

SMD ■ B EAST1616OGBA0



Features

- Package in 8mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Full-color type.
- 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).

Description

- The EAST1616O SMD LED 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.
- Besides, lightweight makes them ideal for miniature applications. etc.

Applications

- Back-lighting in dashboard and switch.
- Telecommunication: indicator and back-lighting in telephone and fax.
- Flat back-light for LCD, switch and symbol.
- General use.

Device Selection Guide

Code	Chip Materials	Emitted Color	Resin Color
S2	AlInGaN	Brilliant Orange	Water Clear
GH	InGaN	Brilliant Green	
BH	InGaN	Blue	

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Code	Rating	Unit
Reverse Voltage	V_R		5	V
Forward Current	I_F		25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	S2	60	mA
		GH	100	
		BH	100	
Power Dissipation	P_d	S2	60	mW
		GH	95	
		BH	95	
Electrostatic Discharge(HBM)	ESD	S2	2000	V
		GH	150	
		BH	150	
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.	

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Code	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_v	S2	72.0	-----	180	mcd	
		GH	140	-----	360		
		BH	28.5	-----	90.0		
Viewing Angle	$2\theta_{1/2}$		-----	120	-----	Deg	
Peak Wavelength	λ_p	S2	-----	611	-----	nm	
		GH	-----	518	-----		
		BH	-----	468	-----		
Dominant Wavelength	λ_d	S2	599	-----	609	nm	$I_F=20mA$
		GH	520	-----	530		
		BH	465	-----	475		
Spectrum Radiation Bandwidth	$\Delta\lambda$	S2	-----	17	-----	nm	
		GH	-----	35	-----		
		BH	-----	35	-----		
Forward Voltage	V_F	S2	1.7	2.0	2.4	V	
		GH	2.7	3.3	3.7		
		BH	2.7	3.3	3.7		
Reverse Current	I_R	S2	-----	-----	10	μA	$V_R=5V$
		GH	-----	-----	50		
		BH	-----	-----	50		

Note:

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

S2

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
Q1	72.0	90.0	mcd	I _F =20mA
Q2	90.0	112		
R1	112	140		
R2	140	180		

Bin Range Of Dom. Wavelength

Bin Code	Min.	Max.	Unit	Condition
1	599	604	nm	I _F =20mA
2	604	609		

GH

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
R2	140	180	mcd	I _F =20mA
S1	180	225		
S2	225	285		
T1	285	360		

Bin Range Of Dom. Wavelength

Bin Code	Min.	Max.	Unit	Condition
X	520	525	nm	I _F =20mA
Y	525	530		

BH

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
N1	28.5	36.0	mcd	I _F =20mA
N2	36.0	57.0		
P1	57.0	72.0		
P2	72.0	90.0		

