DATASHEET

High performance SMD LED with Reflector

93-22/G6R7C-B01/2A0

Features

- Package in 12mm tape on 7” diameter reels.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process
- Eia std. package.
- White SMT package.
- Pb-free.
- The product itself will remain within RoHS compliant version.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).
- Precondition: Bases on JEDEC J-STD 020D Level 4

Applications

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Indicator and backlight for audio and video equipment.
- Indicator and backlight for battery driven equipment.
- Small indicator for outdoor applications.
- Indicator and backlight in office equipment.
- Flat backlight for LED, switches and symbol.
- General use.

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Device Selection Guide

Type	Chip Materials	Emitted Color	Resin Color
G6	AlGaInP	Brilliant Yellow Green	Water Clear
R7	AlGaInP	Dark-Red	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Type	Rating	Unit
Reverse Voltage	V_R		5	V
Forward Current	I_F	G6 / R7	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	G6 / R7	60	mA
Power Dissipation	Pd	G6 / R7	60	mW
Electrostatic Discharge(HBM)	ESD		2000	V
Operating Temperature	T_{opr}		-40 ~ +85	℃
Storage Temperature	Tstg		-40 ~ +90	℃
Soldering Temperature	T_{sol}		Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

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Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Type	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	G6	18.0	-----	36.0	mcd	I_F=5mA
		R7	28.0	-----	57.0		
Viewing Angle	2θ1/2		-----	130	-----	deg	I_F=5mA
Peak Wavelength	λp	G6	-----	575	-----	nm	I_F=5mA
		R7	-----	631	-----		
Dominant Wavelength	λd	G6	570.5	-----	574.5	nm	I_F=5mA
		R7	621.0	-----	628.0		
Spectrum Radiation Bandwidth	Δλ	G6	-----	20	-----	nm	I_F=5mA
		R7	-----	20	-----		
Forward Voltage	V_F	G6	1.6	-----	2.2	V	I_F=5mA
		R7	1.6	-----	2.2		
Reverse Current	I_R	-----	-----	-----	10	μA	V_R=5V

Notes:
1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V
4. All reliability item are tested under good thermal management.
   Dynamic reliability are tested under at 20mA.

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Bin Range Of Dominant Wavelength

Chip	Bin Code	Min.	Max.	Unit	Condition
G6	1	570.5	572.5	nm	IF=5mA
	2	572.5	574.5		
R7	1	621.0	624.5		
	2	624.5	628.5		

Bin Range Of Luminous Intensity

Chip	Bin	Min	Max	Unit	Condition
G6	M1	18.0	22.5	mcd	I_F=5mA
	M2	22.5	28.0		
	N1	28.0	36.0		
R7	N1	28.0	36.0		
	N2	36.0	45.0		
	P1	45.0	57.0		

Bin Range Of Forward Voltage

Chip	Bin	Min	Max	Unit	Condition
G6	C	1.60	1.95	V	I_F=5mA
	D	1.95	2.20		
R7	C	1.60	1.95		
	D	1.95	2.20		

Notes:
1.Tolerance of Luminous Intensity ±10%
2.Tolerance of Dominant Wavelength ±1nm
3.Tolerance of Forward Voltage ±0.1V

