SPECIFICATION

REFOND P/N伤 伤

RF-BNS150TS-CE

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Mass Product 伤

深圳市瑞丰光电子股份有限公司 承认专用章

Contents 伤

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1. Description

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1.1 General Description

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The Colour LED which was fabricated using a blue chip Package Dimension : 3.2mmX1.6mmX0.7mm.

LED 3.2mmX1.6mmX0.7mm 伤

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1.2 Features

Extremely wide viewing angle.

Suitable for all SMT assembly and solder process. 伤伤伤

Moisture sensitivity level: Level 3. 伤伤伤伤伤伤伤

RoHS compliant. 伤伤伤伤 伤

1.3 Application

Optical indicator.

伤 Switch and symbol, display. 伤

General use. 伤

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1.4 Package Dimension

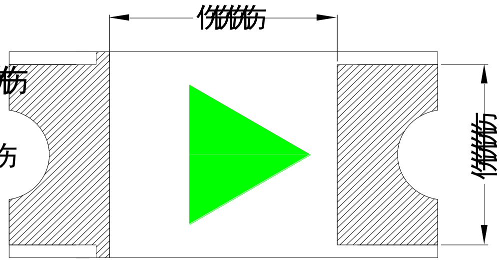
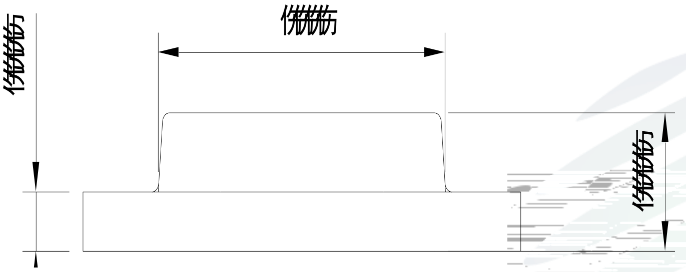


Fig.1-1 Top view伤 Fig.1-2 Bottom view伤 伤



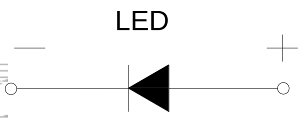


Fig.1-3 Side view伤 Fig.1-4 Polarity伤 伤

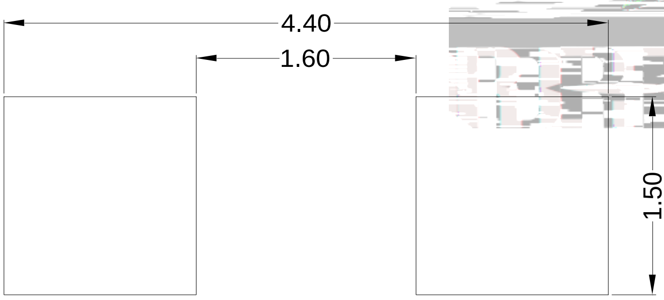


Fig.1-5 Soldering patterns伤

Notes 伤

伤 All dimensions units are millimeters. 伤

All dimensions tolerances are ±0.2mm unless otherwise noted.

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=20mA			--	15	--	nm
Forward Voltage	I_F=20mA	V_F	G1	2.8	--	2.9	V
			G2	2.9	--	3.0	V
			H1	3.0	--	3.1	V
			H2	3.1	--	3.2	V
			I1	3.2	--	3.3	V
			I2	3.3	--	3.4	V
			J1	3.4	--	3.5	V
Dominant Wavelength	I_F=20mA	$_D$	C20	462.5	--	465	nm
			D10	465.0	--	467.5	nm
			D20	467.5	--		

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

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

Parameter	Symbol	Rating	Units
Power Dissipation	P_d	105	mW
Forward Current	I_F	30	mA
Peak Forward Current			

Notes 伤

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

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

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

4. The above luminous intensity measurement allowance tolerance ±10%.

5. Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product.

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6. All measurements were made under the standardized environment of Refond.

