SPECIFICATION

REFOND P/N

RF-P1S196TS-B52

□R&D

■Mass Product

Contents

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1. Description

1.1 General Description

The Colour LED which was fabricated using a yellow chip and red chip，Package Dimension : 1.6mmX1.6m B T EMC /P 0e675 Tm[(c)]TJETBTgq45.73(B TJET.1 0 0 1 64.32 531.79 Tm[( )]TJET

en-US

1.4 Package Dimension

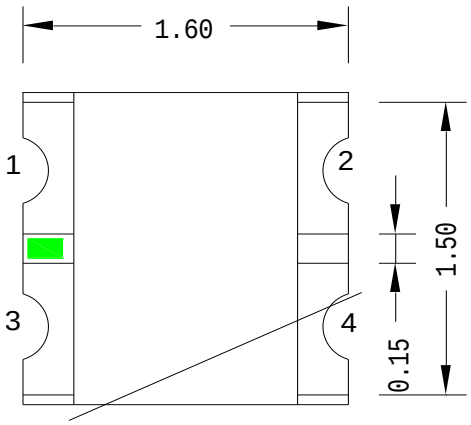

Fig.1-1 Top view

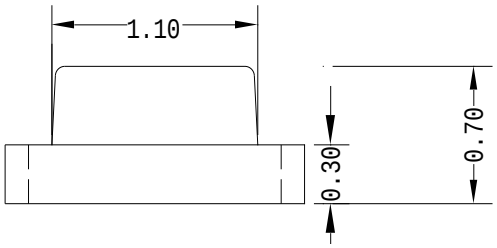

Fig.1-2 Side view

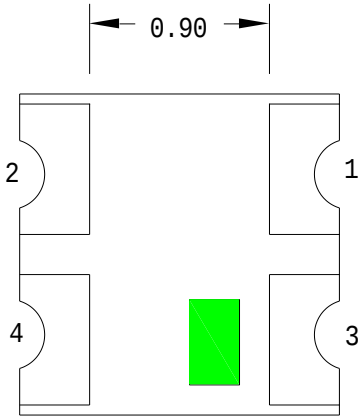

Fig.1-3 Bottom view

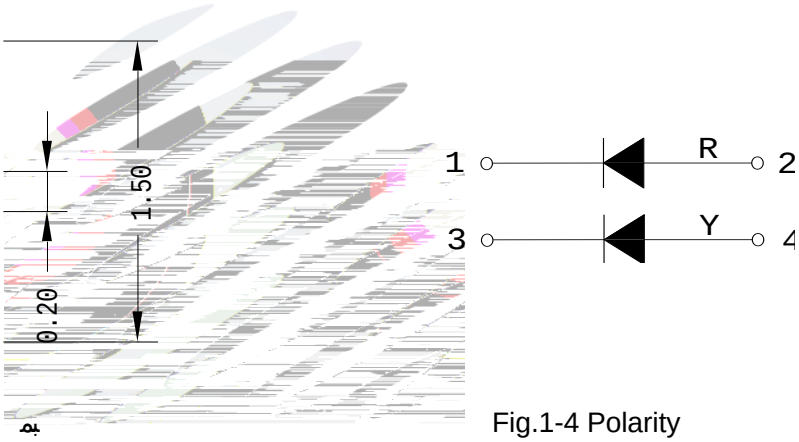

Fig.1-4 Polarity

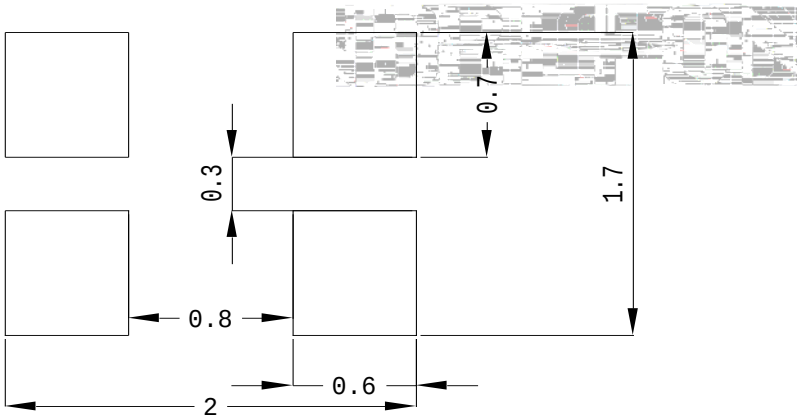

Fig.1-5 Soldering patterns

Notes

1. All dimensions units are millimeters.

   All dimensions tolerances are 0.2mm unless otherwise noted.