Bin Range Of Dom. Wavelength

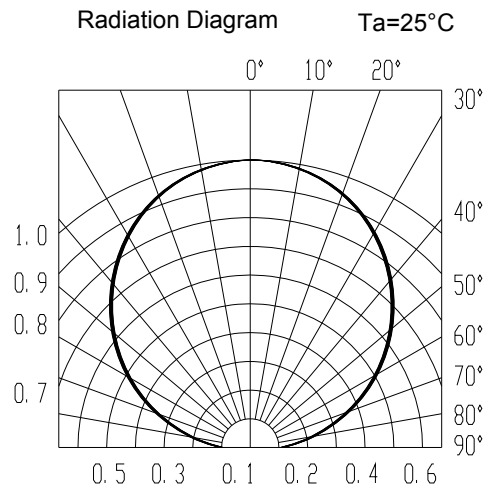
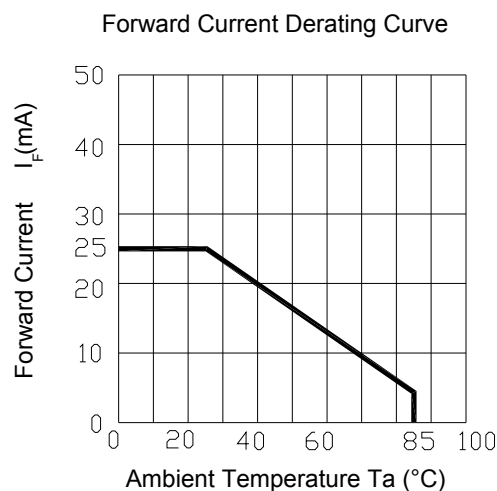
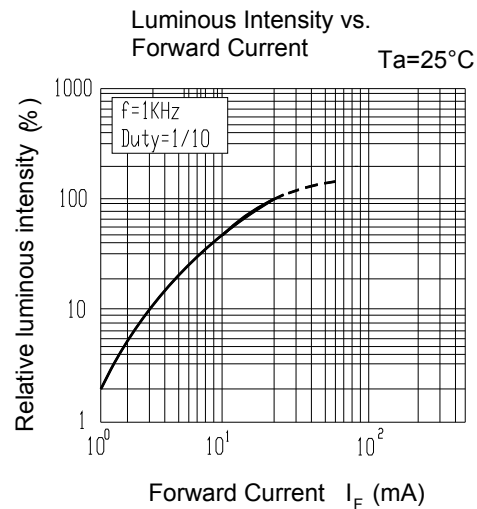
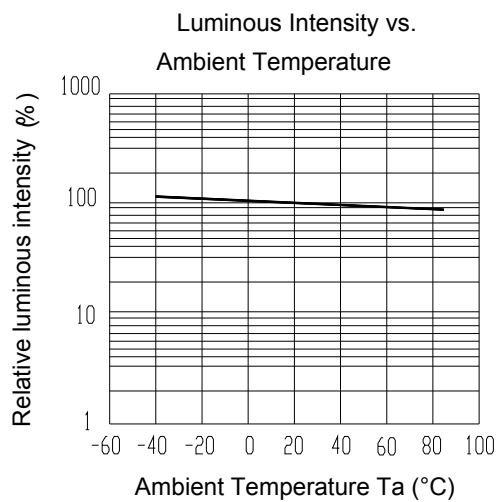
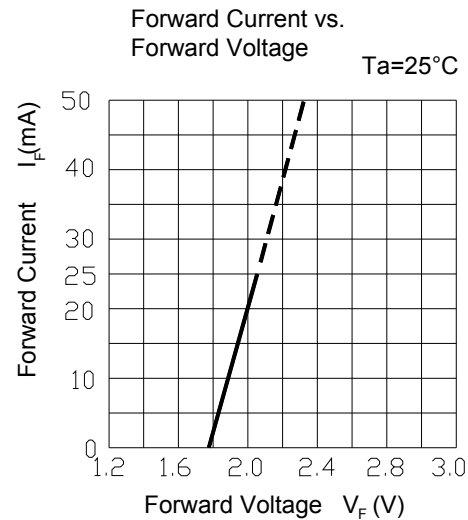
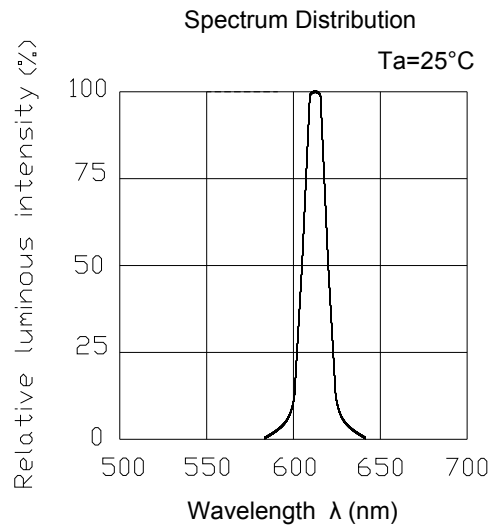
Bin Code	Min.	Max.	Unit	Condition
X	465	470	nm	I _F =20mA
Y	470	475		

Note:

1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength: ±1nm

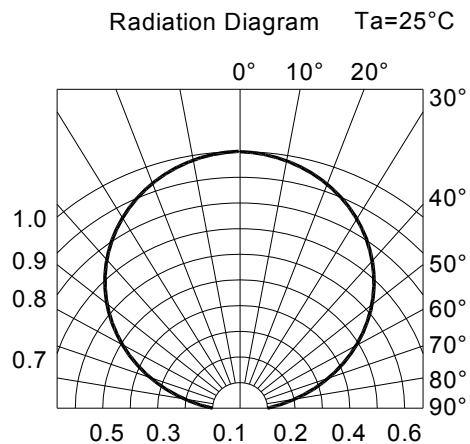
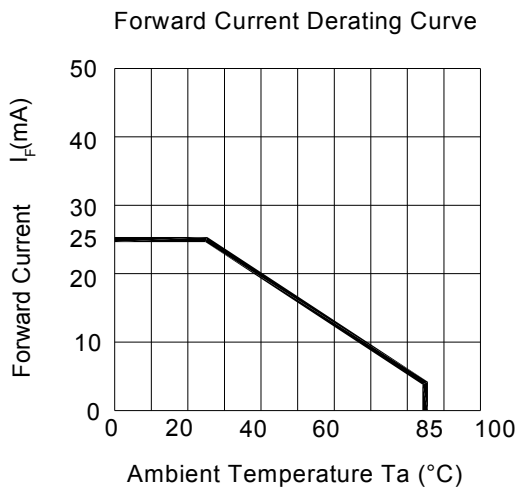
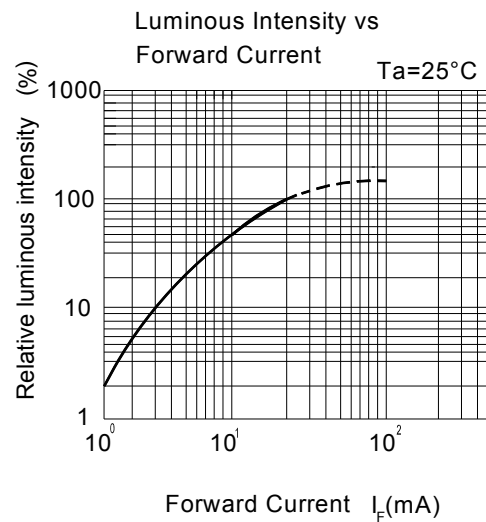
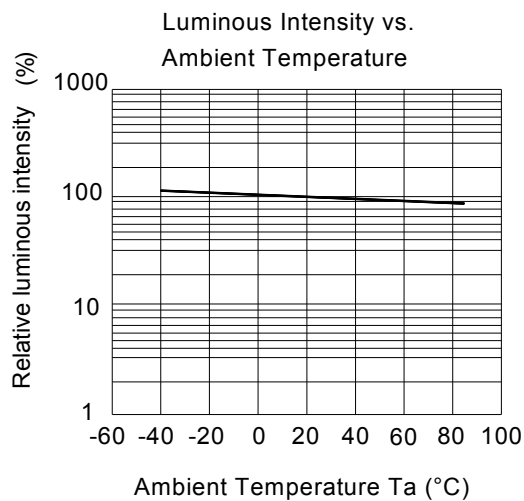
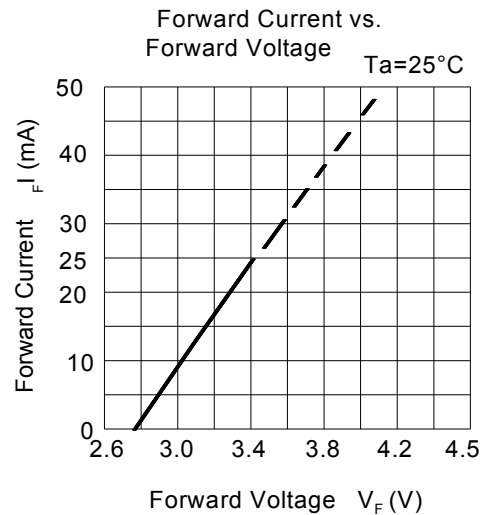
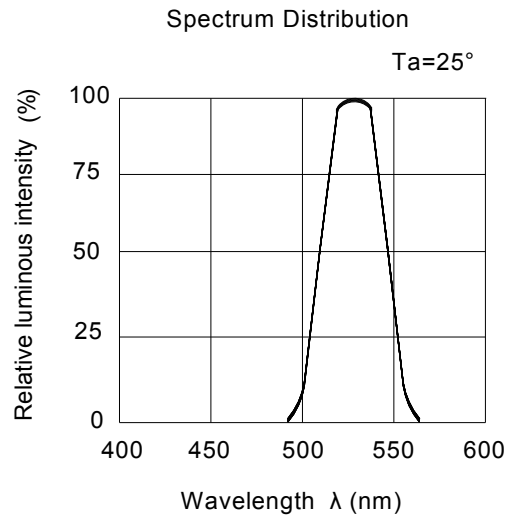
Typical Electro-Optical Characteristics Curves

