EVERLIGHT AMERICAS

DATASHEET

White SMD Surface Mount Device
EAPL3527WA9

Features

- Fluorescence Type
- High Luminous Intensity
- High Efficiency
- Pb-free
- ESD protection.
- The product itself will remain within RoHS compliant version.

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.

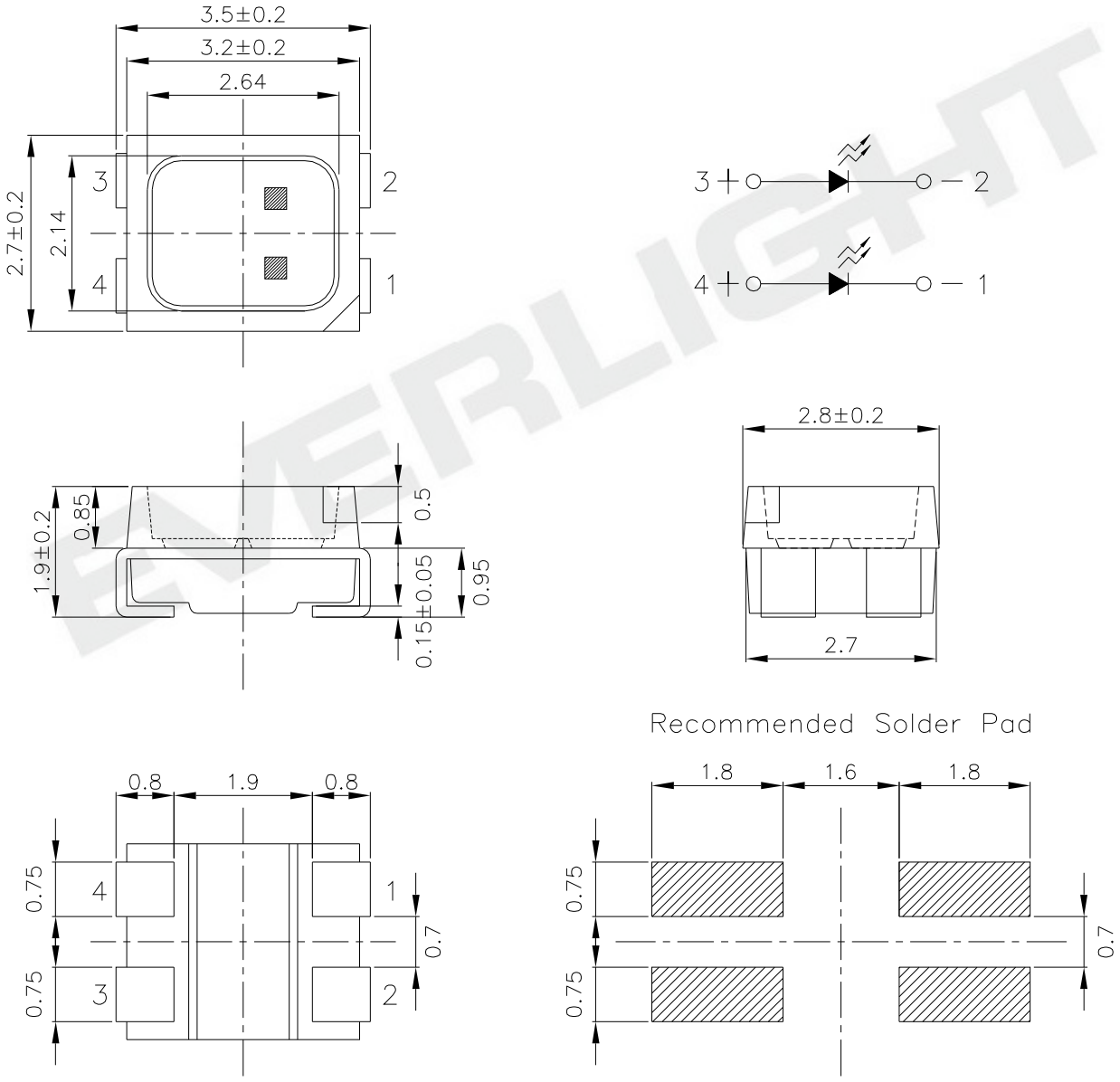
Applications

- OA Equipment
- Backlighting of Full Color LCD
- Automotive Equipment
- Replacement of Conventional Light Bulbs and Fluorescent Lamps

Device Selection Guide

Chip Material	Emitted Color	Resin Color
InGaN	Pure White	Water Clear

Package Outline Dimensions



Note: The tolerances unless mentioned is: ±0.1mm, Unit = mm

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V[*1]
Forward Current	I_F	30	mA[*1]
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA[*1]
Power Dissipation	Pd	110	mW[*1]
Electrostatic Discharge(HBM)	ESD	1000	V[*1]
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.	