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1.5 Product Parameters

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

Item	Test Condition	Symbol		Code	Value			Unit
					Min.	Typ.	Max.	
Spectral Half Bandwidth	I_F=20mA	Δ	R	/	--	15	--	nm
			Y		--	15	--	
Forward Voltage	I_F=20mA	V_F	R	1L	1.8	--	2.4	V
			Y	1L	1.8	--	2.4	
Dominant wavelength	I_F=20mA	d	R	F00	625.0	--	630.0	nm
				G00	630.0	--	635.0	
				H00	635.0	--	640.0	
			Y	D00	585.0	--	590.0	

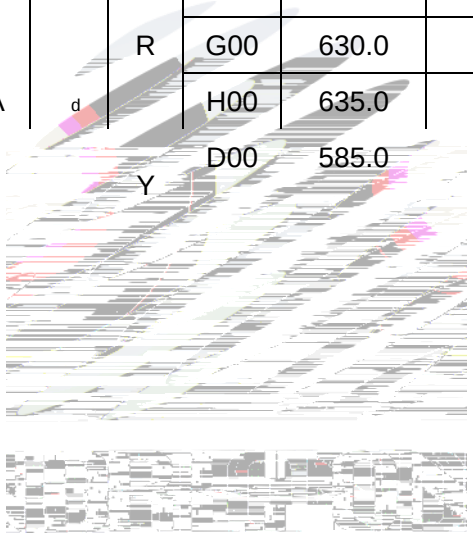
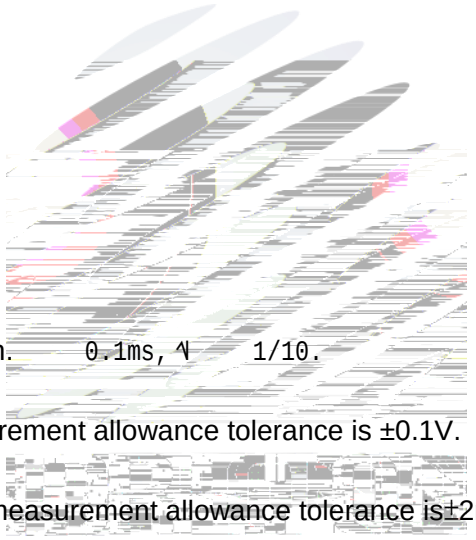


Table 1-2 Absolute Maximum Ratings at Ts=25°C ẅ



Notes

1. 1/10 Duty cycle, 0.1ms pulse width. 0.1ms, ㄐ 1/10.