S2



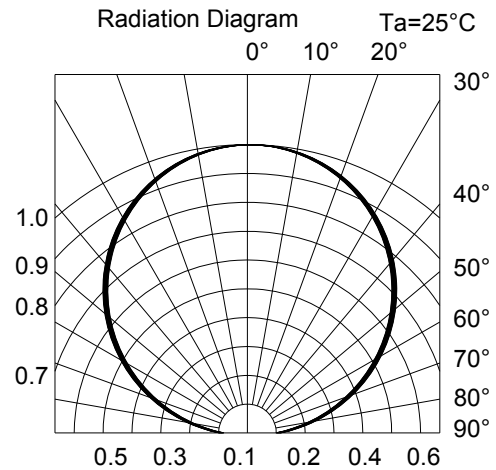
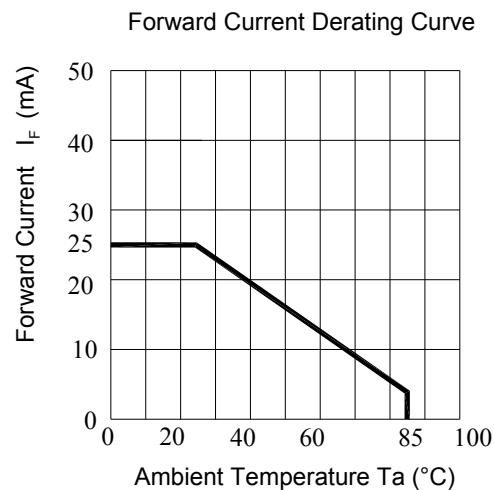
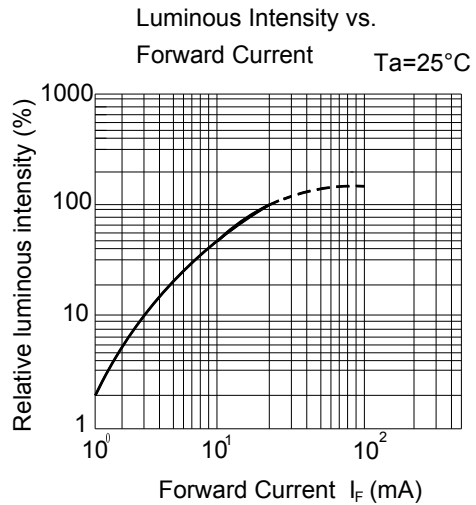
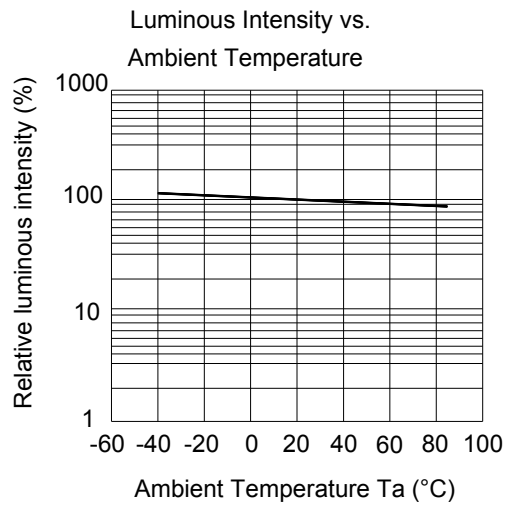
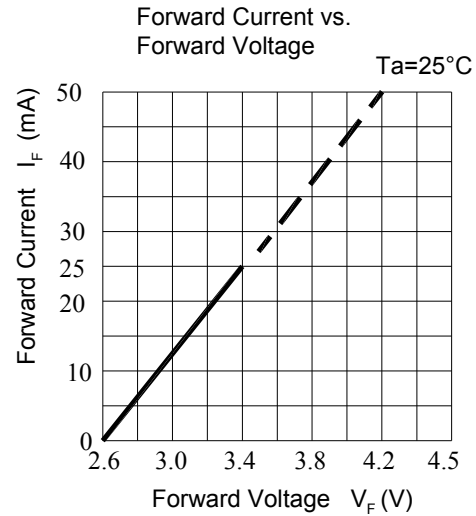
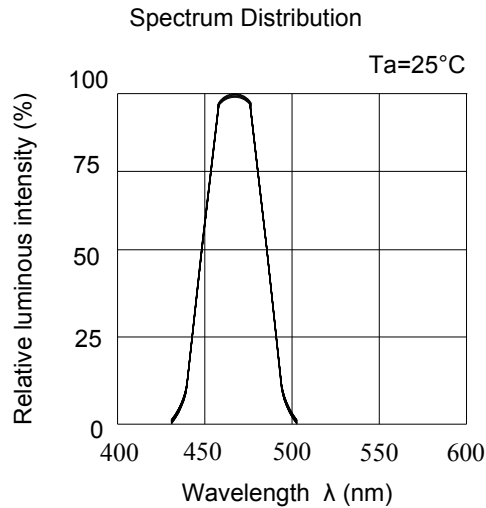
Typical Electro-Optical Characteristics Curves

