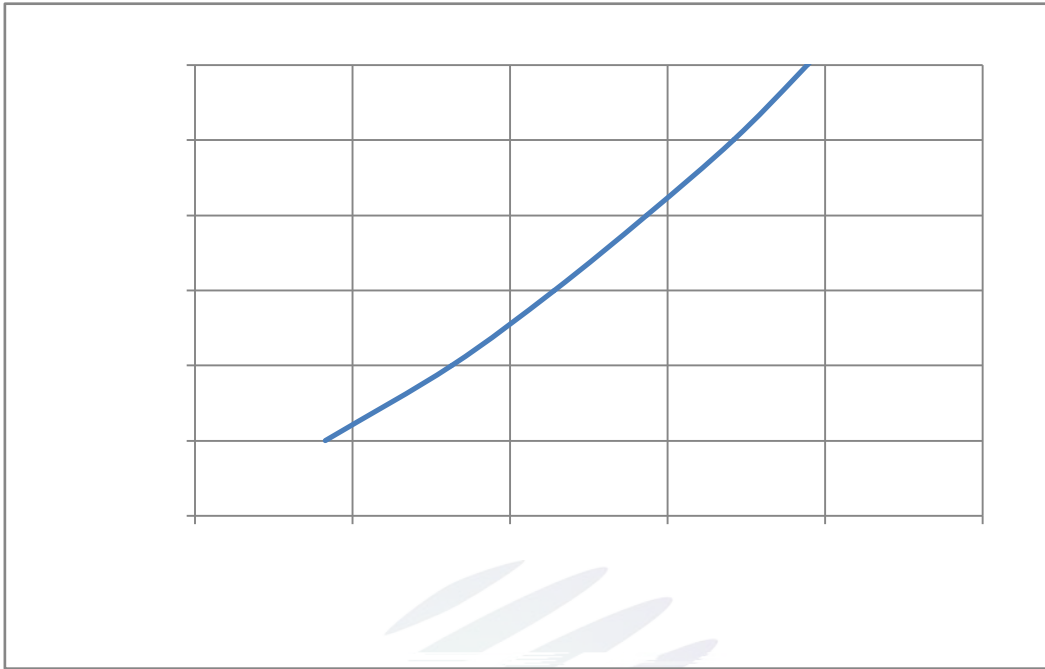


Fig. 1-7 Forward Voltage Vs Forward Current

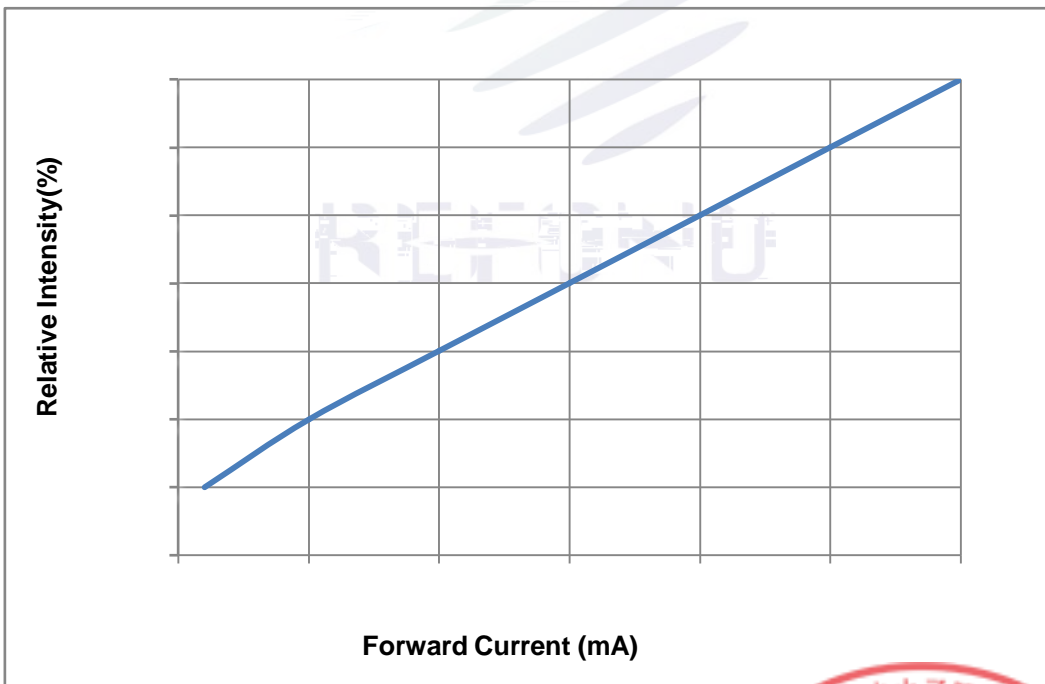


Fig. 1-8 Forward Current Vs Relative Intensity



