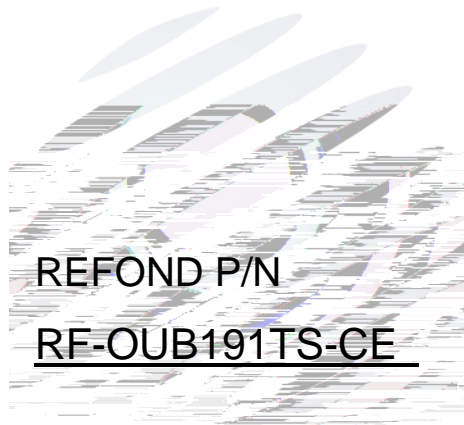
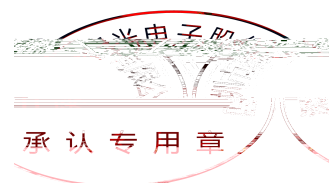


SPECIFICATION



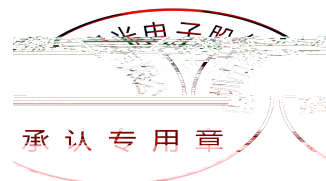
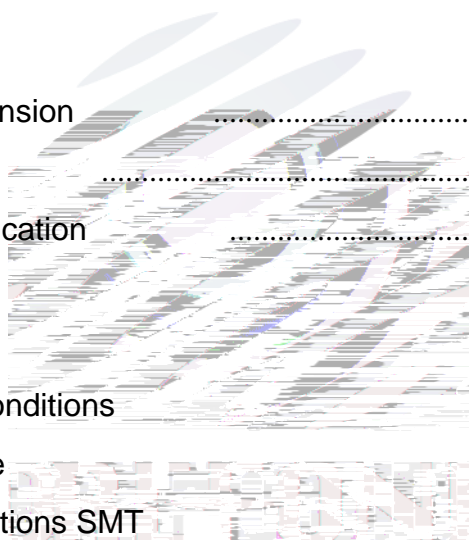
REFOND P/N
RF-OUB191TS-CE

R&D
Mass Product



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1. Description

1.1 General Description

The Colour LED which was fabricated using an orange chip Package Dimension :
 1.6mmX0.8mmX0.7mm.

LED

1.6mmX0.8mmX0.7mm

1.2 Features

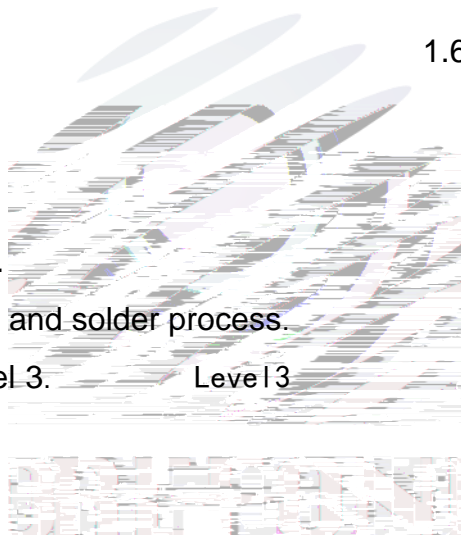
Extremely wide viewing angle.

Suitable for all SMT assembly and solder process.

Moisture sensitivity level: Level 3.

