DATASHEET

Top view LEDs
67-23/R6GHBHC-B05/2T



Features

- P-LCC-4 package.
- White package.
- Optical indicator.
- Colorless clear window.
- Pb-free.
- The product itself will remain within RoHS compliant version.

Applications

- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD's, switches and symbols.
- Light pipe application.
- General use.

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Device Selection Guide

Chip Materials		Emitted Color	Resin Color
R6	AlGaInP	Brilliant Red	Water clear
GH	InGaN	Brilliant Green	
BH	InGaN	Blue	

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol		Rating	Unit
Reverse Voltage	V_R		5	V
Forward Current	I_F	R6	25	mA
		GH	25	
		BH	25	
Peak Forward Current	IFP	R6	100	mA
		GH	100	
		BH	100	
Power Dissipation	Pd	R6	120	mW
		GH	110	
		BH	110	
Electrostatic Discharge(HBM)	ESD	R6	2000	V
		GH	150	
		BH	150	
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		Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_V	R6	112	-----	285	mcd	I_F=20mA
		GH	180	-----	715		
		BH	72	-----	285		
Viewing Angle	2θ1/2		-----	120	-----	deg	
Peak Wavelength	λp	R6	-----	632	-----	nm	
		GH	-----	518	-----		
		BH	-----	468	-----		
Dominant Wavelength	λd	R6	621	-----	631	nm	
		GH	520	-----	530		
		BH	465	-----	475		
Spectrum Radiation Bandwidth	Δλ	R6	-----	20	-----	nm	
		GH	-----	35	-----		
		BH	-----	35	-----		
Forward Voltage	V_F	R6	-----	2.0	2.4	V	
		GH	-----	3.4	3.95		
		BH	-----	3.4	3.95		
Reverse Current	I_R	R6	-----	-----	10	μA	V_R=5V
		GH	-----	-----	50		
		BH	-----	-----	50		

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

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Bin Range of Luminous Intensity

Chip	Bin	Min	Max	Unit	Condition
R6	R	112	180	mcd	I_F=20mA
	S	180	285		
GH	S	180	285		
	T	285	450		
	U	450	715		
BH	Q	72	112		
	R	112	180		
	S	180	285		

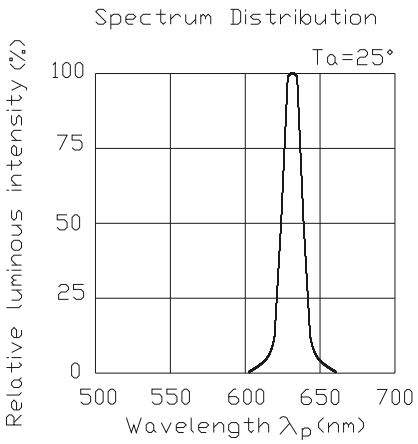
Bin Range of Dominant Wavelength

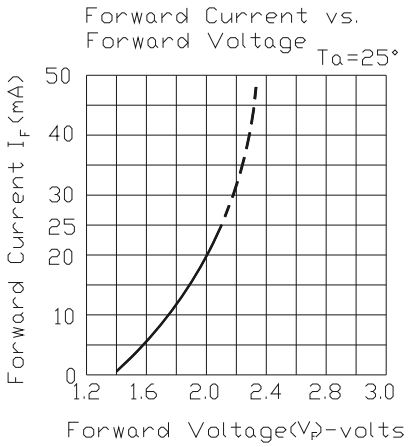
Chip	Bin	Min	Max	Unit	Condition
R6	FF1	621	626	nm	I_F=20mA
	FF2	626	631		
GH	X	520	525		
	Y	525	530		
BH	X	465	470		
	Y	470	475		

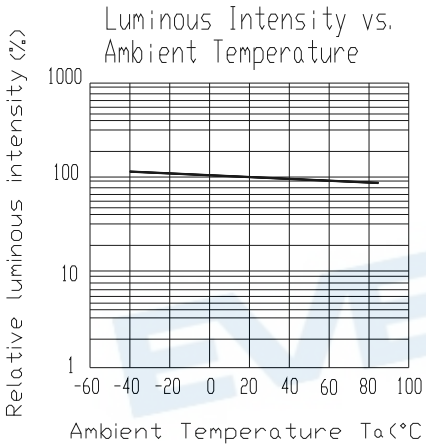
1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V