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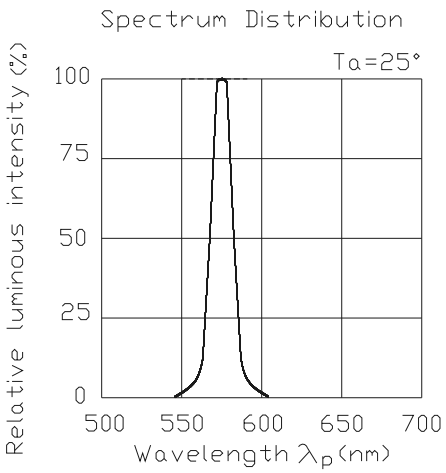
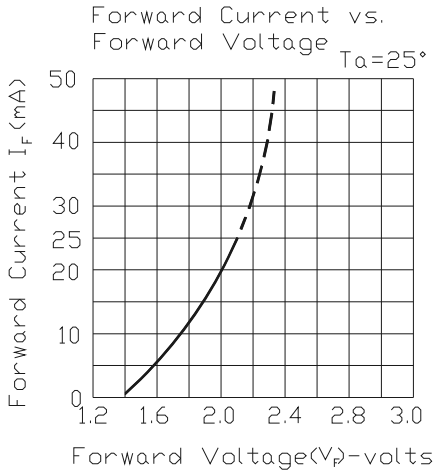
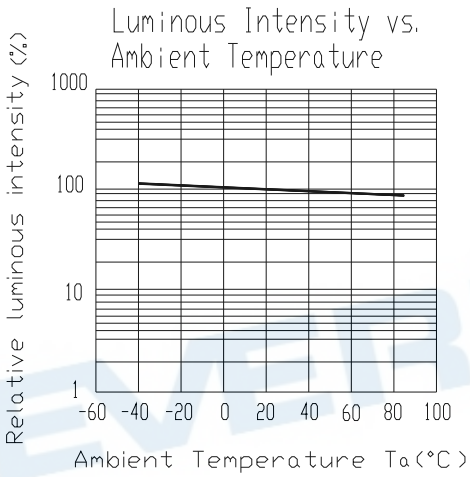
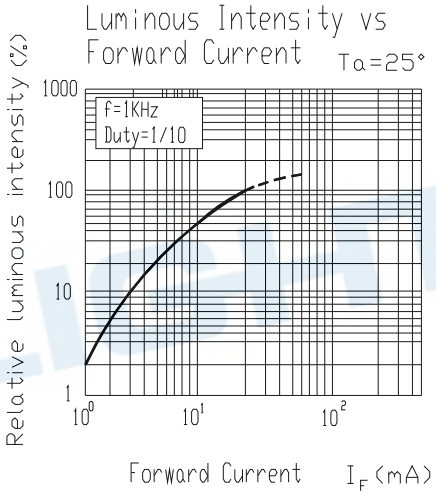
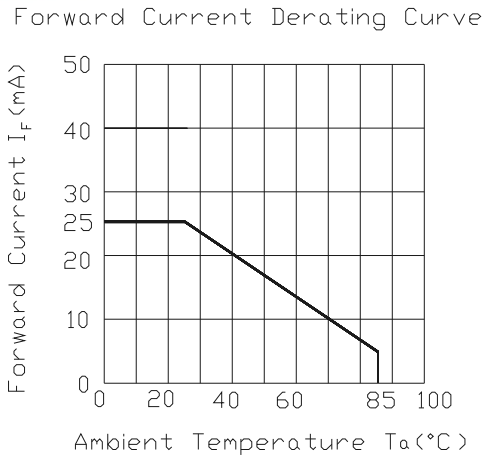
Typical Electro-Optical Characteristics Curves(G6)

