EVER-LED

RoHS Compliant
PB Free

Features:

- ◇ Package in 8mm tape on 7”diameter reel.
- ◇ Compatible with automatic placement equipment.
- ◇ Compatible with infrared and vapor phase reflow solder process.
- ◇ Mono-color type.
- ◇ The product itself will remain within RoHS compliant version.

Descriptions:

- ◇ This 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:

- ◇ Automotive: Backlighting in dashboard and switch.
- ◇ Telecommunication: Indicator and backlighting in telephone and fax.
- ◇ Flat backlight for LCD, switch and symbol.
- ◇ General use.

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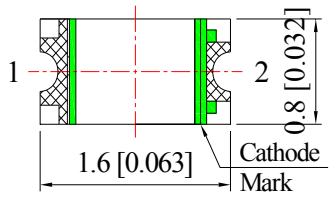
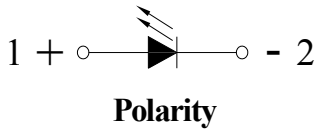
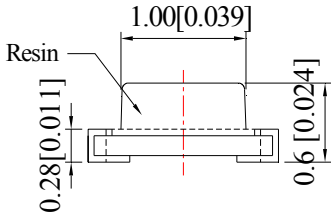
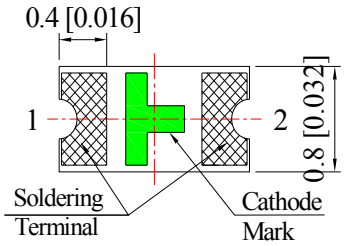
Package Dimension:



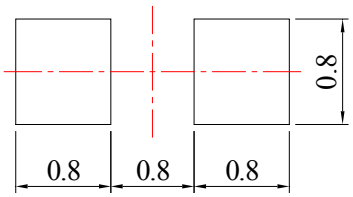


Polarity





Recommended Soldering Pad Dimensions



Unit: mm
Tolerance: ±0.10mm

Part No.	Chip Material	Lens Color	Source Color
0603-FLWC-DNB	InGaN	Water Clear	Blue

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.10mm (.004”) unless otherwise specified.
3. Specifications are subject to change without notice.

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Absolute Maximum Ratings at Ta=25℃

Parameters	Symbol	Max.	Unit
Power Dissipation	PD	90	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	IFP	100	mA
Forward Current	IF	25	mA
Reverse Voltage	VR	5	V
Electrostatic Discharge (HBM)	ESD	400	V
Operating Temperature Range	Topr	-40℃ to +80℃	
Storage Temperature Range	Tstg	-40℃ to +85℃	
Soldering Temperature	Tsld	260℃ for 5 Seconds	

Electrical Optical Characteristics at Ta=25℃

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity *	IV	80	120	---	mcd	IF=10mA (Note 1)
Luminous Intensity *	IV	130	200	---	mcd	IF=20mA (Note 1)
Viewing Angle *	$2\theta_{1/2}$	---	130	---	Deg	IF=20mA (Note 2)
Peak Emission Wavelength	λp	---	468	---	nm	IF=20mA
Dominant Wavelength	λd	---	470	---	nm	IF=20mA (Note 3)
Spectral Line Half-Width	△λ	---	25	---	nm	IF=20mA
Forward Voltage	VF	2.60	3.20	3.60	V	IF=20mA
Reverse Current	IR	---	---	10	μA	V_R=5V

Notes:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

3. The dominant wavelength (λd) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

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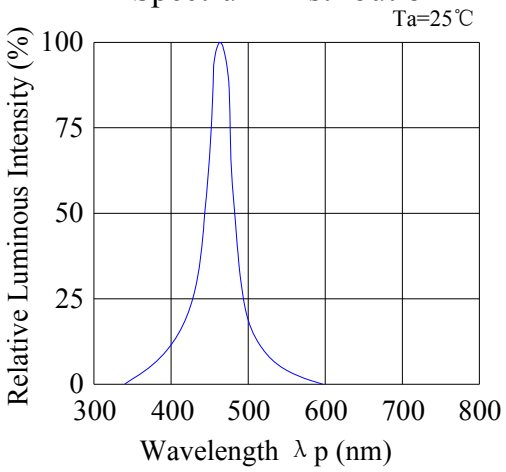
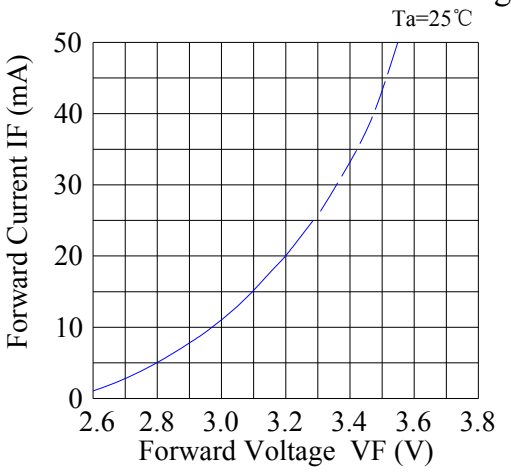
Typical Electrical / Optical Characteristics Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