2. The above forward voltage measurement allowance tolerance is ±0.1V. ıı ㄔ ±0.1V.

3. The above dominant wavelength measurement allowance tolerance is±2nm. ıı ±2nm.

4. The above luminous intensity measurement allowance tolerance ±10%. ẗ Ὼ ώ ″

1.6 Typical Optical Characteristics Curves

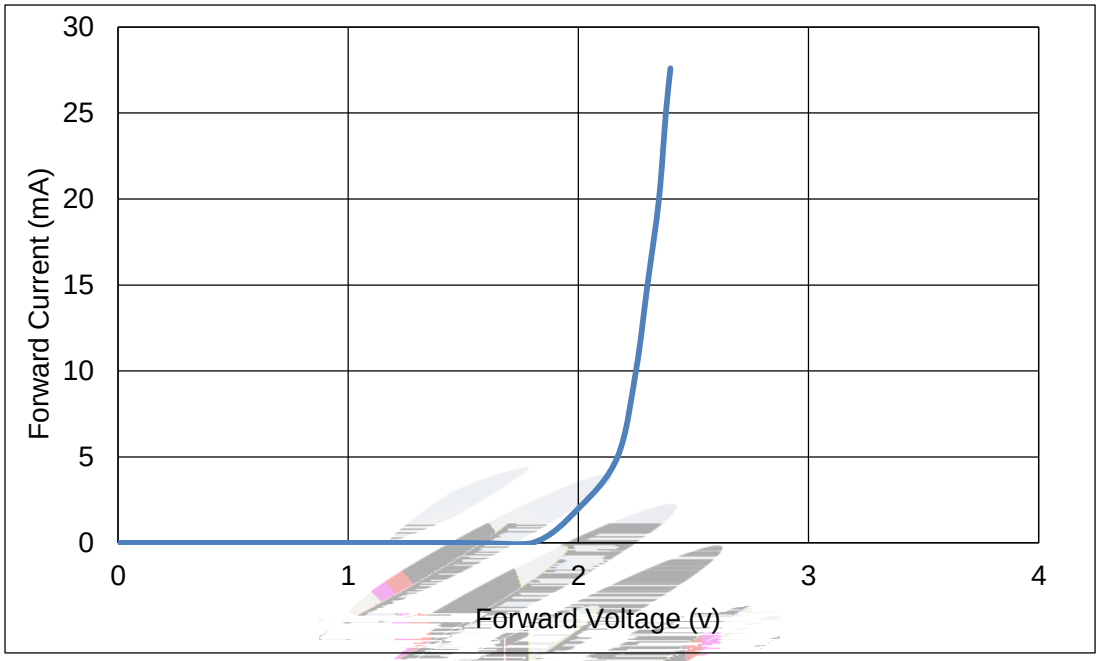


Fig.1-7 Forward Voltage Vs Forward Current

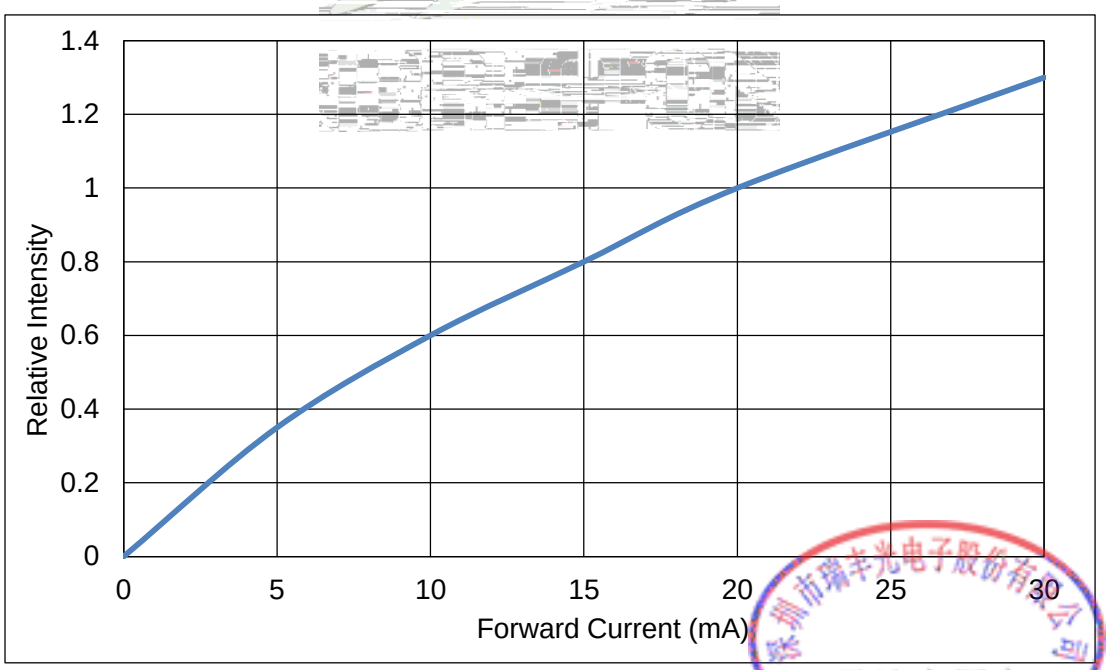


Fig.1-8 Forward Current Vs Relative Intensity

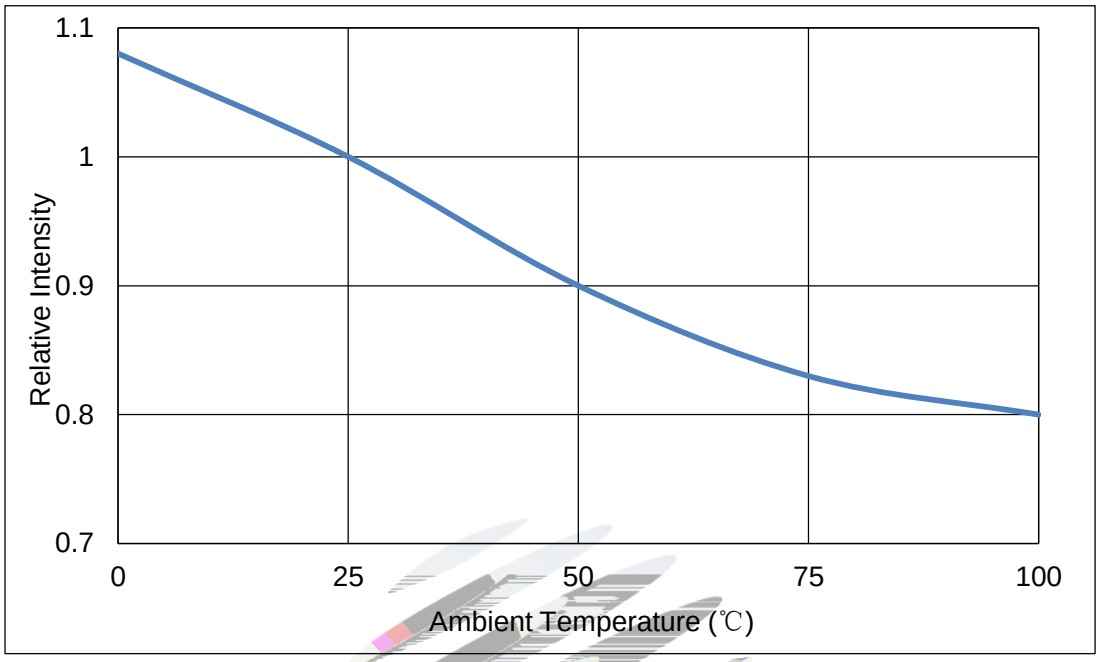


Fig.1-9 Pin Temperature Vs Relative Intensity