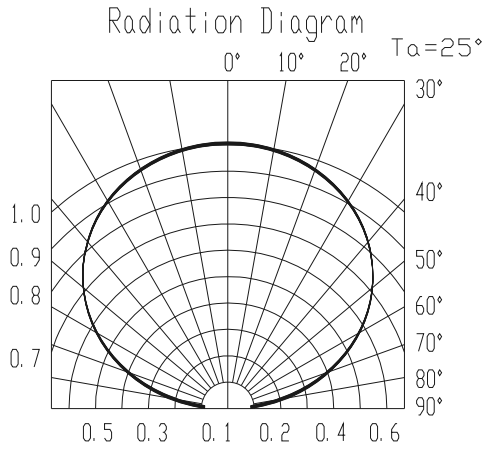












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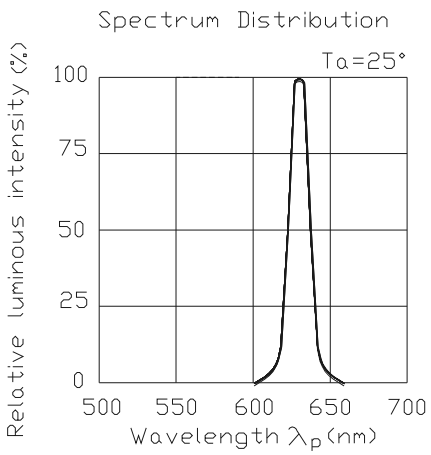
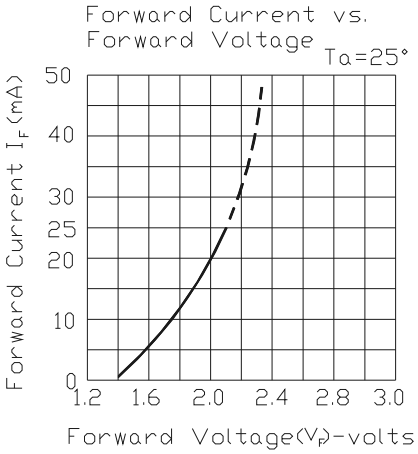
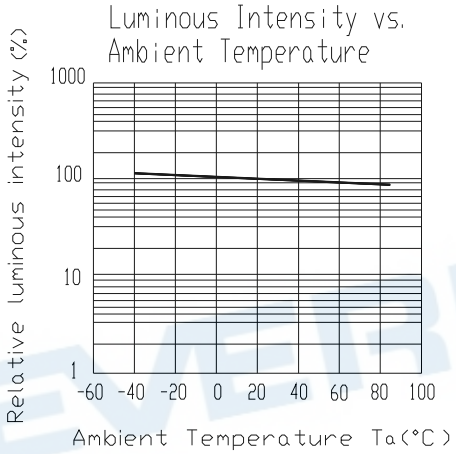
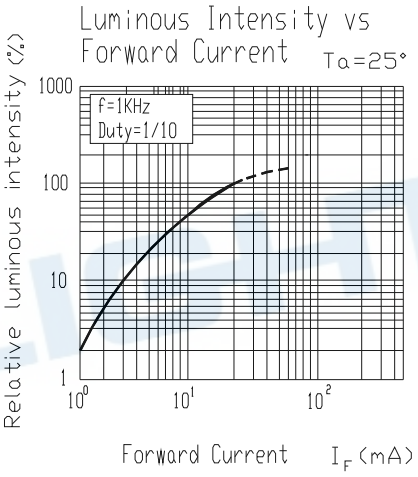
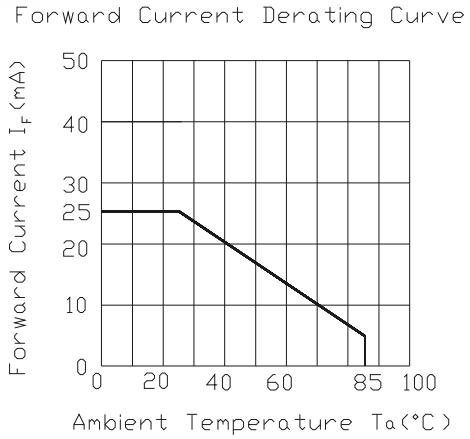
Typical Electro-Optical Characteristics Curves(R7)