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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 伤

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1.6 Typical Optical Characteristics Curves

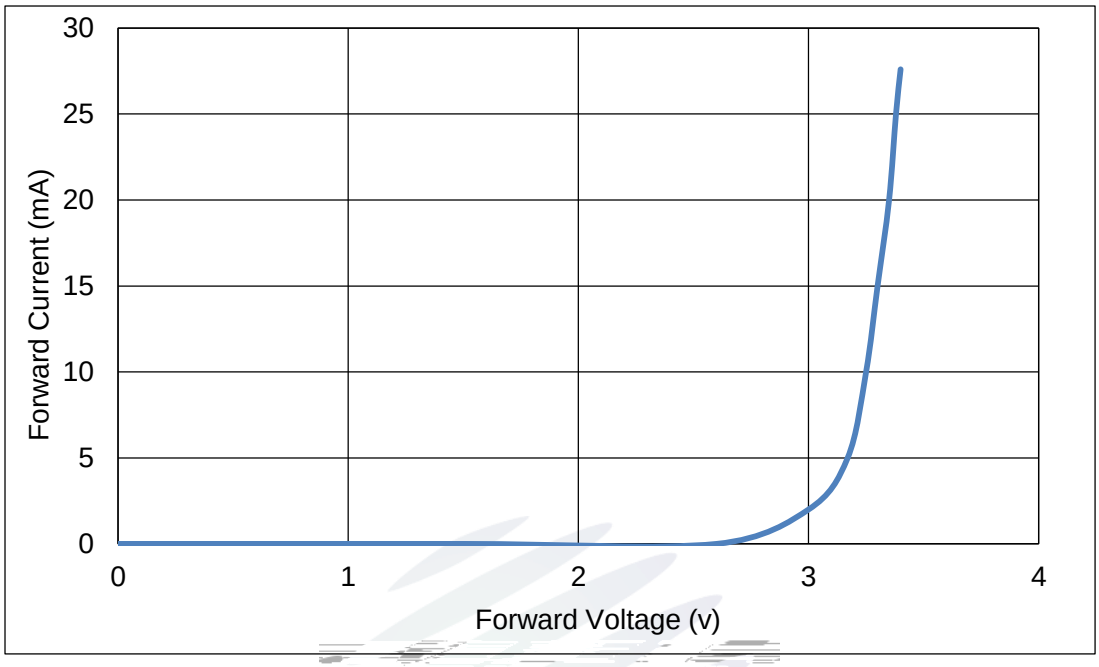

Fig 1-6 Forward Voltage Vs Forward Current

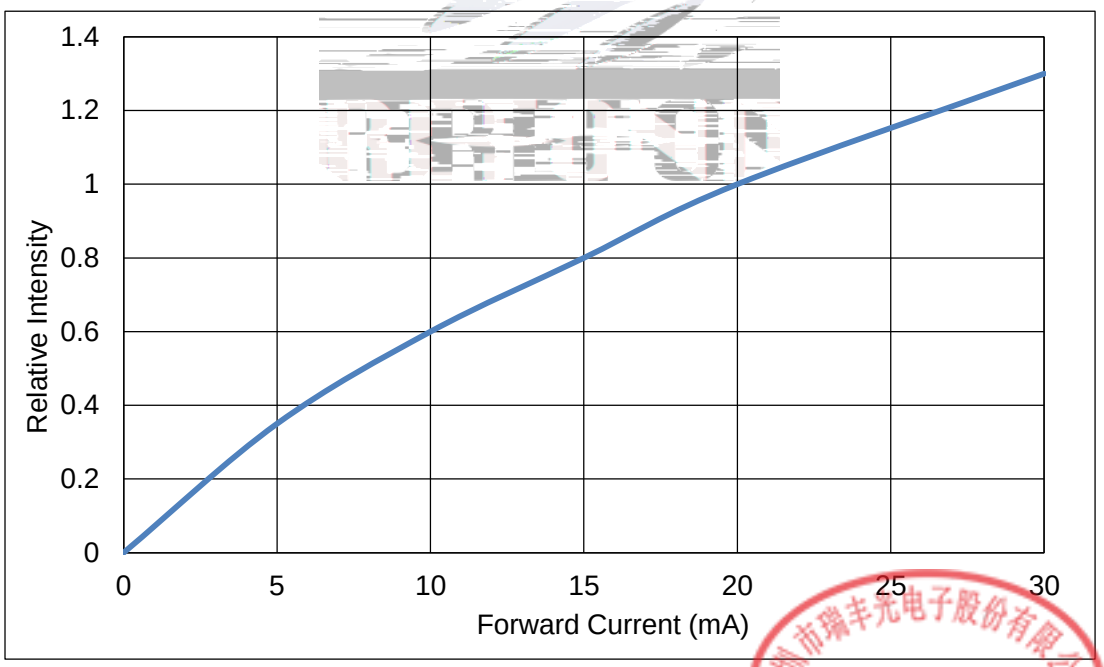

Fig 1-7 Forward Current Vs Relative Intensity

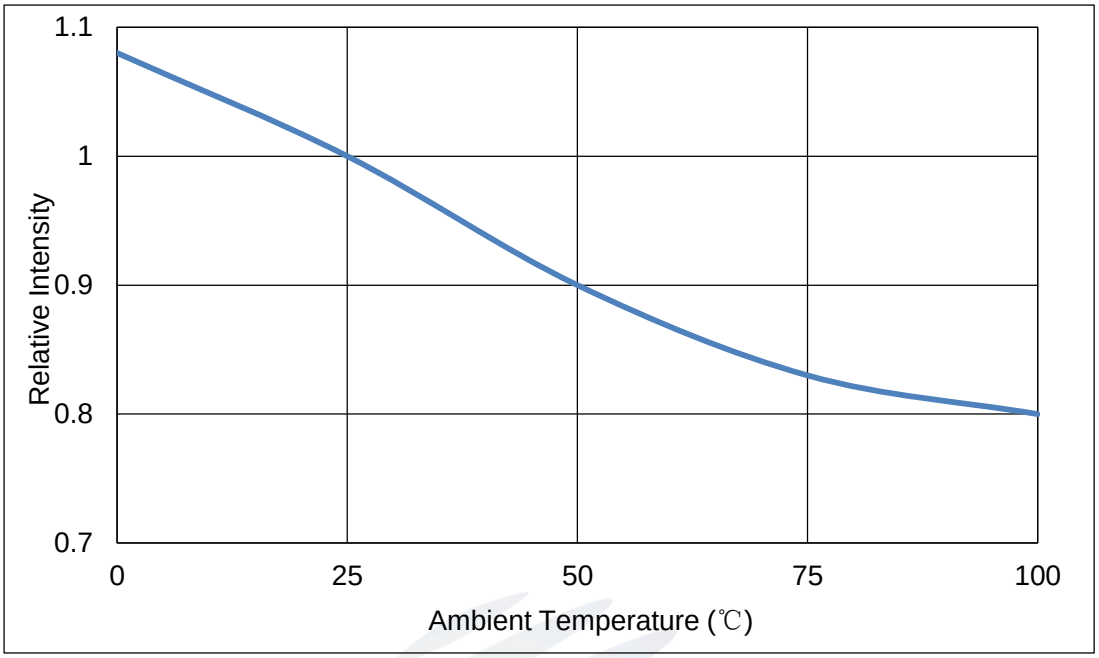