Level 3

SMT



1.4 Package Dimension

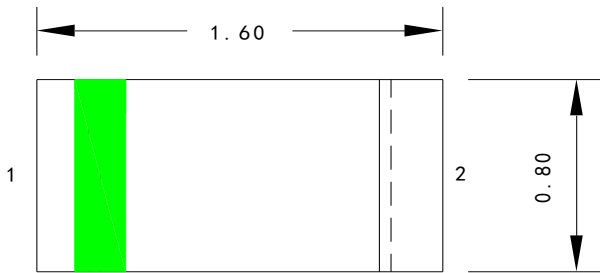


Fig.1-1 Top view

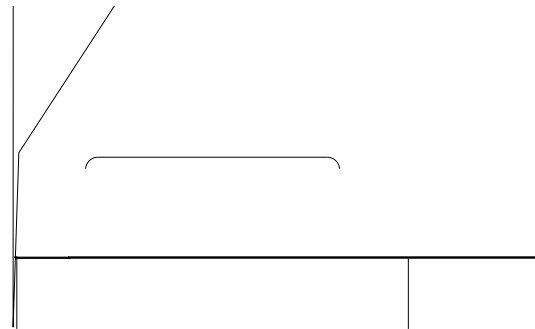


Fig.1-2 Side view

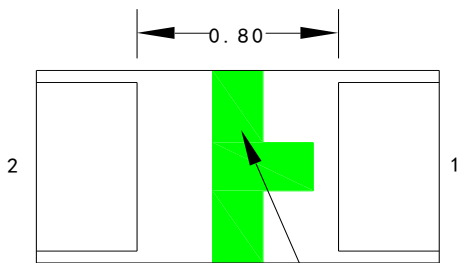


Fig.1-3 Bottom view

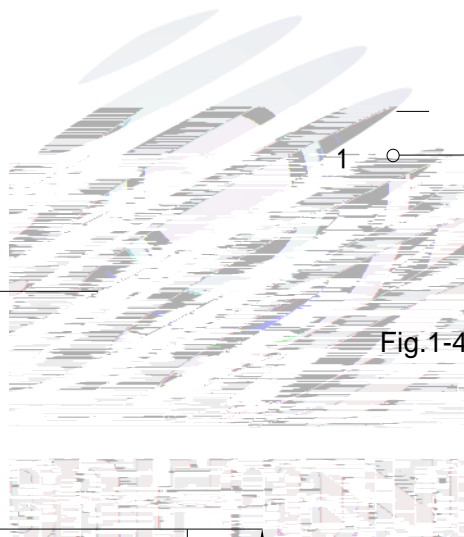


Fig.1-4 Polarity

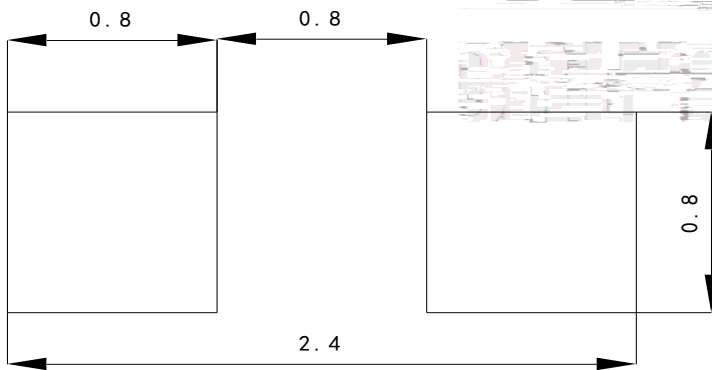
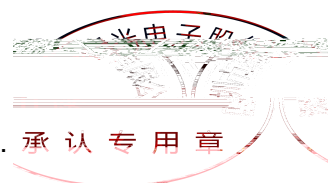


Fig.1-5 Soldering patterns

Notes

1. All dimensions units are millimeters.

All dimensions tolerances are $\pm 0.2\text{mm}$ unless otherwise noted.



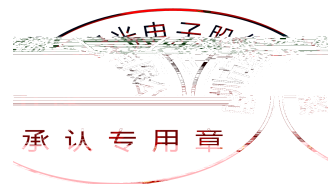
± 0.2

1.5 Product Parameters

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

Item	Test Condition	Symbol	Value			Unit	
			Min. ()	Typ.	Max.		
Spectral Half Bandwidth	$I_F=20\text{mA}$	Δ	--	15	--	nm	
Forward Voltage	$I_F=20\text{mA}$	V_F	B1	1.8	--	1.9	V
			B2	1.9	--	2.0	V
			C1	2.0	--	2.1	V
			C2	2.1	--	2.2	V
			D1	2.2	--	2.3	V
			D2	2.3	--	2.4	V
Dominant Wavelength	$I_F=20\text{mA}$						

