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DATA SHEET

PART NO.: LSC2HIRC

REV: A / 0

CUSTOMER'S APPROVAL: _____ DCC: _____

PARA ight	1.9*4.0*5.1MM RECTANGULAR LED LAMP	
	Part No.: LSC2HIRC	REV:A / 0

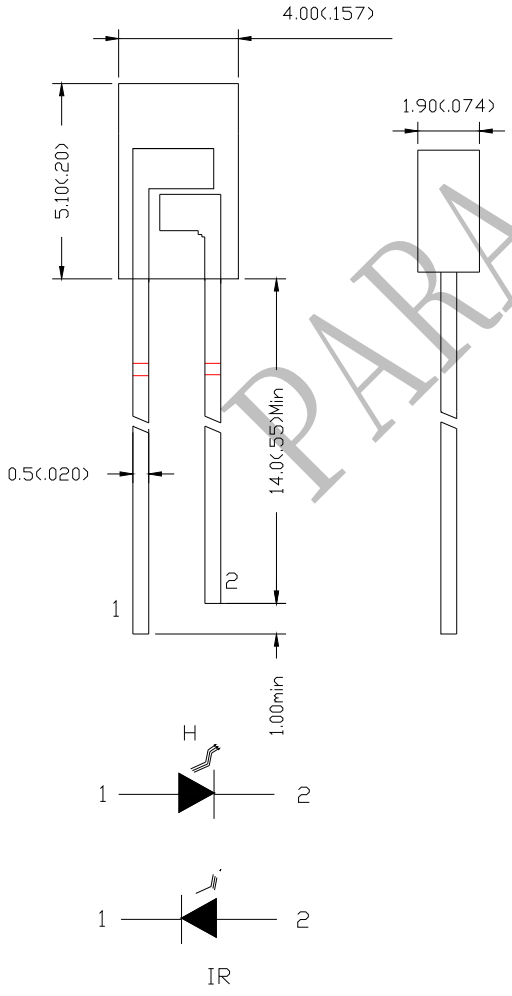
■ Features

- 1.9*4.0*5.1mm diameter package.
- Low power consumption.
- High Luminous Intensity .
- High Efficiency.
- Long life, stable and reliable.
- Pb-free.
- RoHS compliant

■ Applications

- Blood oxygen sensor

■ Package Dimensions



Notes:

1. All dimensions are in millimeters.
2. Tolerance is ± 0.2mm unless otherwise noted

■ Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating		nit
		R	IR	
Power Dissipation	Pd	60	50	mW
Peak Forward Curre t (1/10 Duty Cycle, 0.1ms Pulse Width)	IFP	80	80	mA
DC Forward Current	IF	30	50	mA
Reverse Voltage	VR	5	5	V
Junction Temperature	TJ	≤115		℃
Operating Temperature Range	Topr	-40°C ~ + 85°C		
Storage Temperature Range	Tstg	-40°C ~ +85°C		
Solderin Condition	Tsol	Wave Soldering : 260°C For 5 Seconds		
		Hand soldering: 300°C For 3 Seconds		

Notes:

1.1/10 duty cycle,0.1ms pulse width.

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

3.The above dominant wavelength measurement allowance tolerance is ±2.0nm.

Electrical and optical characteristics(Ta=25℃)

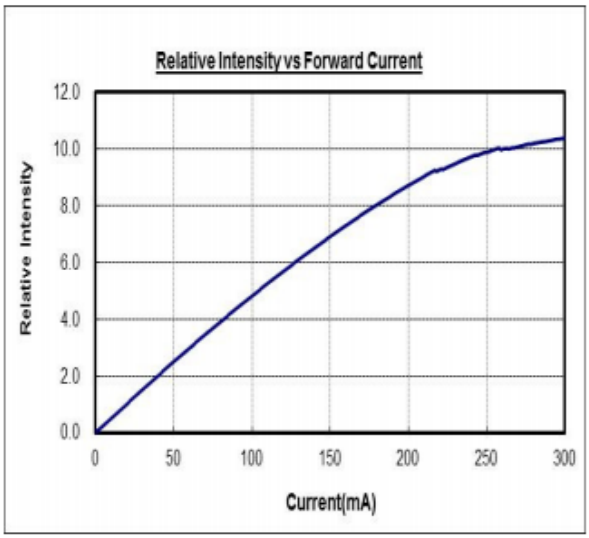
Parameter	Symbol		Min.	Typ.	Max.	Unit	Test Condition
Dominant Wavelength	λp	R	650	660	670	nm	IF =20mA
		IR	895	899	910	nm	IF =20mA
Forward Voltage	VF	R	1.7	---	2.6	V	IF =20mA
		IR	1	---	1.6	V	IF =20mA
Reverse Current	IR	R	---	---	10	μA	VR=5V
		IR	--	---	10	μA	VR=5V