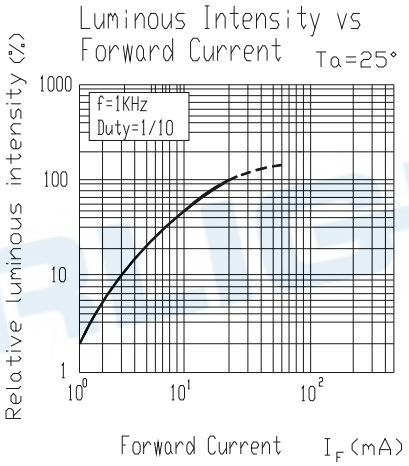
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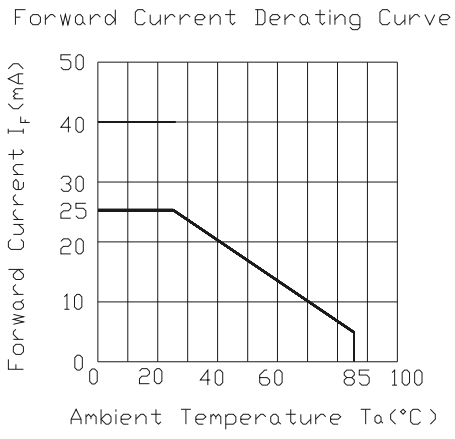
Typical Electro-Optical Characteristics Curves (R6)

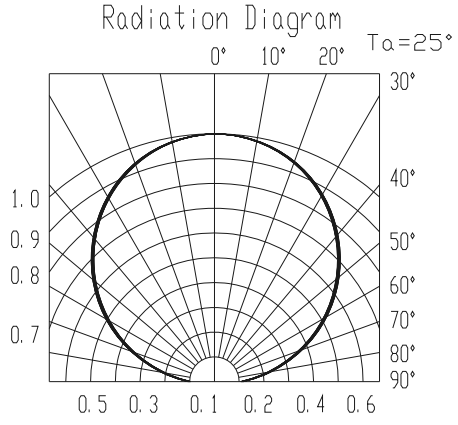








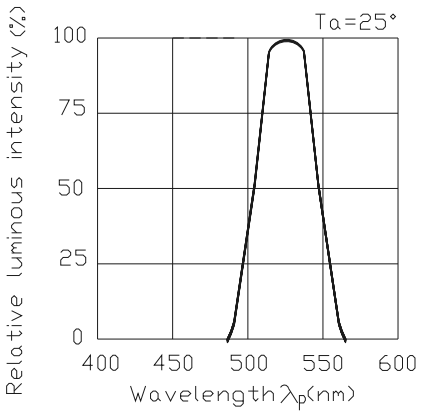




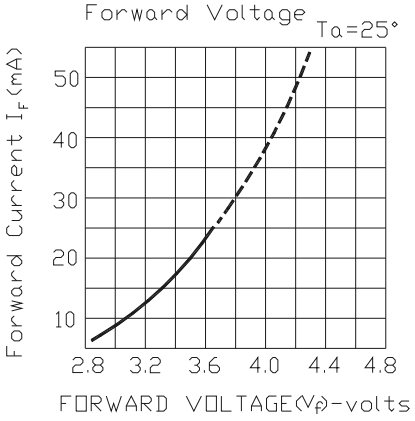
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Typical Electro-Optical Characteristics Curves (GH)

