EVERLIGHT ELECTRONICS CO.,LTD.

Technical Data Sheet
Side View LED (0.6mm)

99-216/Y2C-AR2T1B/FC

Features

- Side view white LED.
- White SMT package.
- Lead frame package with individual 2 pins.
- Wide viewing angle.
- Soldering methods: IR reflow soldering.
- Pb-free.
- The product itself will remain within RoHS compliant version.

Descriptions

- Due to the package design, 99-216 has wide viewing angle, low power consumption and white LEDs are devices which are materialized by combing Blue LEDs and specialphosphors .This feature makes the LED ideal for light guide application.

Applications

- LCD back light.
- Mobile phones .
- Indicators.
- Illuminations.
- Switch lights.

Device Selection Guide

Chip Material	Emitted Color	Resin Color
AlGaInP	Brilliant Yellow	Water Clear

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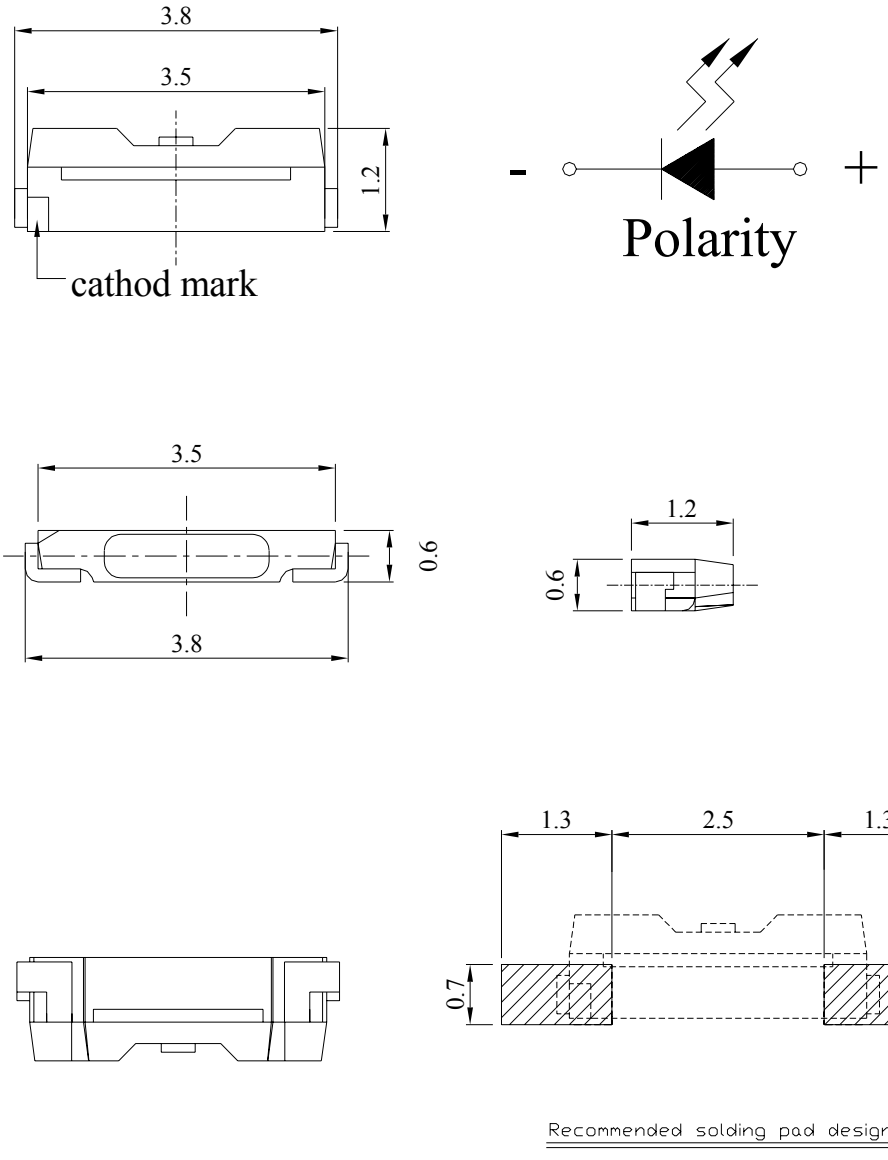
Package Outline Dimensions