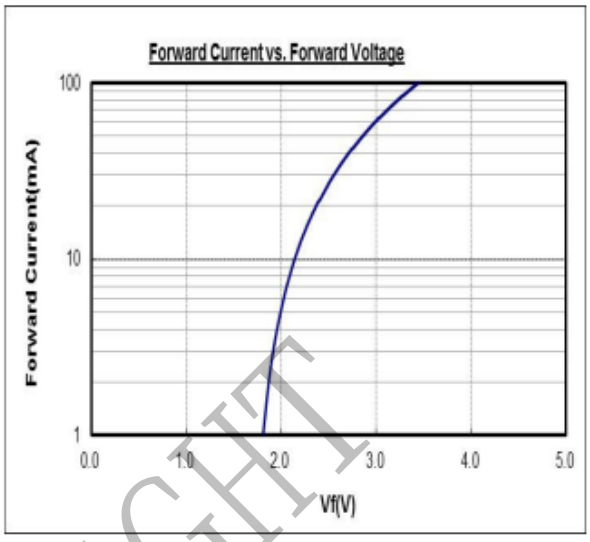
Notes:

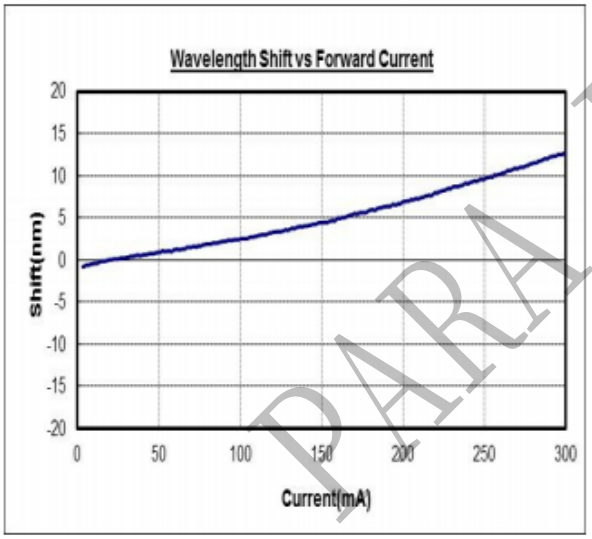
1. Luminous flux is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. θ1/2 is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength, λd is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

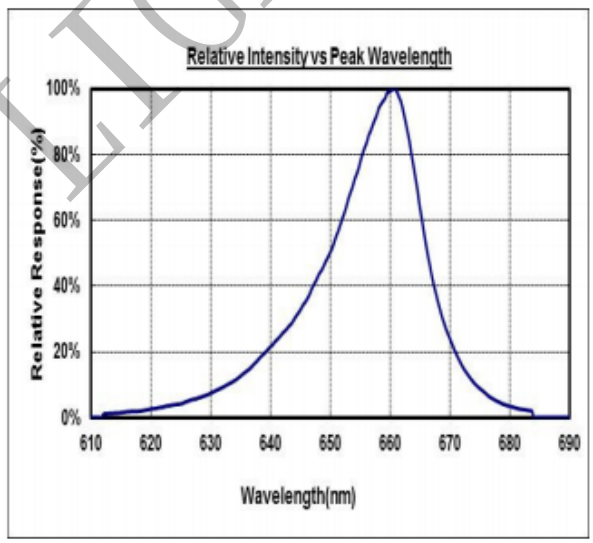
■ Typical Electro-Optical Characteristics

