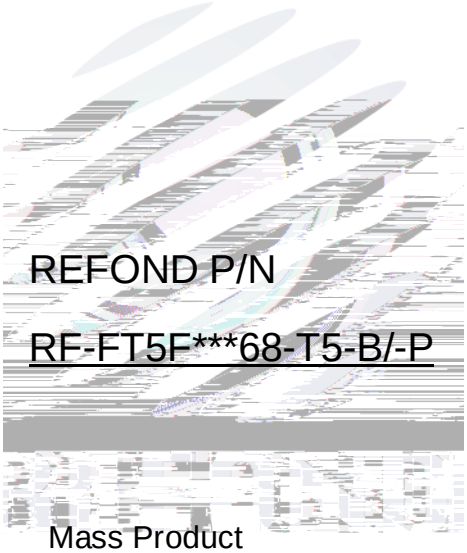
SPECIFICATION



REFOND P/N

RF-FT5F***68-T5-B/-P

Mass Product

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Contents

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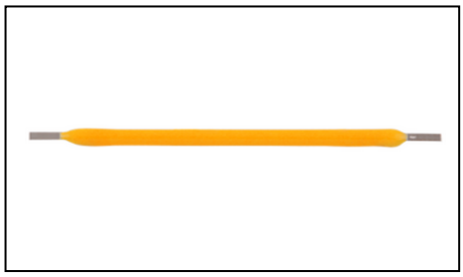
1. Description

1.1



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

Product Package:53.0mm×1.5mm×2.2mm.

LED 53.0mm×1.5mm×2.2mm

1.2 Features

► IntegratedPackage.

► 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.

