

## SMD- Top view LEDs 67-21/T3C-EU1V2M/2A0



### Features

- P-LCC-2 package.
- Fluorescence Type
- High Luminous Intensity
- High Efficiency
- Precondition: Bases on JEDEC J-STD 020D Level 3
- Pb-free.
- The product itself will remain within RoHS compliant version.
- Compliance with EU REACH
- Compliance Halogen Free .(Br<900ppm,Cl<900ppm,Br+Cl<1500ppm)

### Descriptions

- The white LED which was fabricated using a blue LED and a phosphor, and the phosphor is excited by blue light and emits yellow fluorescence. The mixture of blue light and yellow light results in a white emission.

### Applications

- OA equipment
- Backlighting of full color LCD
- Automotive equipment
- Replacement of conventional light bulbs and fluorescent lamps .

## Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	White	Water Clear

## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	5	V
Forward Current	I <sub>F</sub>	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	100	mA
Power Dissipation	P <sub>d</sub>	110	mW
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +90	°C
ESD	ESD <sub>HBM</sub>	150	V
Soldering Temperature	T <sub>sol</sub>	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

## Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	450	---	1400	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	---	120	---	deg	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	2.75	---	3.95	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	---	---	50	μA	V <sub>R</sub> =5V

### Notes:

1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength ±1nm
3. Tolerance of Forward Voltage ±0.1V

### Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
U1	450	565	mcd	I <sub>F</sub> =20mA
U2	565	715		
V1	715	900		
V2	900	1120		
AA	1120	1400		

### Bin Range of Forward Voltage

Group	Bin Code	Min.	Max.	Unit	Condition
M	5	2.75	3.05	V	I <sub>F</sub> =20mA
	6	3.05	3.35		
	7	3.35	3.65		
	8	3.65	3.95		

Notes:

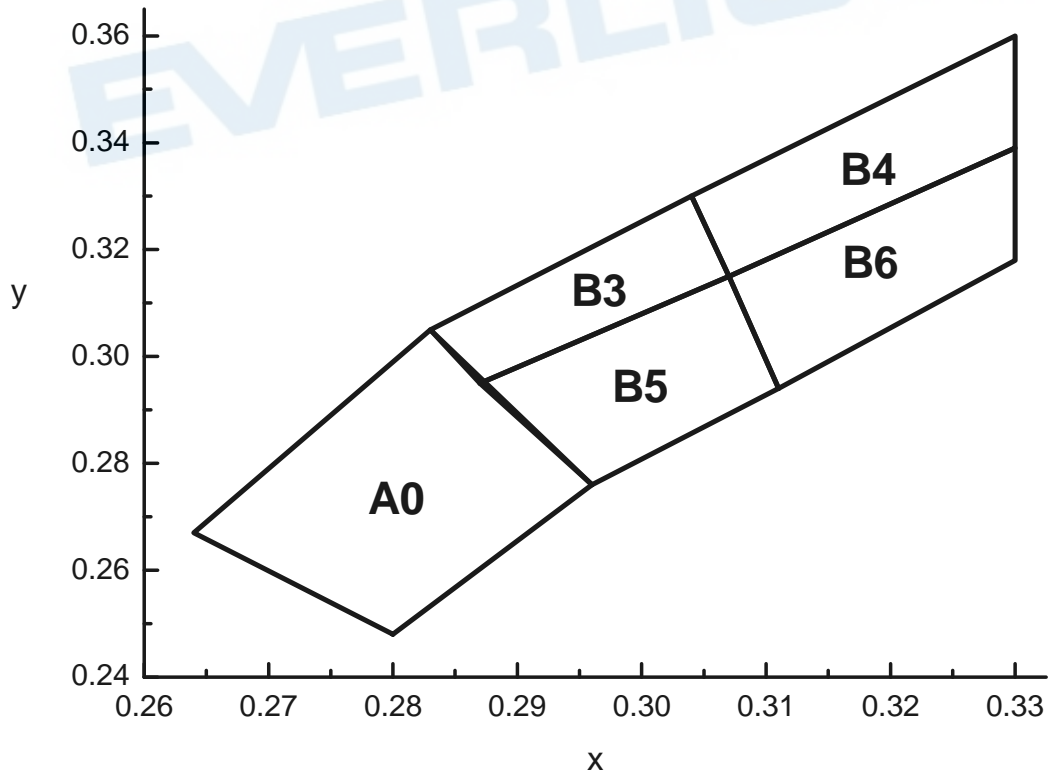
1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength ±1nm
3. Tolerance of Forward Voltage ±0.1V

