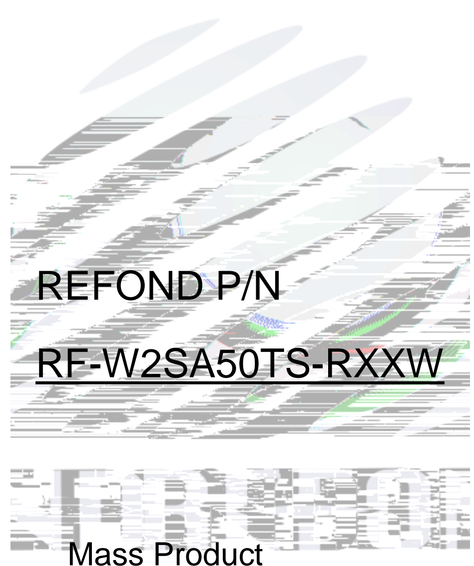
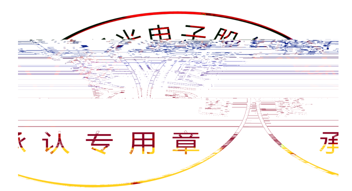
SPECIFICATION



REFOND P/N

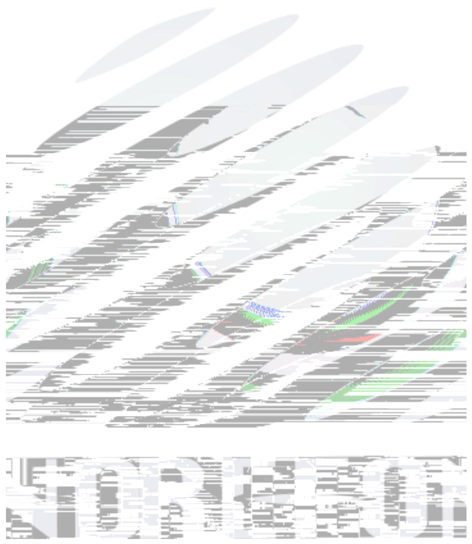
RF-W2SA50TS-RXXW

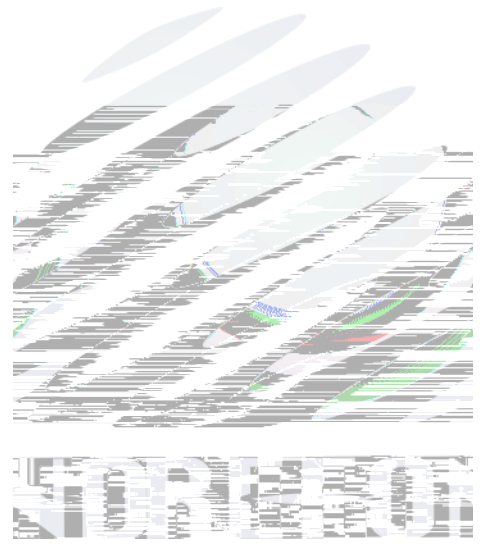
Mass Product



Contents

1. Description
1.1General Description
1.2Features
1.3Application
1.4Package Dimension
1.[(..............................9C92ED7. /Span <MCID 15/Lang (en-US)Span <2(roBT/F4uCID 2t5 5 P rea3(tio)Tf1





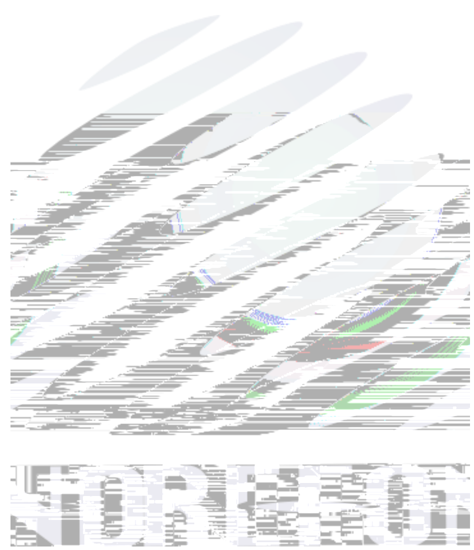
1.3Application

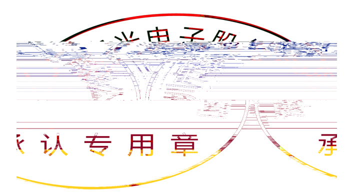
Article color lamp,lamp belt.

Landscape lighting,Trademark logo.

Hotels,markets,offices,household and other architectural uses.

General use.





