

SPECIFICATION

REFOND P/N

RF-FT4F***68-T3-B/-P

Mass Product



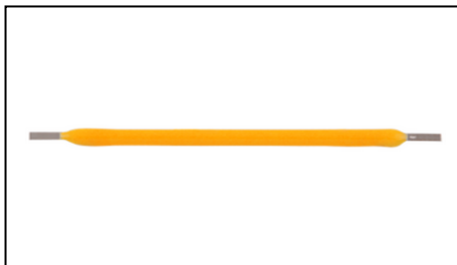
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1. Description

1.1

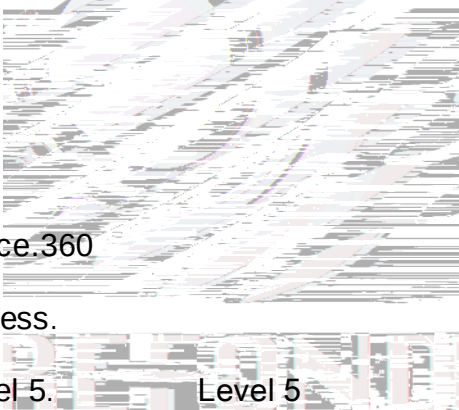


The White LED, which was fabricated by using a blue chip and the phosphor.

Product Package:40.0mm×1.5mm×2.2mm.

LED

40.0mm×1.5mm×2.2mm



1.2 Features

- ▶ Integrated Package.
- ▶ 360 ° Full Angle Luminescence.360
- ▶ Suitable for spot welding process.
- ▶ Moisture sensitivity level: Level 5. Level 5
- ▶ RoHS compliant. RoHS

1.3 Application

- ▶ Indoor lighting.
- ▶ Decorative applications.
- ▶ General use.