Fig 1-8 Pin Temperature Vs Relative Intensity

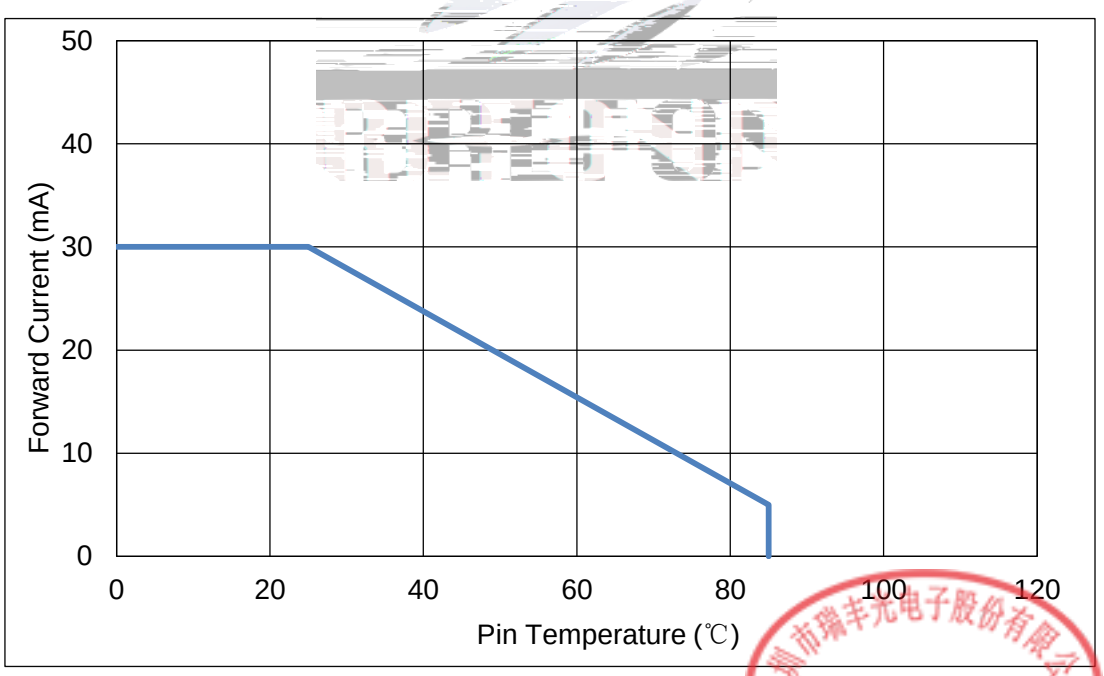

Fig 1-9 Pin Temperature Vs Forward Current

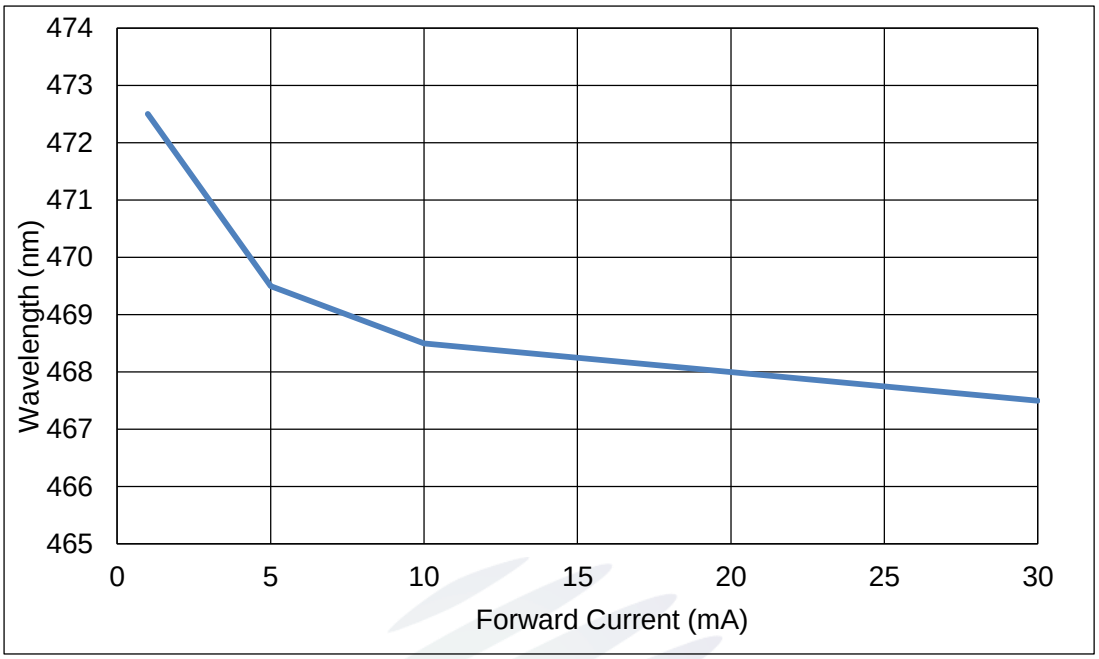

Fig 1-10 Forward Current Vs Dominate Wavelength (Ta=25℃)