Notes: Tolerances Unless Dimension ±0.1mm ,Unit = mm

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Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	50	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	120	mW
Electrostatic Discharge(HBM)	ESD	2000	V
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
Soldering Temperature	Tsol	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_V	140	---	360	mcd	I_F=20mA
Viewing Angle	2θ1/2	-----	110	-----	deg	I_F=20mA
Peak Wavelength	λp	-----	591	-----	nm	I_F=20mA
Dominant Wavelength	λd	585.5	-----	594.5	nm	I_F=20mA
Spectrum Radiation Bandwidth	△λ	-----	15	-----	nm	I_F=20mA
Forward Voltage	V_F	1.75	-----	2.35	V	I_F=20mA
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

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Bin Range of Luminous Intensity

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

Bin Range of Dominant Wavelength

Group	Bin Code	Min.	Max.	Unit	Condition
A	D3	585.5	588.5	nm	I_F=20mA
	D4	588.5	591.5		
	D5	591.5	594.5		

Bin Range of Forward Voltage

Group	Bin.	Min.	Max.	Unit	Condition
B	0	1.75	1.95	V	I_F=20mA
	1	1.95	2.15		
	2	2.15	2.35		

Notes:

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

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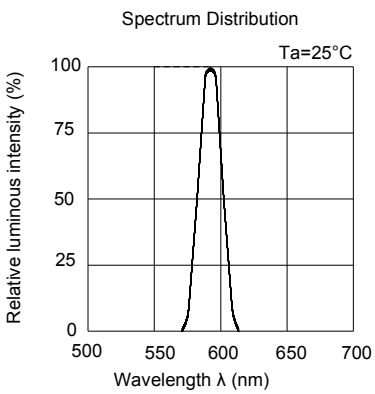
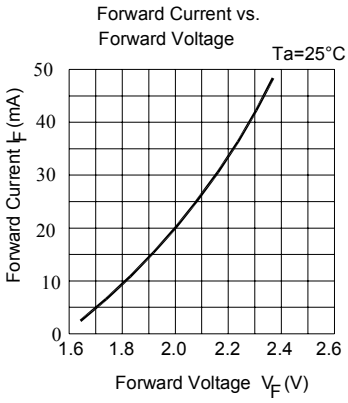
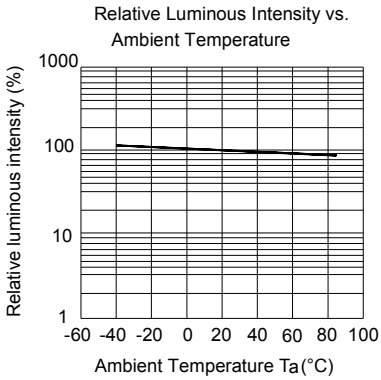
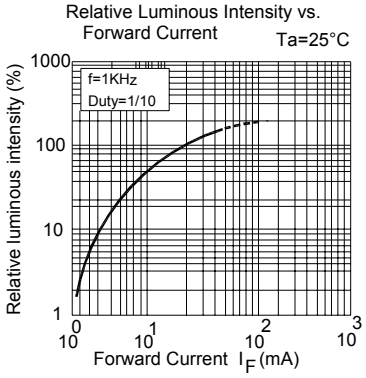
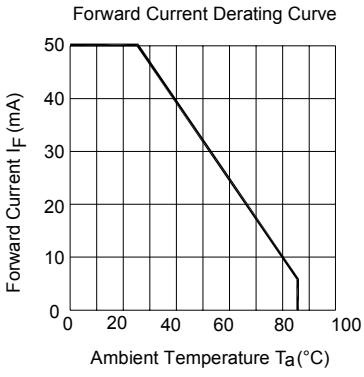
Typical Electro-Optical Characteristics Curves

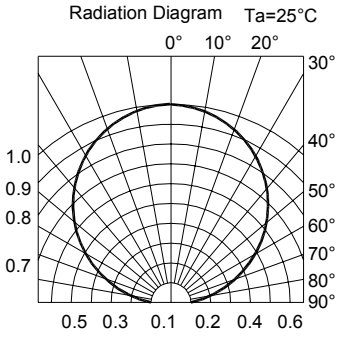












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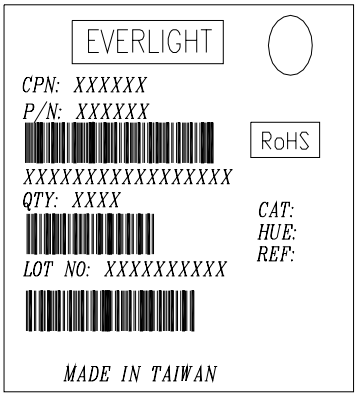
Label Explanation