1.4 Package Dimension

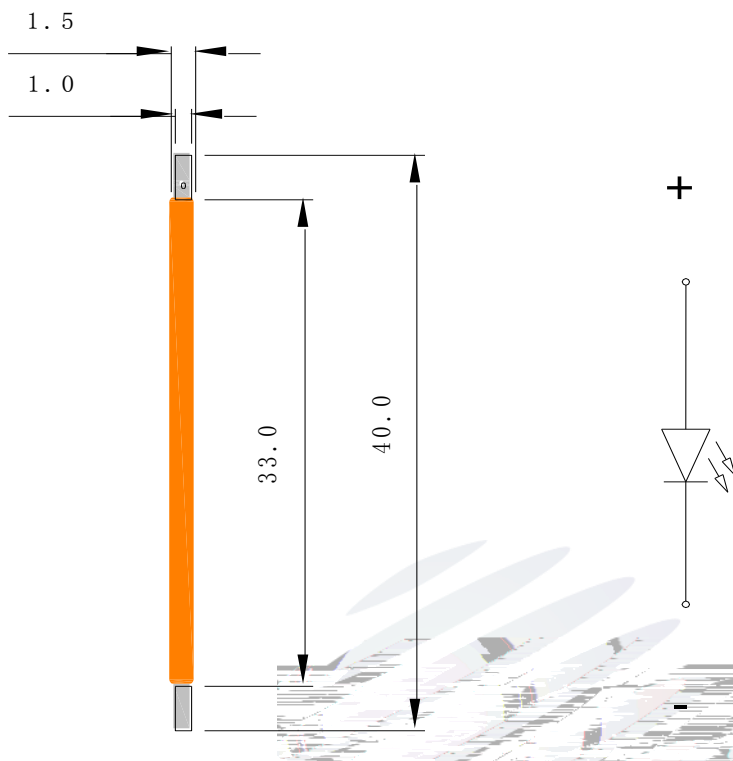


Fig.1-1 Top View



Fig.1-2 Side View

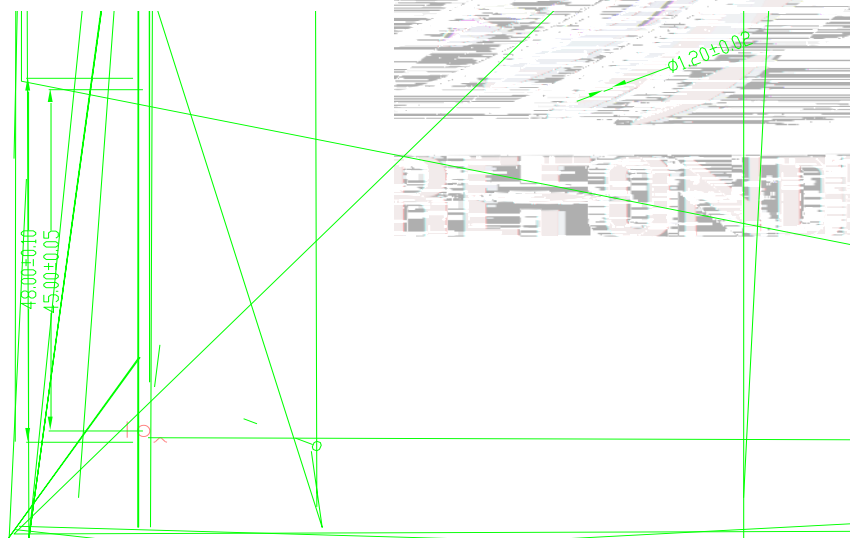


Fig.1-3 Whole Line View

Notes

1. All dimensions units are millimeters.
2. All dimensions tolerances are $\pm 0.5\text{mm}$ unless otherwise noted.



0.5



Notes



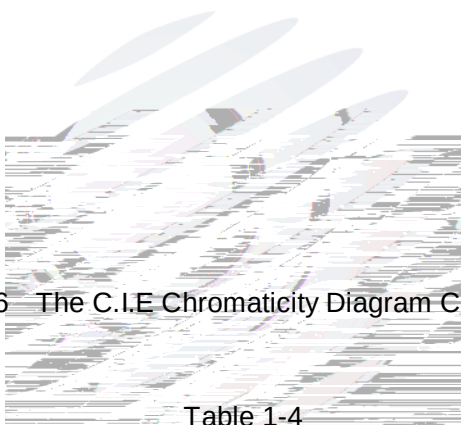


Fig. 1-6 The C.I.E Chromaticity Diagram CIE

Table 1-4

BIN CODE	CIE-X1	CIE-Y1	CIE-X2	CIE-Y2	CIE-X3	CIE-Y3	CIE-X4	CIE-Y4
27R	0.4556	0.4289	0.4715	0.4327	0.4578	0.4088	0.4435	0.4055
65E	0.3094	0.3272	0.3069	0.3387	0.3176	0.3487	0.3186	0.3354

1.7 Typical Optical Characteristics Curves

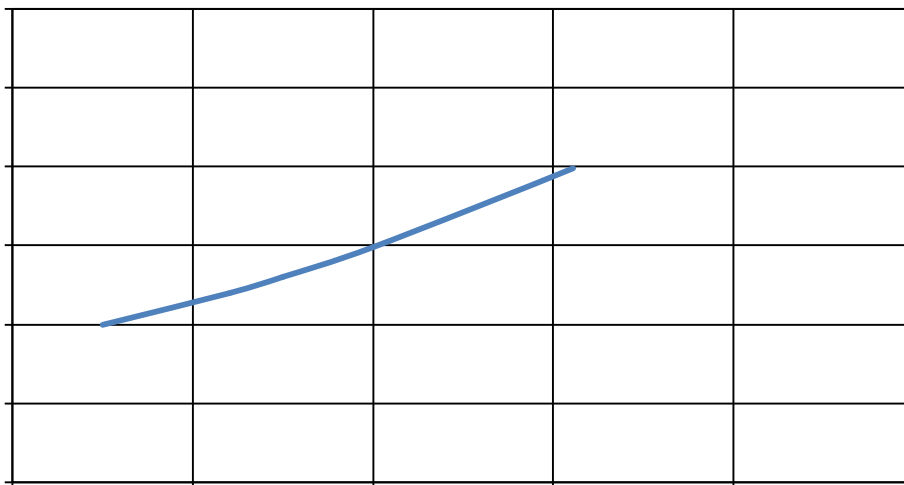
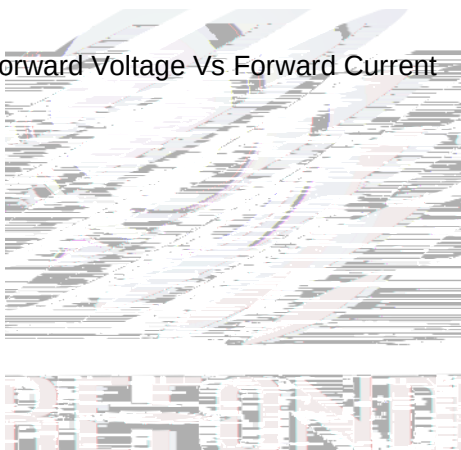


