



SPECIFICATION

REFOND P/N

RF-OMRI32TS-CE-J

D⁶

Mass Product





Contents

1. Description	3
1.1 General Description	3
1.2 Features	3
1.3 Application	3
1.4 Package Dimension	4
1.5 Product Parameters	5
1.6 Bin Range Of Forward Voltage and Luminous Intensity and Dominant wavelength (IF=150mA)	
BIN (IF=150mA)	6
1.7 Typical Optical Characteristics Curves	7
2. Packaging	11
2.1 Packaging Specification	11
2.1.1 Carrier Tape Dimension	11
2.1.2 Reel Dimension	11
2.1.3 Label Form Specification	12
2.2 Moisture Resistant Packing	12
2.3 Cardboard Box	13
2.4 Reliability Test Items And Conditions	13
2.5 Criteria For Judging Damage	14
3. SMT Reflow Soldering Instructions SMT	15
3.1 SMT Reflow Soldering Instructions SMT	15
4. Handling Precautions	17
4.1 Handling Precautions	17





1. Description

1.1 General Description



The Red source color devices are made with AlGaInP on Substrate Light Emitting Diode
Product Package:2.80mmX3.50mmX0.70mm

>76 3'9S;` B

\$Z" _ _ J%Z " _ _ J" Z" _ _

1.2 Features

PLCC2 Package.B>55\$

Extremely wide viewing angle.

Suitable for all SMT assembly and solder process.

E? F

Available on tape and reel.

Moisture sensitivity level: Level 2.

>VWV\$

Compliance with RoHS and REACH. Da: E D735:

Qualifications: The product qualification test plan is based on the guidelines of AEC-Q101
Stress Test Qualification for Automotive Grade Discrete Semiconductors.

375ZC#" #

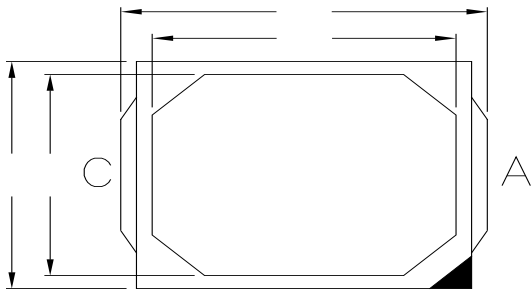
1.3 Application

Automotive Lighting Interior and Exted[ač

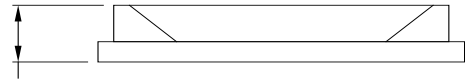




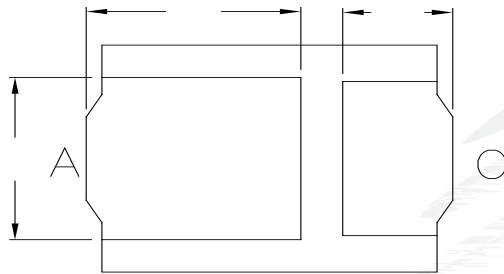
1.4 Package Dimension



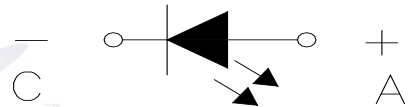
正面视图



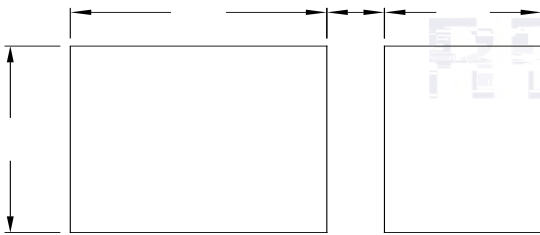
侧面视图



背面视图



极性



推荐焊盘

Notes

#Z All dimensions units are millimeters.

\$Z All dimensions tolerances are $\pm 0.05\text{mm}$ unless otherwise noted.