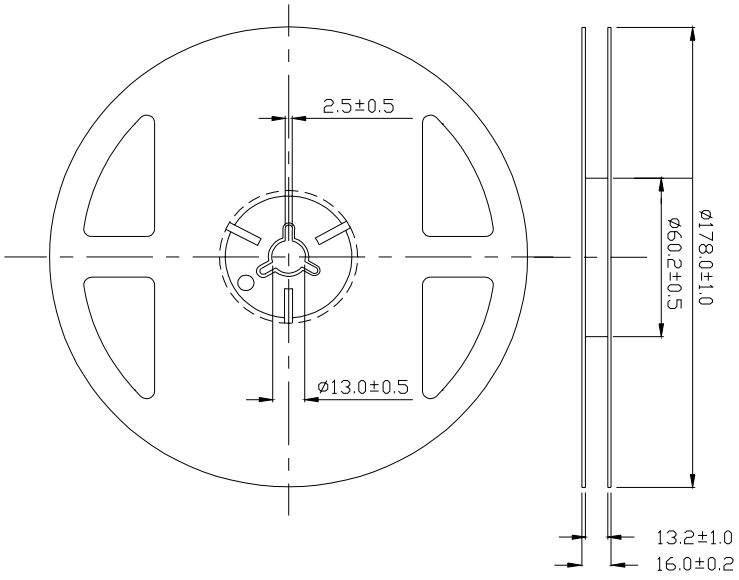
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank



Reel Dimensions



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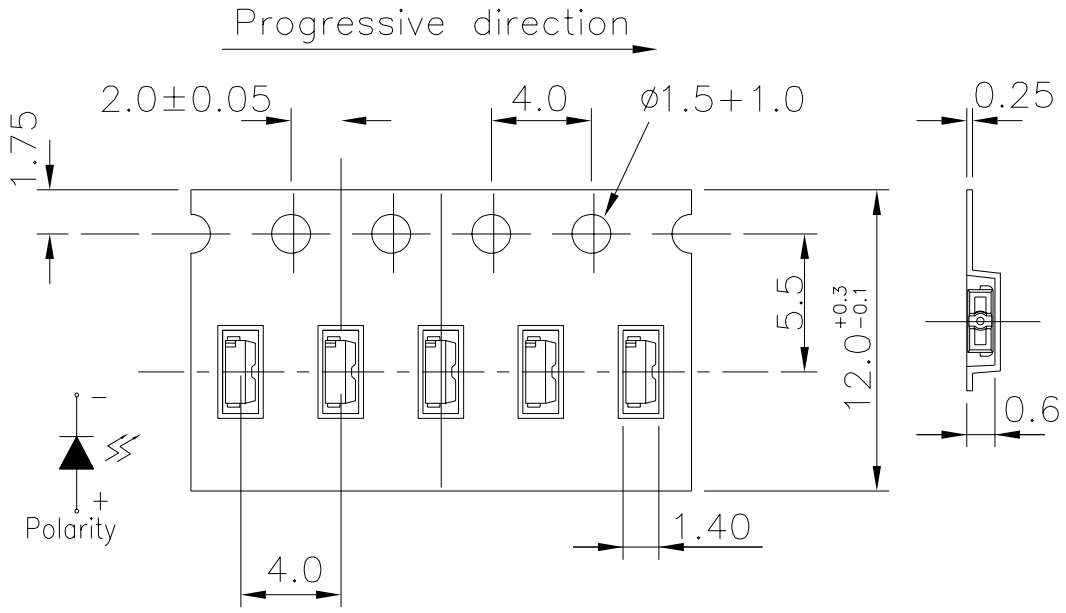
Carrier Tape Dimensions; Loaded Quantity 3500 pcs Per Reel