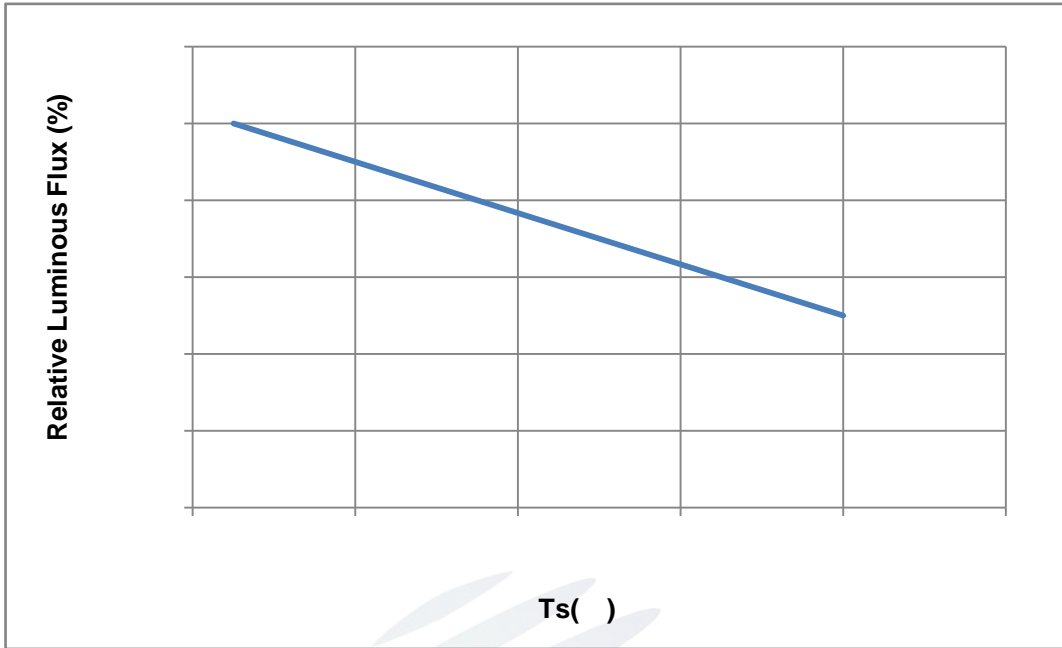


Fig. 1-9 Solder Temperature Vs Relative Intensity

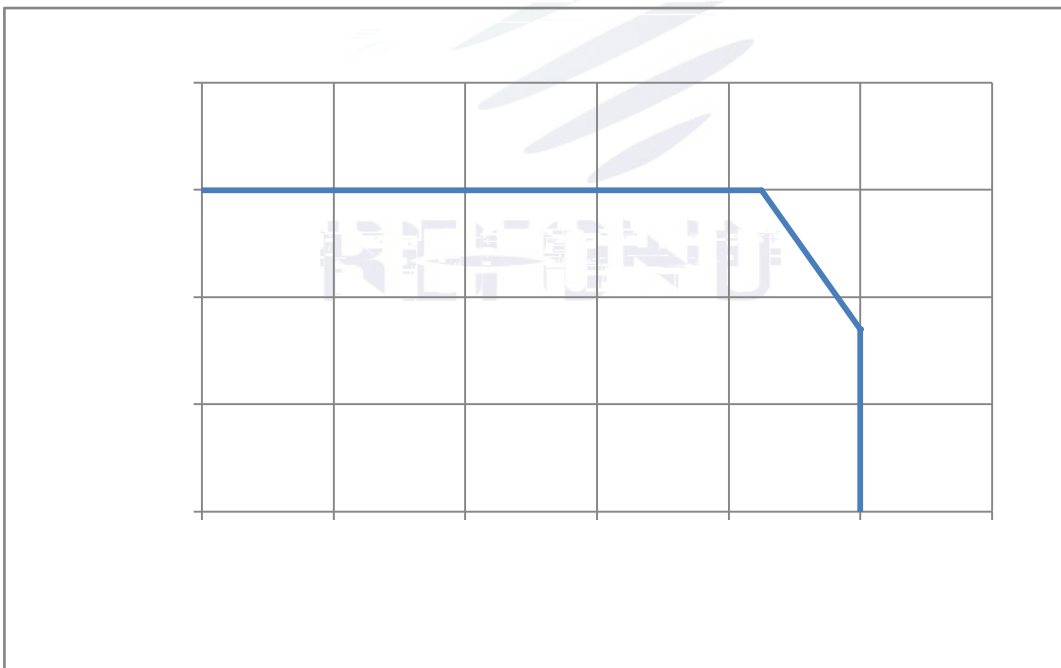