1.4Package Dimension

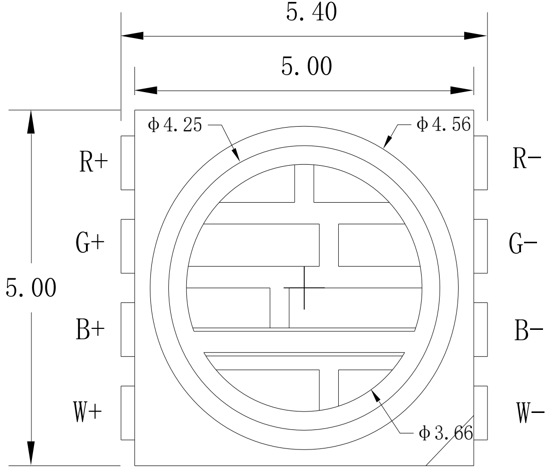


Fig.1-1 Top view

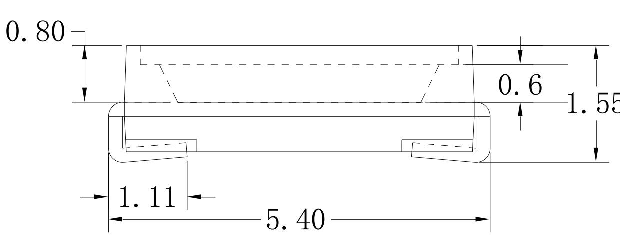


Fig.1-2Side view

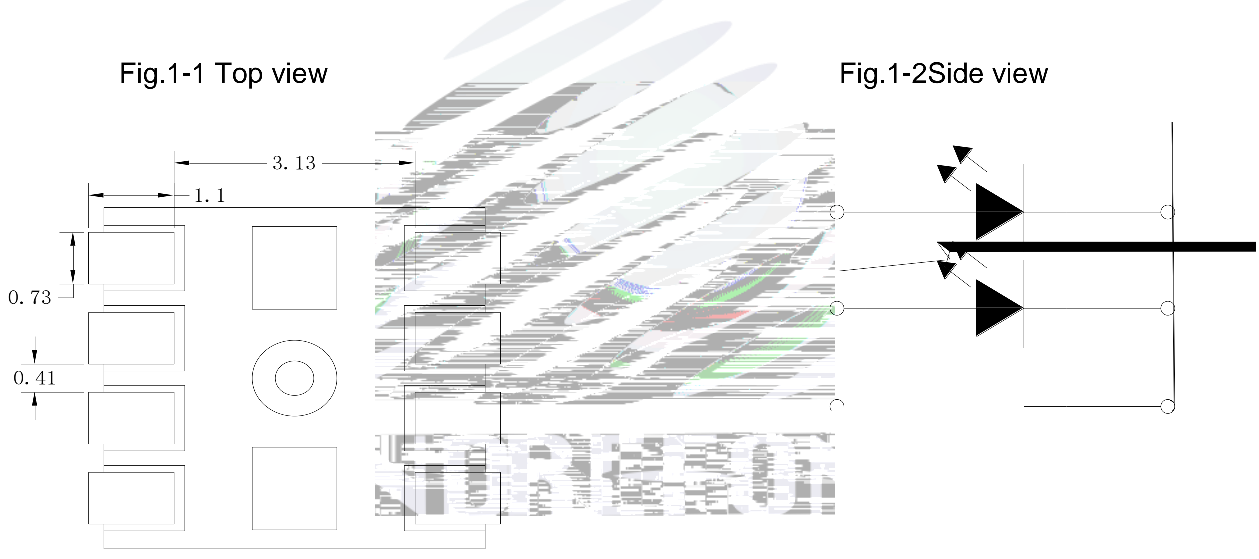
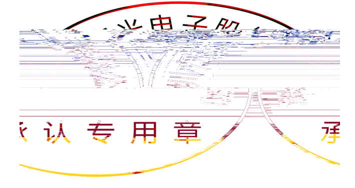


Fig.1-3Bottom view

Fig.1-4Polarity

1.33
0.90
0.26

Fig.1-5Soldering patterns



Notes

(All dimensions units are millimeters.

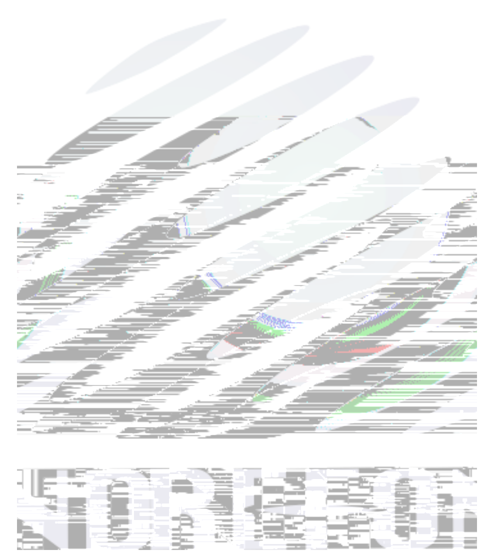
, (All dimensions tolerances are ±0.2mm unless otherwise noted. (,

