

SMD LED



Lead-Free Parts

PRELIMINARY

This is just a preliminary design
to let you evaluate the concept

LG-1311UEL9UG-CT

DATA SHEET

DOC.NO : IMQW0905-LG-1311UEL9UG-CT

REV. : A

DATE : 11 – Apr. – 2014

Features:

1. Package in 8mm carrier tape on 7" diameter reel.
2. Compatible with automatic placement equipment.
3. Compatible with infrared and vapor phase reflow solder process.
4. Mono-color type.
5. Pb-free.
6. The product itself will remain within RoHS compliant version.

Descriptions:

1. The LG-1311 SMD Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
2. Besides, lightweight makes them ideal for miniature applications. etc.

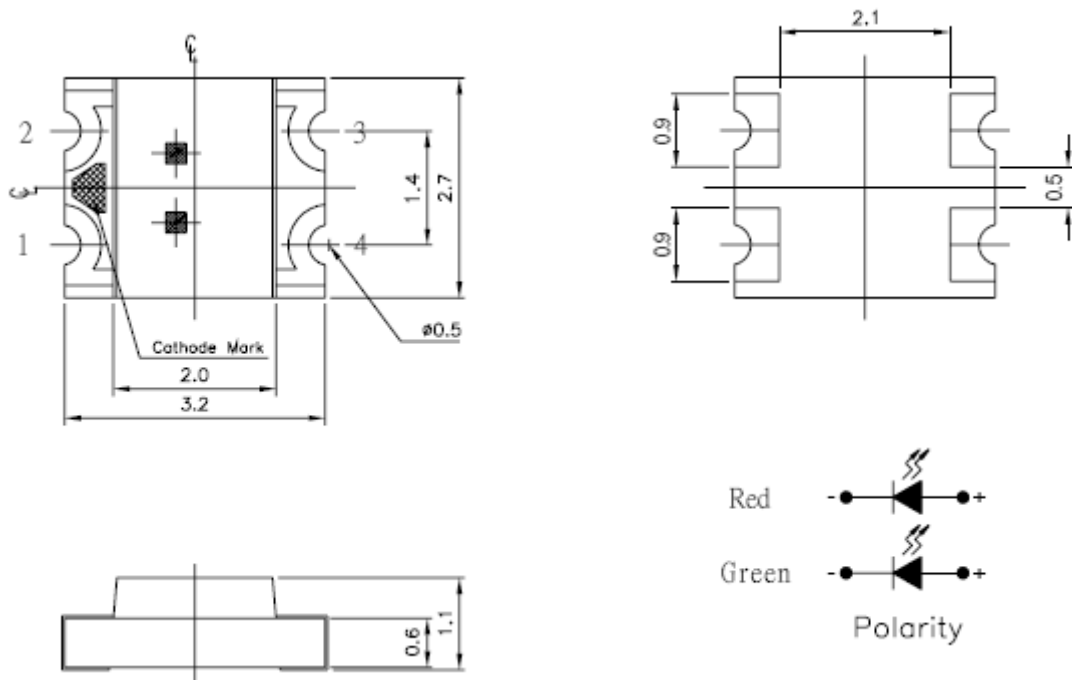
Applications:

1. Automotive : backlighting in dashboard and switch.
2. Telecommunication : indicator and backlighting in telephone and fax.
3. Flat backlight for LCD, switch and symbol
4. General use.