1.5 Product Parameters

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

Item	Symbol	Test Condition	Value			Unit
			Min.	Typ.	Max.	
Forward Voltage	V_F	$I_F=150\text{mA}$	1.8	---	2.5	V
Reverse Current	I_R	$V_R=5\text{V}$	---	---	10	μA
Luminous Flux		$I_F=150\text{mA}$	19.6	22	26.9	lm
Dominant wavelength	λ_d	$I_F=150\text{mA}$	617.5	620	625	nm
Viewing Angle	2 1/2	$I_F=150\text{mA}$	---	120	---	deg
Thermal Resistance.	R_{THJ-S}	$I_F=150\text{mA}$	---	---	55	/W

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

Parameter	Symbol	Rating	Units
Power Dissipation	P_D	450	mW
Forward Current	I_F	180	mA
Peak Forward Current	I_{FP}	240	mA
Reverse Voltage	V_R	5	V
Electrostatic Discharge (HBM)	E_{SD}	2000	V
Operating Temperature	T_{OPR}	-40 ~ +110	
Storage Temperature	T_{STG}	-40 ~ +110	
Junction Temperature	T_J	125	



Notes

1. 1/10 Duty cycle, 10ms pulse width. 10ms, 1/10.
2. The above forward voltage measurement allowance tolerance is $\pm 0.1V$. $\pm 0.1V$.
3. The above color coordinates measurement allowance tolerance is ± 0.005 . ± 0.005 .
4. The above luminous intensity measurement allowance tolerance $\pm 10\%$. $\pm 10\%$.
5. Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product.
6. All measurements were made under the standardized environment of Refond.
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 >76 .
8. ESD yield is over 90% at 2000V ESD (HBM). ESD protection during products handling is needed. >76 .