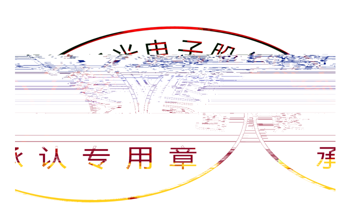
1.5Product Parameters

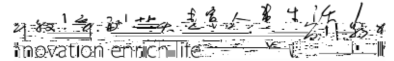
Table 1-1 Electrical / Optical Characteristics at Ts=25°C

Item	Symbol	Test Condition	Value			Unit
			Min.	Typ	Max.	
Forward Voltage R	V_F	I_F=20mA	2.0	---	2.3	V
Forward Voltage G			2.95	---	3.25	V
Forward Voltage B			2.85	---	3.25	V
Forward Voltage W			2.75	---	3.05	V

Luminous Intensity R







Thermal Resistance W			---	75	---	/W

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

Parameter	Symbol	Rating	Units
Power Dissipation	P_D	293.75	mW
Forward Current	I_F	R/G/B/W 25	mA
Peak Forward Current	I_{FP}	80	mA
Reverse Voltage	V_R	5	V
Electrostatic Discharge (HBM)	E_{SD}	2000	V
Operating Temperature	T_{OPR}	-40 ~ +85	
Storage Temperature	T_{OPR}	-40 ~ +85	
Junction Temperature R	T_J	94	
Junction Temperature G	T_J	94	
Junction Temperature B	T_J	94	
Junction Temperature W	T_J	93	

Notes

1. 1/10 Duty cycle, 0.1ms pulse width. ( ) (
2. The above forward voltage measurement allowance tolerance is ±0.1V.
3. The above wavelength measurement allowance tolerance is 1nm. ±1nm(
4. The above color coordinates measurement allowance tolerance is±0.005. (/ (

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

6. The above color rending index measurement allowance tolerance is ±1.

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

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

9.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(

10. ESD yield is over 80% at 2000V ESD (HBM). ESD protection during products handing is needed.2

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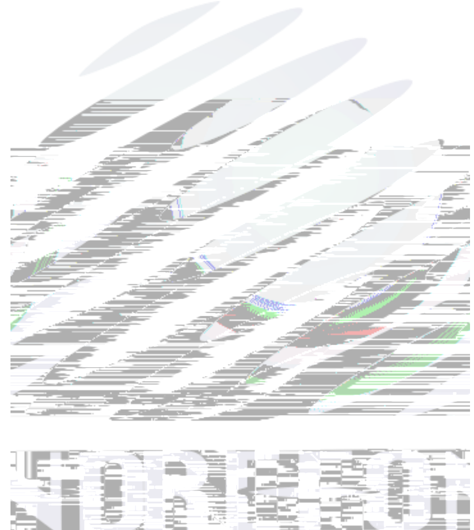
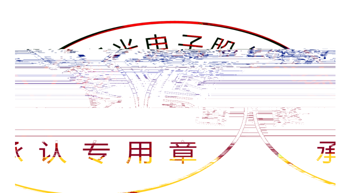


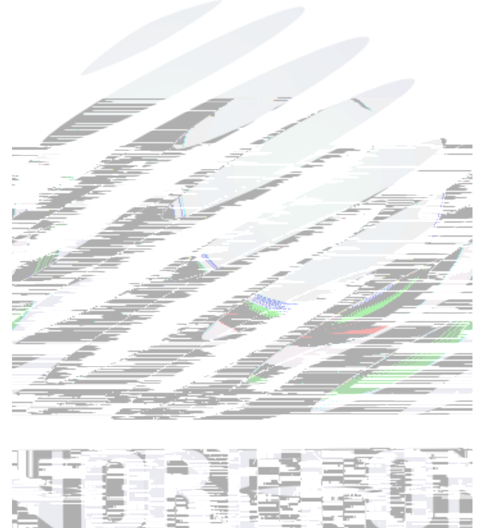


1.5.1 Bin Range Of Forward Voltage and Luminous Intensity (IF=20mA)

BIN (IF=20mA)

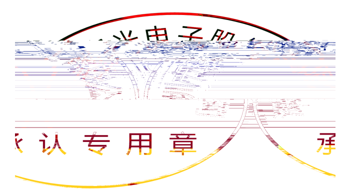
Table 1-3

Forward Voltage R	V_F V R	Rv
		2.0-2.3
Forward Voltage G	V_F V G	Gv
		2.95-3.25
Forward Voltage B	V_F V B	Bv



0.39
0.37
0.35
0.33
0.31
0.29
0.28 0.30 0.32 0.34 0.36 0.40 0.42 0.44 0.46 0.48 0.50