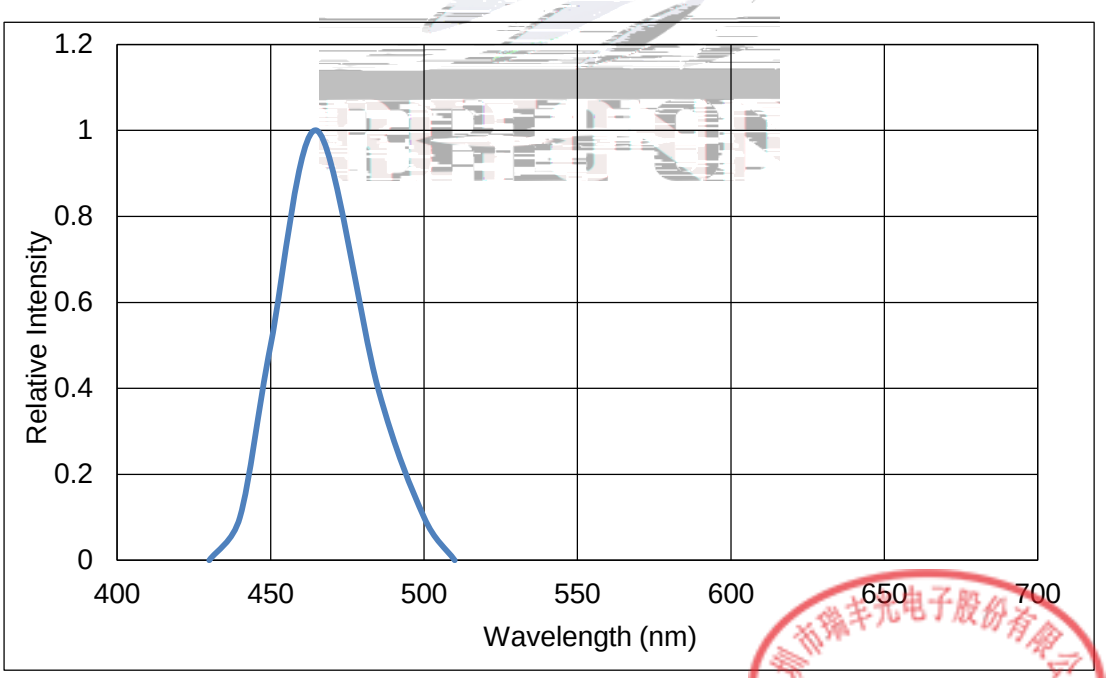

Fig 1-11 Relative Intensity Vs Wavelength (Ta=25℃)

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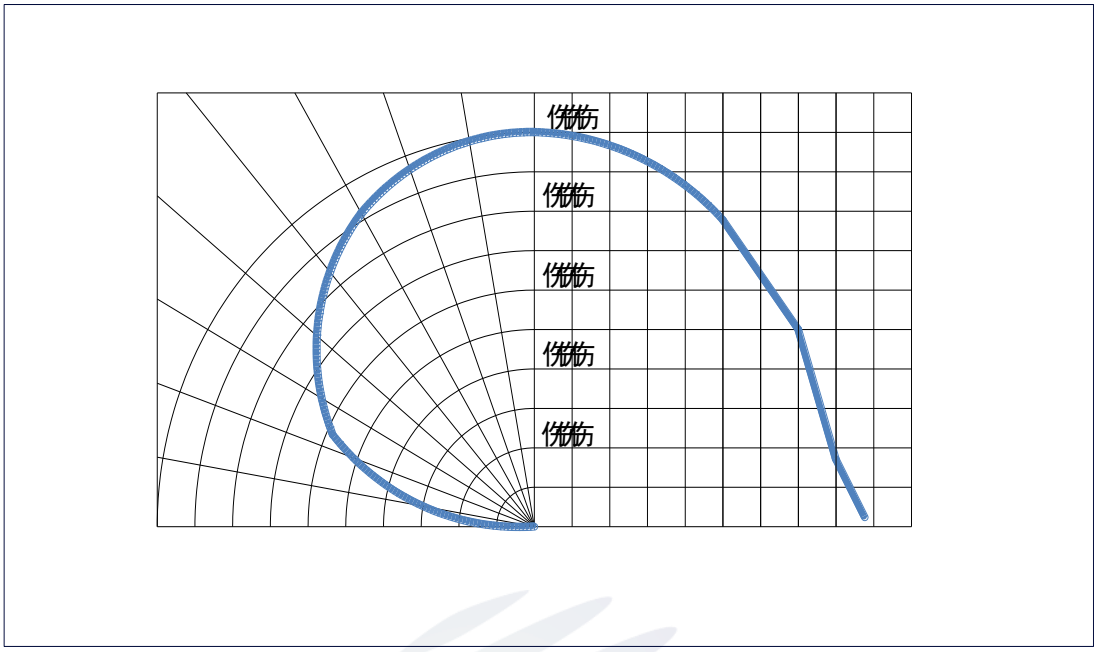