### Bin Range of Chromaticity Coordinate

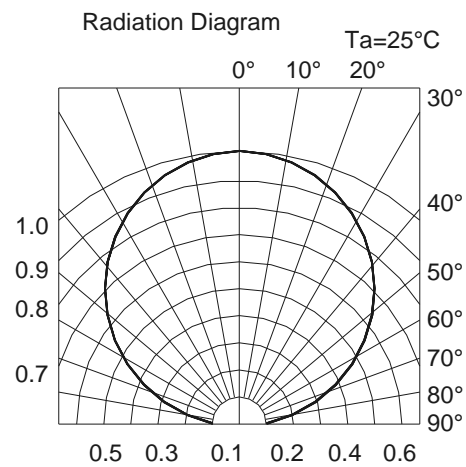
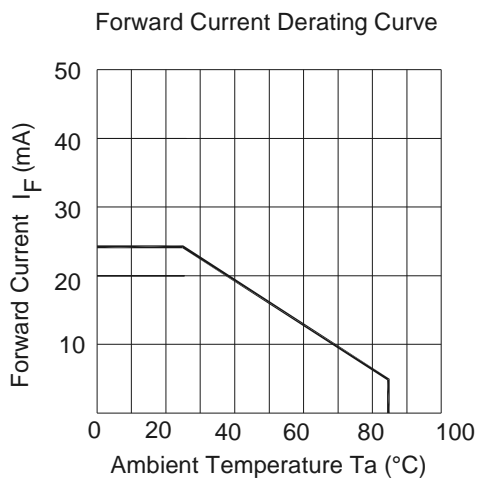
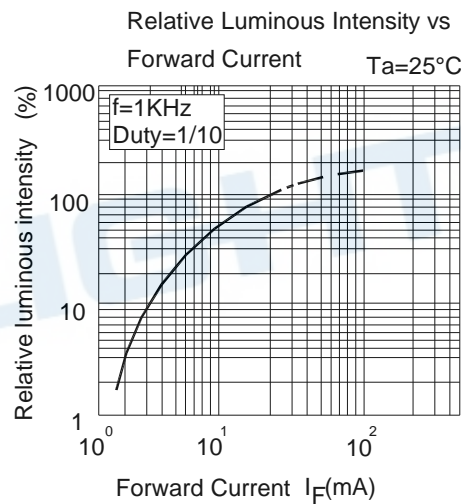
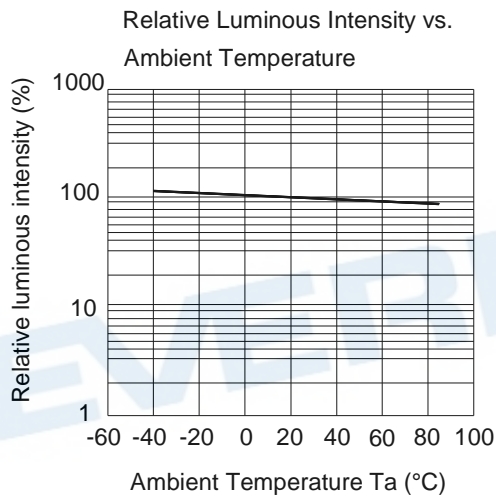
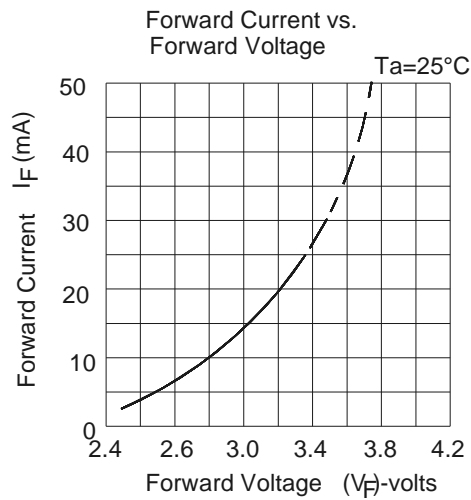
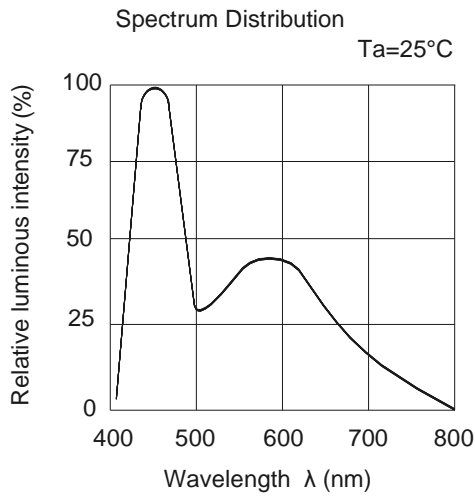
Group	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y	Condition
E	A0	0.280	0.248	B6	0.311	0.294	IF =20mA
		0.264	0.267		0.307	0.315	
		0.283	0.305		0.330	0.339	
		0.296	0.276		0.330	0.318	
	B3	0.287	0.295	B4	0.307	0.315	
		0.283	0.305		0.304	0.33	
		0.304	0.330		0.33	0.36	
		0.307	0.315		0.33	0.339	
	B5	0.296	0.276				
		0.287	0.295				
		0.307	0.315				
		0.311	0.294				