Device Selection Guide

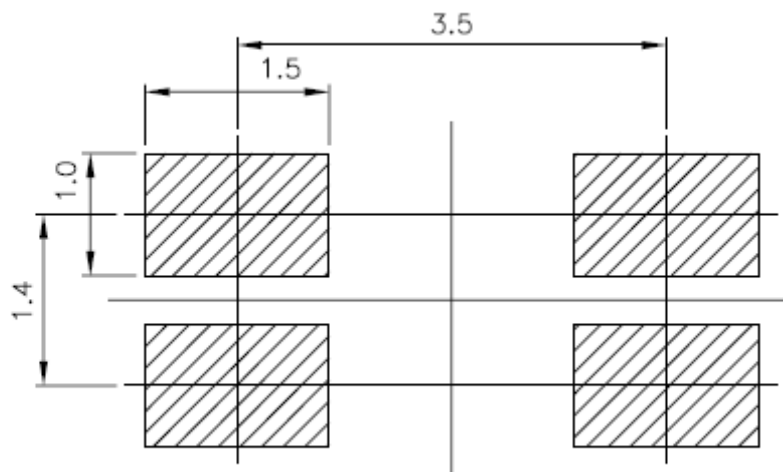
Part No.	Material	COLOR	
		Emitted	Lens
LG-1311UEL9UG-CT	AlGaInP	Red	Water Clear
	AlGaInP	Green	

Package Outline Dimensions



- Note : 1.All dimension are in millimeter tolerance is ± 0.1 mm unless otherwise noted.
2. Specifications are subject to change without notice.

Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is ± 0.1 mm, Angle ± 0.5 . Unit=mm.

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Ratings		UNIT
		UEL	9UG	
Power Dissipation	PD	60	60	mW
Peak pulse current Duty 1/10@10KHz	I _{FP}	60	60	mA
Forward Current Per Chip	I _F	25	25	mA
Reverse Current	I _r	5	5	V
Electrostatic Discharge	ESD	2000		V
Operating Temperature	T _{opr}	-40 ~ +85		°C
Storage Temperature	T _{stg}	-40 ~ +90		°C