GH

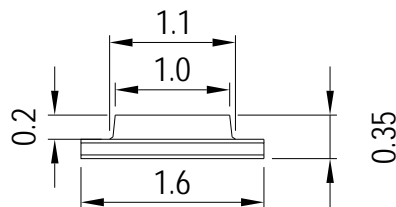
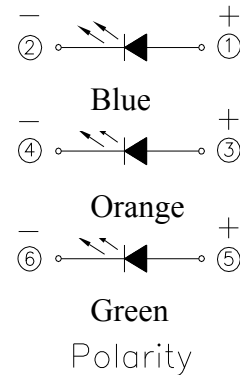


Typical Electro-Optical Characteristics Curves

BH



Top



Technical drawing of a PCB layout showing top and bottom views with dimensions and callouts.

Top View Dimensions:

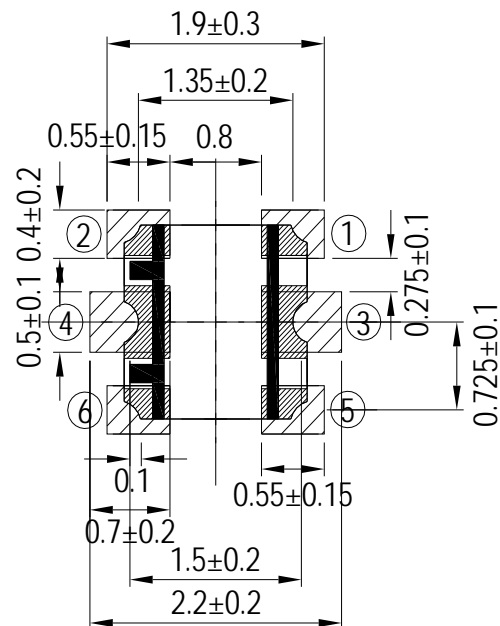
- Overall width: 1.6
- Overall height: 0.6 ± 0.1
- Inner width: 1.6
- Inner height: 0.8
- Left side segments: 0.25 , 0.6 , 0.25
- Right side segments: 0.25 ± 0.05 , 0.25 ± 0.05
- Bottom segments: 0.4 , 0.4

Bottom View Dimensions:

- Overall width: 1.6
- Overall height: 0.6 ± 0.1
- Inner width: 1.6
- Inner height: 0.8
- Left side segments: 0.25 , 0.6 , 0.25
- Right side segments: 0.25 ± 0.05 , 0.25 ± 0.05
- Bottom segments: 0.4 , 0.4

Callouts:

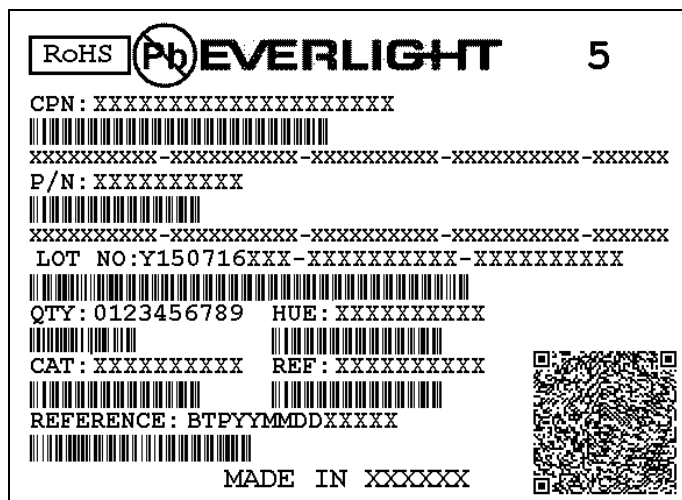
- ①, ②, ③, ④, ⑤, ⑥: Circular callouts pointing to specific features on the layout.
- Solder Mask: Label pointing to the central area of the layout.