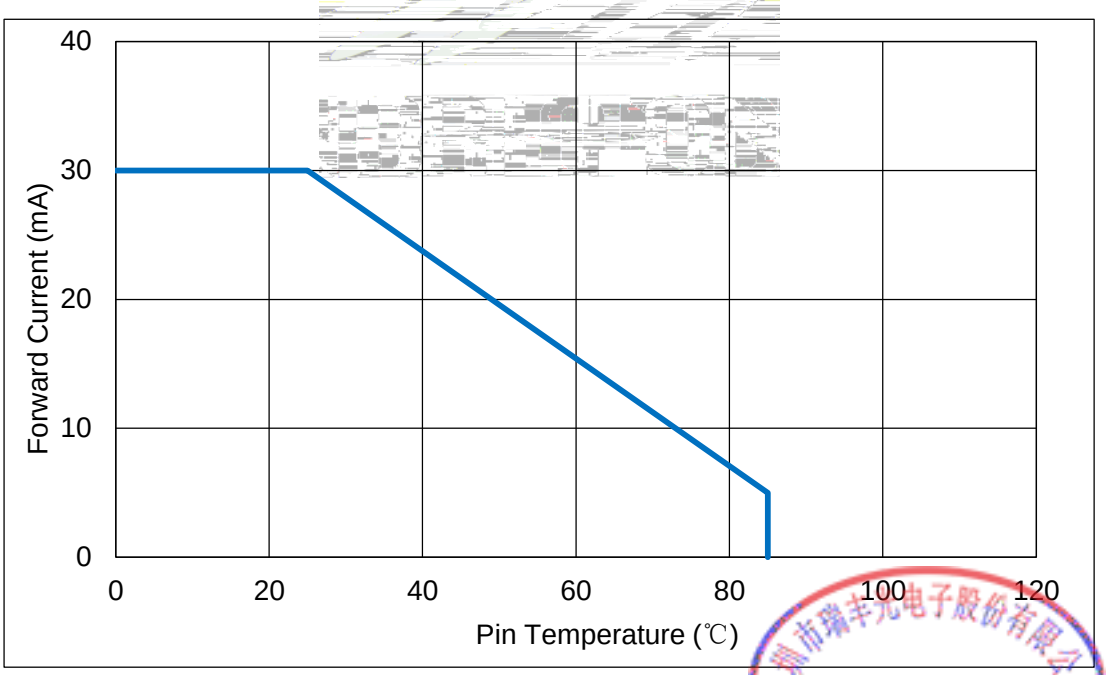


Fig.1-10 Pin Temperature Vs Forward Current

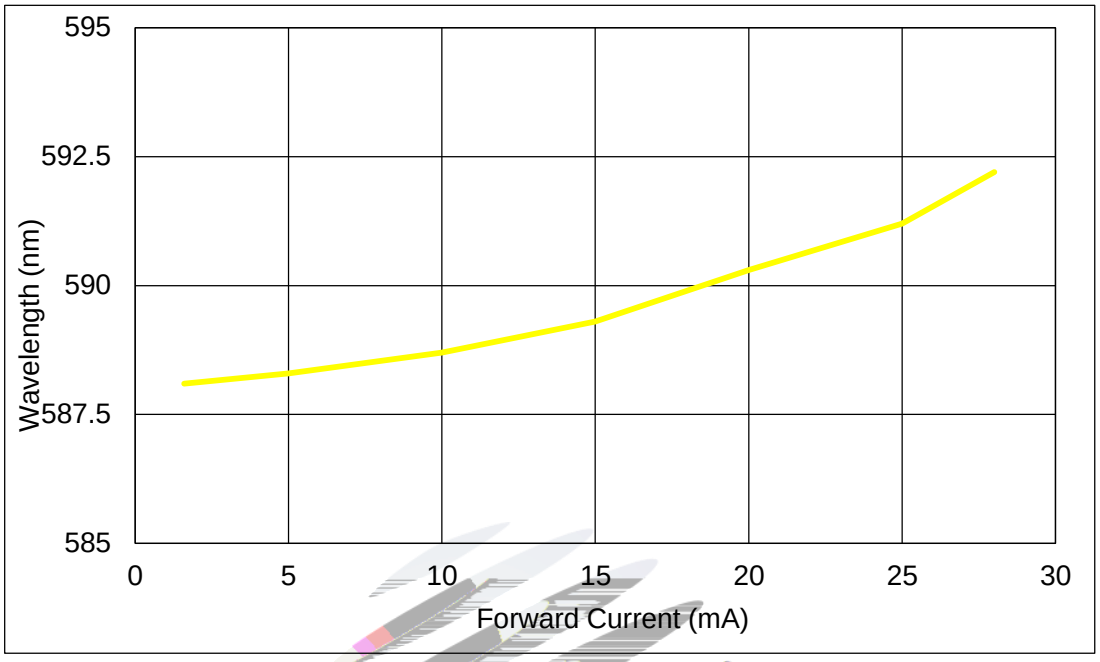


Fig.1-11 Forward Current Vs Dominate Wavelength (Ta=25)

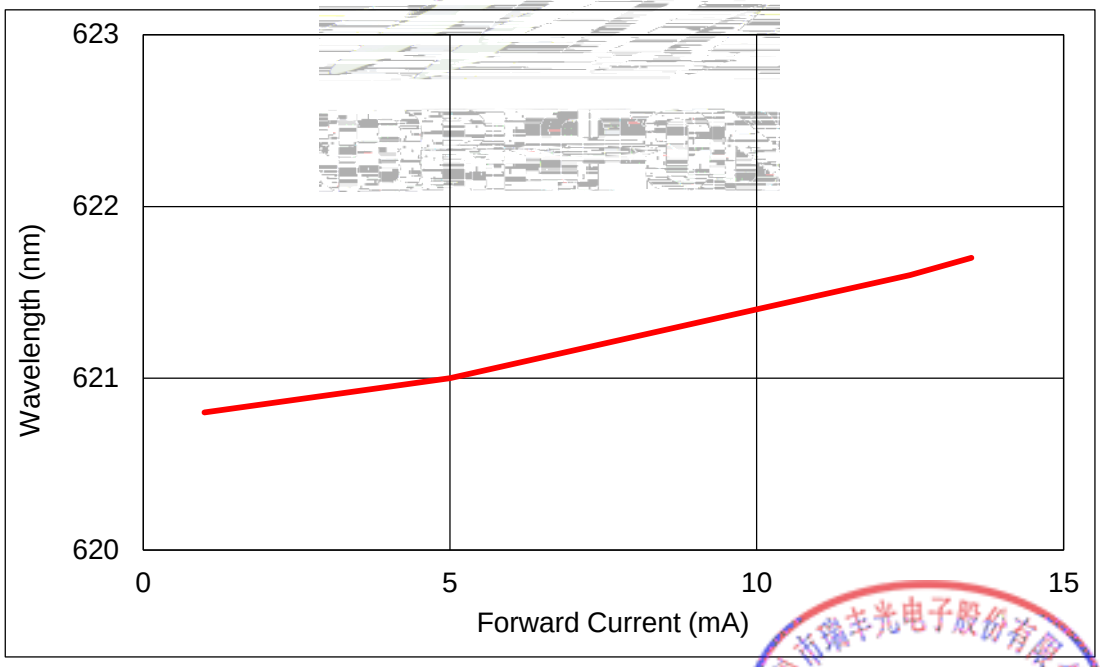


Fig.1-12 Forward Current Vs Dominate Wavelength (Ta=25℃)