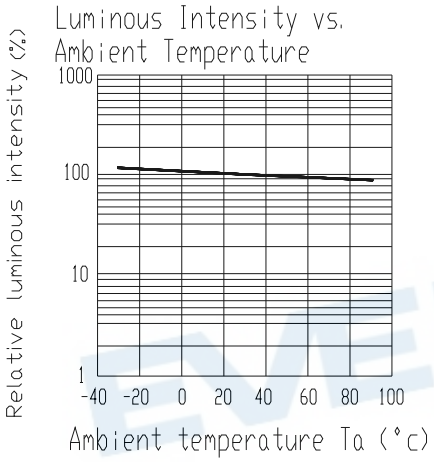
Spectrum Distribution



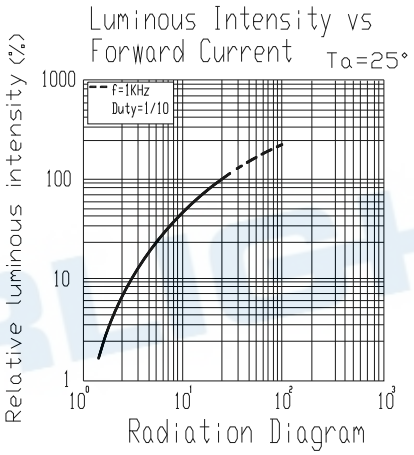
Forward Current vs. Forward Voltage



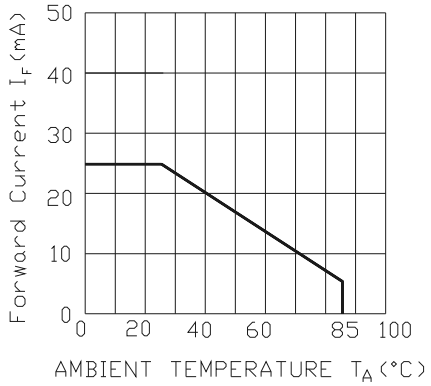
Luminous Intensity vs. Ambient Temperature



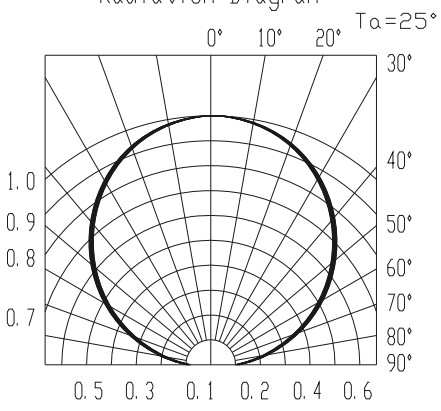
Luminous Intensity vs Forward Current



Forward Current Derating Curve



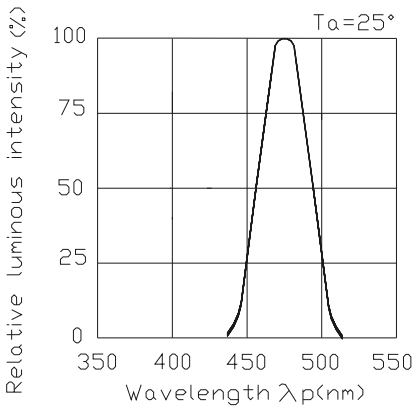
Radiation Diagram



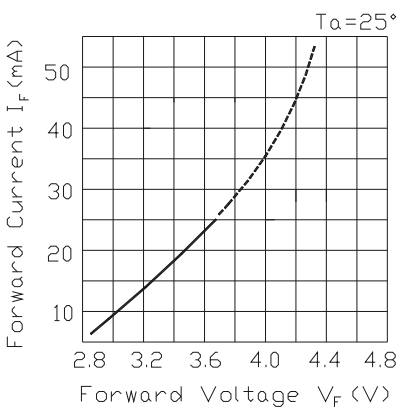
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Typical Electro-Optical Characteristics Curves (BH)

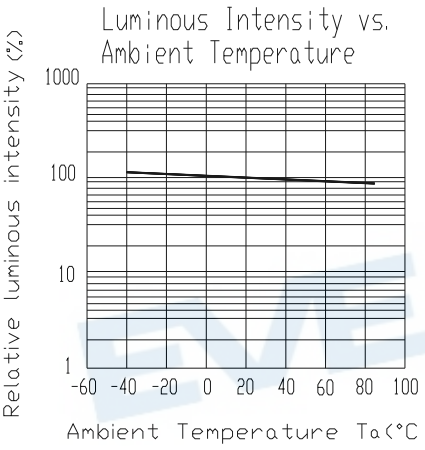
Spectrum Distribution



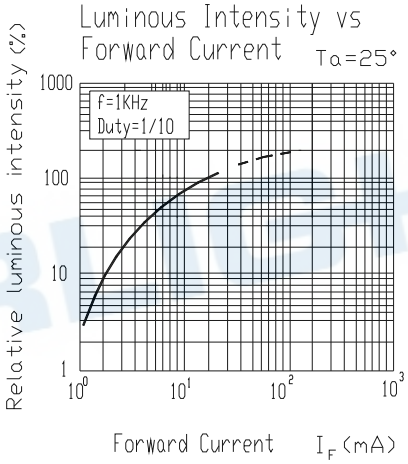
Forward Voltage



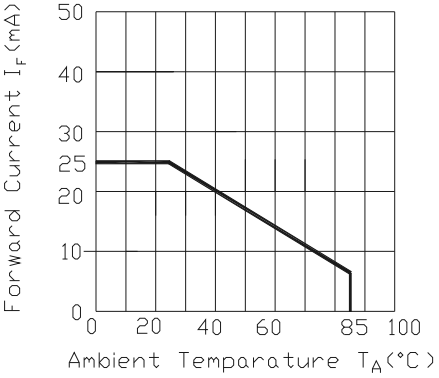
Luminous Intensity vs. Ambient Temperature