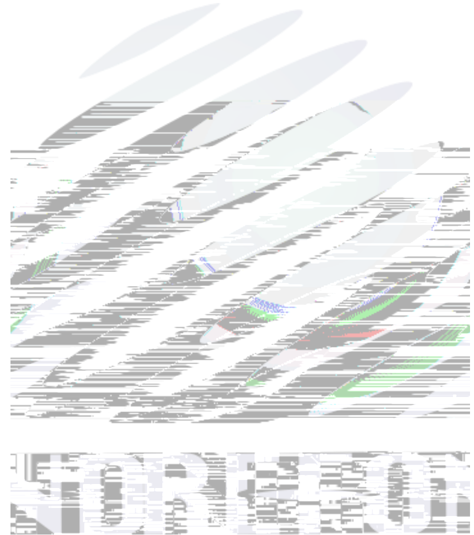
Fig 1-6 The C.I.E Chromaticity Diagram CIE



1.5.2 BIN and parameter comparison table BIN

Table 1-4

Bin code	XY	VF-W	VF-G	VF-R	VF-B	IV-W	IV-G	IV-R	IV-B	WLD-G	WLD-R



1.6 Typical optical characteristics curves

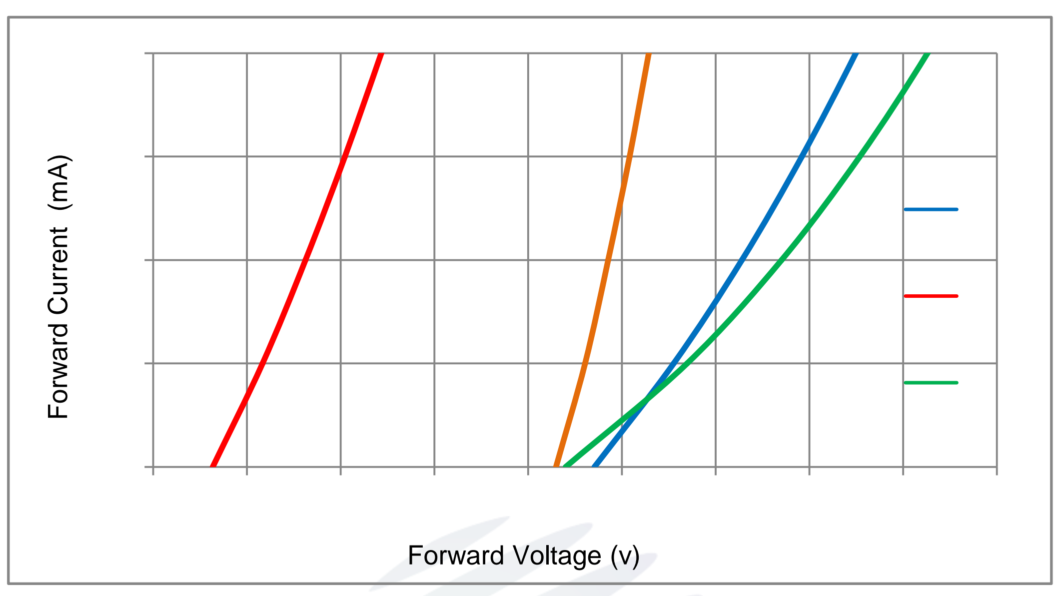


Fig 1-7 Forward Voltage Vs. Forward Current

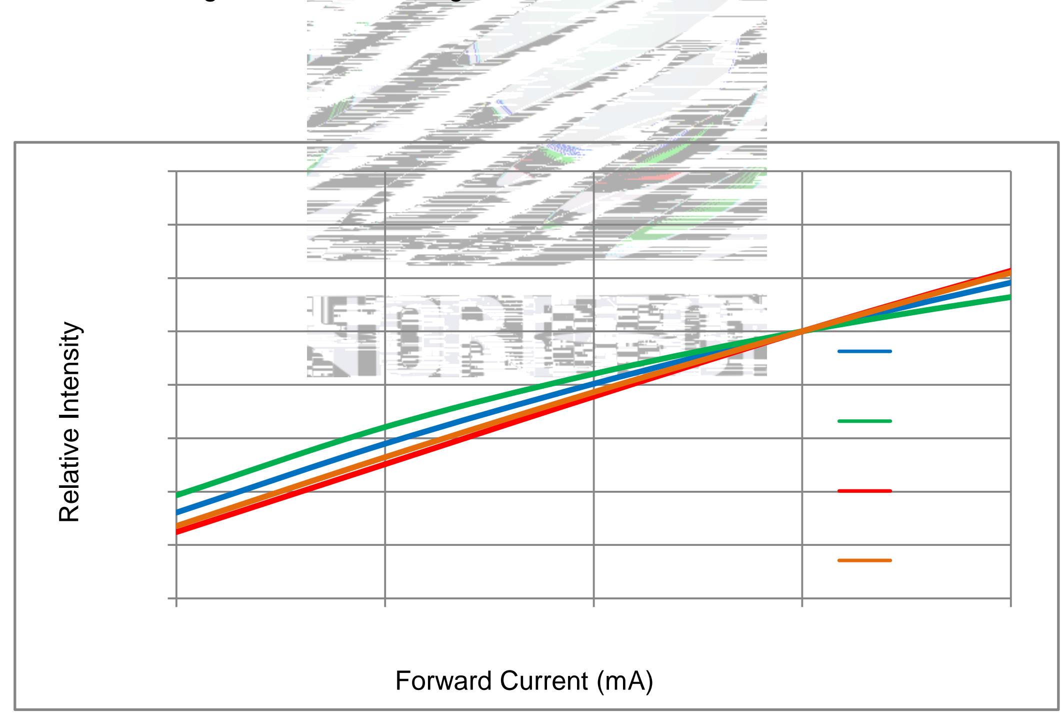
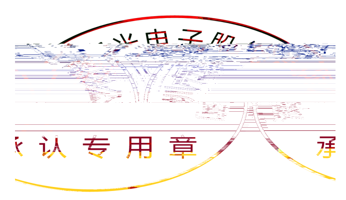