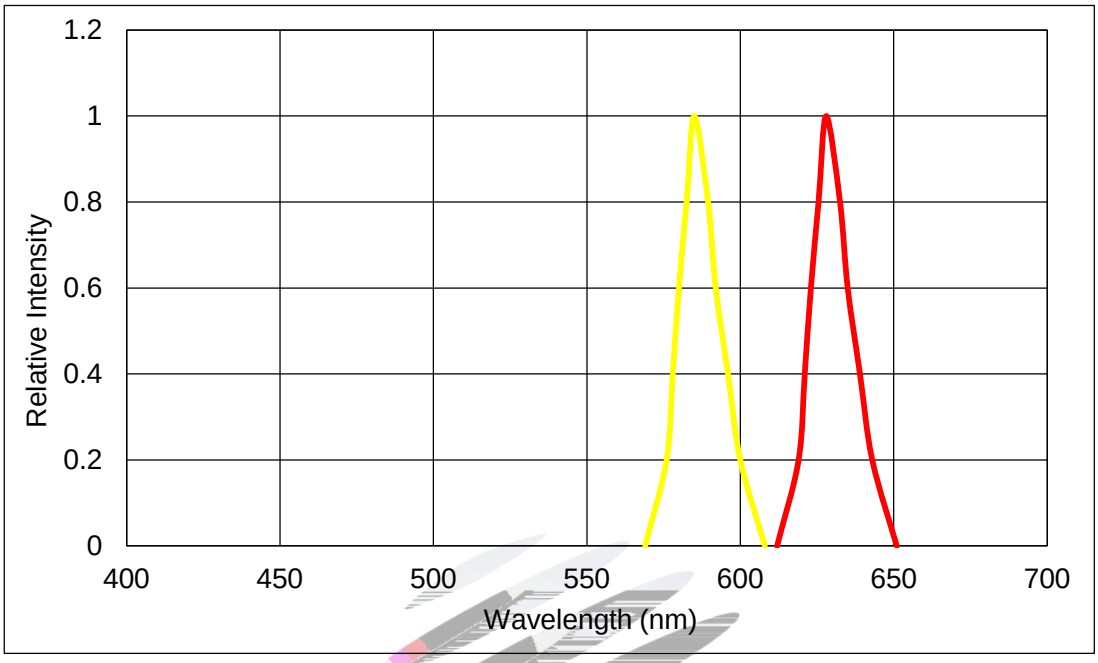


Fig.1-13 Relative Intensity Vs Wavelength (Ta=25)