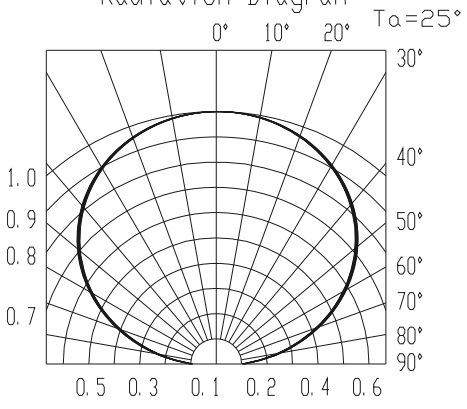












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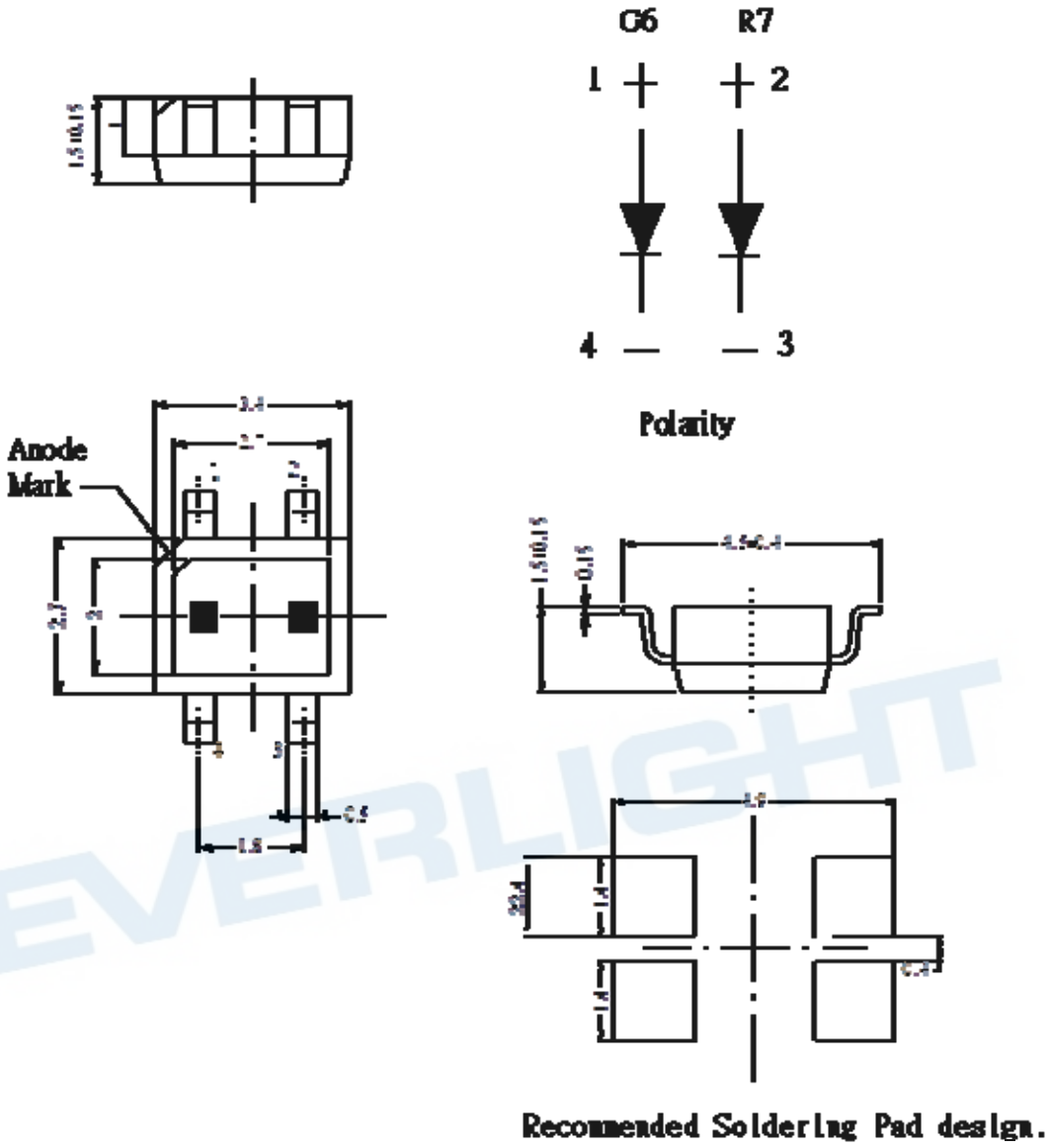
Package Dimension



Note: Tolerances unless mentioned ±0.1mm. Unit = mm

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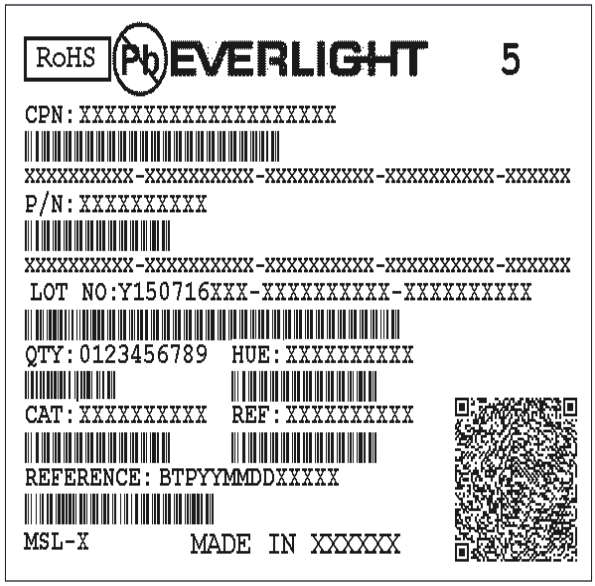
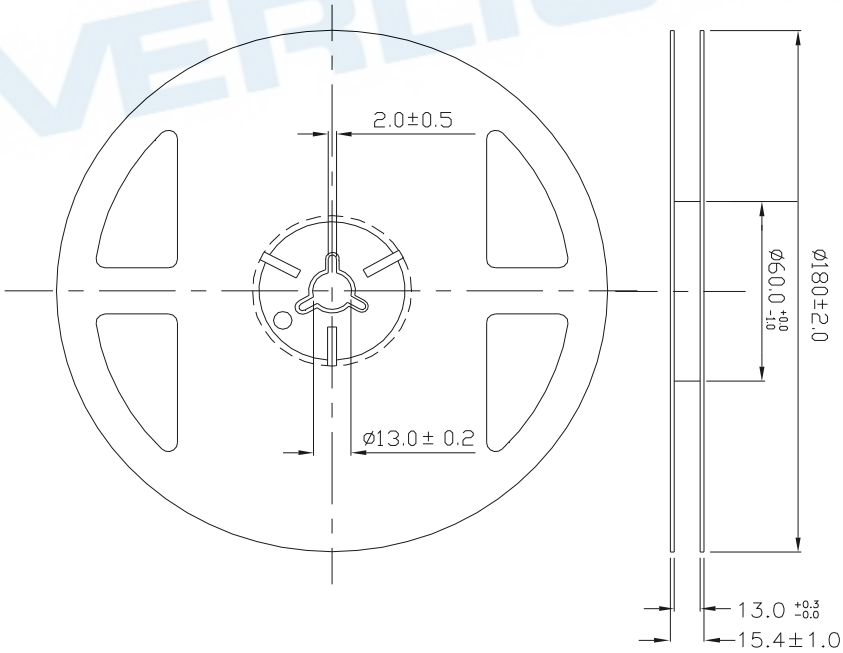
Moisture Resistant Packing Materials