Fig 1-8 Forward Current Vs. Relative Intensity



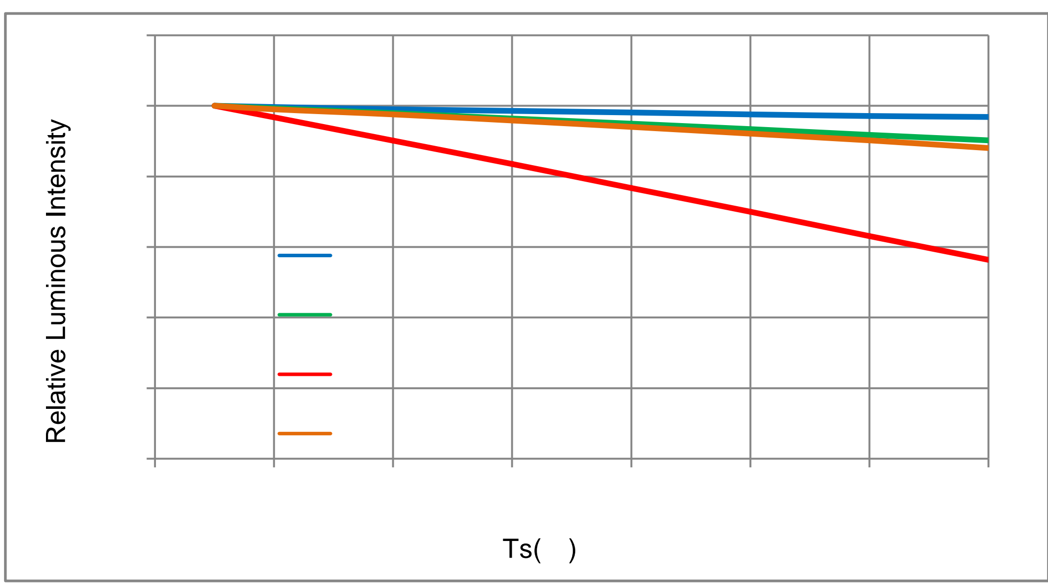


Fig 1-9 Solder Temperature Vs Relative Intensity

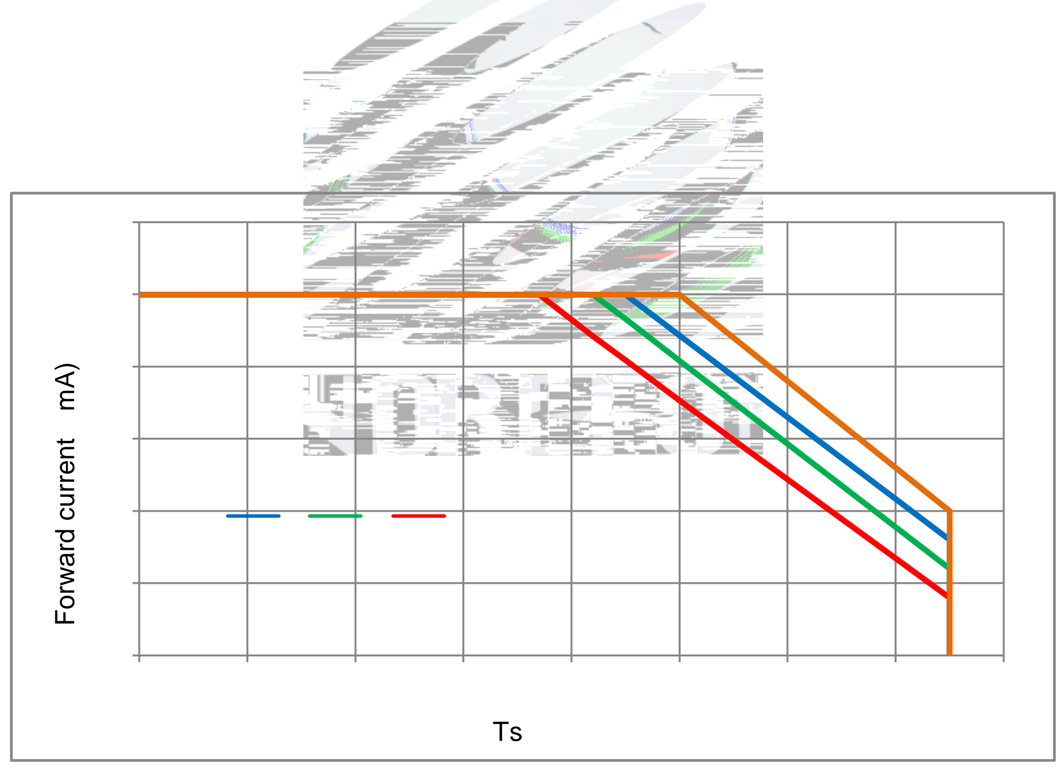


Fig 1-10 Solder Temperature Vs Forward Current

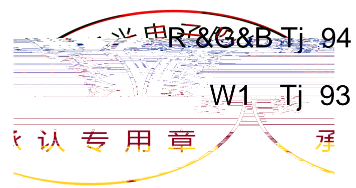


Fig 1-11 Forward Voltage Vs Solder Temperature

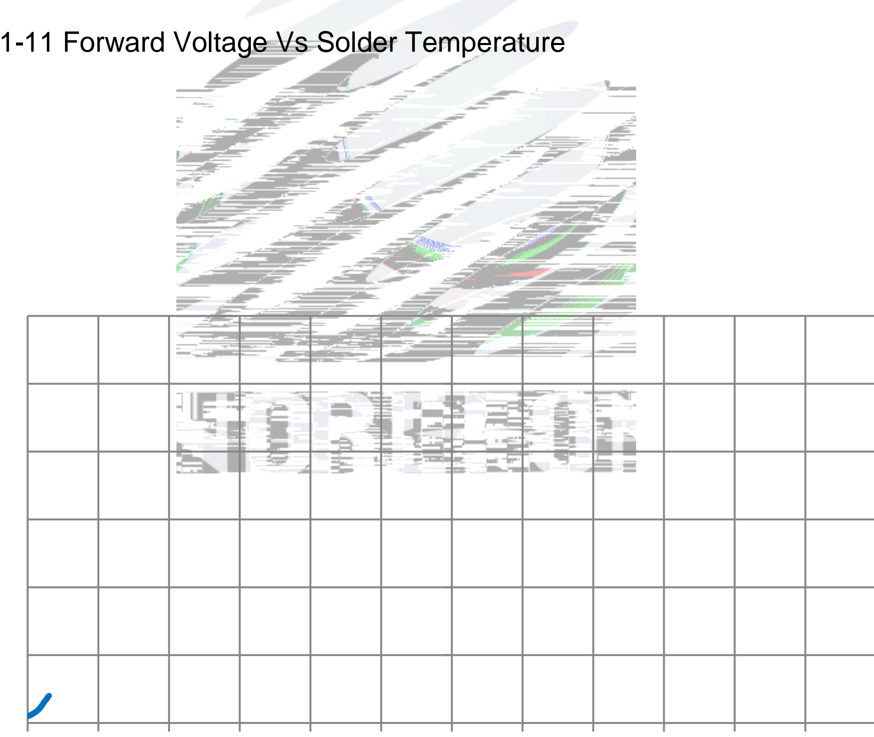