Notes : $V_R=5V$ For test conditions. $V_R=5V$



1.6 Typical Optical Characteristics Curves

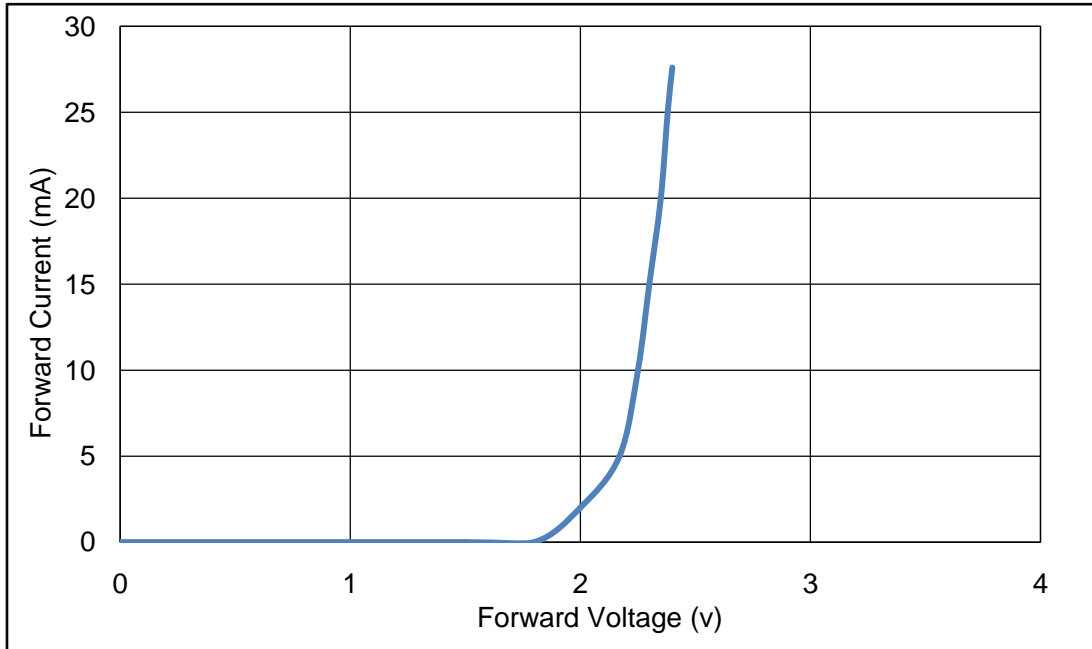


Fig 1-6 Forward Voltage Vs Forward Current