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1.4 Package Dimension

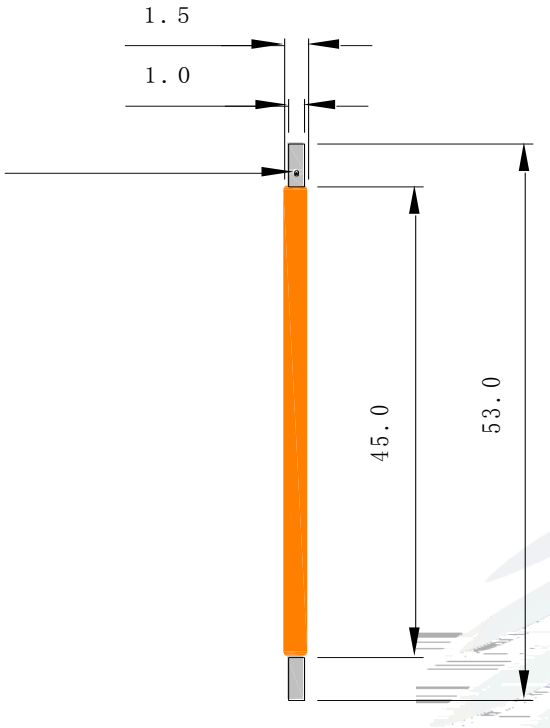

Fig.1-1 Top View

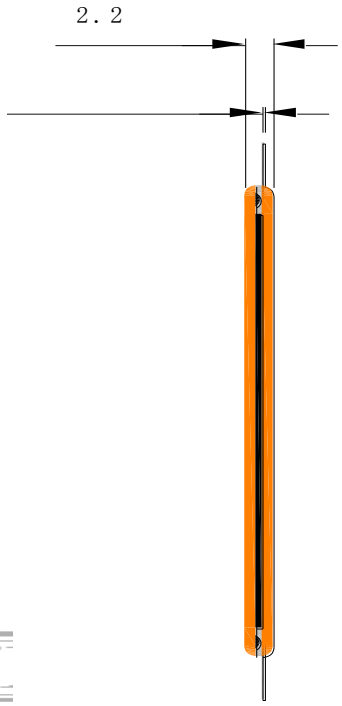

Fig.1-2 Side View

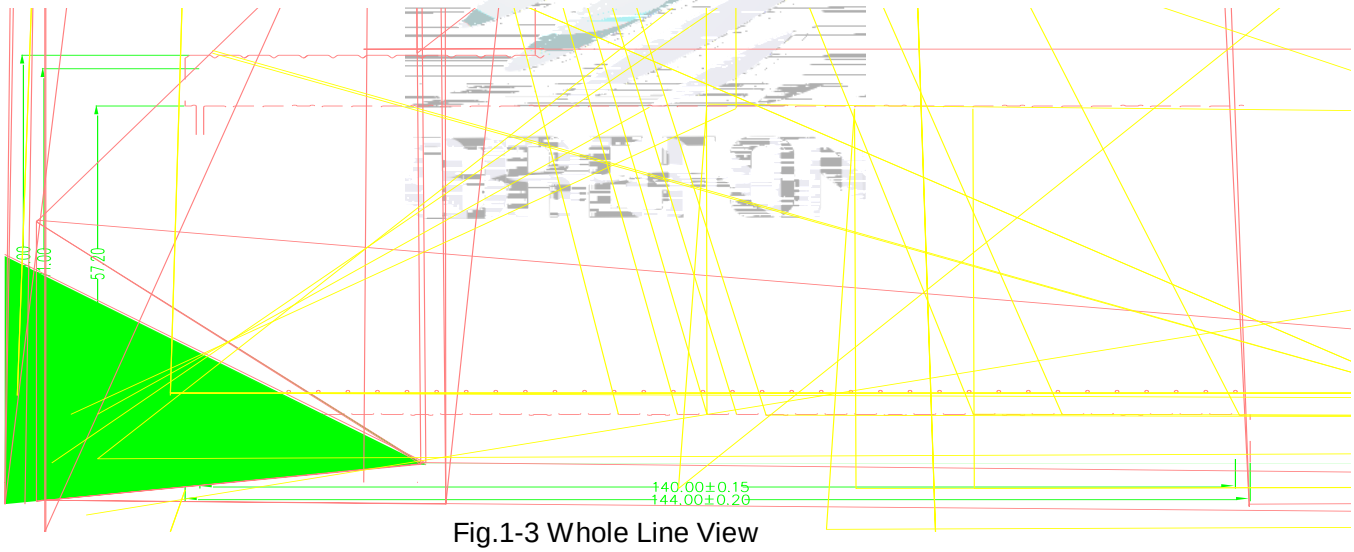

Fig.1-3 Whole Line View

Notes

1. All dimensions units are millimeters.
2. All dimensions tolerances are ±0.5mm unless otherwise noted.

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0.5

1.5 Product Parameters

Table 1-1 Electrical / Optical Charact

Item	Symbol	Test Condition	Value		
				Typ.	Max.
Forward Voltage	V_F	I_F=20mA		---	72
Leakage Current	V_F	IF=5uA	50		---
Luminous Flux	Φ	I_F=20mA	230		280
Viewing Angle	2θ1/2	I_F=20mA	---		360
Solder Temperature	Ts	I_F=20mA	---		105