Fig 1-12 Radiation diagram

2. Packaging

2.1 Packaging Specification

Package:1000pcs/reel.

2.1.1Carrier Tape Dimension

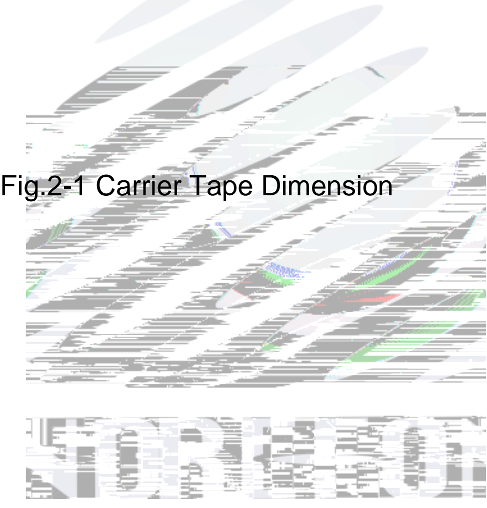


Fig.2-1 Carrier Tape Dimension

2.1.2Reel Dimension

,

Fig.2-2Reel

Notes

2.1.3Label Form Specification

PART NO. cinvcode
SPEC NO.cspecno
LOT NO.lotno

BIN CODE

XY:

QTY:

DATE:

Fig 2-3 Label Form

PART NO.	Part Number
SPEC NO.	Spec Number
LOT NO.	Lot Number
BIN CODE	Bin Code
XY	Chromaticity Bin
QTY	Packing Quantity
DATE	Made Date

2.2Moisture Resistant Packing

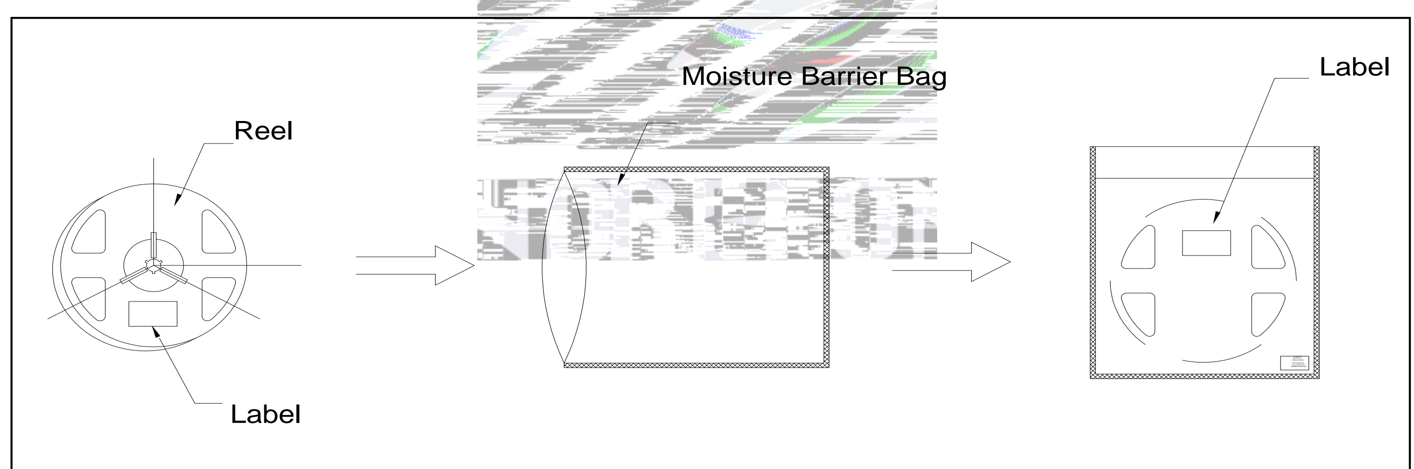
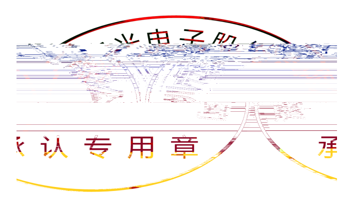


Fig.2-4 Packing specification



2.3Cardboard Box

Fig.2- Cardboard Box

2.4 Reliability Test Items And Conditions

Table 2-3 Test items and conditions

Test Items	Ref. Standard	Test Condition	Time	Quantity	Ac/Re /
Reflow	JESD22-B106	T_{emp}:260 max T=10 sec	2times.	10pcs.	0/1
Thermal Shock	JEITAED-4701 300307	-40 15min 10s 100 15min	100 cycle.	10pcs.	0/1
High Temperature Storage	JEITAED-4701 200 201	T_{emp}:100	1000hrs.		

High Temperature High Humidity Life Test	JESD22-A101	60 / 90%RH IF=20mA	500hrs.	10pcs.	0/1

2.5 Criteria For Judging Damage

Table 2-4 Criteria for judging damage

Test Items	Symbol	Test Condition	Criteria For Judgement	Applicable project
Forward Voltage		7,		Reflow Thermal Shock High and Low Temperature Storage Life Test
Luminous Intensity	Iv	7,	Maintenance 70%	
Luminous Intensity			Maintenance 70%	
Luminous Intensity			Maintenance 50%	
Luminous Flux W		7,	Maintenance 88%	
Lamp Bead Light Test	)	7,	No open circuit short circuit or flicke	High Temperature High Humidity Life Test

Notes

1.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.)