1.6 Bin Range Of Forward Voltage and Luminous Intensity and Dominant wavelength (IF=150mA) BIN (IF=



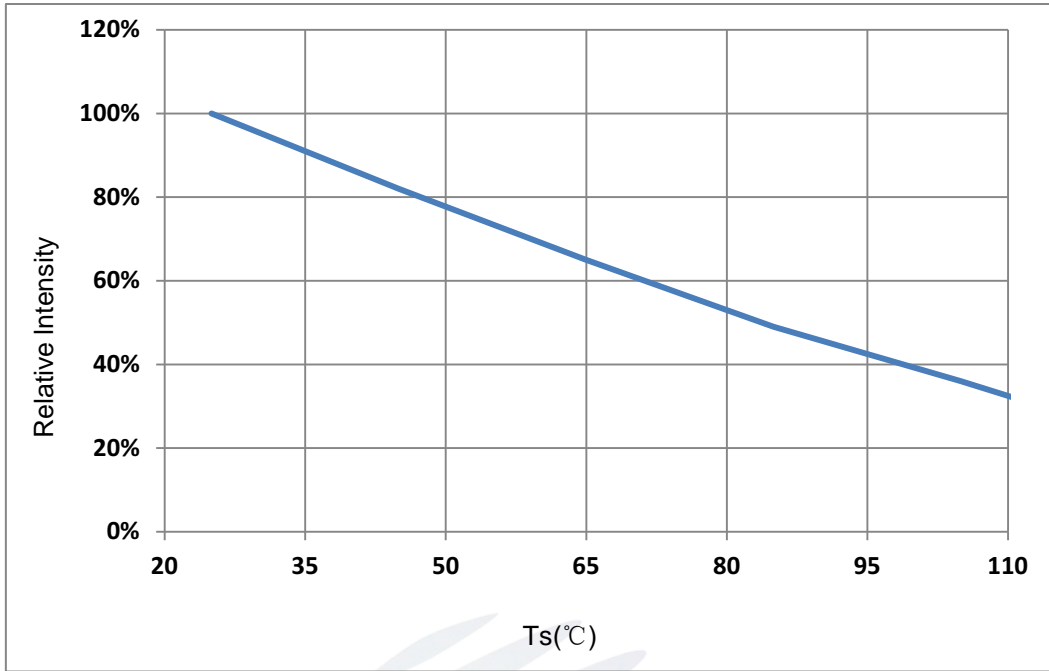


Fig. 1-8 Solder Temperature Vs Relative Intensity