Label Explanation



- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



Note: The tolerances unless mentioned is ±0.1mm ;Unit = mm

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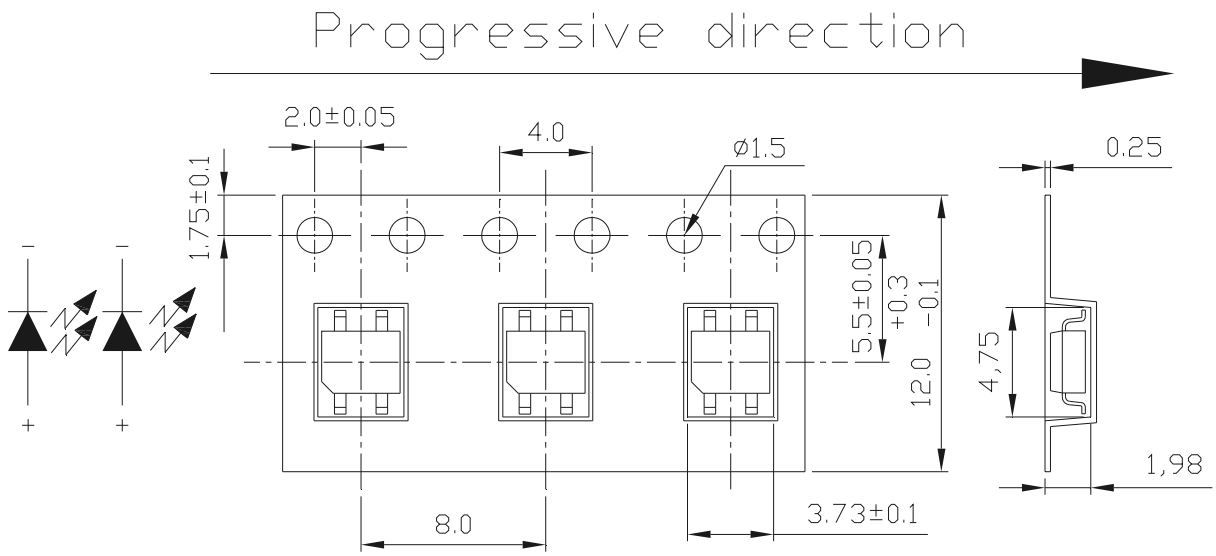
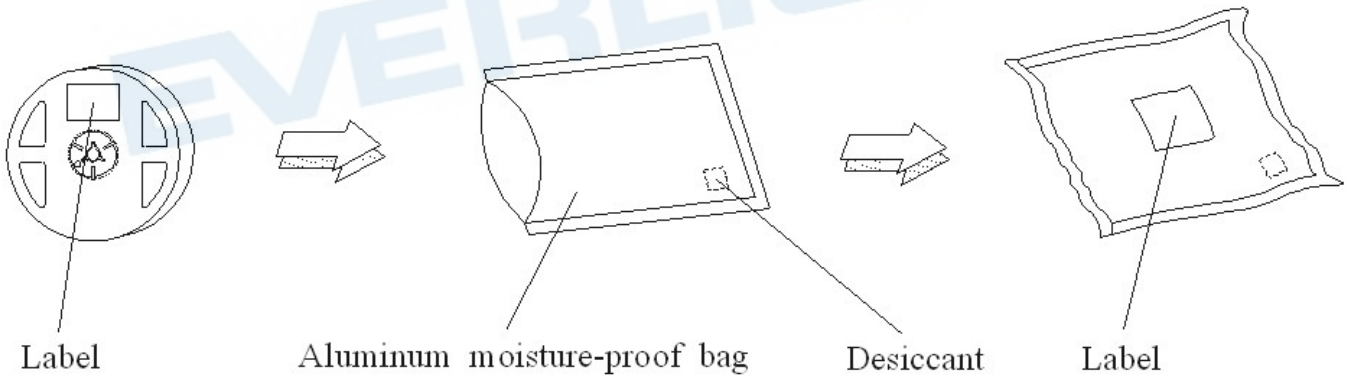
Carrier Tape Dimensions: Loaded Quantity 1000 pcs Per Reel