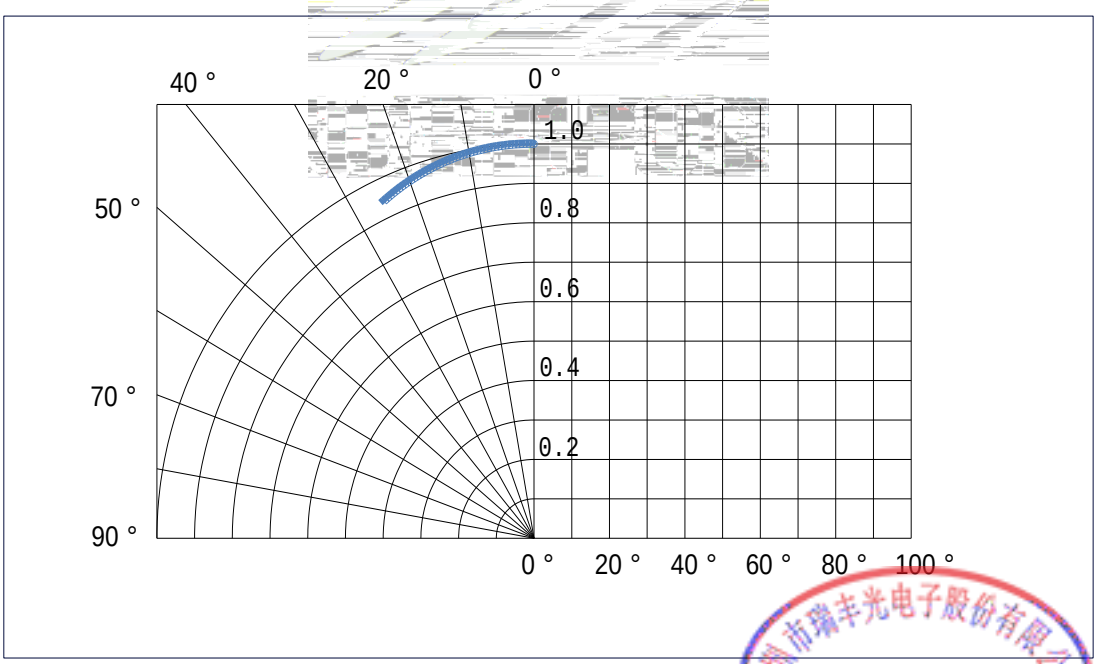


Fig.1-14 Diagram characteristics of radiation

2. Packaging

2.1 Packaging Specification

Package:4000pcs/reel.