Note: Tolerance of Chromaticity Coordinates:  $\pm 0.01$

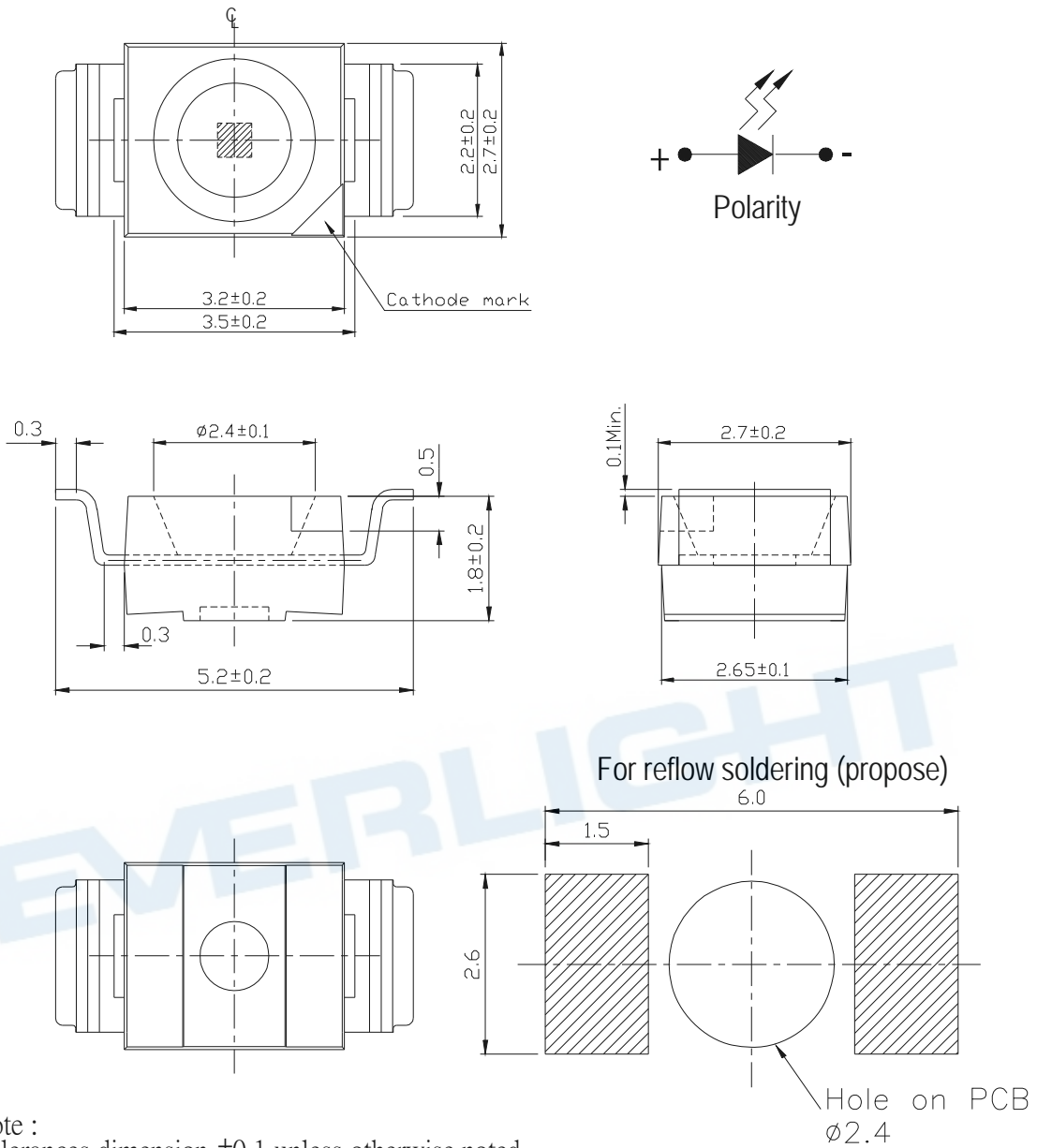
### The C.I.E. 1931 Chromaticity Diagram