Rev. 0.01

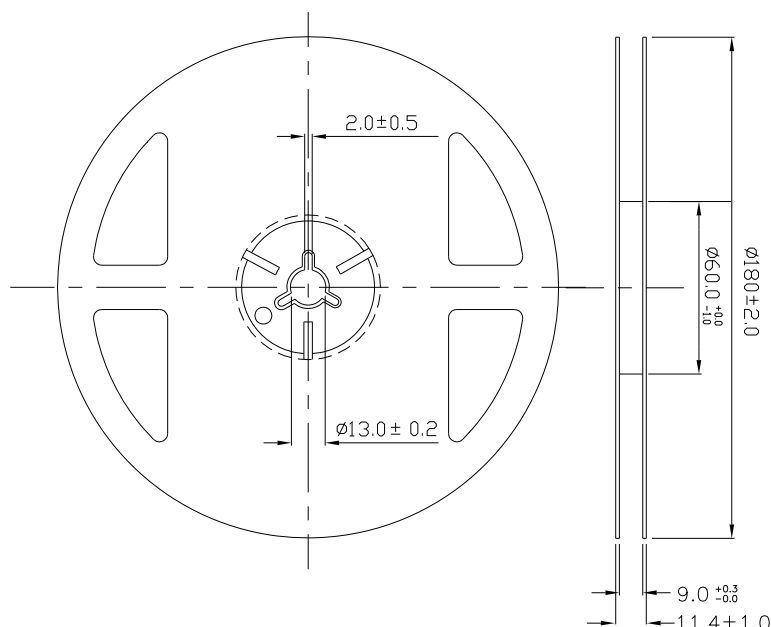
Moisture Resistant Packing Materials

Label Explanation



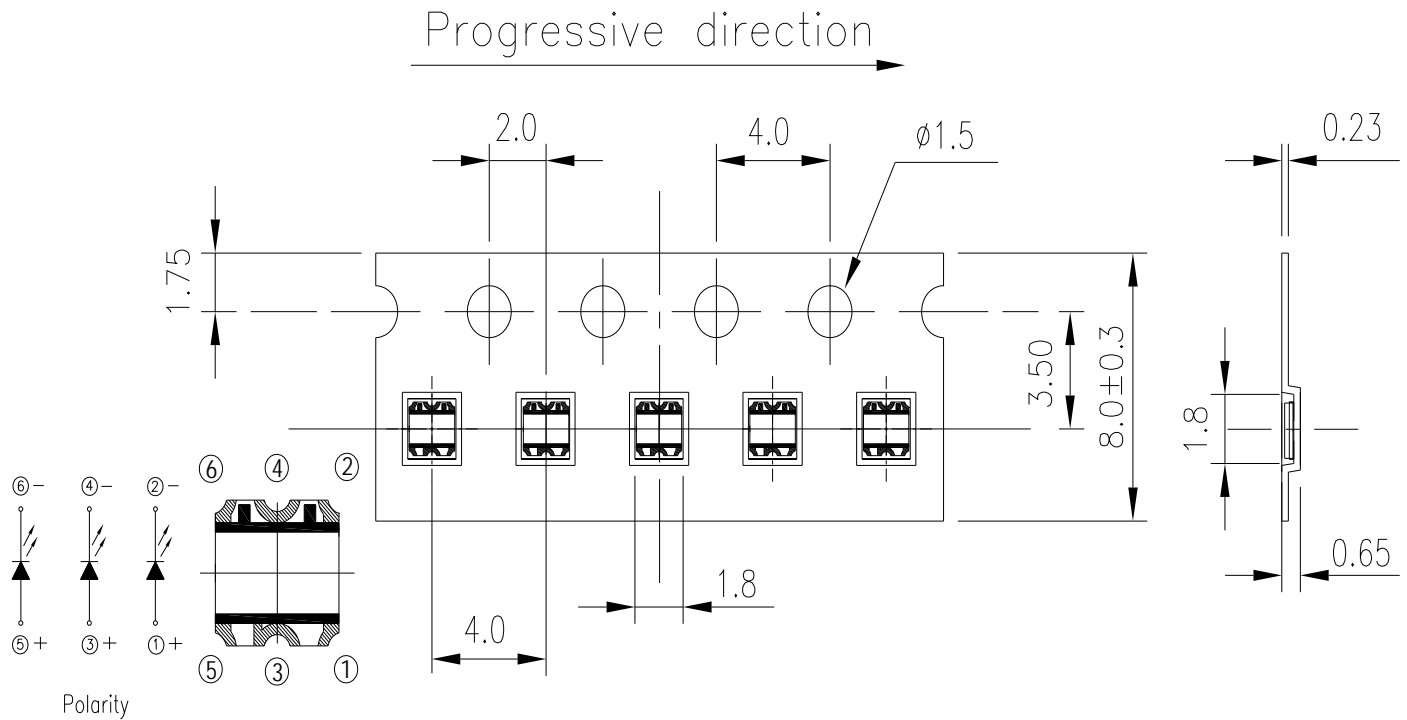
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Chromaticity Coordinates & Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