Fig. 1-7 Forward Voltage Vs Forward Current



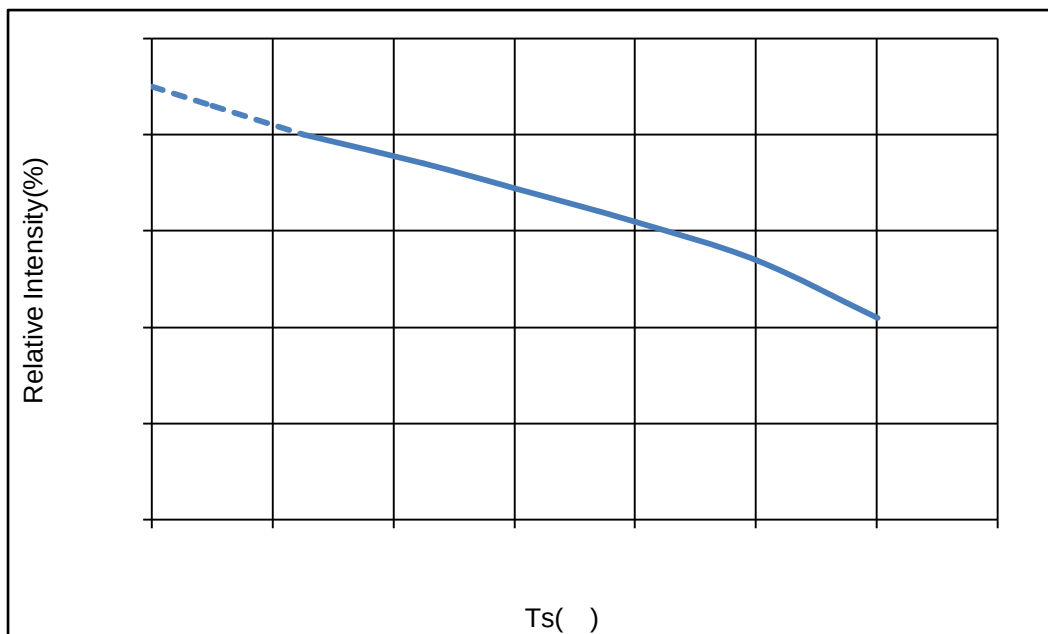


Fig. 1-9 Solder Temperature Vs Relative Intensity

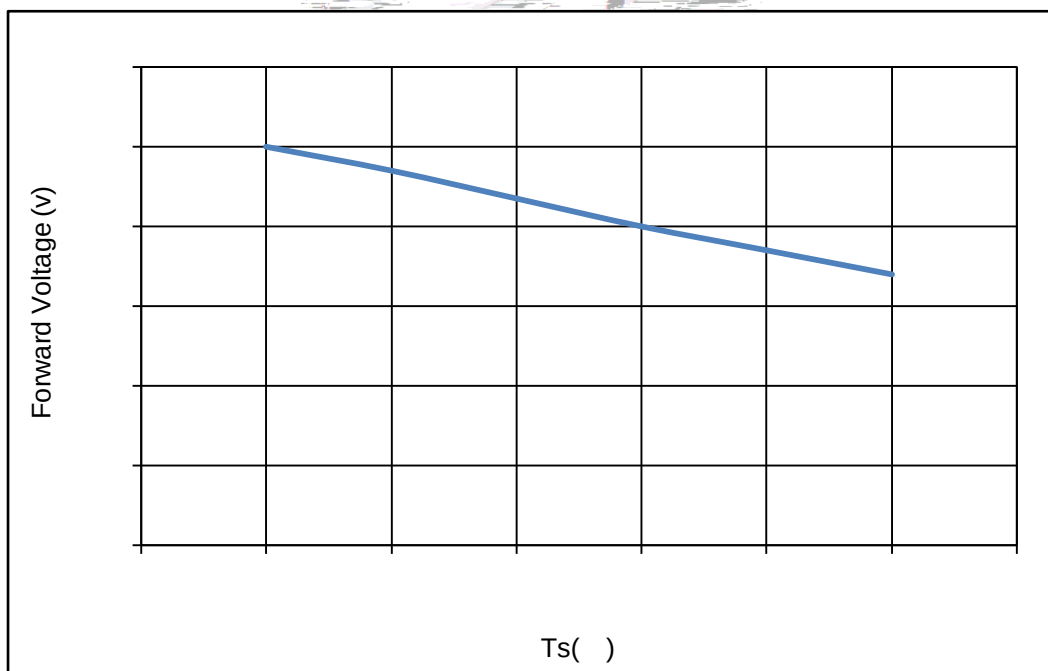


Fig. 1-10 Forward Voltage Vs Solder Temperature