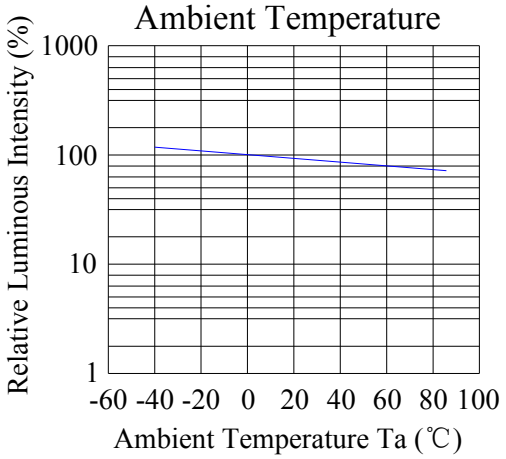
Spectrum Distribution



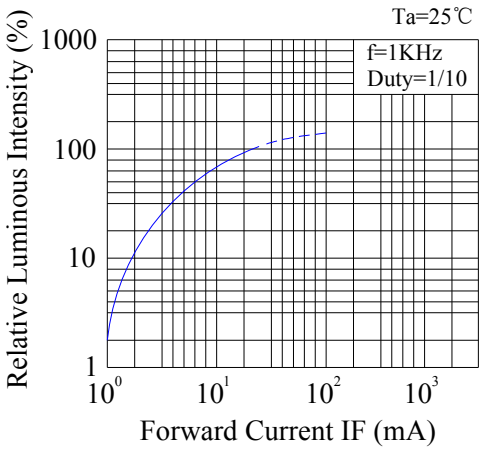
Forward Current & Forward Voltage



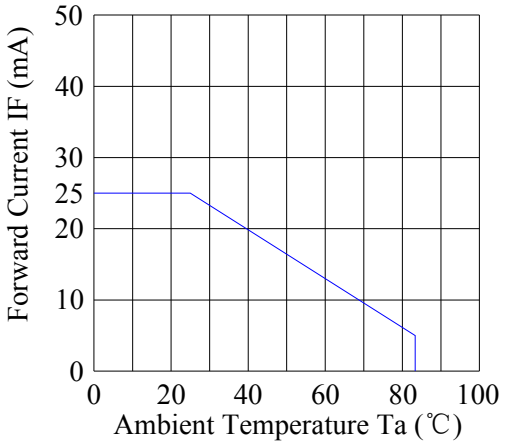
Luminous Intensity & Ambient Temperature



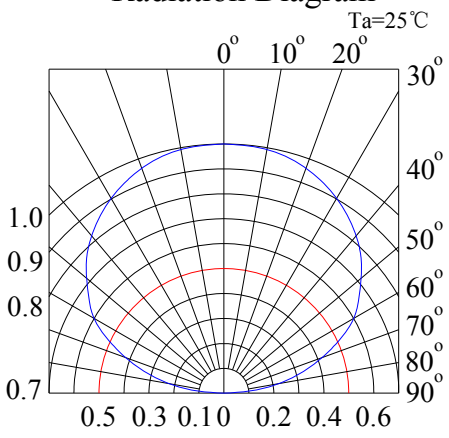
Luminous Intensity & Forward Current



Forward Current Derating Curve



Radiation Diagram



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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%.

1) Test Items and Results:

No.	Test Item	Test Hours/Cycles	Test Conditions	Sample Size	Ac/Re
1	Resistance to Soldering Heat	6 Min	Tsld=260±5℃, Min. 5sec	25pcs	0/1
2	Thermal Shock	300 Cycles	H: +100℃ 5min ∫ 10 sec L: -10℃ 5min	25pcs	0/1
3	Temperature Cycle	300 Cycles	H: +100℃ 15min ∫ 5min L: -40℃ 15min	25pcs	0/1
4	High Temperature Storage	1000Hrs.	Temp: 100℃	25pcs	0/1
5	DC Operating Life	1000Hrs.	IF=20mA	25pcs	0/1
6	Low Temperature Storage	1000Hrs.	Temp: -40℃	25pcs	0/1
7	High Temperature/ High Humidity	1000Hrs.	85℃/85%RH	25pcs	0/1

2) Criteria for Judging the Damage:

Item	Symbol	Test Conditions	Criteria for Judgment	
			Min	Max
Forward Voltage	VF	IF=20mA	---	F.V.*)×1.1
Reverse Current	IR	VR=5V	---	F.V.*)×2.0
Luminous Intensity	IV	IF=20mA	F.V.*)×0.7	---

*) F.V.: First Value.