Fig. 1-10 Solder Temperature Vs Forward Current



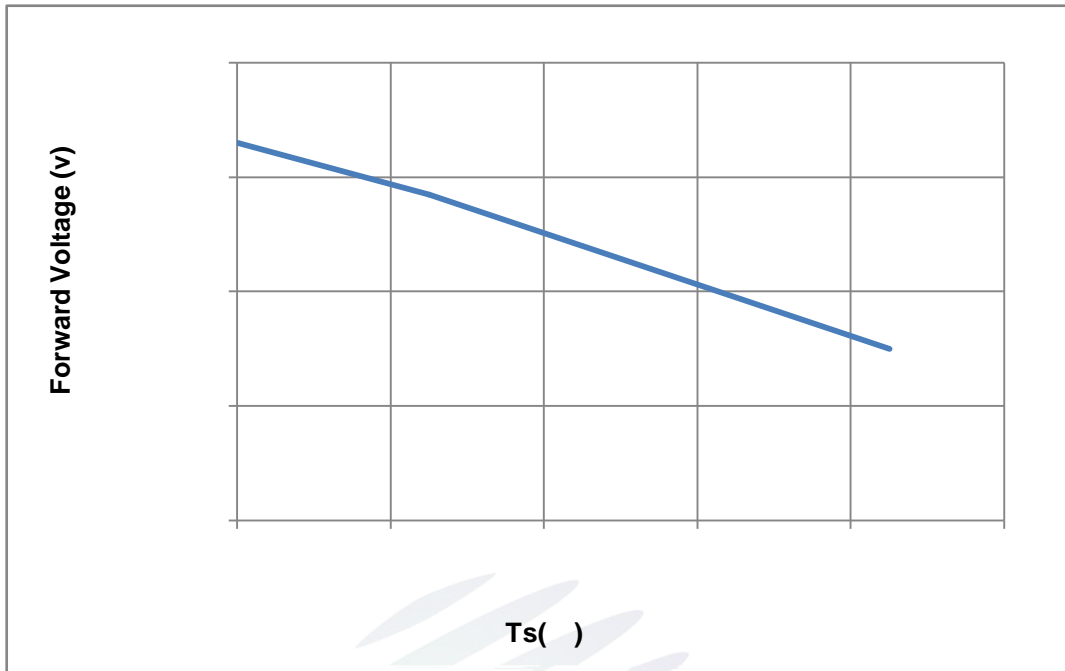


Fig. 1-11 Forward Voltage Vs Solder Temperature

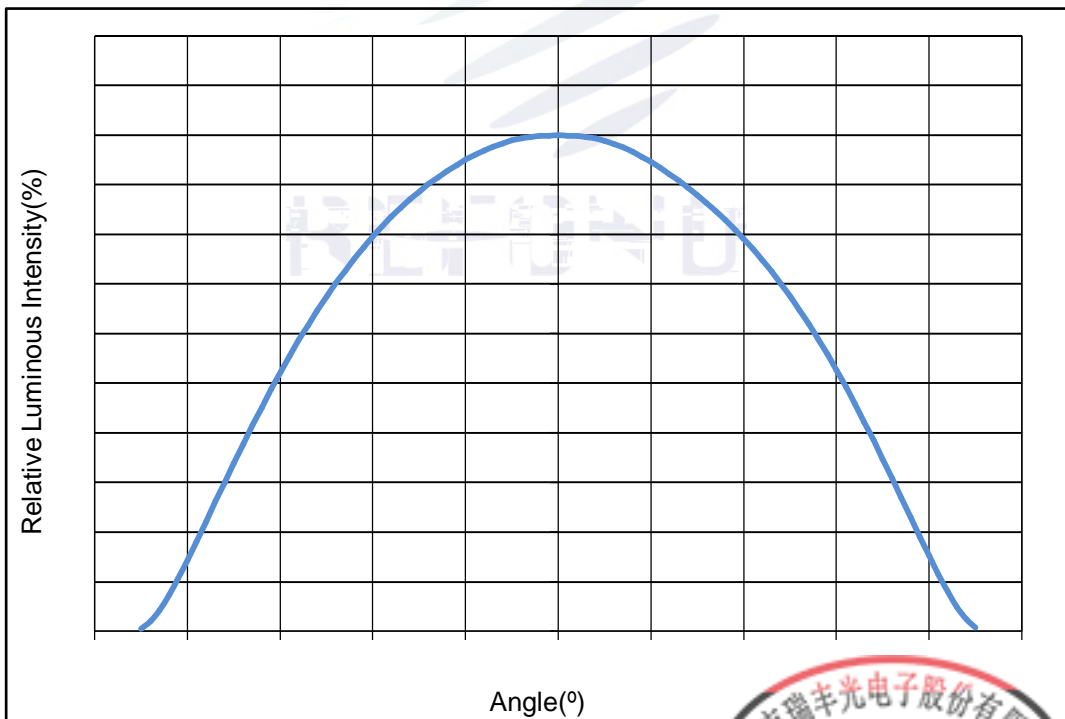