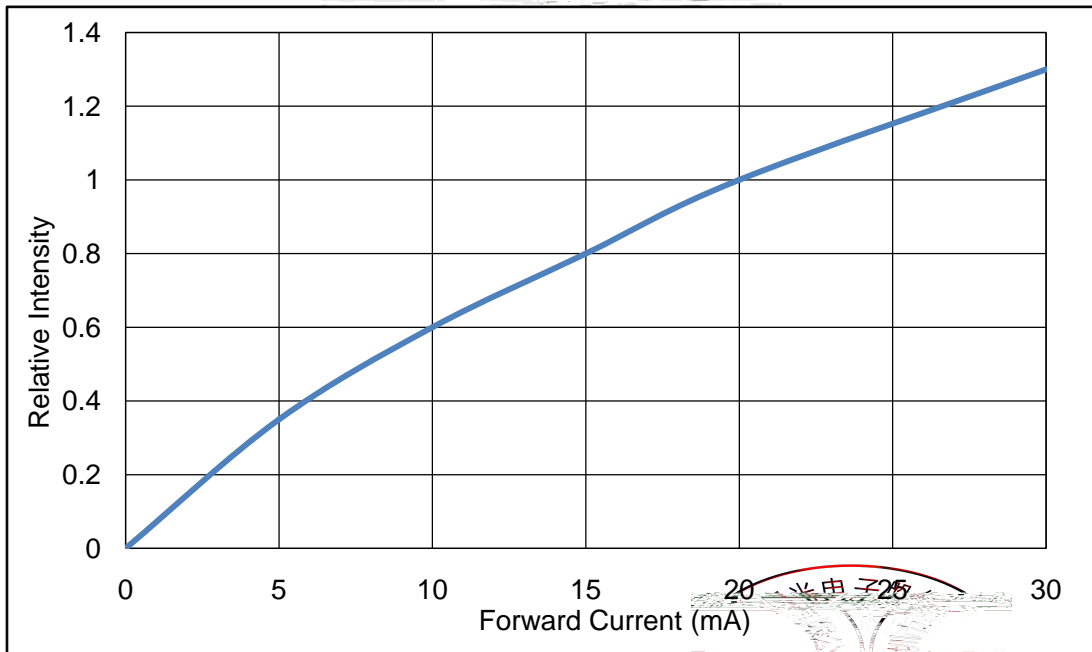


Fig 1-7 Forward Current Vs Relative Intensity

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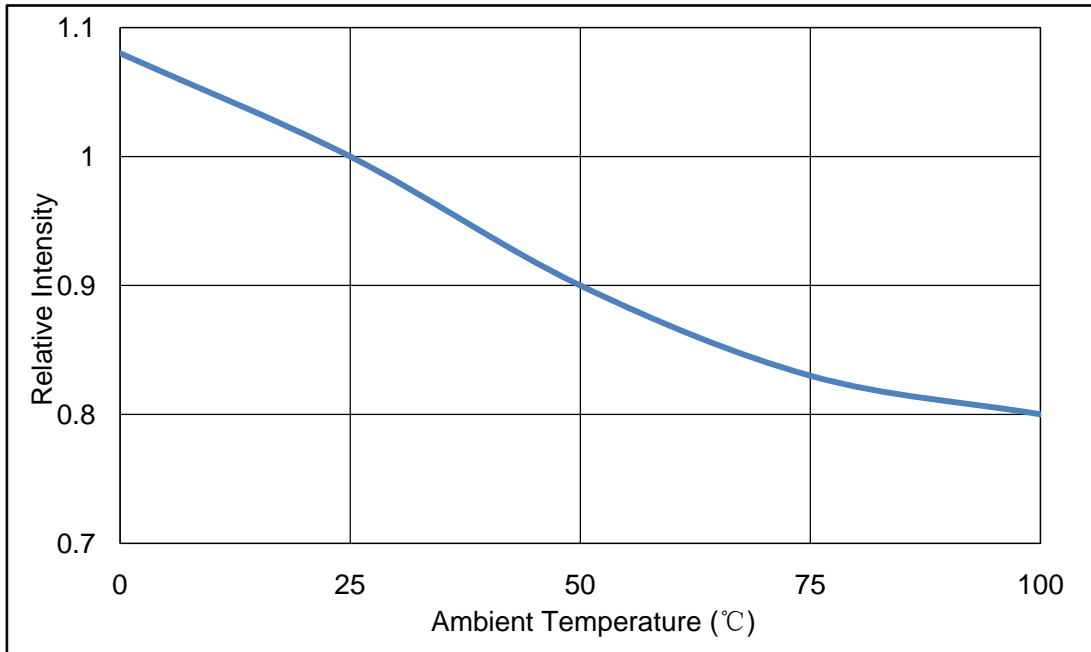