Typical Electro-Optical Characteristics Curves



Package Dimension

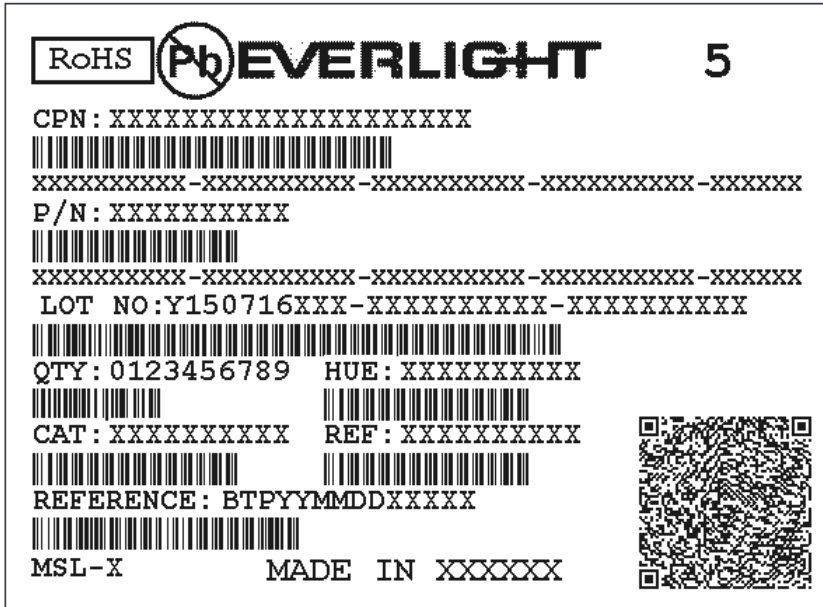


Note :  
Tolerances dimension  $\pm 0.1$  unless otherwise noted  
Unit : mm

Note: Tolerances unless mentioned  $\pm 0.1$ mm. Unit = mm