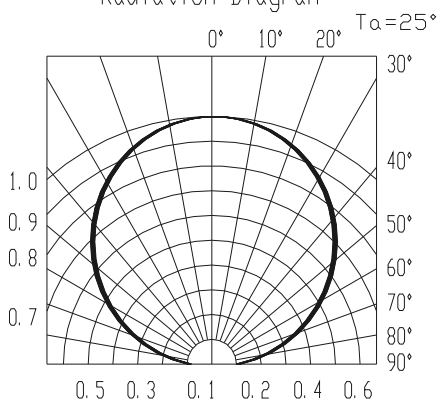
Luminous Intensity vs Forward Current



Forward Current Derating Curve

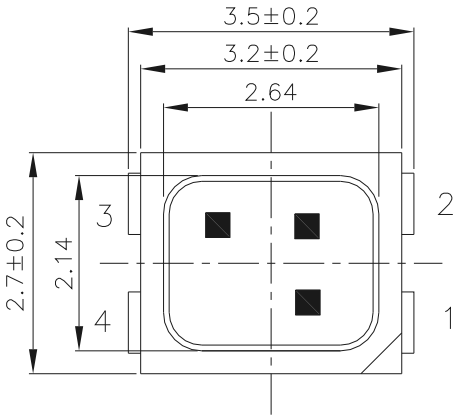


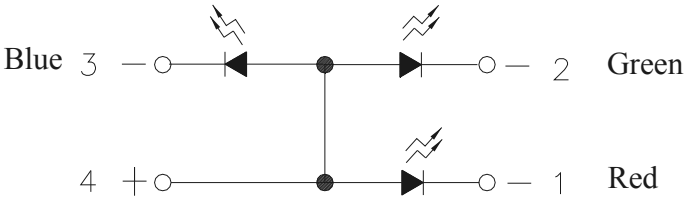
Radiation Diagram

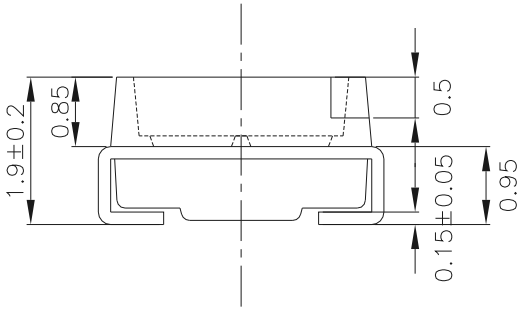


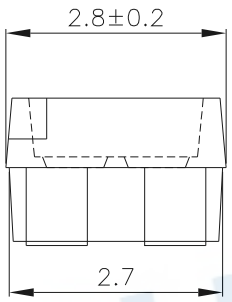
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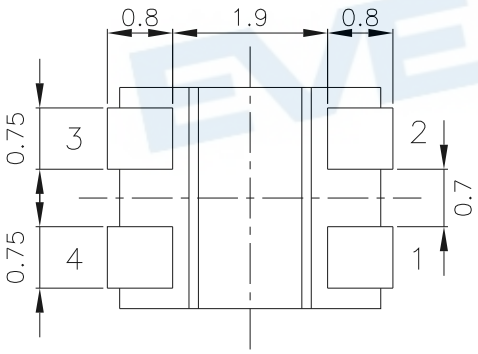
Package Dimension