Fig 1-8 Pin Temperature Vs Relative Intensity

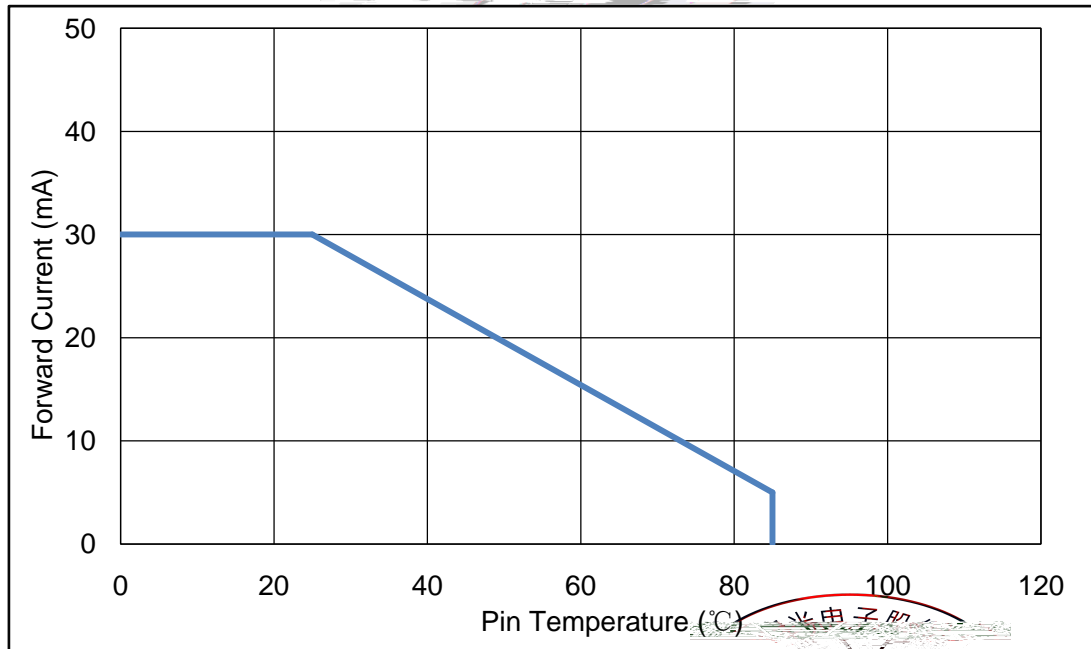
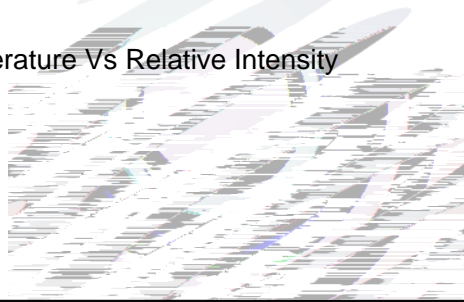
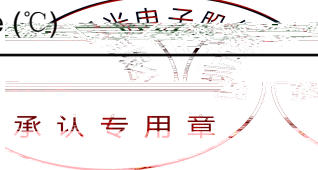


Fig 1-9 Pin Temperature Vs Forward Current



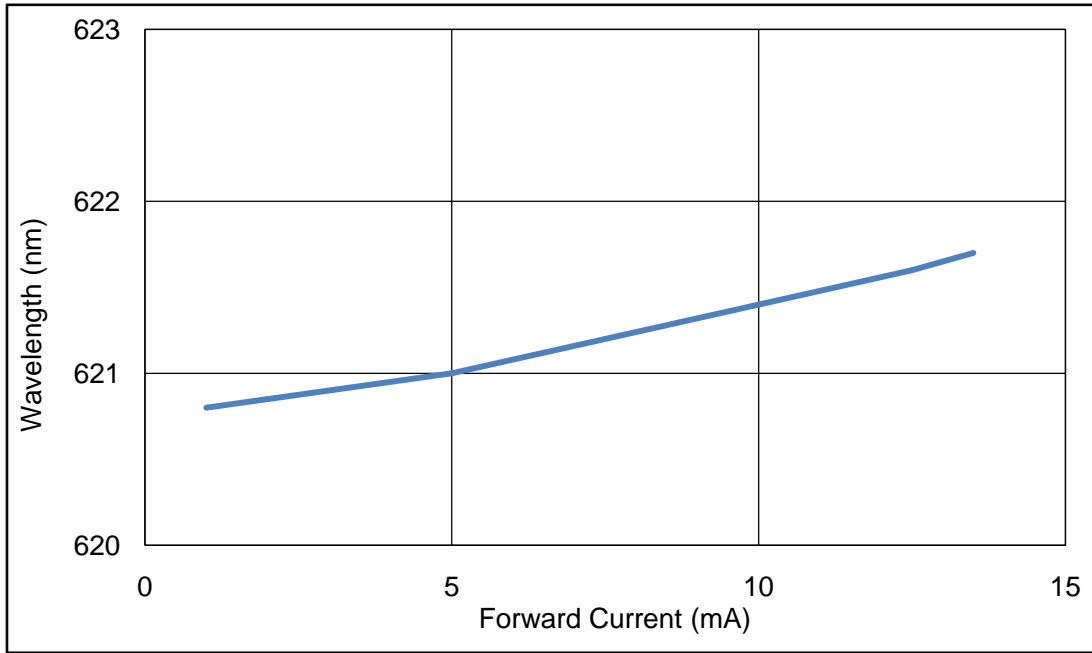


Fig1-10 Forward Current Vs Dominate Wavelength (Ta=25°C)