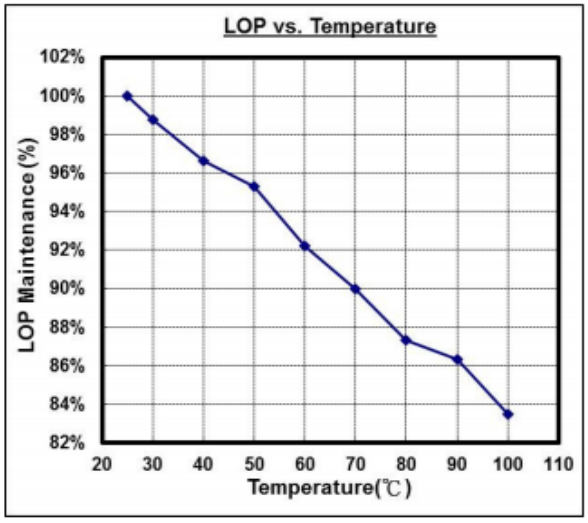
H:

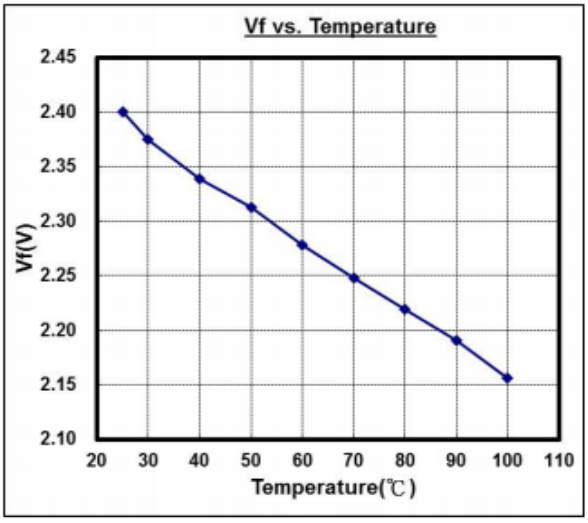


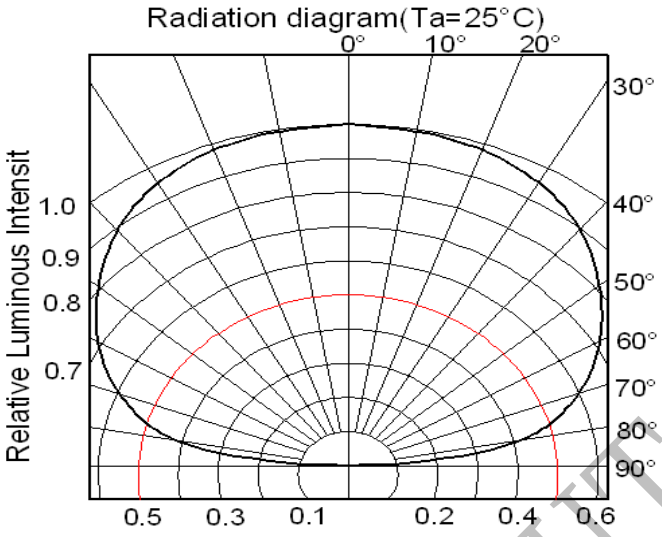




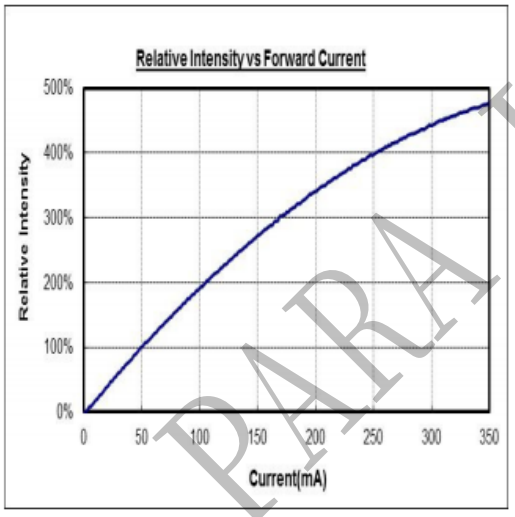