2.1.1 Carrier Tape Dimension

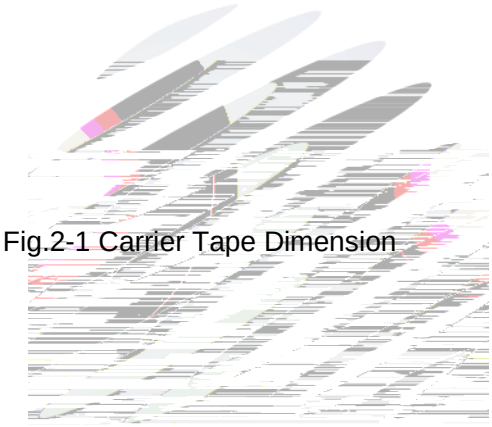


Fig.2-1 Carrier Tape Dimension

2.1.2 Reel Dimension

Table 2-1 Dimension

A	8.0 ± 0.1mm

Fig.2-2 Reel Dimension

Notes

The tolerances unless mentioned ±0.1mm. Unit : mm ± 0.1

2.1.3 Label Form Specification

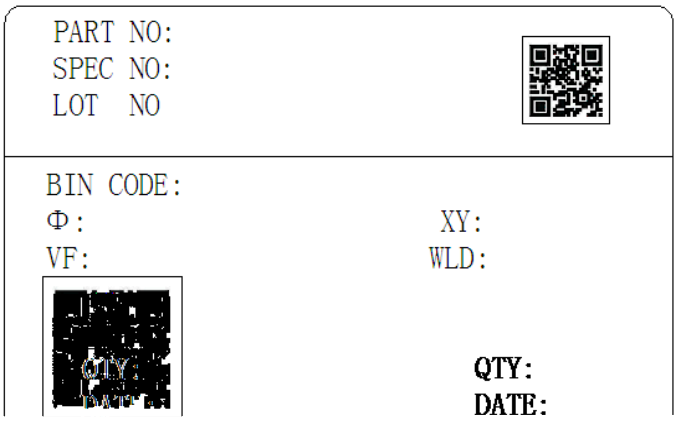


Table 2-2 Parameter

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

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2.3 Cardboard Box ˜

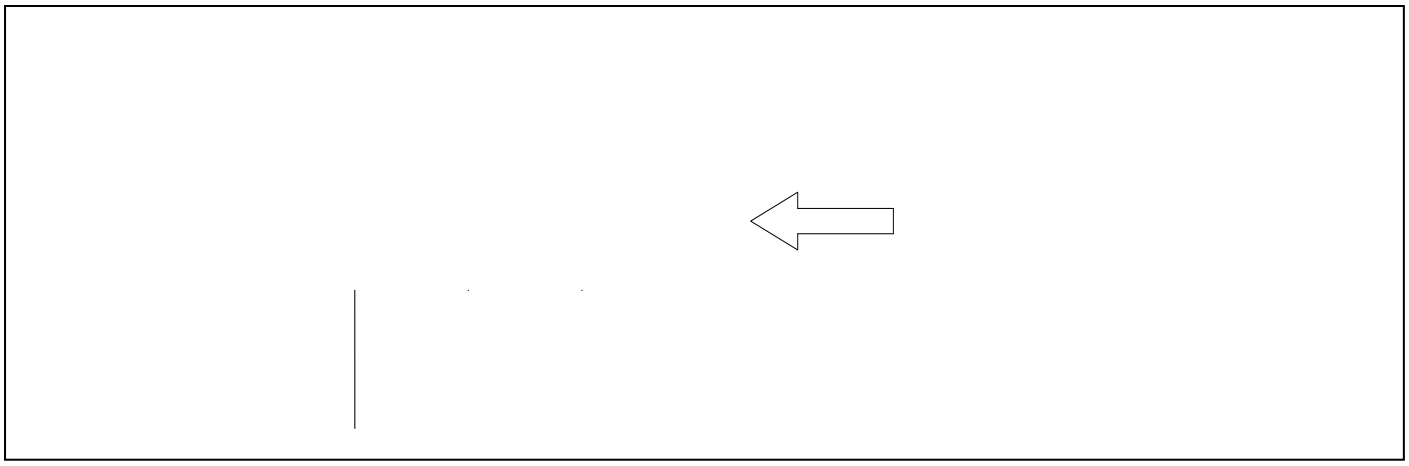

Fig.2-5 Cardboard Box ˜

2.4 Reliability Test Items And Conditions Ḥ Ű Ł

Table 2-3 Reliability Test Items And Conditions Ḥ Ű Ł

Test Items	Ref.Standard Ĩ !!	Test Condition Ł	Time	Quantity	Ac/Re /
Reflow ڤ	JESD22-B106	T_{emp}:260 max T=10 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 Ḧ	JESD22-A103	T_{emp}:100	1000 hrs.	22Pcs.	0/1
Low Temperature Storage u Ḧ	JESD22-A119	T_{emp}:-40	1000 hrs.	22Pcs.	0/1
Life Test	JESD22-A108	T_a=25 I_F=20mA	1000 hrs.	22Pcs.	0/1

2.5 Criteria For Judging Damage ≡ ‼

Table 2-4 Criteria For Judging Damage ≡ ‼

Test Items	Symbol	Test Condition ɫ	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 th e LED to the series and parallel circuit,should take consideration of all the factors such as the current, voltage di stribution, 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. 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	Tsmax	T_P	3 °C/	Max 3 °C/ s

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

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

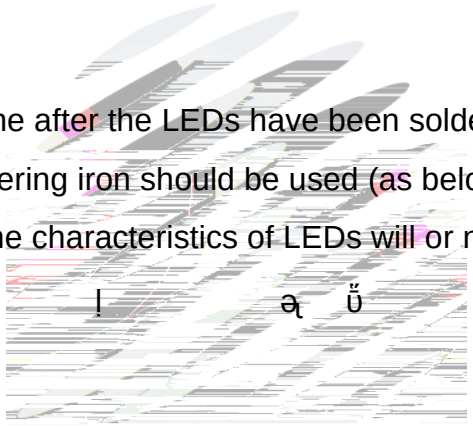
3.1.1 Soldering Iron

(1) When do soldering by hand, keep the temperature of iron below less 300℃ less than 3 seconds.

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

3.1.2 Repairing

Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable,a double-head soldering iron should be used (as below figure). It should be confirmed in advance whether the characteristics of LEDs will or not be damaged by repairing.



3.1.3 Cautions

(1) Components should not be mounted on warped (non coplanar) portion of PCB. After soldering, do not warp the circuit board.LED

(2) Do not apply mechanical force or excess vibration during the cooling process to normal temperature after soldering. Do not rapidly cool device after soldering.

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4. Handling Precautions¸ ʢ ɘ Ɛ

4.1 Handling Precautions¸ ʢ ɘ Ɛ

(1) LED operating environment and sulfur element composition can not be over 100PPM in the LEDmating usage material. This is provided for informational purposes only and is not a warranty or endorsement.LED ɟ ΰ LED ώ ΰ U ɷ ˜ 100PPM. ˜ ɟ o ɶ ʢ Ḧ

(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. Ƕ ῗ LED `Y ıı LED ᴺ ΰ ƚ ᛚ ώ U ᴨ 900PPM ᛚ ώ U ᴨ 900PPM ώ ώ U ᴨ 1500PPM. ˜ ɟ o ɶ ʢ Ḧ

(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. ƚ ἳ ᴰ ᴸ LED `Y ﺱ ¸ Ὼ ΰ ƚ ᴰ LED ΰ Ὼ ╥ Ƕ ƚ Ὼ¸ ` ΰ ɘ o ɶ LED ك ƚ ˜ ` Ƕ : : م ɘ ﺱ LED Ş ɘ ¸ ἳ φ Ⅎ

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Version History/ ¦ ㄐ˜

Date	Revisor ¦	Version	Verifier	Remarks
2018.02.03	ㄟ	E/1		┼
2021.07.07		E/2		
2022.06.20		E/3	∏	

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