Fig 1-12 Diagram characteristics of radiation

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2. Packaging

2.1 Packaging Specification

Package:4000pcs/reel. 4000pcs

2.1.1 Carrier Tape Dimension 伤

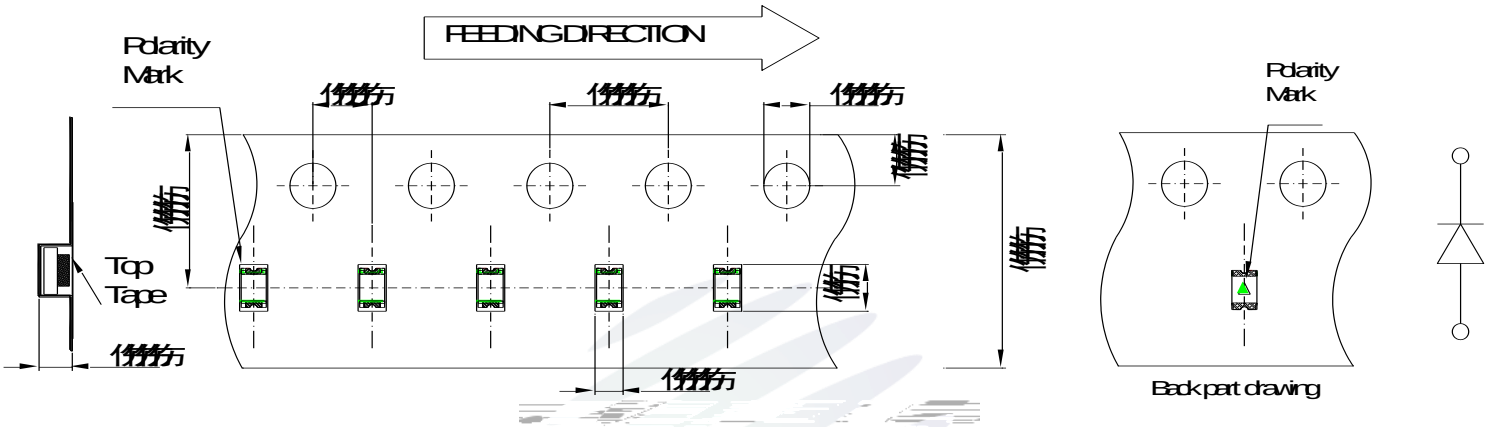

Fig.2-1 Carrier Tape Dimension 伤

2.1.2 Reel Dimension

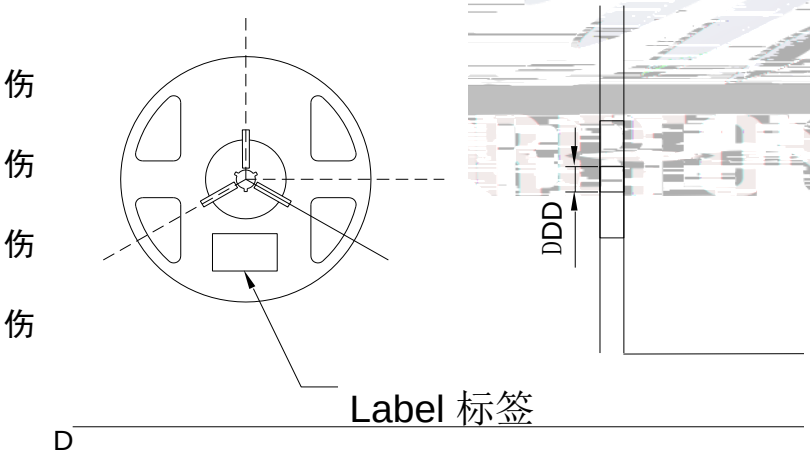

Fig.2-2 Reel Dimension 伤

伤able 2-1 Dimension 伤

A	8.0 0.1mm
B	178 1mm
C	60 1mm
D	13.0 0.5mm

Notes 伤

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

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2.1.3 Label Form Specification

Table 2-2 Parameter伤 伤

PART NO.	Part Number
SPEC NO.	Spec Number
LOT NO.	Lot Number
BIN CODE	Bin Code
XX14.4 137587	Luminous flux

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Fig. 2-3 Label Form Specification 伤