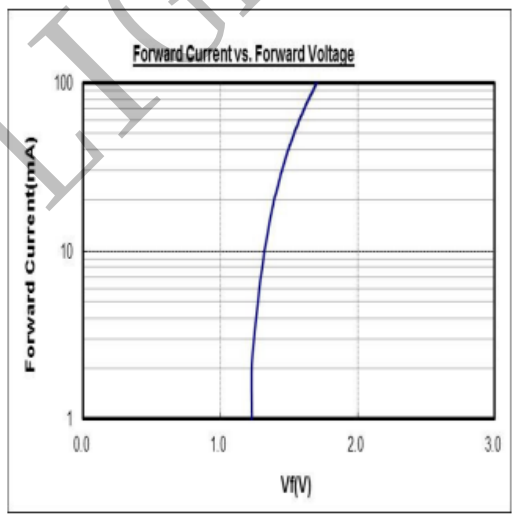


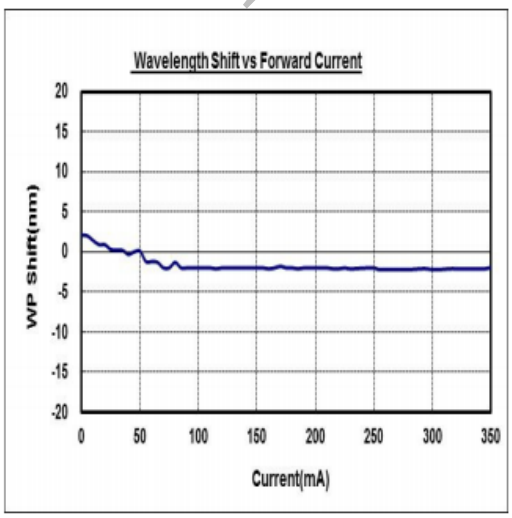


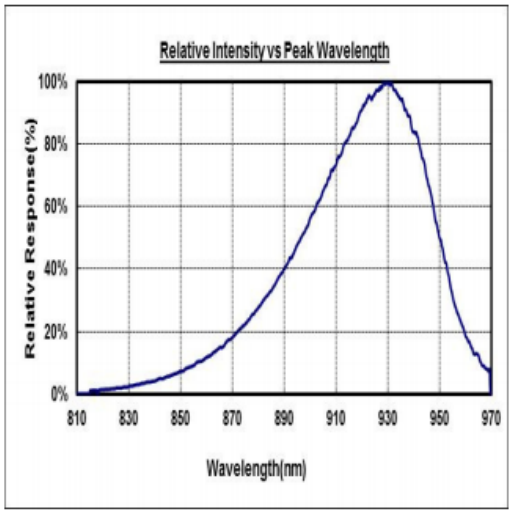


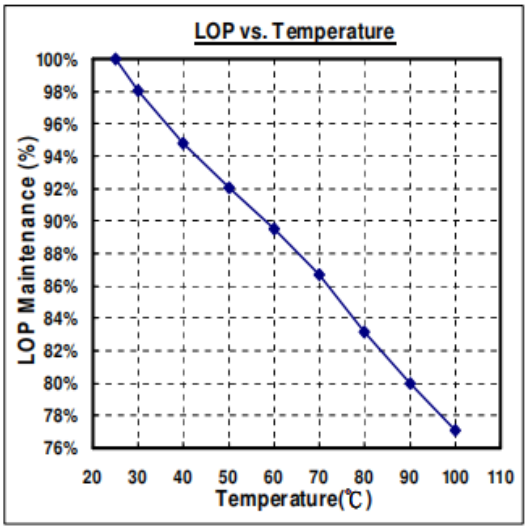
IR:

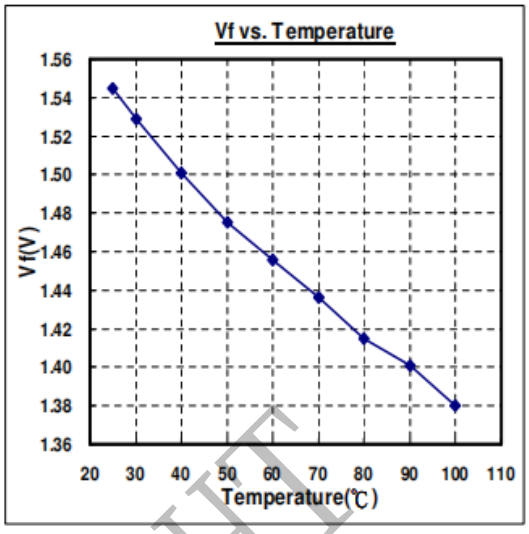


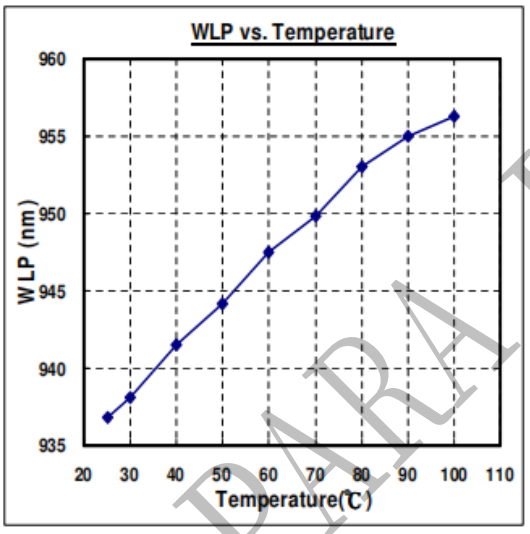







LOP vs. Temperature
LOP Maintenance (%)
100%
98%
96%
94%
92%
90%
88%
86%
84%
82%
80%
78%
76%
20 30 40 50 60 70 80 90 100 110
Temperature(℃)


Vf vs. Temperature
Vf(V)
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
20 30 40 50 60 70 80 90 100 110
Temperature(℃)


WLP vs. Temperature
WLP (nm)
960
955
950
945
940
935
20 30 40 50 60 70 80 90 100 110
Temperature(℃)

● Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.
Confidence level：90%.
LTPD：10%.

Items	Test Condition	Test Hours/ Cycles	Quantity	Ac/Re
Wave Soldering	Temp. : 260℃±5℃ Min. 5sec.	3times	22 PCS	0/1
Temperature Cycle	H : +85℃ 30min. ∫ 5 min L : -40℃ 30min.	300 Cycles	22PCS	0/1
Thermal Shock	H : +100℃ 10min. ∫ 10 sec L : -40℃ 10min.	100Cycles	22PCS	0/1
High Temperature Storage	Temp. : 100℃	1000Hrs	22PCS	0/1
Low Temperature Storage	Temp. : -40℃	1000Hrs	22PCS	0/1
Dc Life	IF =20mA	1000Hrs	22PCS	0/1
High Temperature / High Humidity	85℃/ 85%RH	500Hrs	22PCS	0/1

● **Failure Criteria**

Test Items	Symbol	Test condition	Failure Criteria	
			Min.	Max.
Forward Voltage	VF	IF=20mA	---	(U.S.L*)×1.1
Reverse Current	IR	VR=5V	---	(U.S.L*)×2.0
Luminous Intensity	Iv	IF=20mA	(L.S.L*)×0.7	---

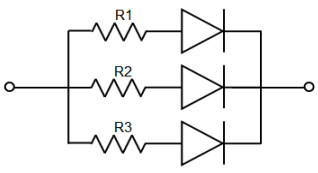
● Packaging

The LED's are packed in cardboard boxes after packaging in anti-electrostatic bags or plastic bags or taping. According to the total delivery amount, cardboard boxes will be used to protect the LED's from mechanical shocks during transportation. The label on the minimum packing unit bag shows. The boxes are not water resistant and therefore must be kept away from water and moisture.1000pcs per packet

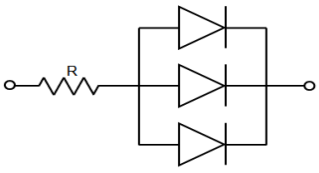
● Cautions

Application

1. A LED is a current-operated device. The slight shift of voltage will cause big change of current, which will damage LEDs. Customer should use resistors in series for the Over-Current-Proof.
2. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended to use individual resistor separately, as shown in Circuit A below. The brightness of each LED shown in Circuit B might appear difference due to the differences in the I-V characteristics of those LEDs.



Circuit model A



Circuit model B

3.High temperature may reduce LEDs' intensity and other performances, so keeping it away from heat source to get good performance is necessary.

●Storage

1. Before opening original package, it is recommended to store them in the following environment:Temperature: 5℃~30℃/ Humidity: 85%RH max.
2. After opening original package, the storage ambient for the LEDs should be in 5~30°C temperature and 60% or less relative humidity.
3. In order to avoid moisture absorption, it is recommended that the LEDs that out of the original package should be stored in a sealed container with appropriate desiccant, or in desiccators with nitrogen ambient.
4. The LEDs should be used within 24hrs (1 day) after opening the package. Once been mounted, soldering should be quick.
5. If the moisture absorbent material (silica gel) has faded away or the LEDs stored out of original package for more than 168hrs (7 days), baking treatment should be performed using the conditions: 60℃ at least 24 hours.