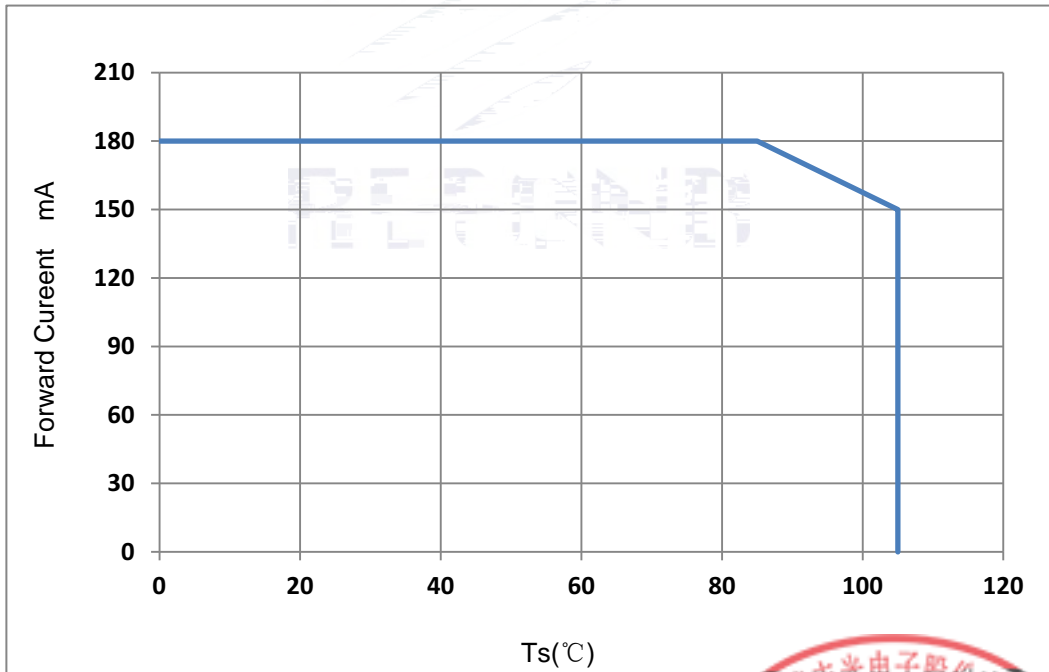


Fig. 1-9 Solder Temperature Vs Forward Current



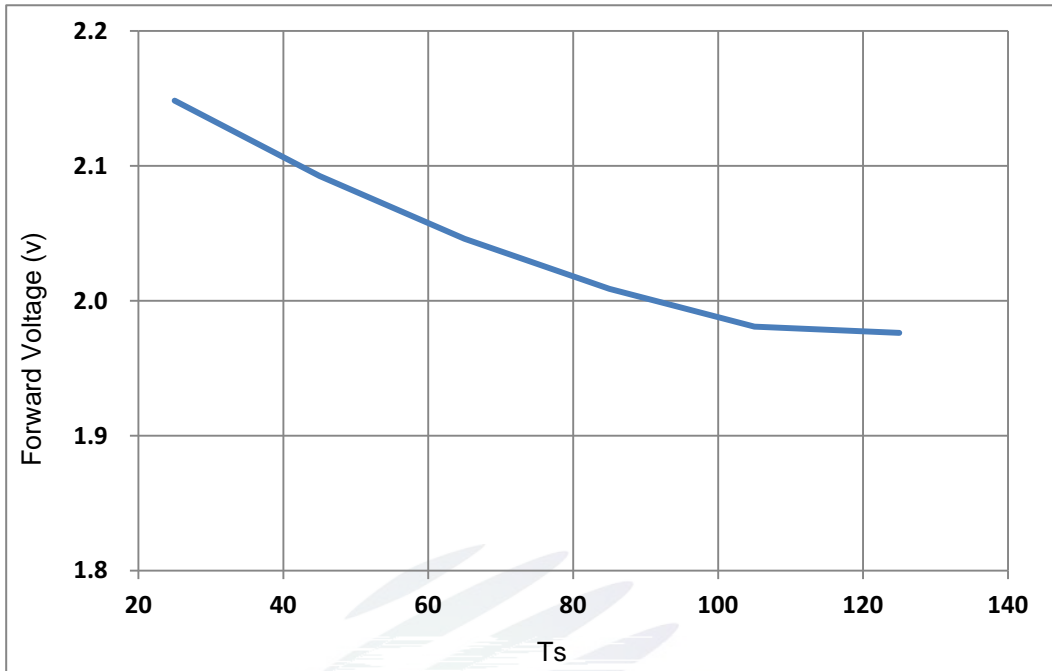


Fig. 1-10 Forward Voltage Vs Solder Temperature