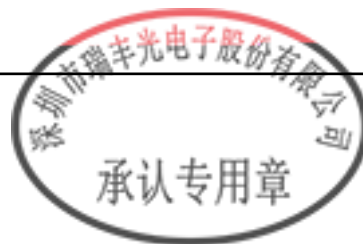


Fig. 1-12 Radiation diagram



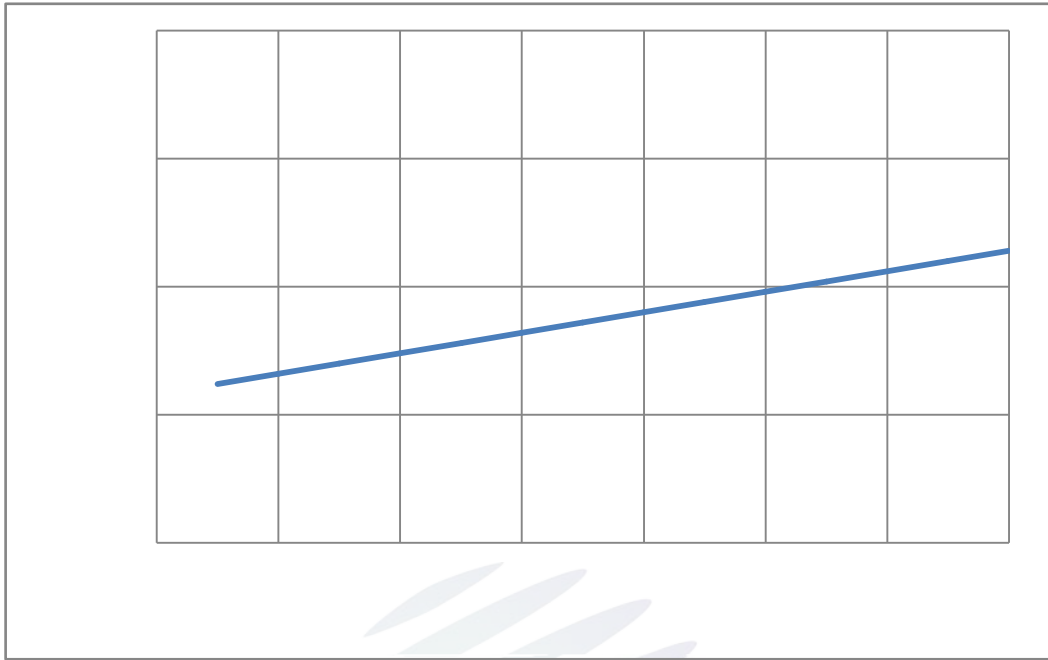


Fig. 1-13 Forward current vs.Dominate wavelength (Ts=25°C)