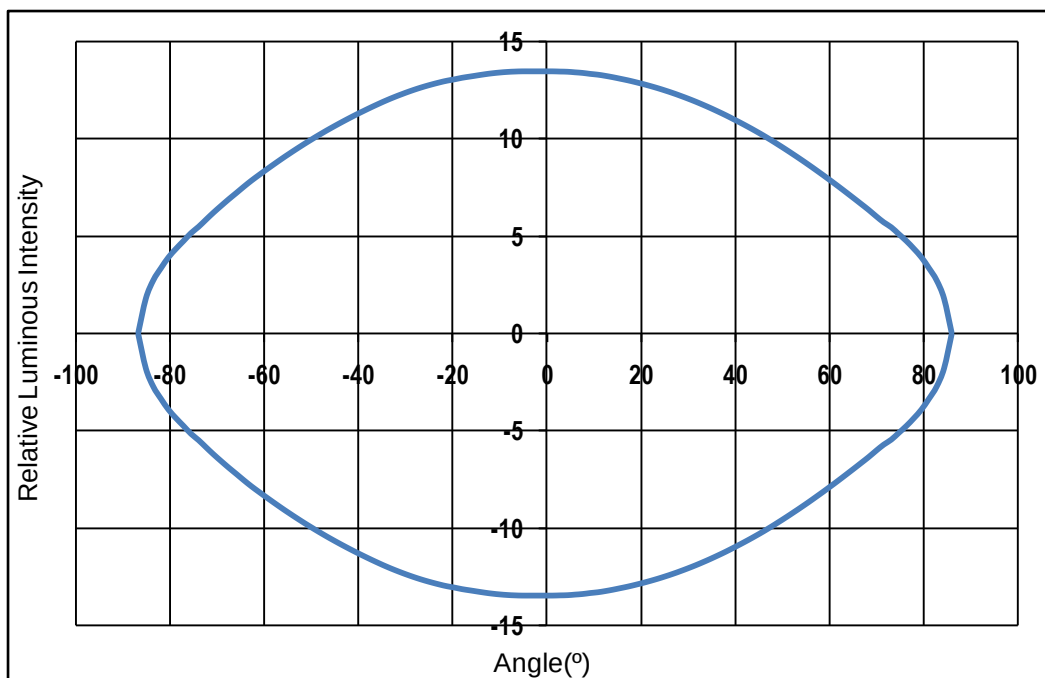


Fig. 1-11 Radiation diagram

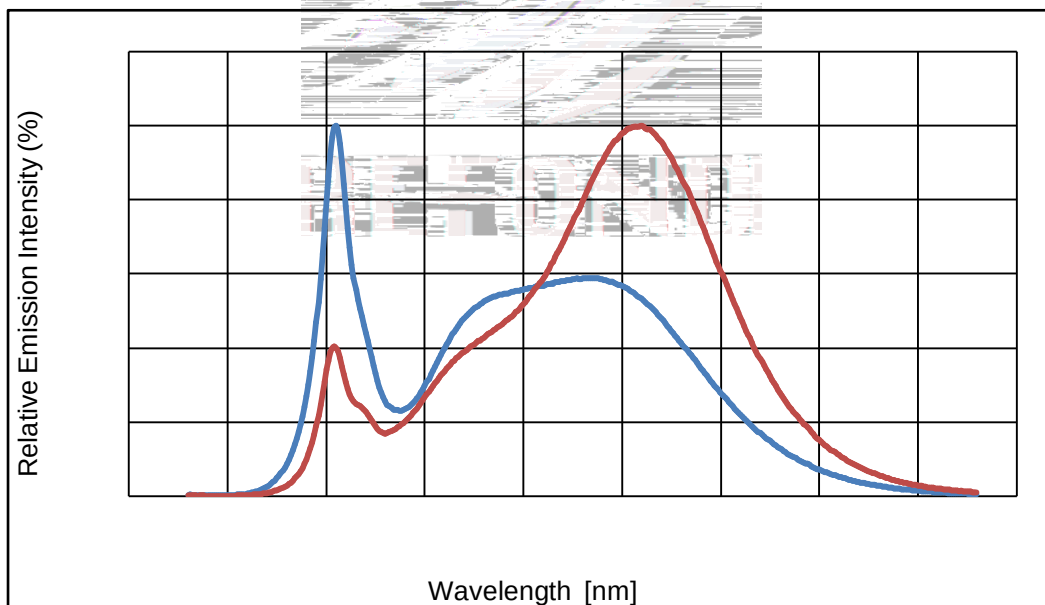


Fig. 1-12 Spectrum Distribution





2.1.2 Label Form Specification

P/N		
Bom	S/N:	
L/N:		
Bin Code:	X/Y	
Ø:	Ra:	
Vf	QTY:	
	DATE:	
Web: www.refond.com		