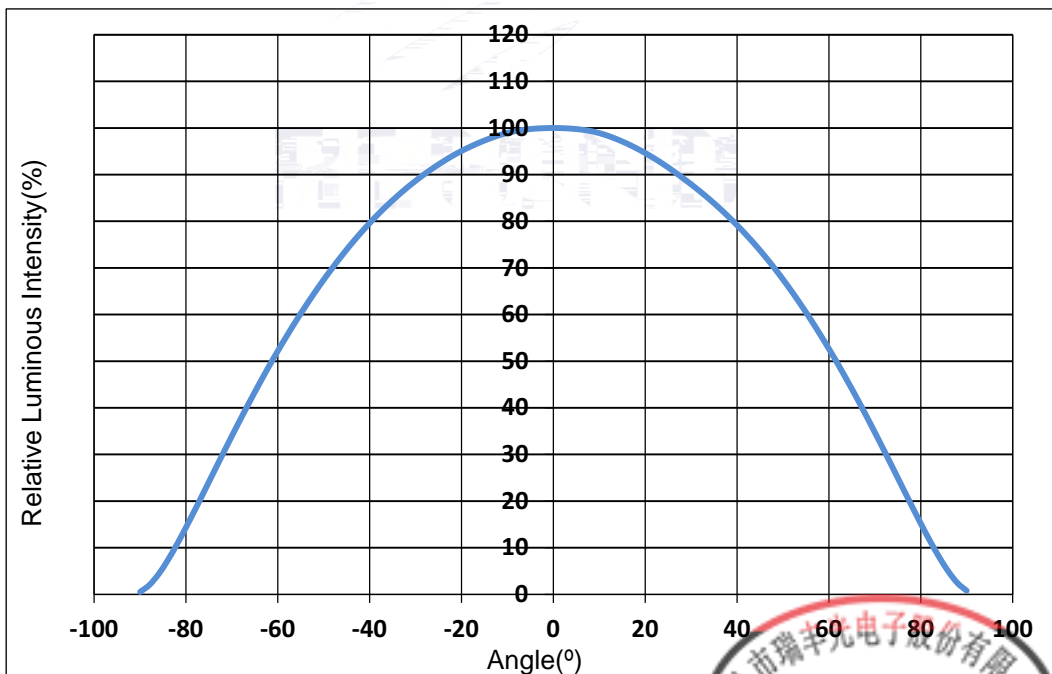


Fig. 1-11 Radiation diagram



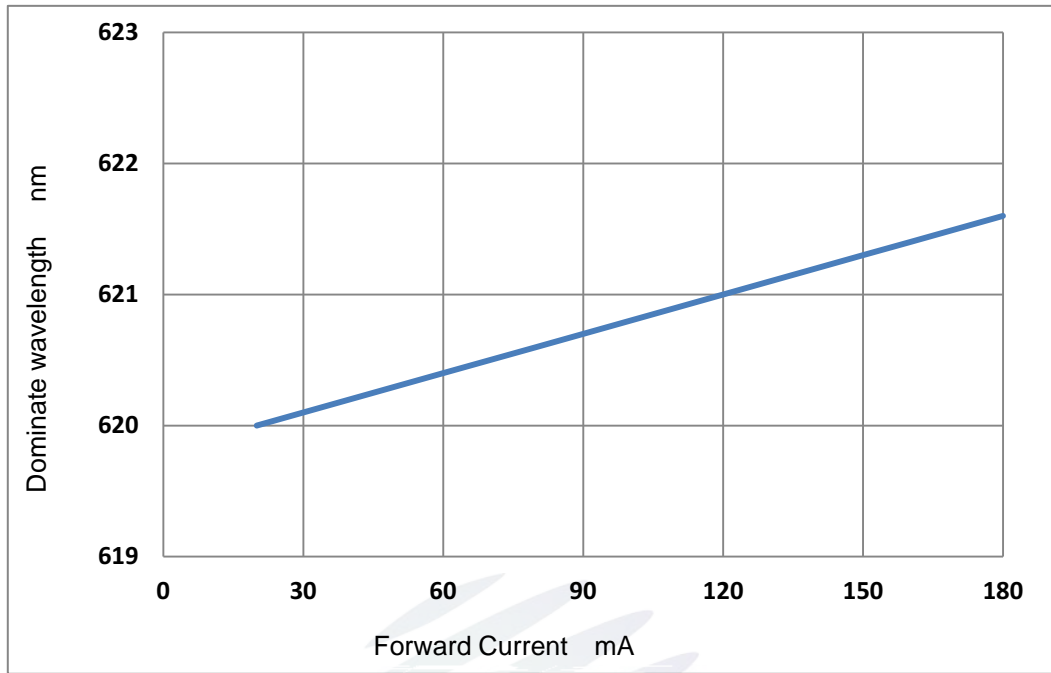


Fig. 1-12 Forward current Vs Dominate wavelength

(Ts=25°C)