Soldering Temperature	T _{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.		

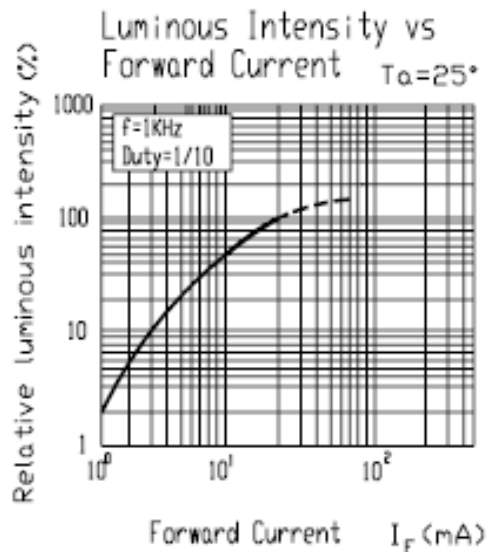
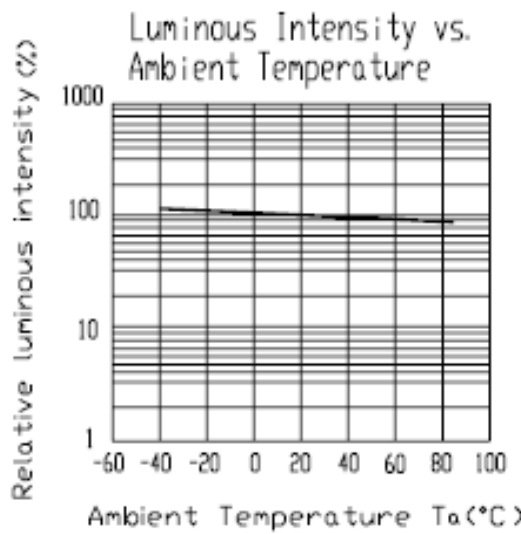
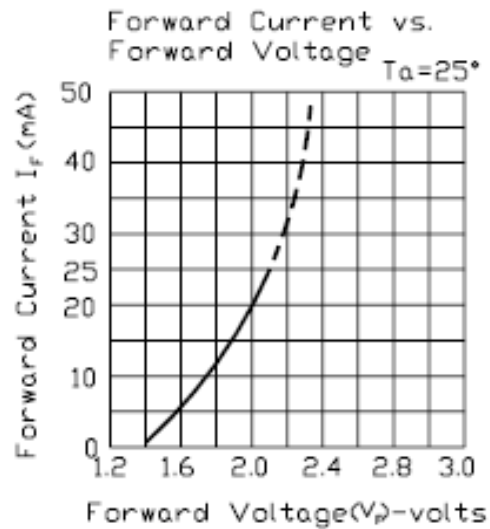
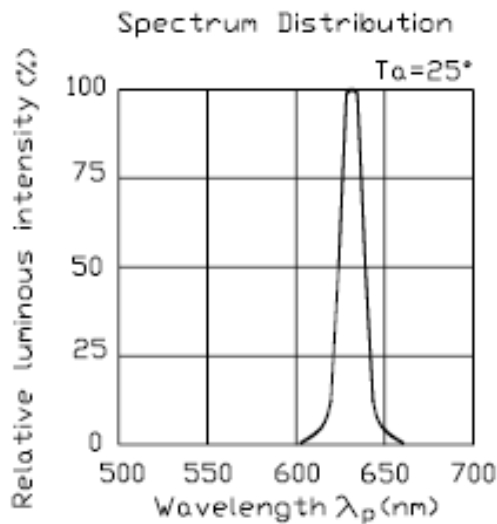
Typical Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol		Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	IV	UEL	15	40	----	mcd	IF=20mA
		9UG	15	25	----		
Peak Wavelength	λ _p	UEL	----	632	----	nm	
		9UG	----	575	----		
Dominant Wavelength	λ _d	UEL	----	624	----	nm	
		9UG	----	573	----		
Spectrum Radiation Bandwidth	Δλ	UEL	----	20	----	nm	
		9UG	----	20	----		
Forward Voltage	VF	UEL	1.7	2.0	2.4	V	
		9UG	1.7	2.0	2.4		
Viewing Angle	2θ _{1/2}		----	140	----	Deg	
Reverse Current	I _r	UEL	----	----	10	μA	V _r =5V
		9UG	----	----	10		