Table 1-2 Absolute Maximum Ratings at Ts=

Parameter	Symbol		Units
Power DissiN56 39.re278 Tm			

Notes

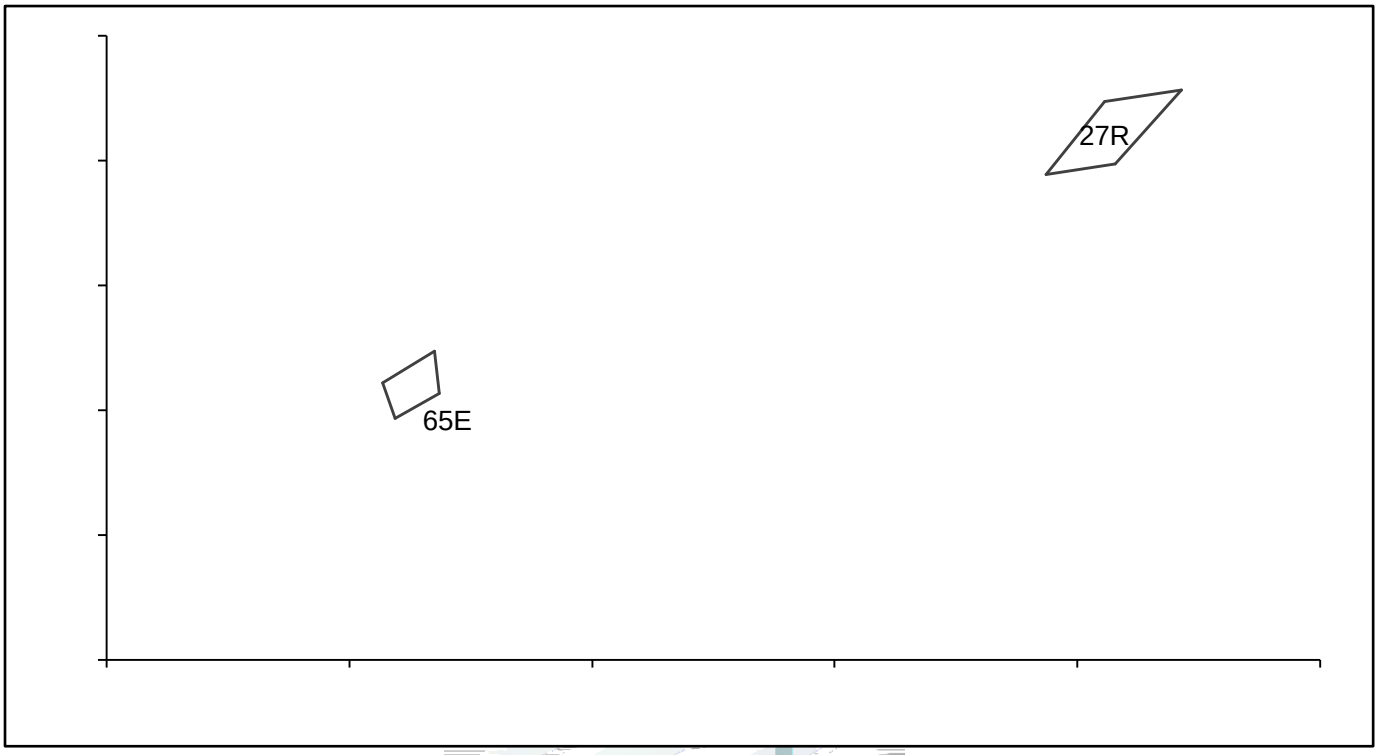

Fig. 1-6 The C.I.E Chromaticity Diagram CIE

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

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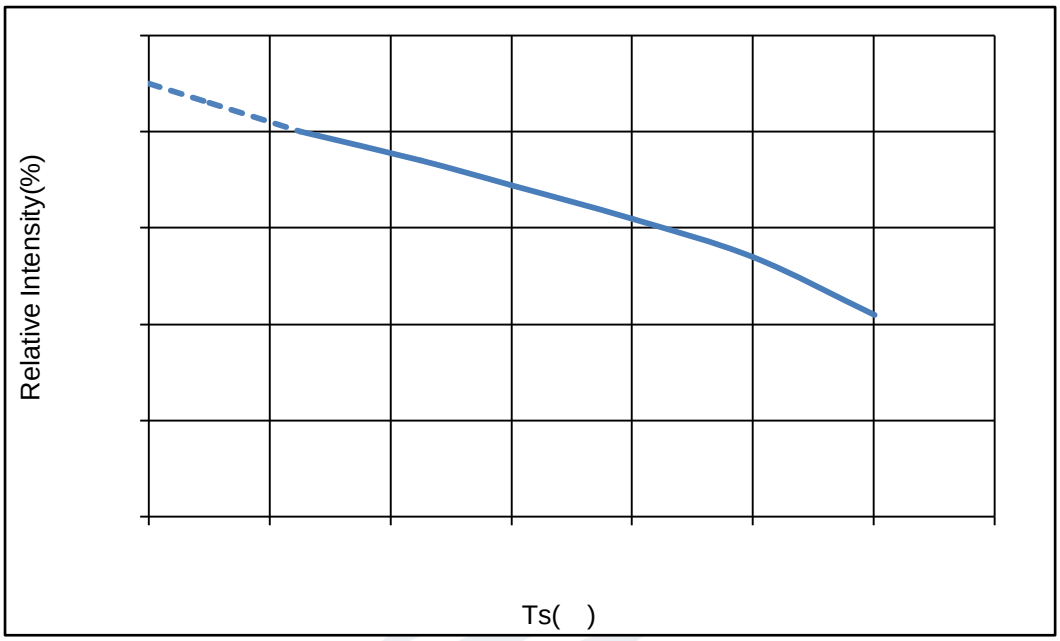