Notes:
Tolerances unless mentioned ±0.1mm. Unit = mm

Moisture Resistant Packing Process



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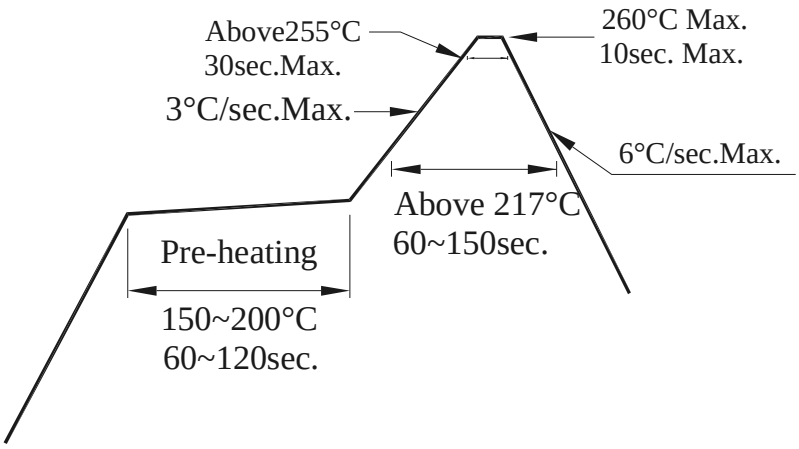
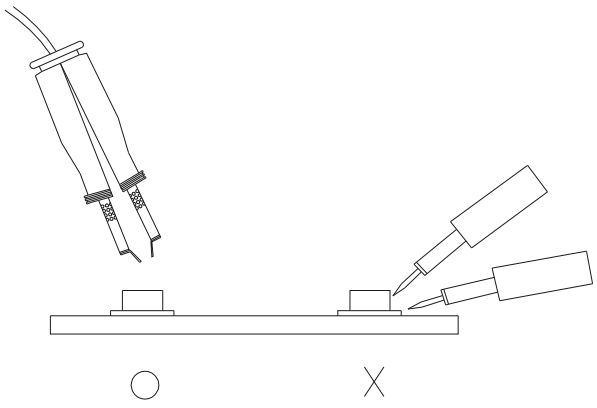
Precautions for Use

1. Over-current-proof
   1.1 Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).



2. Storage
   2.1 Moisture proof bag should only be opened immediately prior to usage.
   2.2 Environment should be less than 30℃ and 60% RH when moisture proof bag is opened.
   2.3 After opening the package MSL Conditions stated on page 1 of this spec should not be exceeded.
   2.4 If the moisture sensitivity card indicates higher than acceptable moisture, the component should be baked at min. 60deg +/-5deg for 24 hours.
3. Soldering Condition
   3.1 Pb-free solder temperature profile
   3.2 Reflow soldering should not be done more than two times.
   3.3 When soldering, do not put stress on the LEDs during heating.
   3.4 After soldering, do not warp the circuit board.
4. Soldering Iron
   Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.
5. Repairing
   Repair 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 beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



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ESD Precaution

Proper storage and handling procedures should be followed to prevent ESD damage to the devices especially when they are removed from the Anti-static bag. Electro-Static Sensitive Devices warning labels are on the packing.

Application Restrictions

High reliability applications such as military/aerospace, automotive safety/security systems, and medical equipment may require different product. If you have any concerns, please contact Everlight before using this product in your application. This specification guarantees the quality and performance of the product as an individual component. Do not use this product beyond the specification described in this document.

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2.The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
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