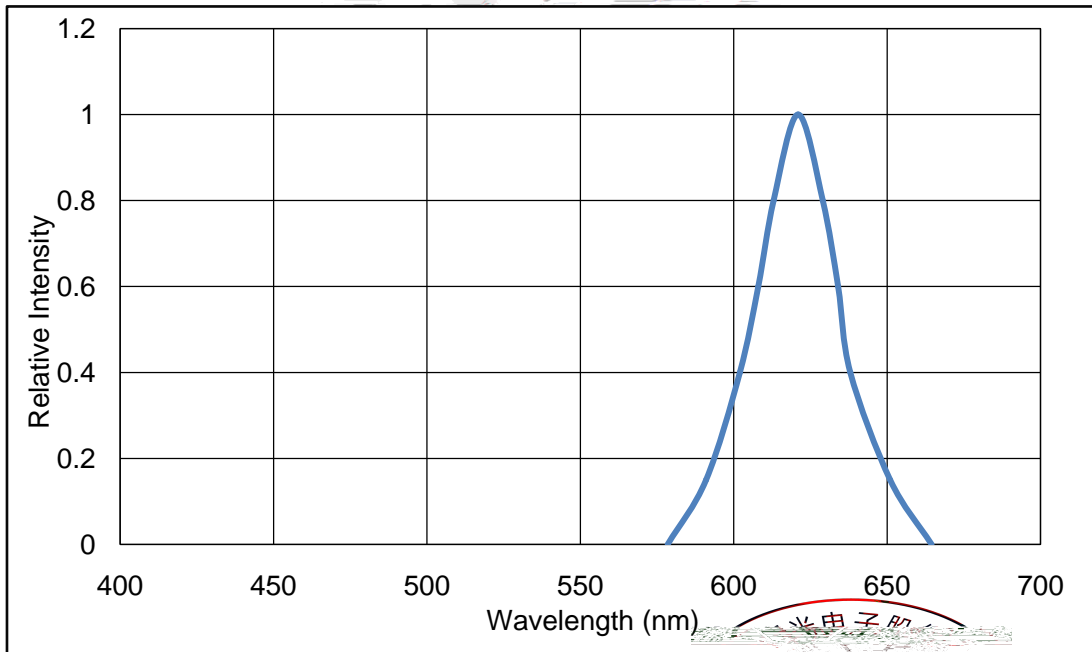
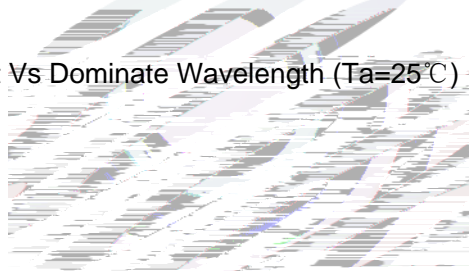


Fig 1-11 Relative Intensity Vs Wavelength (Ta=25°C)