Fig. 1-9 Solder Temperature Vs Relative Intensity

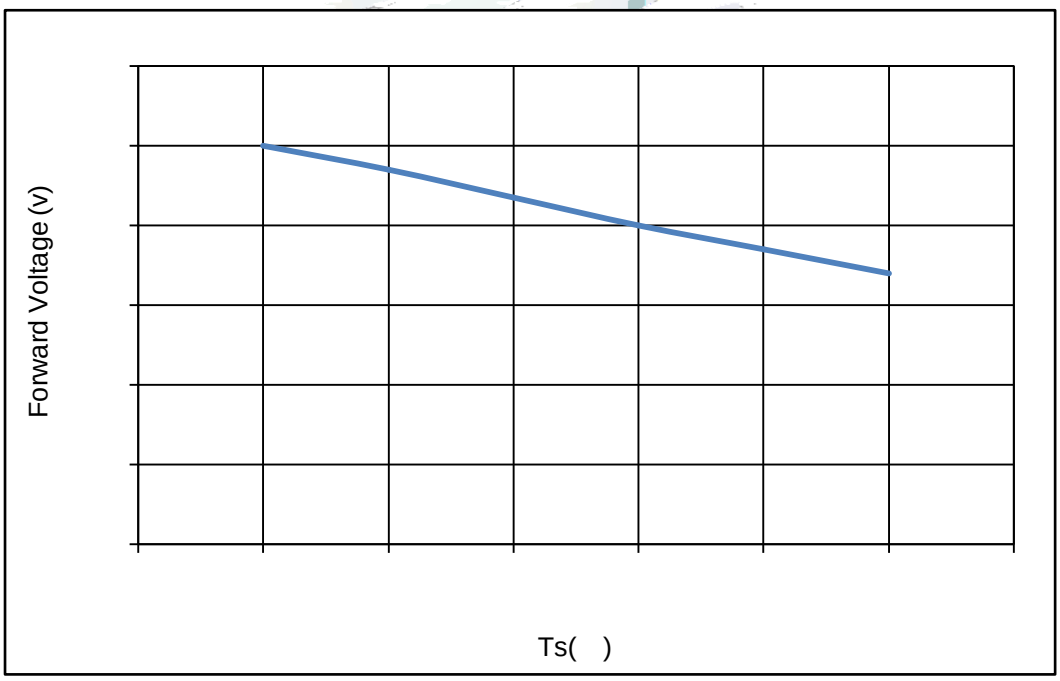

Fig. 1-10 Forward Voltage Vs Solder Temperature

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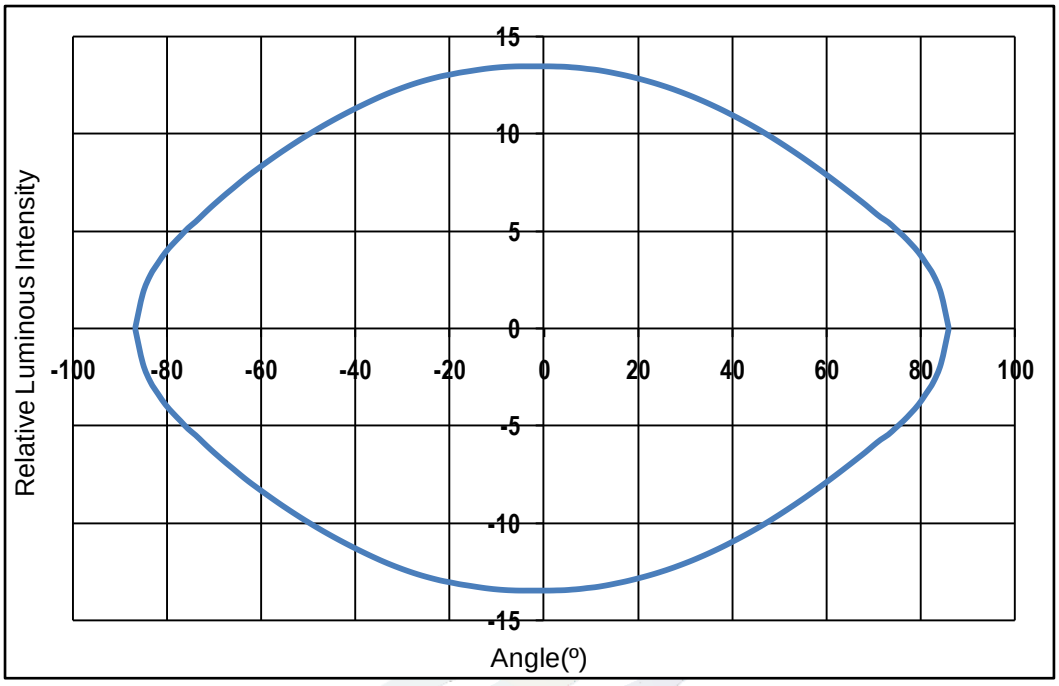