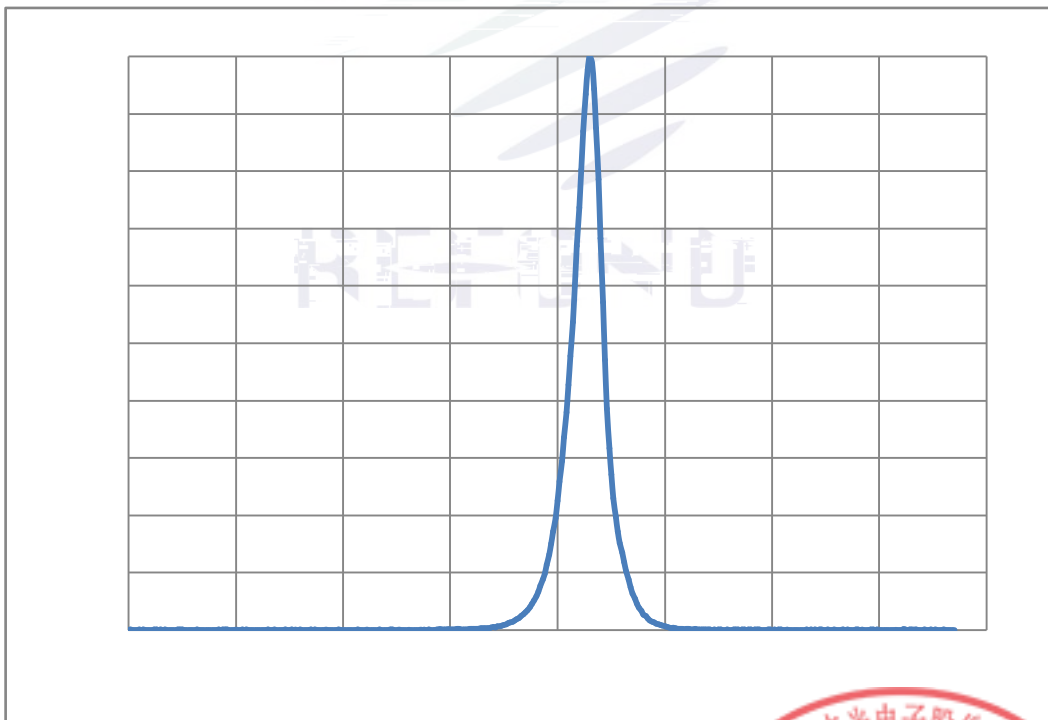


Fig. 1-14 Spectrum Distribution

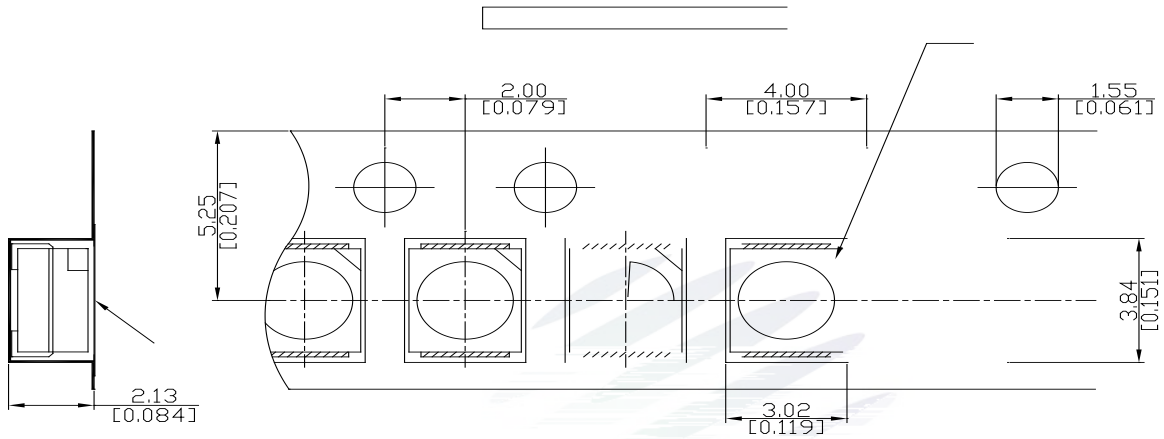


2. Packaging

2.1 Packaging Specification

Package:2000pcs/reel.

2.1.1 Carrier Tape Dimension mm mm



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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



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	$I_F=20mA$	-	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. /
- 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.





Notes

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

(2)Whensoldering , 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 less than 3 seconds.

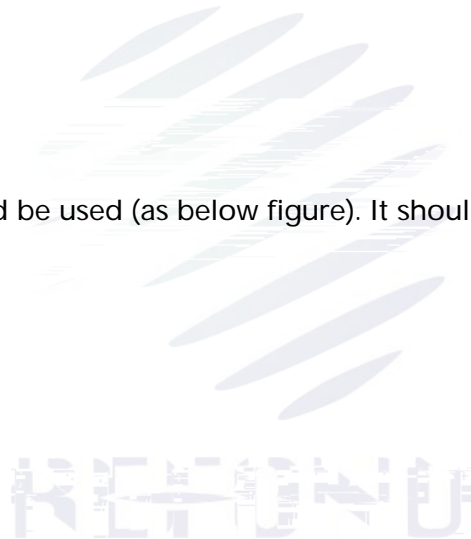
300 3

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

3.1.2 Repairing

ing

double-head soldering iron should be used (as below figure). It should be confirmed in advance whether the chara,



4. Handling Precautions

4.1 Handling Precautions

... mating usage material. This is provided for informational purposes only and is not a warranty or endorsement.
... 100PPM.

(2) In operation - internal

... omine

... materials

... than 1500PPM. This is provided for informational purposes only and is not a warranty or endorsement.

900PPM

900PPM

1500PPM.

... nic energy. The