2.2 Moisture Resistant Packing

Fig.2-4 Moisture Resistant Packing

2.3 Cardboard Box

Fig.2-5 Cardboard Box 伤

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 max T=10 sec	[redacted]	22Pcs.	0/1
Temperature Cycle	JESD22-A104				

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 伤

1.U.S.L: Upper standard level 伤伤伤伤伤伤L.S.L: Lower standard level 伤 伤

2.The above reliability tests is based on the verification of a

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3. SMT Reflow Soldering Instructions SMT 回流焊说明伤

3.1 SMT Reflow Soldering Instructions SMT

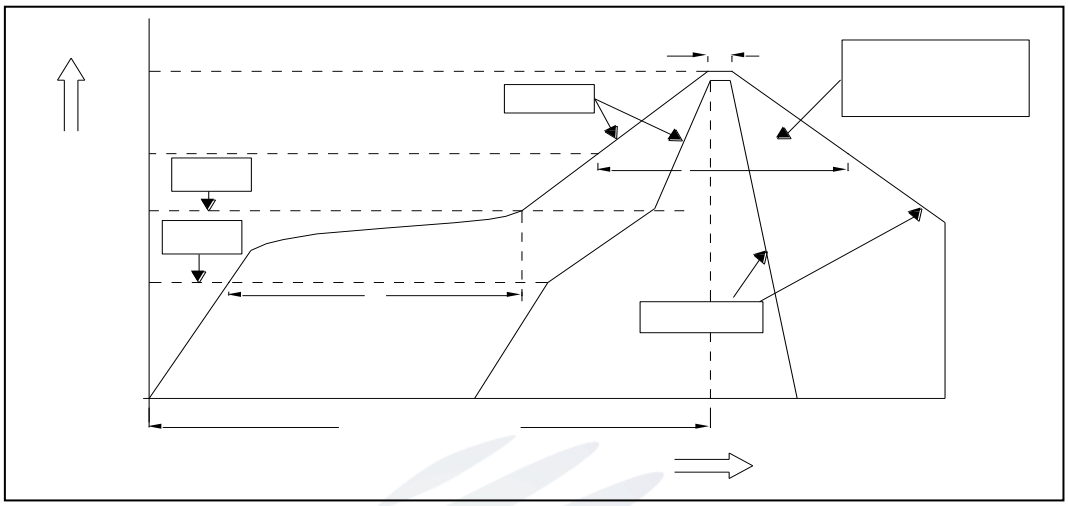

Fig.3-1 SMT Reflow Soldering Instructions SMT

Table 3-1 Parameter

Average temperature rise speed Tsmax T_P	3 °C/ Max 3 °C/ s
Preheating: minimum temperature (Tsmin)	150 °C
Preheating: Max temperature (Tsmax)	200 °C
Preheating: Time Tsmin Tsmax	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) (T_P) 5 °C	30 Max 30s
Cooling speed	6 °C/ Max 6 °C/ s
Needed time from 25 °C to Tp 25 °C	8 Max 8 minutes

Notes

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

(2)When soldering , 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. 伤 伤伤 伤

(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.

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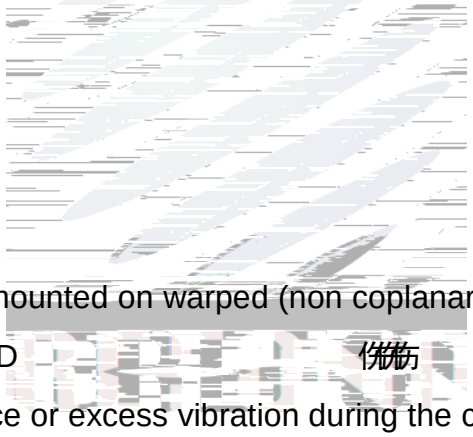

3.1.3 Cautions

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

(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

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4.1 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 伤伤 伤伤伤伤伤伤

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(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. 伤伤 伤伤

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(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. 伤伤

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Table 4-1Storage

Conditions	Temperature	Humidity	Time
Before Opening			
Storage			

伤ersion History/ 伤

Date 伤	Revisor 伤	Version 伤	Verifier 伤	Remarks 伤
2019.07.02	伤	E/1	伤	伤
2019.06.22	伤	E/2	伤	伤
2022.02.15	伤	E/3	伤	伤
2022.06.10	伤	E/4	伤	伤伤伤伤伤伤

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