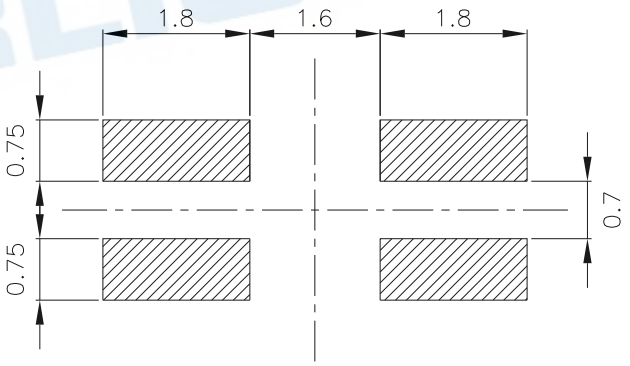








Recommended Solder Pad



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

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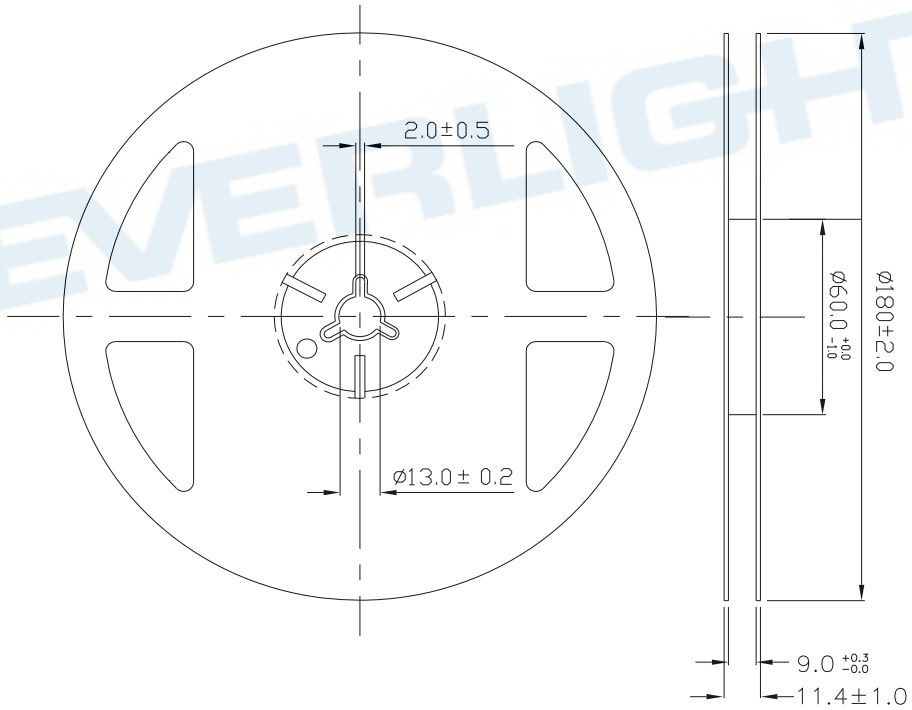
Moisture Resistant Packing Materials

Label Explanation



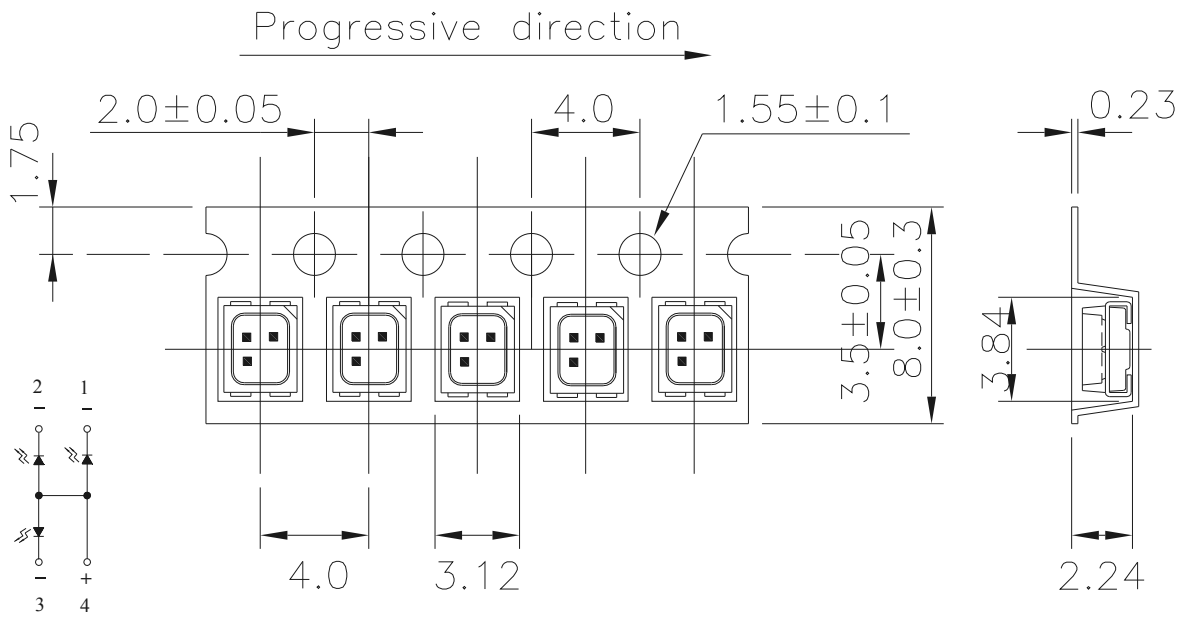
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