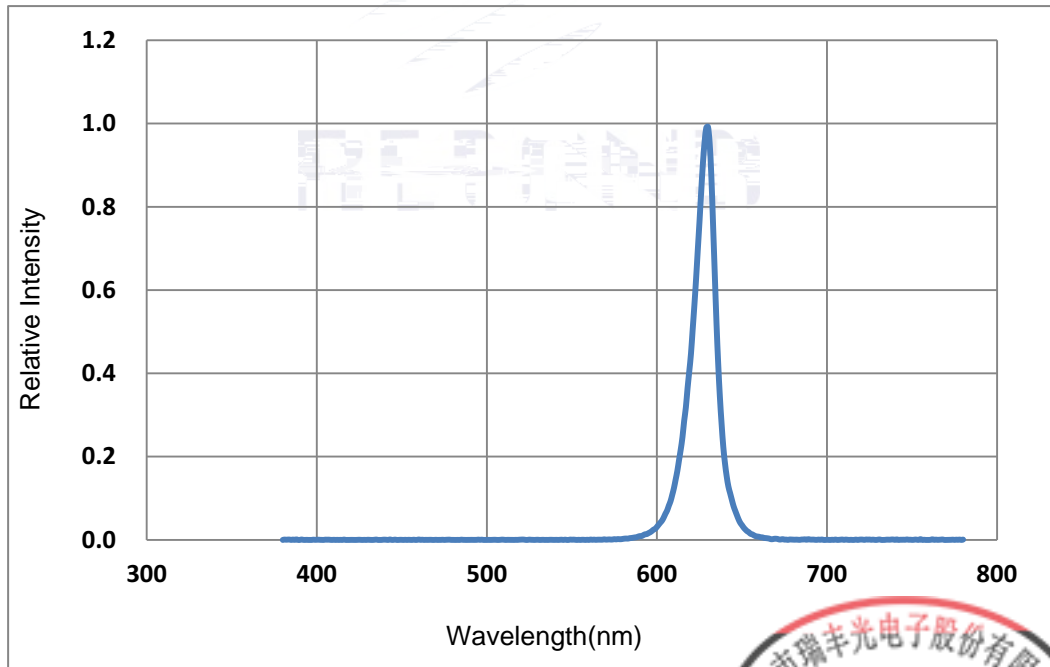


Fig. 1-13 Spectrum Distribution







2.1.3 Label Form Specification

FST WLS Specification

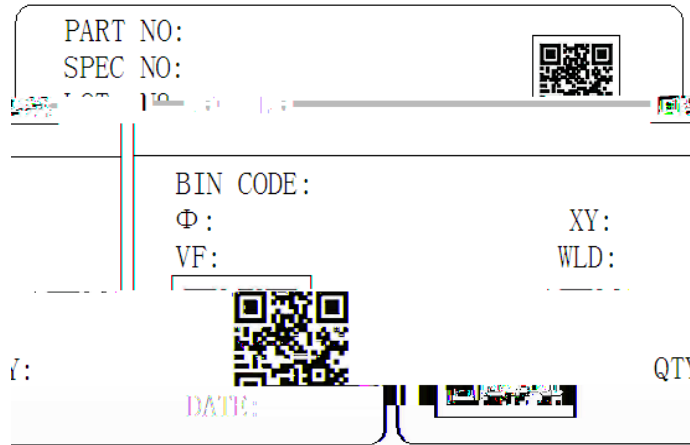


Fig. 2-3 Label

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

2.2 Moisture Resistant Packing

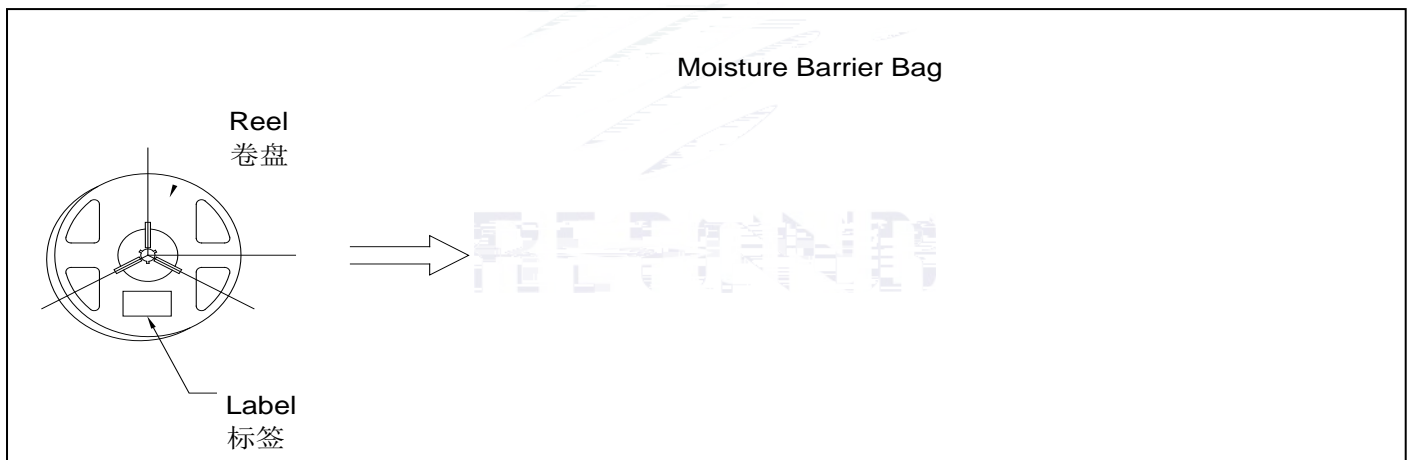


Fig.2-4 Moisture Resistant Packing





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	$I_F=150mA$	-	U.S.L*)x1.1
Reverse Current	I_R	$V_R = 5V$	-	U.S.L*)x2.0
Luminous Flux		$I_F=150mA$	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. ! >76
- 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