Fig. 1-11 Radiation diagram

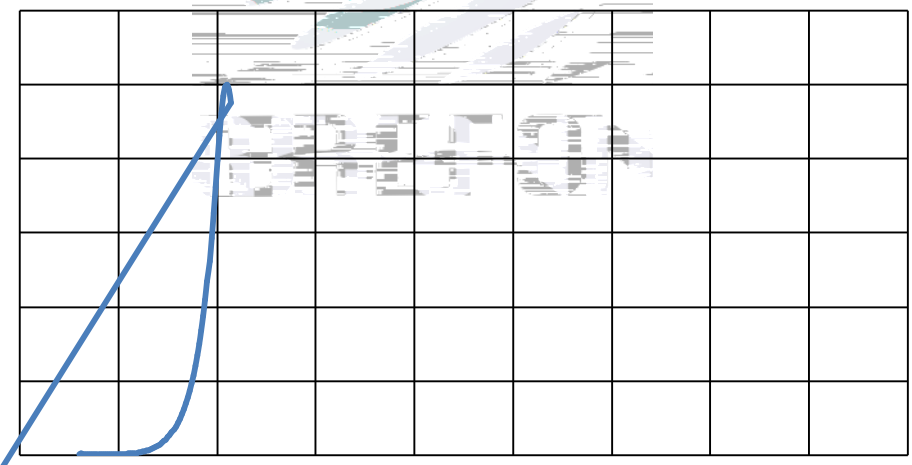

Fig. 1-12 Spectrum Distribution

2. Packaging

2.1 Packaging Specification

Single :720pcs/box 720pcs

Whole Row: 4320pcs/box 4320pcs

2.1.1 Suction box Dimension

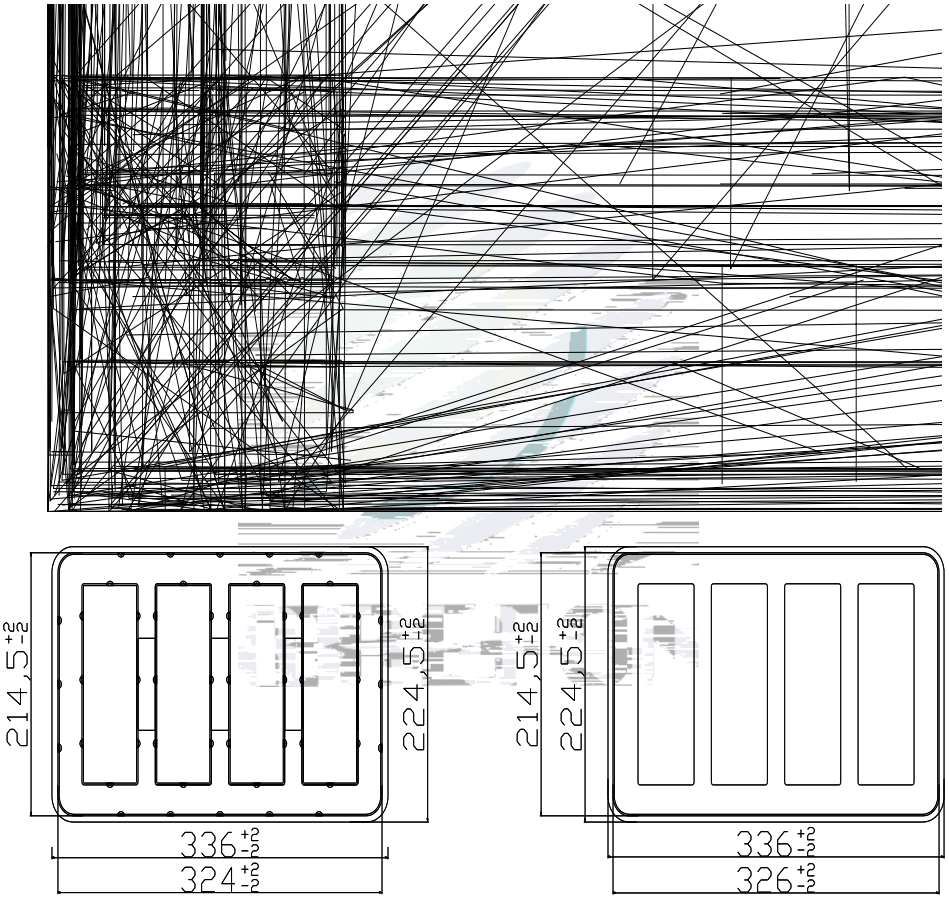

Fig.2-1 Suction box Dimension

Notes

The tolerances unless mentioned ±0.1mm. Unit : mm

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2.1.2 Label Form Specification