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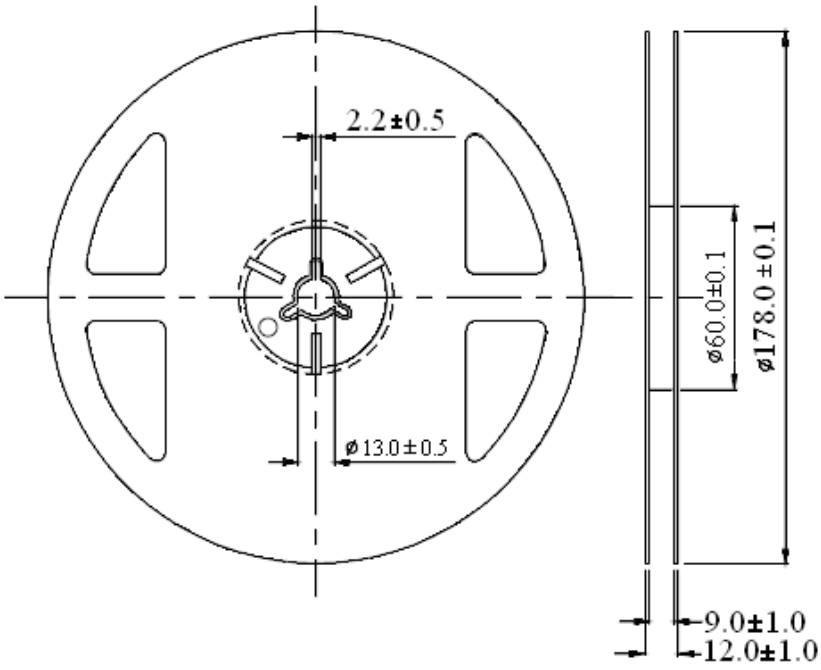
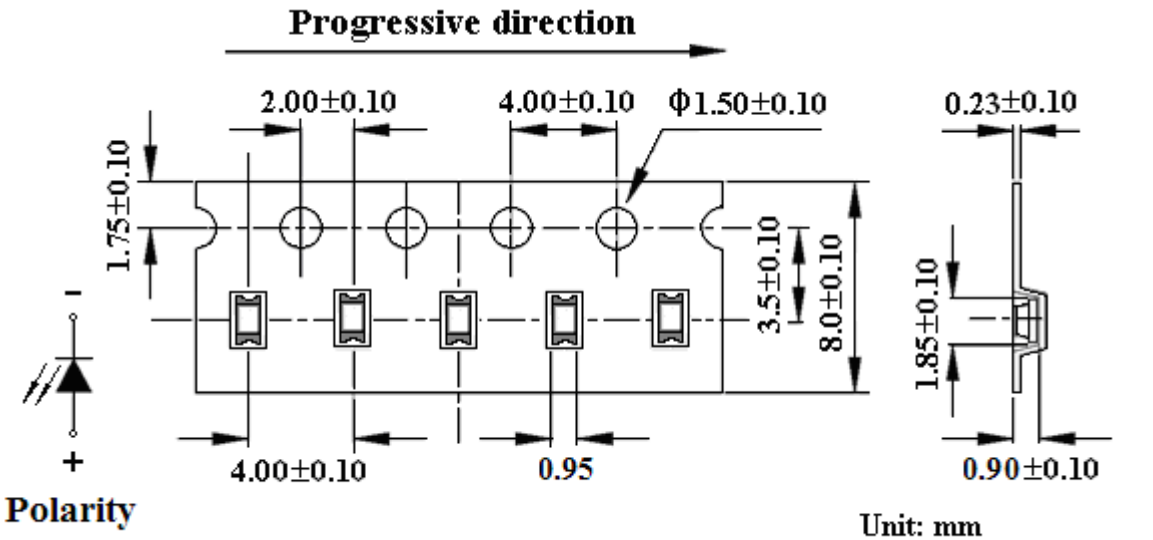
Reel Dimensions:



Unit: mm
Tolerance: ±0.25mm

Carrier Tape Dimensions:

Loaded quantity 4000PCS per reel.