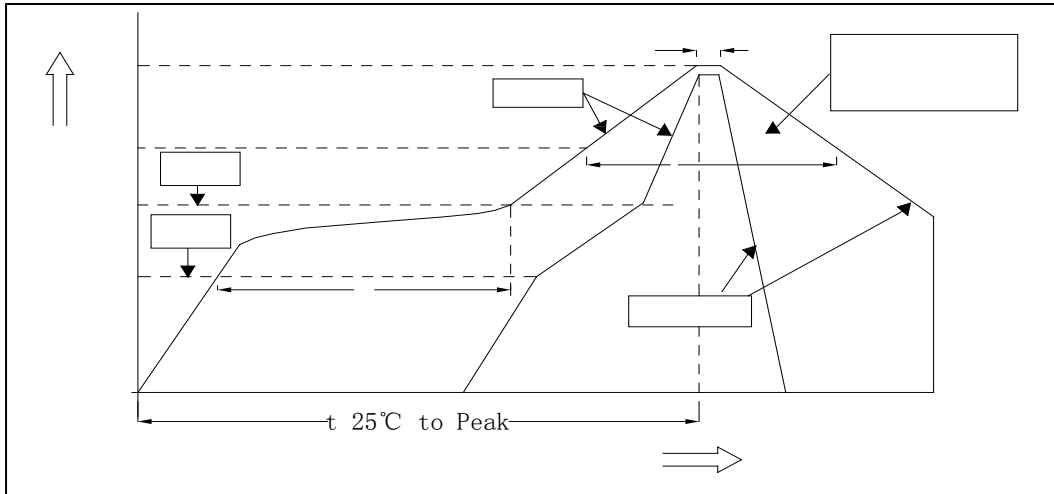
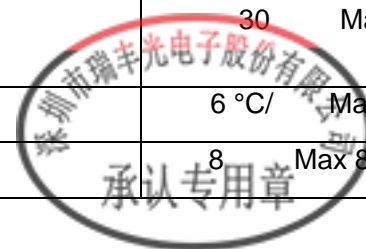


Fig.3-1 SMT Reflow Soldering Instructions SMT

Table 3-1 Reflow parameters 回流焊参数

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	Max 60s
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 (T_P) (T_P) 5 °C		30	Max 30s
Cooling speed		6 °C/	Max 6 °C/ s
Needed time from 25 °C to T_p	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 soldering processes, LED will be damaged.

(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 10 seconds. Refond-0.00





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. LED >76 # " " BB? ž

(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 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.

>76 >76
+ " " BB? + " " BB?
' " " BB? ž

(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 affect 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.

>76
>76

>76

(4) Handle the component along the side surface by using forceps or appropriate tools, Do not directly touch or Handle the silicone lens surface, it may damage the internal circuitry.





Table 4-1 Storage

Conditions		Temperature	Humidity	Time
Storage 储存	Before Opening Aluminum Bag	30	75%	Within 1 Year From Date
	After Opening Aluminum Bag	30	60%	Recommended for use within 24 hours 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 60±5 for above 24 hours.

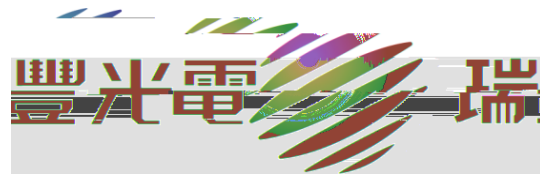
(" f ' \$&





Date	Reviser	Version	Verifier	Remarks
2017/06/26	5ZSa 6S[S`	E0	LZS` Y EZ[[` Y	@7I
2021/04/25	: gS` Y @[S` ZgS	E1	LZg K[[` Y	Template update
2022/08/10	LZag J[S`	E2	LZg K[[` Y	Template update
2023/05/05	LZag J[S`	E3	LZg K[[` Y	Template update





www.refond.com

REFOND

Declare

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