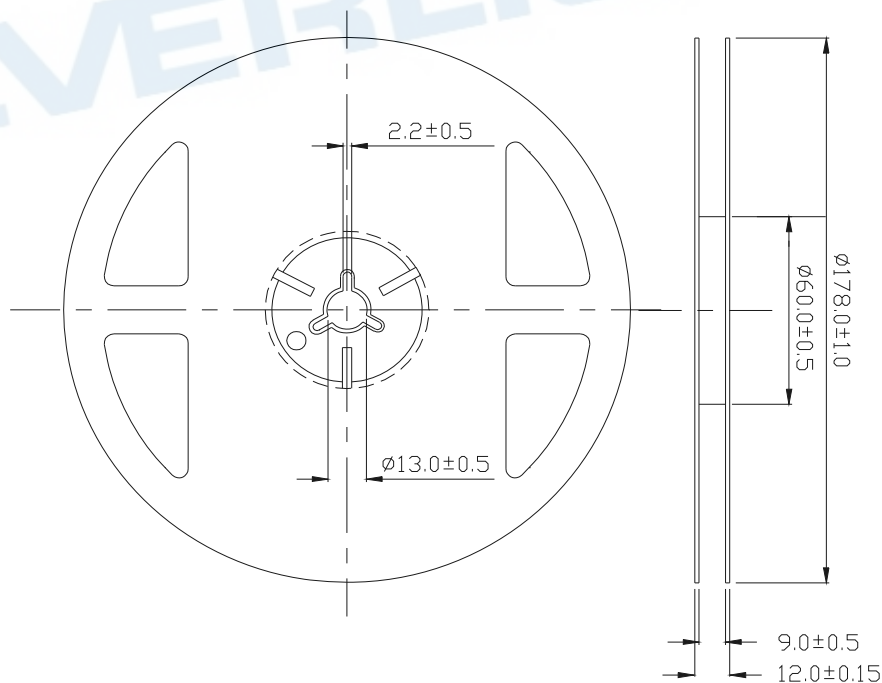
Moisture Resistant Packing Materials

Label Explanation



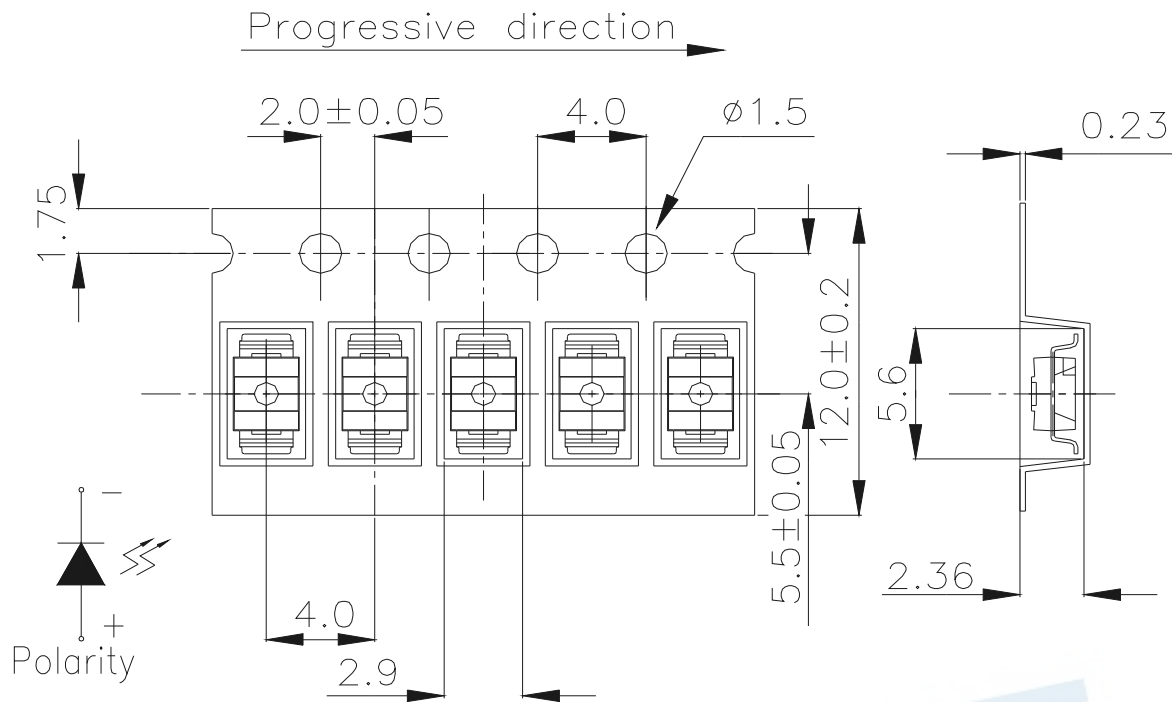
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