2.The technical information shown in the data sheets are 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

3.1SMT Reflow Soldering Instructions SMT

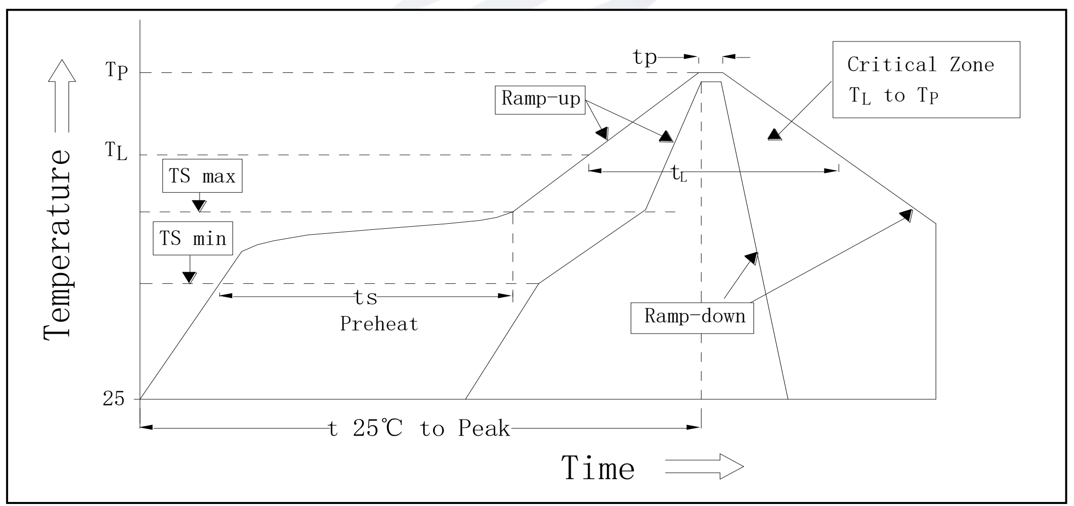


Fig.3-1 SMT Reflow Soldering Instructions SMT

Table 3-1 SMT Reflow Soldering Parameter SMT

Average temperature rise speed Tsmax TP	Max 3 °C/ s 3 °C/
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 (TL)	217 °C

Time limited to maintain high temperature: The Time (tL)	Max 60s 60
Peak /Classification of temperature: / (TP)	260 °C
Time limit classification of peak temperature time tp	Max 10s 10
Hold time within 5 C with the actual peak temperature (TP) (TP) 5 °C	Max 30s 30
Cooling speed	Max 6 °C/ s 6 °C/
Needed time from 25 °C to Tp 25 °C	Max 8 minutes 8

Notes

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

3.1.3 Cautions

(1) The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be impacted on the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when usethe picking up nozzle, the pressure on the silicone resin should be proper. LED

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

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

4. Handling Precautions

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 (

(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.

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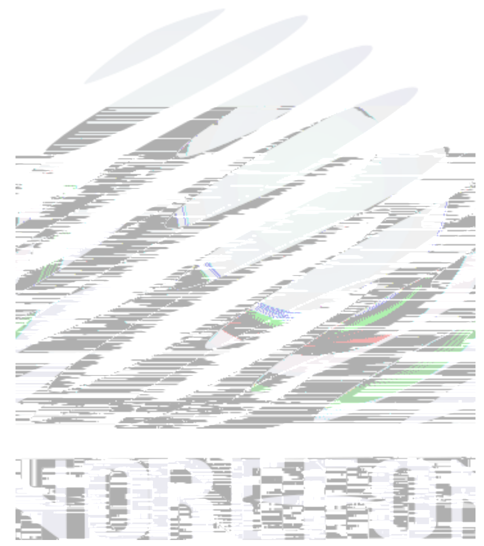
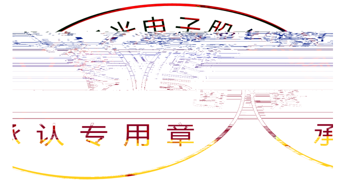


(6) Thermal Design is paramount importance because heat generation may result in the Characteristics decline,such as brightness decreased,Color change and so on.Please consider the heat generation of the LEDs when making the system design.LED

(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.



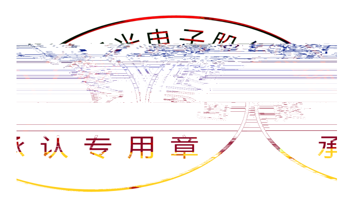
(8) If the moisture absorbent material silica gel has faded away or the LEDs have exceeded the storage time, baking treatment should be performed after unpacking and based on the following condition 60 5 for above 24 hours.

0 / , .

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).

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



Version History/

Date	Revisor	Version	Verifier	Remarks
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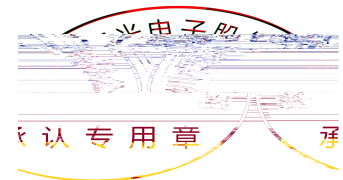

Declare
This specification is written both in English and in Chinese and the latter is formal.