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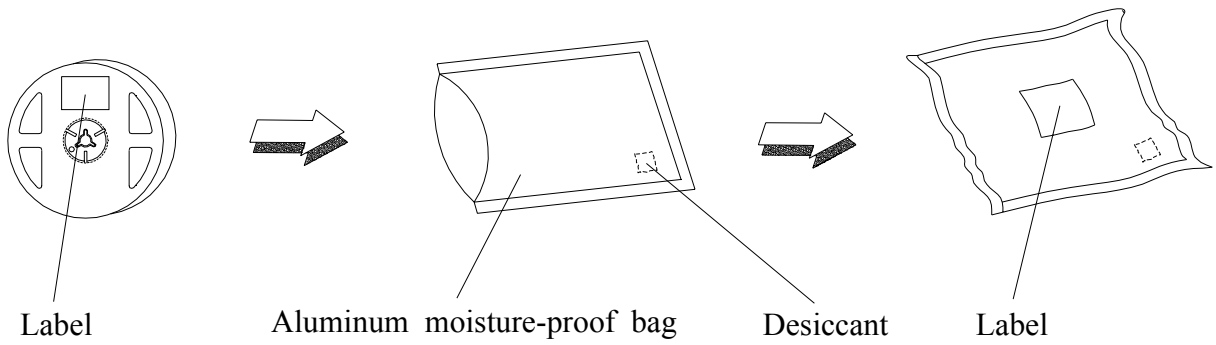
Moisture Resistant Packaging



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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℃ Min. 5 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 / 25℃	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 Hrs.	22 PCS.	0/1

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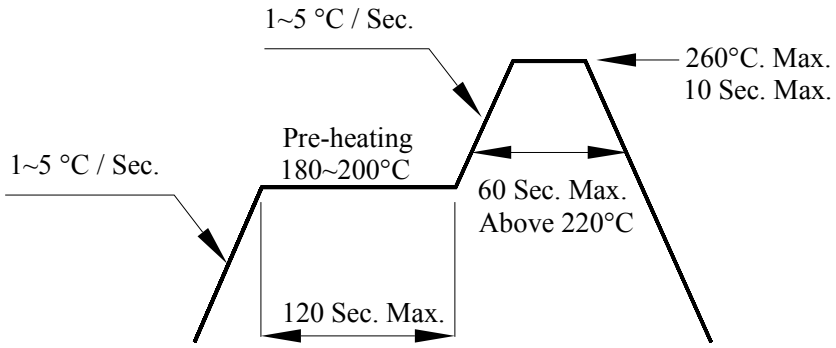
Precautions For Use

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 is 1 year under 30 deg 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℃ 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.

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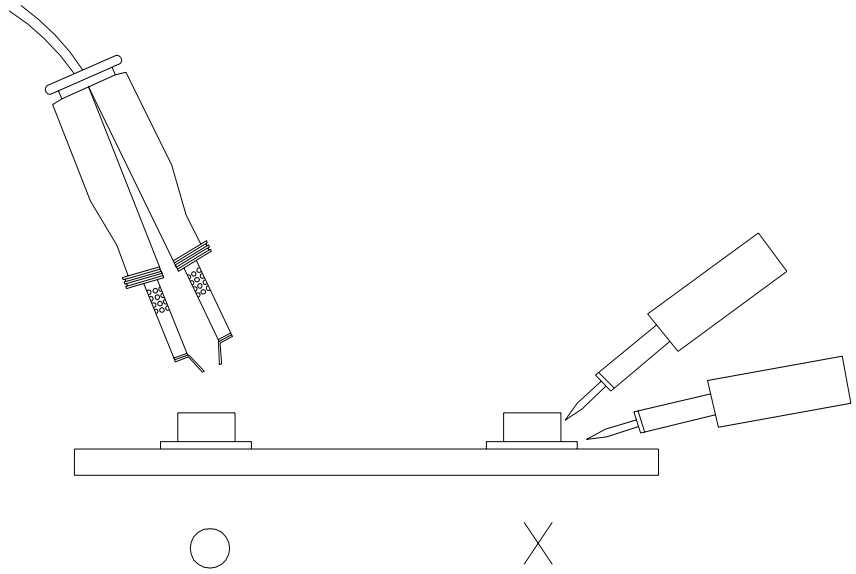
5. Repairing

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.



6. Handling Indications

During processing, mechanical stress on the surface should be minimized as much as possible. Sharp objects of all types should not be used to pierce the sealing compound

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