● ESD (Electrostatic Discharge)-Protection

A LED (especially the Blue、White and Green product) is an ESD sensitive component, and static electricity or power surge will damage the LED. ESD-damaged LEDs will exhibit abnormal characteristics such as high reverse leakage current, low forward voltage, or “no light-up” at low currents, etc.

Some advice as below should be noticed:

1. A conductive wrist strap or anti-electrostatic glove should be worn when handling these LEDs.
2. All devices, equipment, machinery, work tables and storage racks, etc. must be properly grounded.
3. Use anti-static package or boxes to carry and storage LEDs. And ordinary plastic package or boxes is forbidden to use.
4. Use ionizer to neutralize the static charge during handling or operating.
5. All surfaces and objects within 1 ft close to LEDs measure less than 100V.

●Cleaning

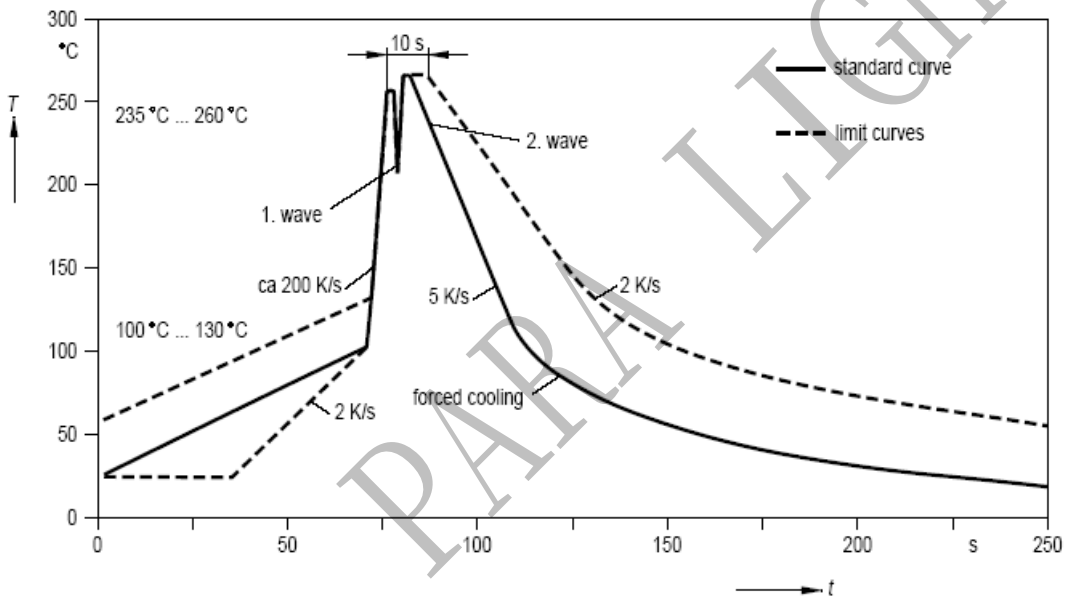
Use alcohol-based cleaning solvents such as IPA (isopropyl alcohol) to clean LEDs if necessary.

●Soldering

1. Soldering condition refer to the draft “Soldering Profile Suggested” on page 4.
2. Reflow soldering should not be done more than 2 times.
3. Manual soldering is only suggested on repair and rework. The maximum soldering temperature should not exceed 300°C within 3 sec. And the maximum capacity of soldering iron is 30W in power.
4. During the soldering process, do not touch the lens at high temperature.
5. After soldering, any mechanical force on the lens or any excessive vibration shall not be accepted to apply,

also the circuit board shall not be bent as well.

●Recommended Wave Soldering Profile



●Others

1. The LEDs described here are intended to be used for ordinary electronic equipment (such as office equipment, communication equipment and household applications).Consult Gtlight’s Sales in advance for the applications in which exceptional reliability is required, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health. (such as in aviation, transportation, traffic control equipment, medical and life support systems and safety devices).
2.The light output from the high luminous intensity LEDs may cause injury to human eyes when viewed directly.
3. The appearance and specifications of the product may be modified for improvement without prior notice.