Fig. 2-2 Label

Table 2-1 Title

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

2.2 Moisture Resistant Packing

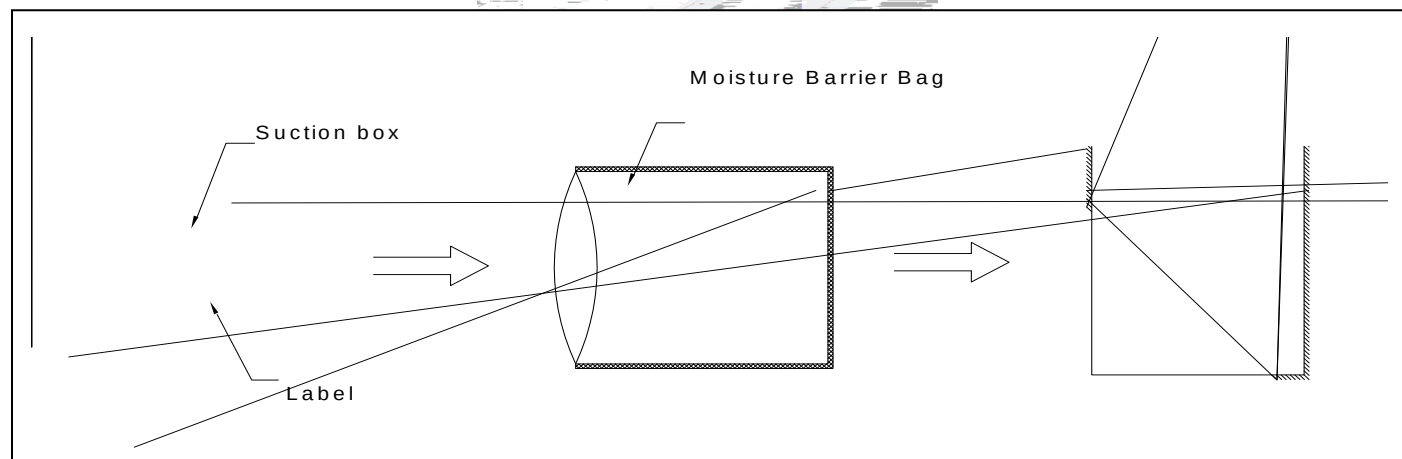


Fig.2-3 Moisture Resistant Packing



2.3 Cardboard Box

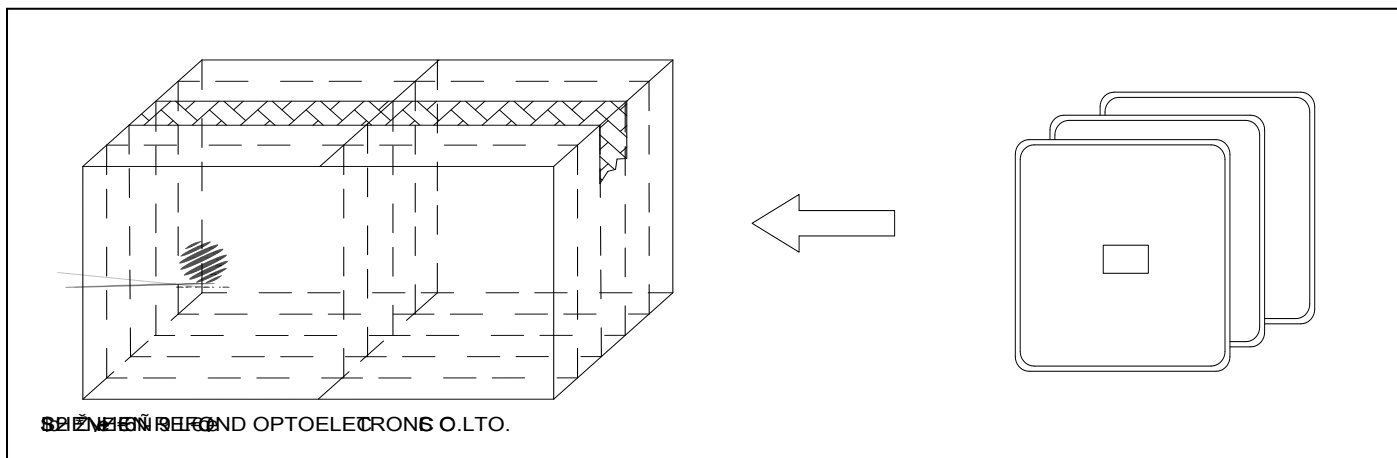


Fig.2-4 Cardboard Box

2.4 Reliability Test Items And Conditions

Table 2-2 Reliability Test Items And Conditions

Test Items	Ref.Standard	Test Condition	Time	Quantity	Ac/Re /
Thermal Shock	JEITAED-4701 300307	-40 15min ↑↓10s 100 15min	100 cycle	20pcs	0/1
Switching Test	/	25 , On 2.5min ↑↓ Off 2.5min	2500cycle	20pcs	0/1
Life Test	JESD22-A108	Ta=25 If=13mA	1000hrs	10pcs	0/1
High Temperature High Humidity Life Test	JESD22-A101	60 / 90%RH If=13mA	500hrs	10pcs	0/1

2.5 Criteria For Judging Damage

Table 2-3 Criteria For Judging Damage

Test Items	Symbol	Test Condition	Criteria For Judgement	
			Min.	Max.
Forward Voltage	V_F	$I_F=13mA$	-	Forward Voltage
Luminous Flux	Φ	$I_F=13mA$	L.S.L*)x0.7	Luminous Flux

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.

/ LED

LED

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.