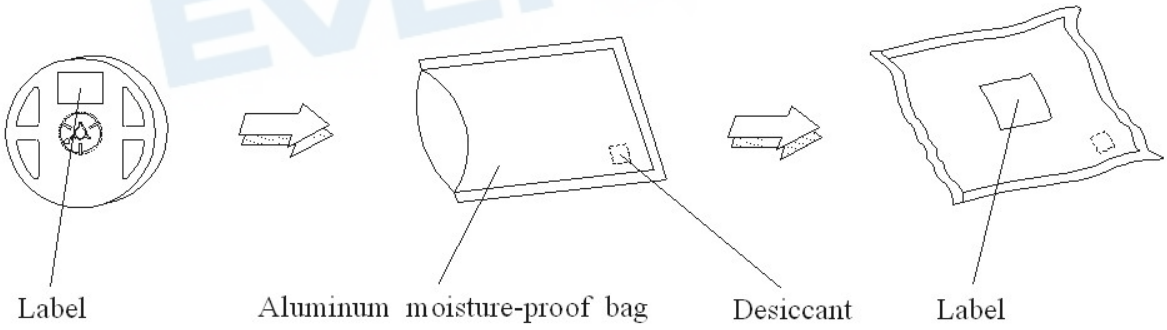
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Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

Moisture Resistant Packing Process



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

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Reliability Test Items and Conditions

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	Reflow Soldering	Temp. : 260℃±5℃ Max 10 sec.	6 min	22 PCS.	0/1
2	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100℃ 5min ∫ 10 sec L : -10℃ 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100℃	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40℃	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	I_F = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 Hrs.	22 PCS.	0/1

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Precautions for Use

1. Over-current-proof

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

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the LEDs should be kept at 30℃ or less and 90%RH or less.

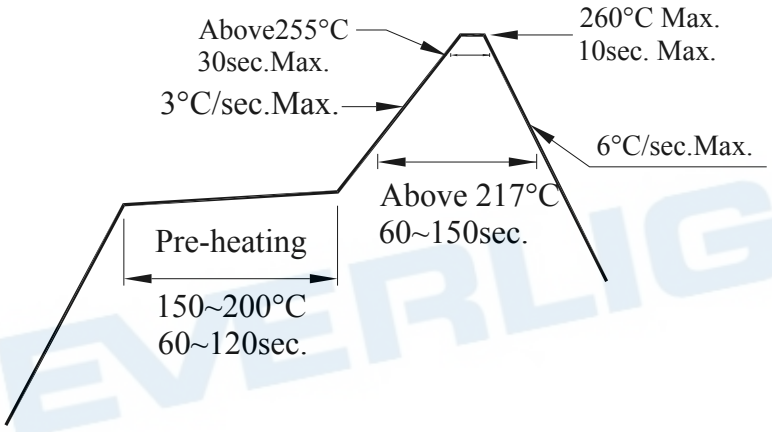
2.3 After opening the package: The LED's floor life are 168 hours under 30℃ or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5℃ 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.

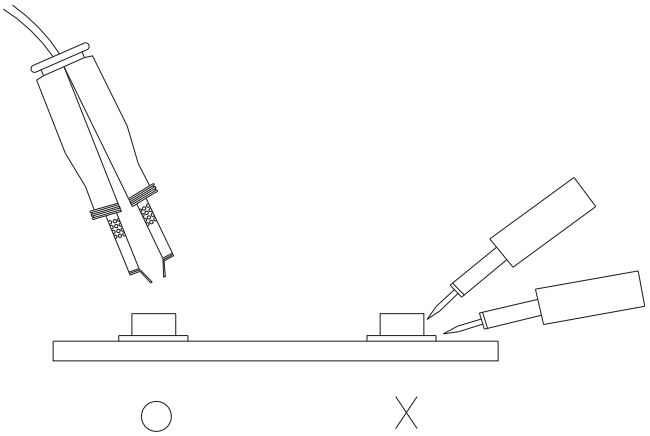
4. Soldering Iron

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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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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