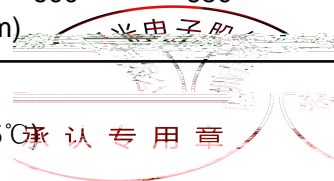


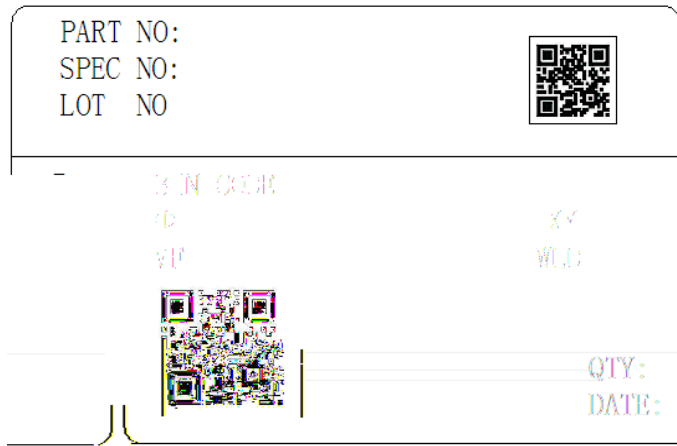
Fig 1-





2.1.3 Label Form Specification

Table 2-2 Parameter



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

Fig. 2-3 Label Form Specification

2.2 Moisture Resistant Packing

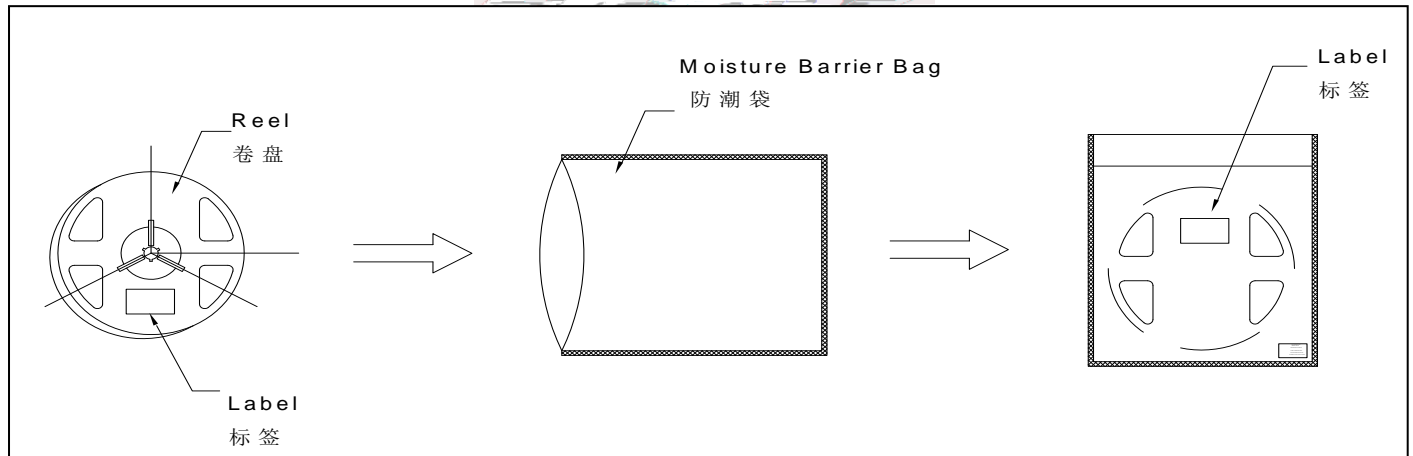
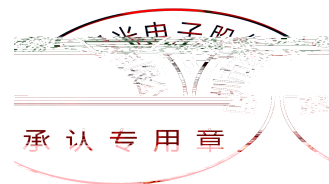