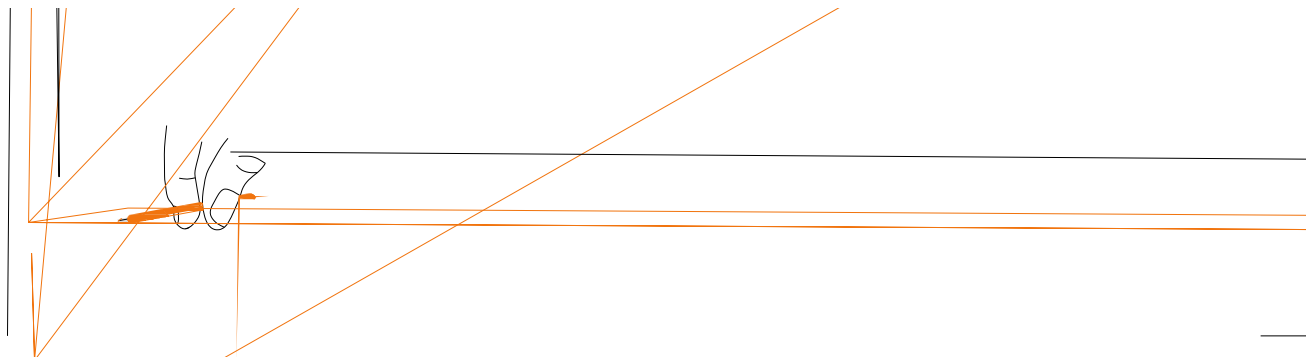
3. Handling Precautions

(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 LED 100PPM.

(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



(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.



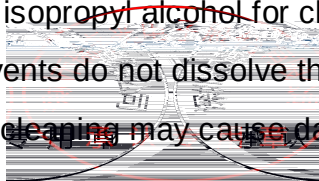
(5) In designing a circuit, the current through each LED can not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change, burn out may happen. The driving circuit must be designed to allow forward voltage only when it is ON or OFF. If the reverse voltage is applied to LED, migration can be generated resulting in LED damage. LED

LED

(6) Thermal 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 LEDs when making the system design. LED

LED

(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.



LED

Table 4-1Storage

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) °C 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).

LED

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



[illegible]



Declare

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