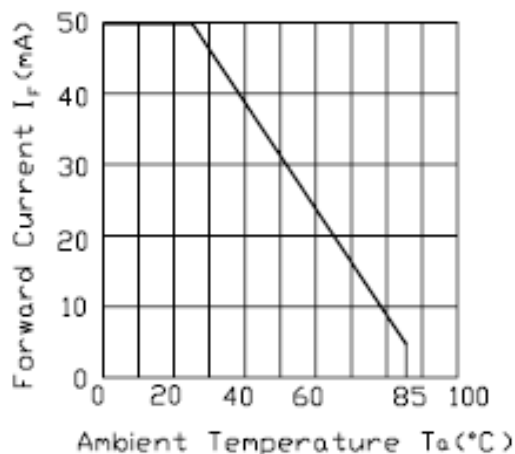
Note : 1.The forward voltage data did not including ±0.1V testing tolerance.
2.The luminous intensity data did not including ±11% testing tolerance.

Typical Electro-Optical Characteristics Curve

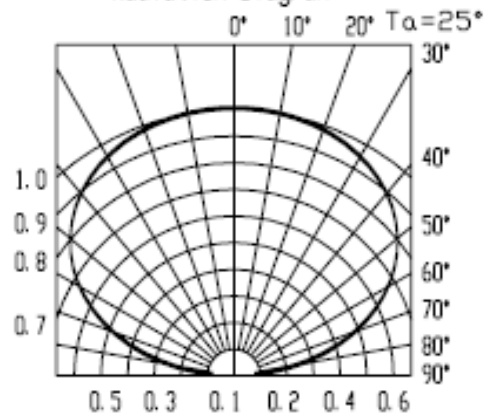
UEL



Forward Current Derating Curve

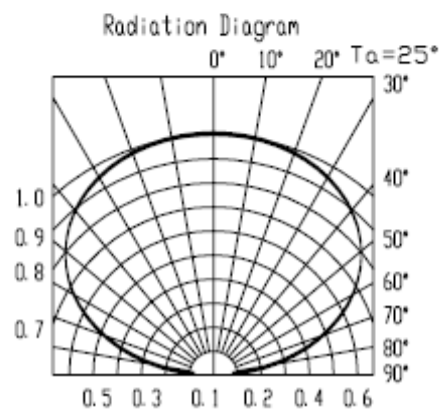
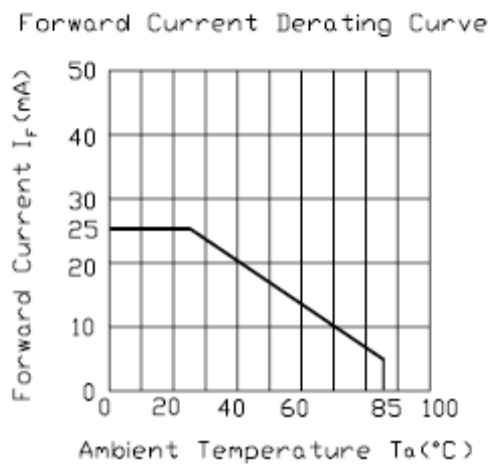
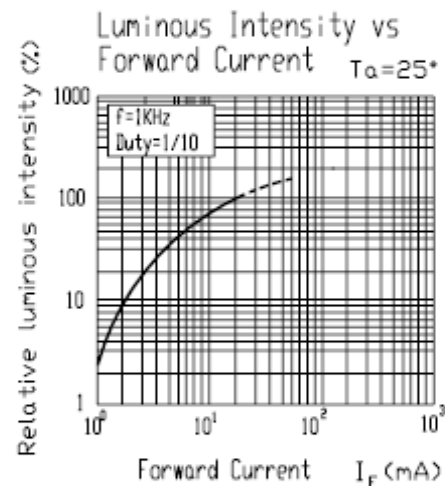
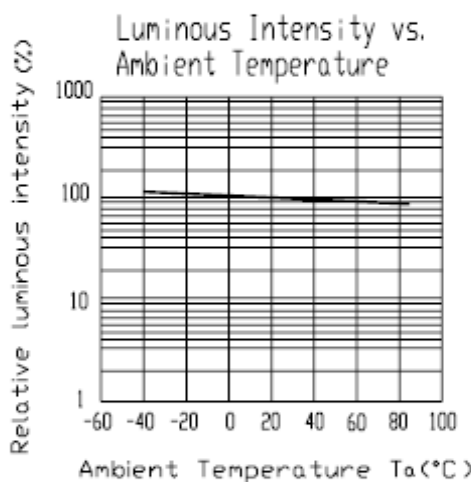
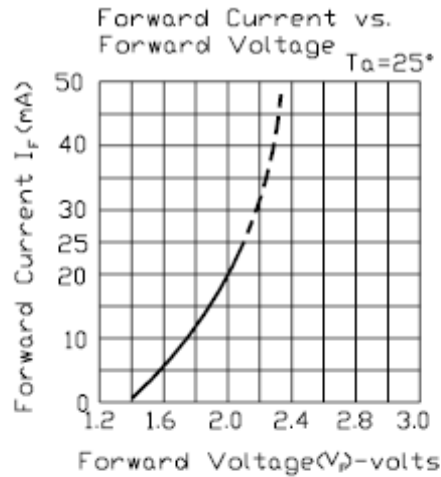
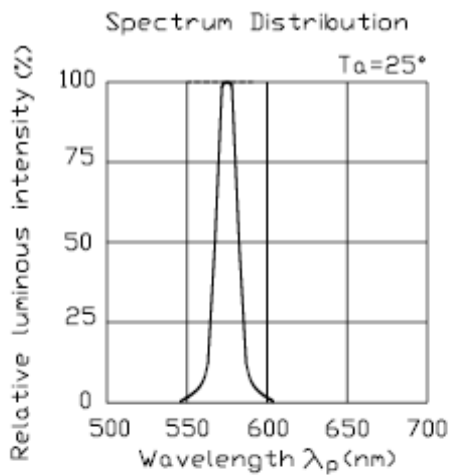