Unit: mm
Tolerance: ±0.10 mm

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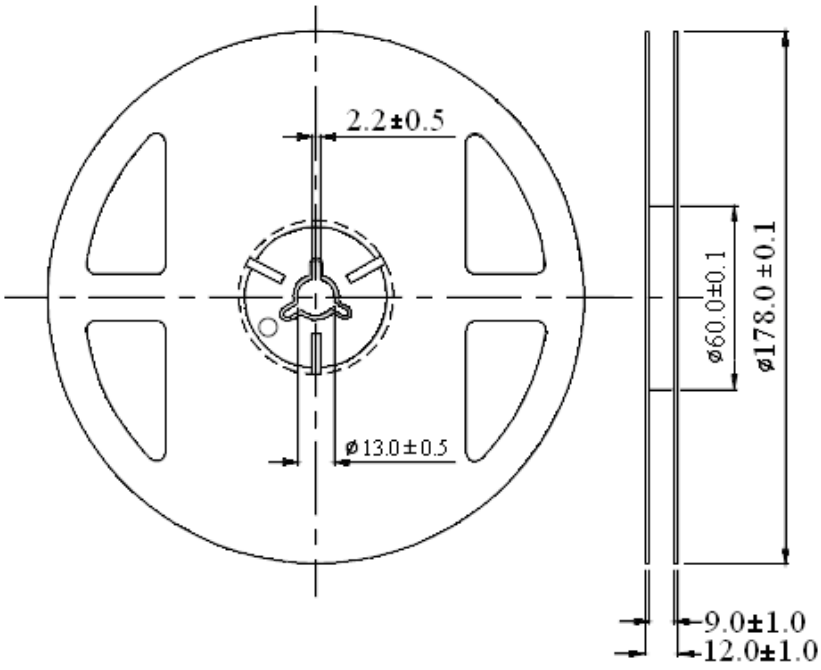
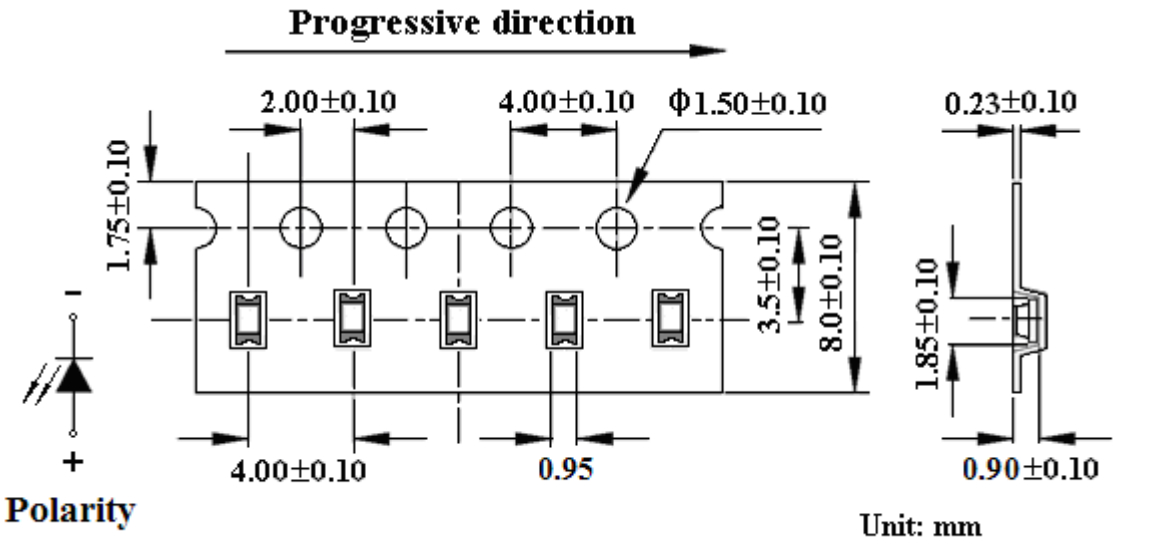
Reel Dimensions:



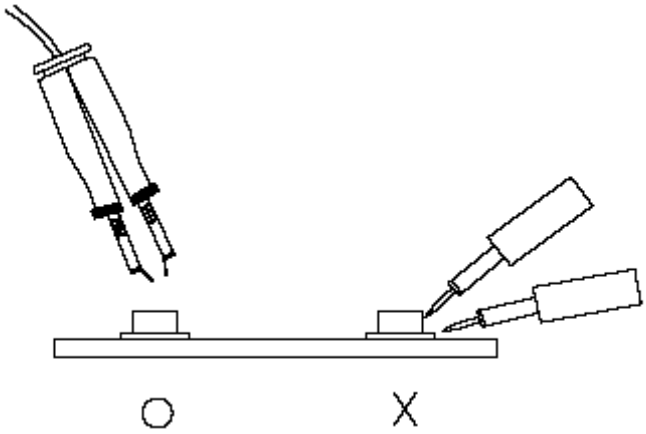
Unit: mm
Tolerance: ±0.25mm

Carrier Tape Dimensions:

Loaded quantity 4000PCS per reel.



Unit: mm
Tolerance: ±0.10 mm



6. Caution in ESD

Static Electricity and surge damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.