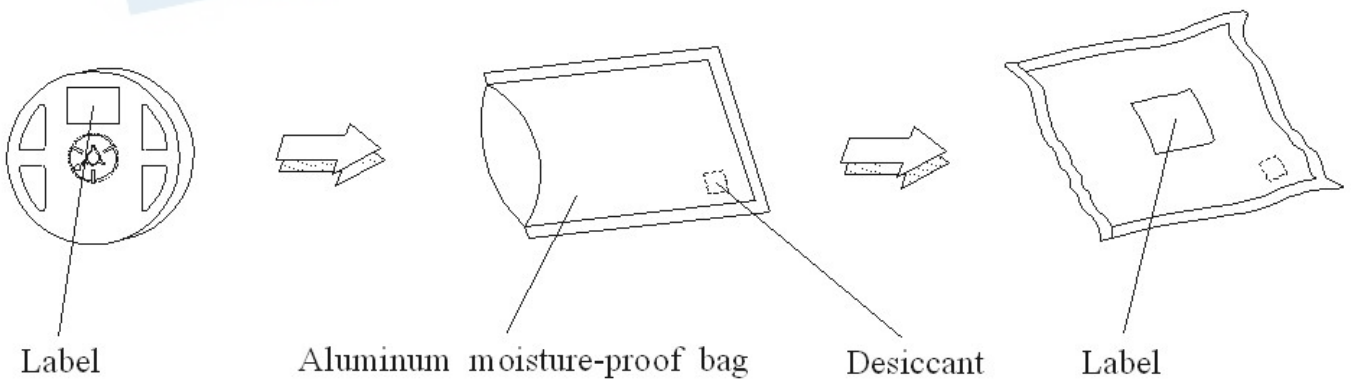
Note: Tolerance unless mentioned is ±0.1mm; Unit = mm

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

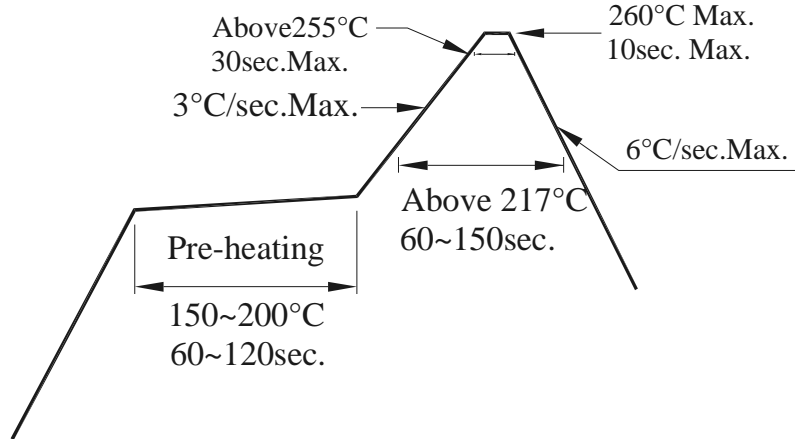
Moisture Resistant Packing Process



## 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°C 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

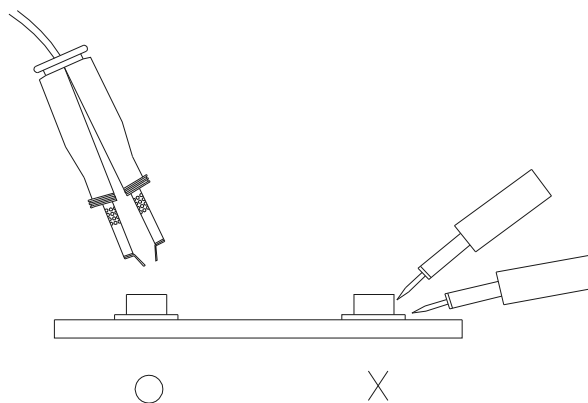
- 3.1 Pb-free solder temperature profile
- 3.2 Reflow soldering should not be done more than two times.
- 3.3 When soldering, do not put stress on the LEDs during heating.
- 3.4 After soldering, do not warp the circuit board.

### 4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C 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.



## 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.

## DISCLAIMER

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2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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