Radiation Diagram

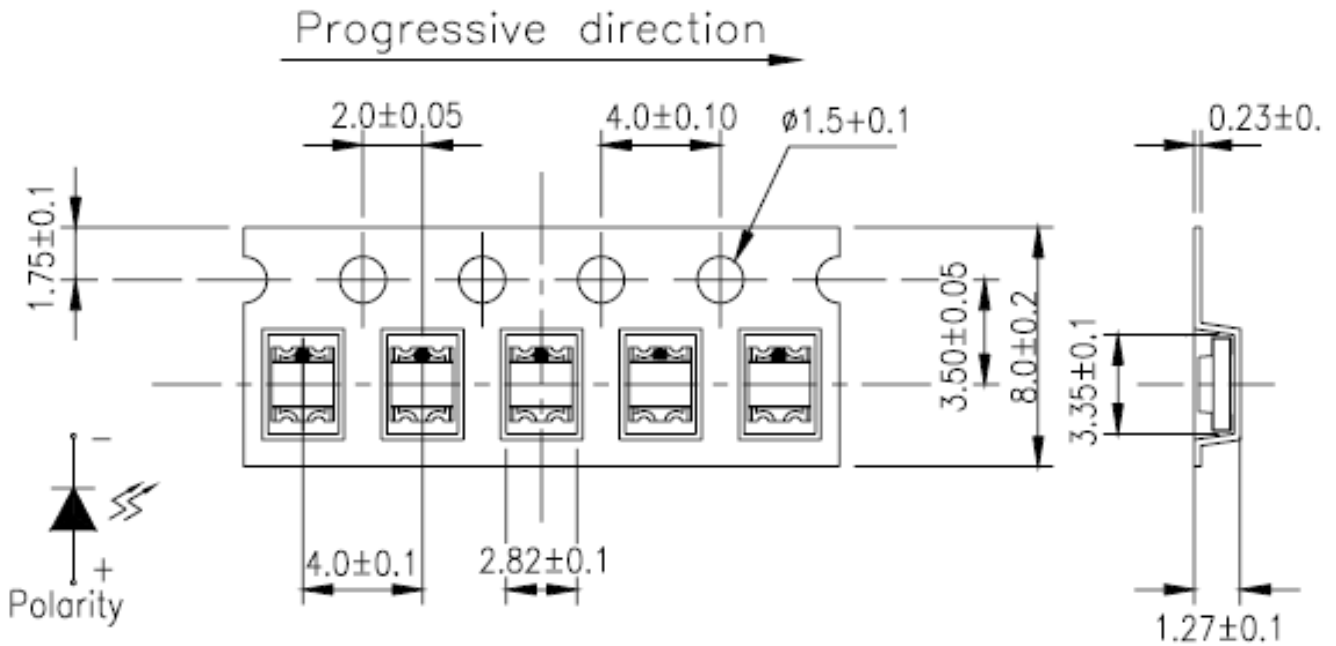


Typical Electro-Optical Characteristics Curve

9UG

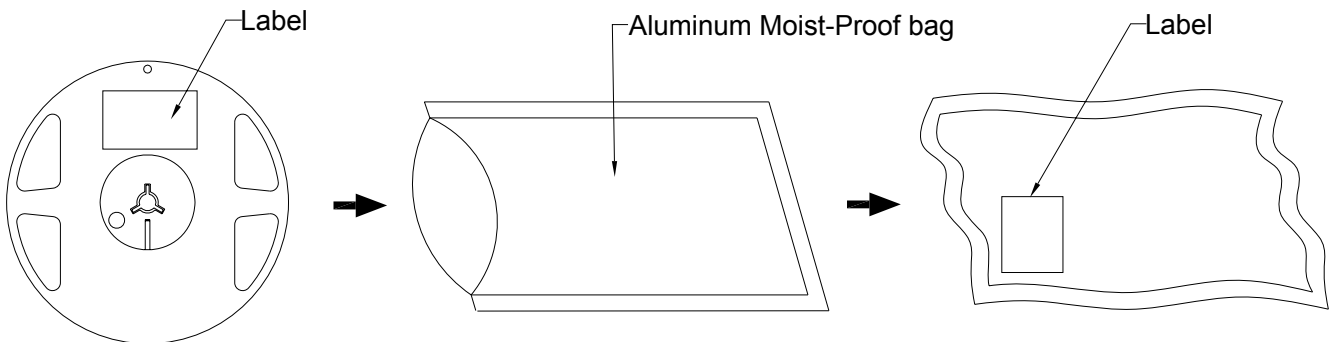


Carrier Tape Dimensions









Note : The tolerances unless mentioned is ± 0.1 mm, Angle ± 0.5 . Unit=mm.