... advises against the use of any chemicals or materials that have been found or are suspected to have an adverse affect on device performance or reliability. To verify compatibility, we recommends that all chemicals and materials be tested in the specific application and environment for which they are intended to

(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.



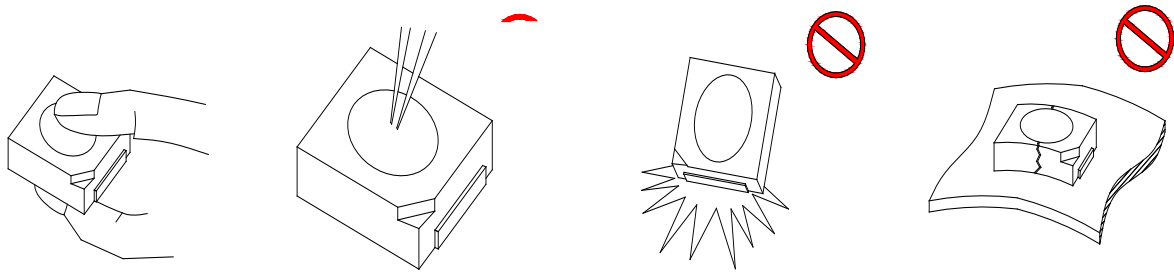


Fig 4-1 Handling Precautions

(5) In designing a circuit, the can not while, resistors for protection should be applied, otherwise slight voltage shift will cause big current change, burn out may happen. The driving circuit must be designed to allow forward

(6) design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decreased, Color change and so on. Please consider the heat generation of the

(7) Compared to standard encapsulants, silicone is generally softer, and the surface is more likely to attract dust, ing 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. 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



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

(8) If the moisture absorbent material silica gel storage time, baking treatment should be performed after unpacking and based on the following condition 60 5 for above 24 hours.

60 5 24

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





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Declare

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