Table 2-1 Title

PART NO.	Part Number
SPEC NO.	Spec Number
LOT NO.	Lot Number
BIN CODE	Bin C3DB0>BDC q426.5 638.

Fig. 2-2 Label

2.2 Moisture Resistant Packing

Fig.2-3 Moisture Resistant Packing

2.3 Cardboard Box

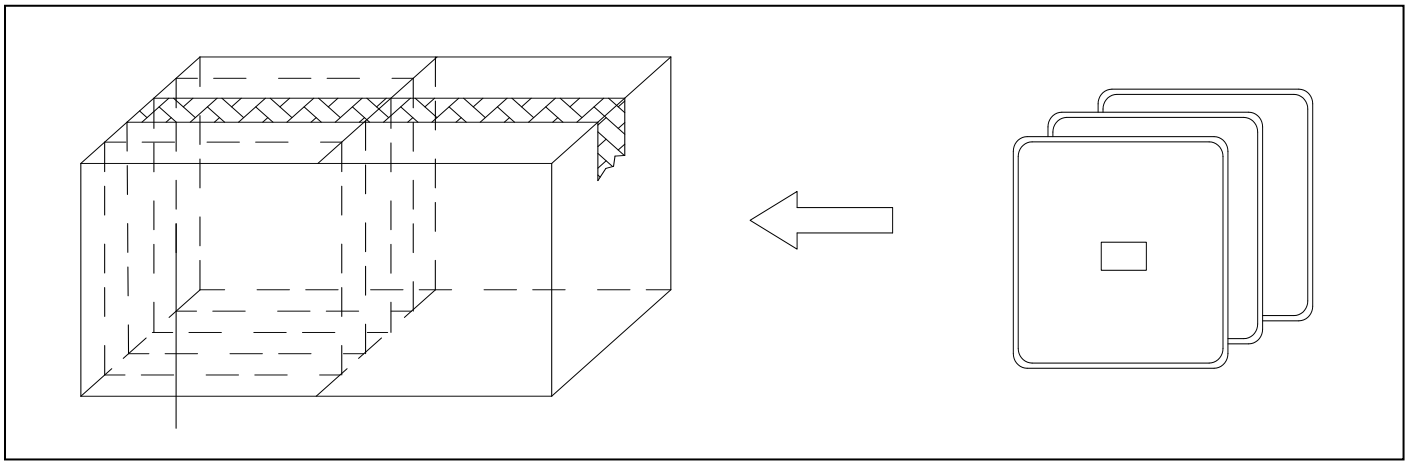

Fig.2-4 Cardboard Box

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 I_F=20mA	1000hrs	10pcs	0/1
High Temperature High Humidity Life Test	JESD22-A101	60 / 90%R_H I_F=20mA	500hrs	10pcs	0/1

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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=20mA	-	Forward Voltage
Luminous Flux	Φ	I_F=20mA	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. —

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3. Handling Precautions

(1) LED operating environment and sulfur element composition cannot be over 100PPM in the LEDmating usage material. This is provided for informational purposes only and is not a warranty or endorsement.LED LED — 100PPM.
—

(2) In order to prevent ex-ternal 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 elementis 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. LED LED
900PPM 900PPM
1500PPM. —

(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 theuse of any chemicals or materials that have been found or are suspected to have an adverse affect on device performance or reliability. To verifycompatibility, Refond recommends that all chemicals and materials be tested in the specific application and environment for which they are intended tobe used. Attaching LEDs, do not use adhesives that outgas organic vapor. LED
LED
LED —

LED —

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(4) Handle the component along the side surface by using forceps or appropriate tools; Do not directlytouch 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

— 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）℃ for above 24 hours. —

60 5 24

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.

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Version History/

Date	Revisor	Version	Verifier	Remarks
2019.12.18		E/1		

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Declare

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