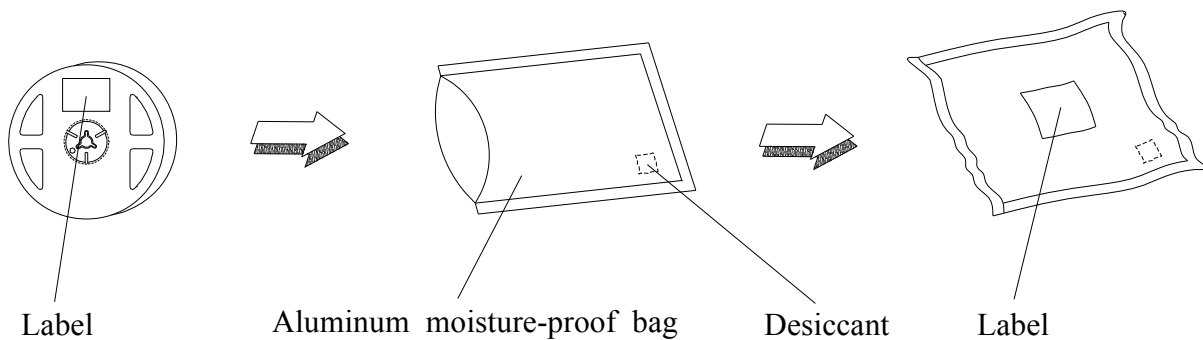
Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm

Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel



Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm

Moisture Resistant Packaging



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°C or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less.

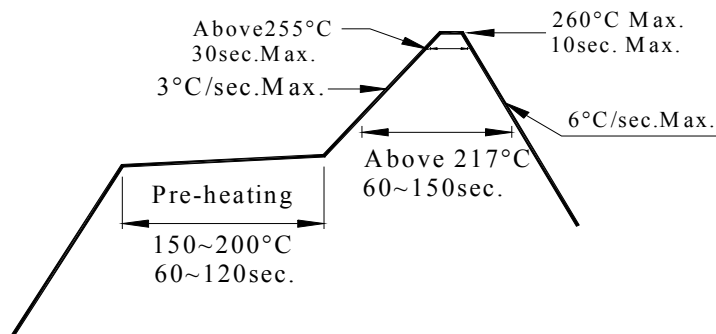
If unused LEDs remain, it should be stored in moisture proof packages.

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°C 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.

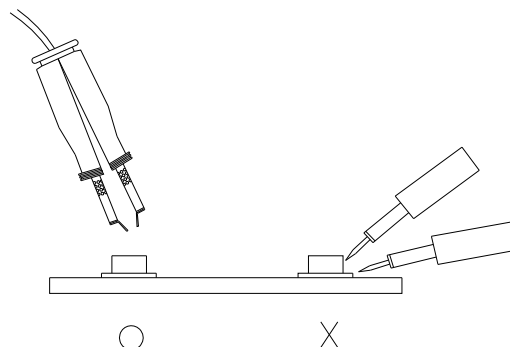
3.4 After soldering, do not warp the circuit board.

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

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
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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