Packing Specifications



Part No.	Description	Quantity/Reel
LG-1311UEL9UG-CT	8.0mm tape,7"reel	2000 devices

Label Explanation

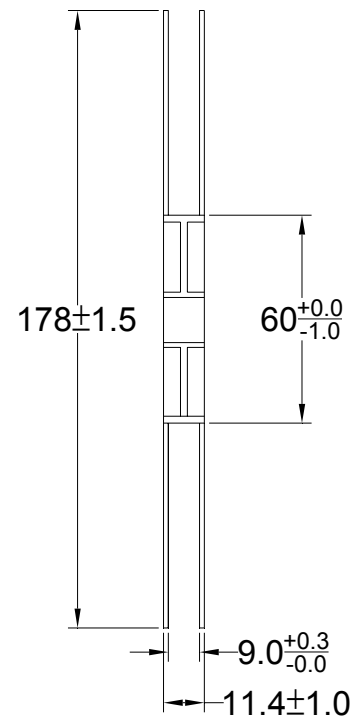
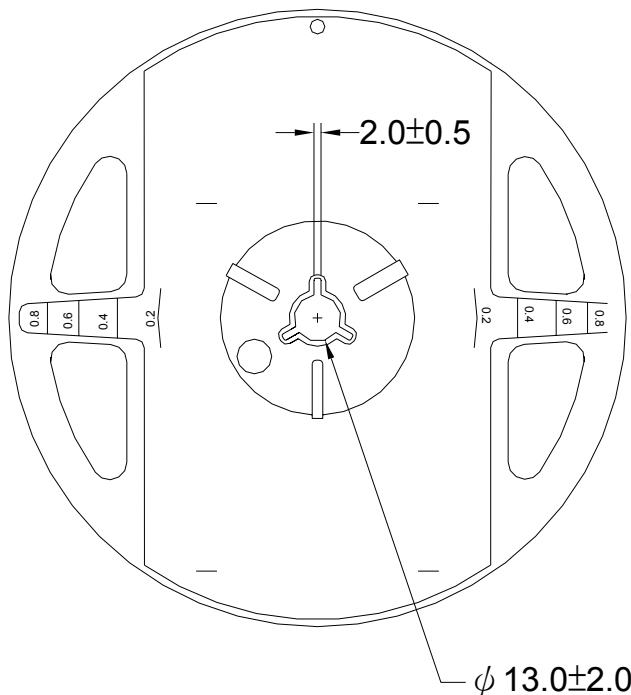
	LIGITEK ELECTRONICS CO., LTD.	
PART :		XXXXXXXXXXXXXXXXXXXX
LOT :		XXXXXXXXXX
QTY(PCS):		XXXX
BIN/HUE :		XXXXX
		VF:XX-XX

BIN : Luminous Intensity

HUE : Dominant Wavelength

VF: Forward Voltage

Reel Dimensions



Precautions For Use:

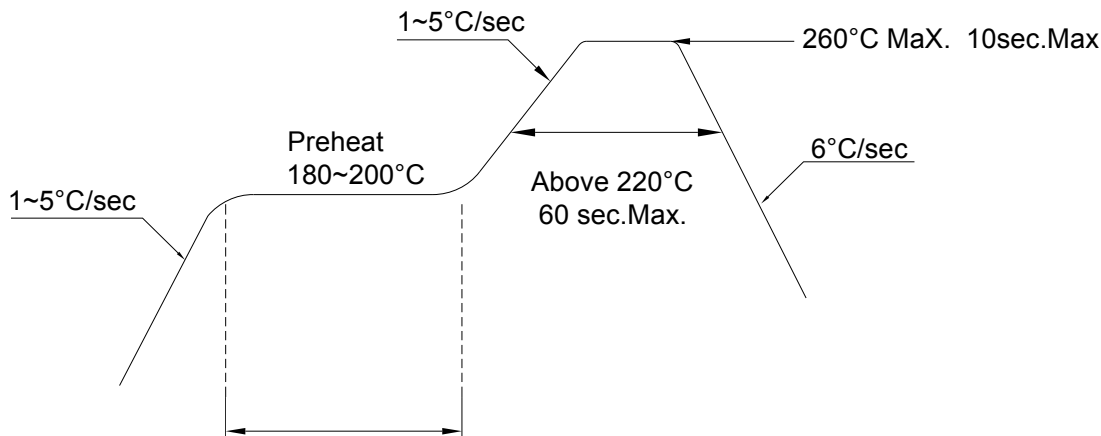
Storage time

1. Don't open the moisture-resistant bag before the LED products are ready to use.
2. Before used: The LEDs should be kept at 30oC or less and 90 % RH or less.
3. After used: The LEDs floor life is 1 year under 30oC or less and 60 % RH or less. If unused LEDs remain, it should be stored in the moisture-resistant packages.
4. If the LEDs have exceeded the storage time or the moisture absorbent material (Silica gel) has faded away; the baking treatment should be performed by the following conditions. Baking Treatment: $60\pm 5^{\circ}\text{C}$ for 24 hrs

Over current- protection

The LEDs is sensitive parts, slight voltage shift will cause big change and will cause burn out. Customer must apply resistors for protection.

LED soldering

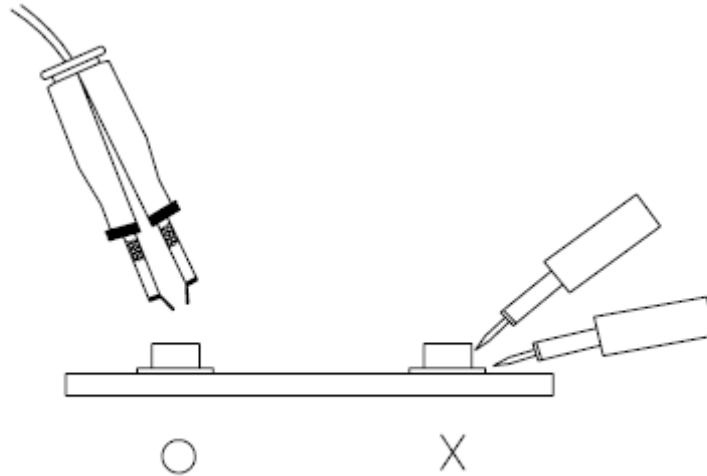


Note:

1. Reflow soldering should not be done more than two times.
2. When soldering, do not put stress on the LEDs during heating.
3. After soldering, do not warp the circuit board.

Repairing

In principle repair should not be done after the LEDs have been soldered. When repairing is unavoidable, it should be confirmed before hand not to be damaged whether the characteristics of the LEDs by repairing and a double-head soldering iron should be used (as below description figure).



Reliability Test:

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Temperature Cycle	H : +100°C 15min ∩ 5 min L : -40°C 15min	300 Cycles	22 PCS	0/1
2	Thermal Shock	H : +100°C 5min ∩ 10sec L : -10°C 15min	300 Cycles	22 PCS	0/1
3	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS	0/1
4	High Temperature /High Humidity	85°C/ 85%RH	1000 Hrs.	22 PCS	0/1
5	Low Temperature Storage	Temp. : -40°C	1000 Hrs.	22 PCS	0/1
6	Reflow Soldering	Temp. : 260°C±5°C Min. 5sec.	6 Min.	22pcs	0/1
7	DC Operating Life	IF = 20 mA	1000 Hrs.	22 PCS	0/1