Fig.2-4 Moisture Resistant Packing



2.3 Cardboard Box

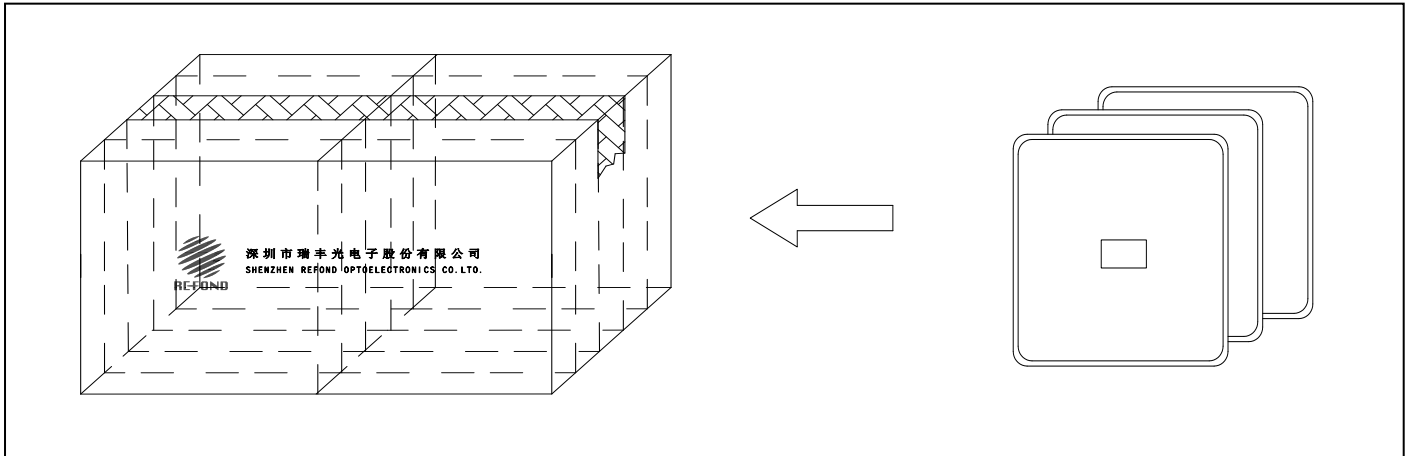


Fig.2-5 Cardboard Box

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	$T_{emp}: 260 \text{ max}$ $T=10 \text{ sec}$	2 times	22Pcs.	0/1
Temperature Cycle	JESD22-A104	100 30 min 5 min -40 30 min	100 cycles	22Pcs.	0/1
Thermal Shock	JESD22-A106	-40 15min 100 15min	300 cycles	22Pcs.	0/1
High Temperature Storage	JESD22-A103	$T_{emp}: 100$	1000 hrs.	22Pcs.	0/1
Low Temperature Storage	JESD22-A119	$T_{emp}: -40$	1000 hrs.	22Pcs.	0/1
Life Test	JESD22-A108	$T_a=25$ $I_F=20\text{mA}$	1000 hrs.	22Pcs.	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	$I_F=20\text{mA}$	-	U.S.L*)x1.1
Reverse Current	I_R	$V_R= 5V$	-	U.S.L*)x2.0
Luminous Flux		$I_F=20\text{mA}$	L.S.L*)x0.7	-

Notes

1.U.S.L: Upper standard level

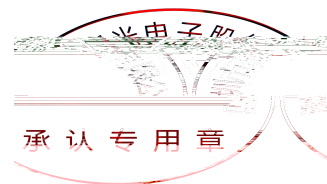
L.S.L: Lower standard level

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.

/ 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. SMT Reflow Soldering Instructions SMT

3.1 SMT Reflow Soldering Instructions SMT

Fig.3-1 SMT Reflow Soldering Instructions SMT

Table 3-1 Parameter

Average temperature rise speed	T_{smax} T_P	3 °C/ Max 3 °C/ s
Preheating: minimum temperature	(T_{smin})	150 °C
Preheating: Max temperature	(T_{smax})	200 °C
Preheating: Time	T_{smin} T_{smax}	60 - 120 60s-120s
Time limited to maintain high temperature: the temperature	(T_L)	217 °C
Time limited to maintain high temperature: The Time	(t_L)	60 - 150 60s-150s
Peak /Classification of temperature:	/ (T_P)	260 °C
Time limit classification of peak temperature time	t_p	10 Max 10s
Hold time within 5 ° C with the actual peak temperature (TP) 5 °C	(T_P)	30s-60s 30s-60s

Notes

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



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.

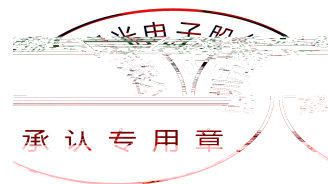


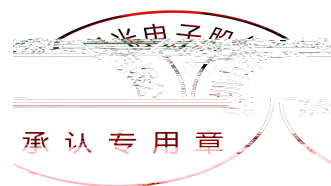
(2) In order to prevent external material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM, the single content of Chlorine element is required to be less than 900PPM, the total content of Bromine element 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.

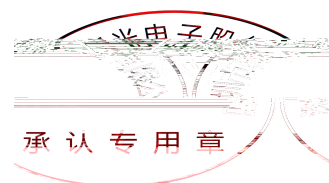
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LED
LED





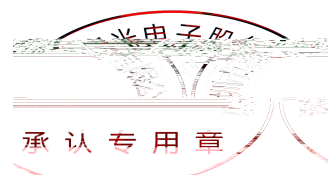
(8) Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS). LED

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



Date	Revisor	Version	Verifier	Remarks
2020.10.28		E0		





Declare

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