[*1]For each die.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Luminous Intensity[*1]	Iv	1800	-----	4500	mcd	I_F=20mA[*2]
Forward Voltage	V_F	2.75	-----	3.95	V	I_F=20mA[*2]
Viewing Angle[*1]	2θ1/2	-----	120	-----	deg	I_F=20mA[*2]
Reverse Current	I_R	-----	-----	50	μA	V_R=5V

[*1]When two LED dies are operated simultaneously.

[*2]For each die.

Bin Range of Luminous Intensity[*1]

Bin Code	Min.	Max.	Unit	Condition
X1	1800	2250	mcd	I_F=20mA[*2]
X2	2250	2850		
Y1	2850	3600		
Y2	3600	4500		

[*1]When two LED dies are operated simultaneously.

[*2]For each die.

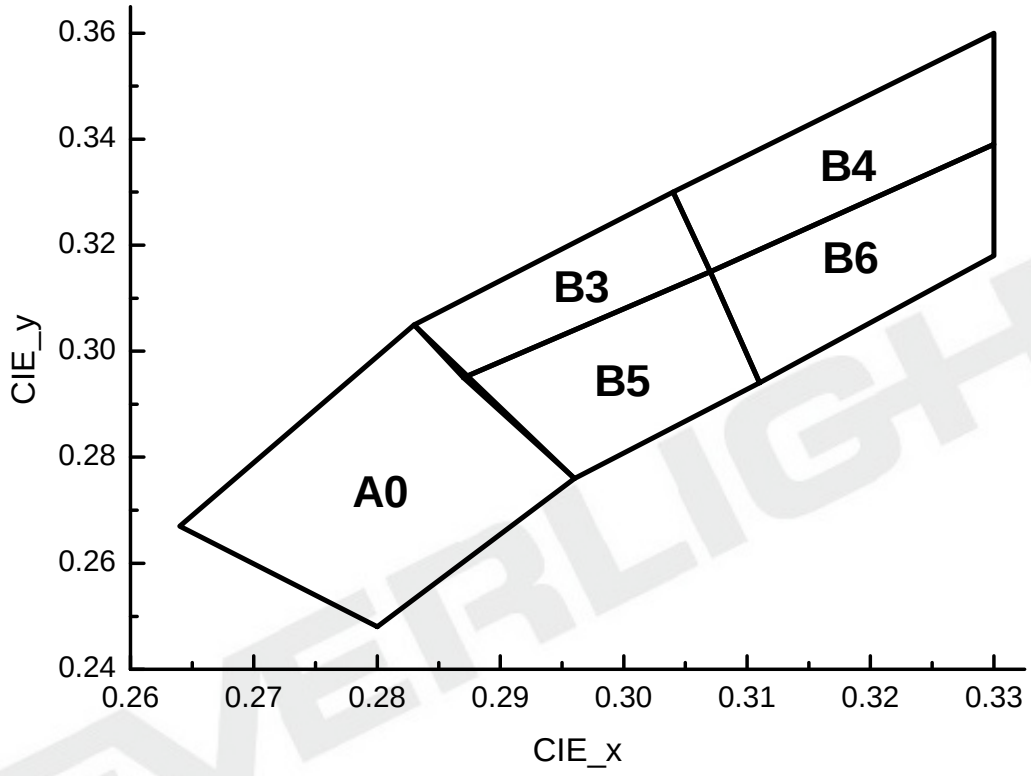
Note: Tolerance of Luminous Intensity: ±11%

Bin Range of Chromaticity Coordinates

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

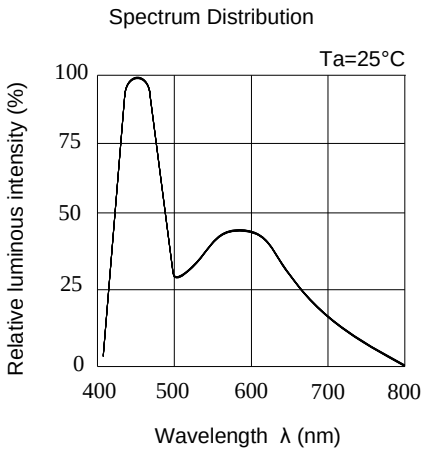
Note: Tolerance of Chromaticity Coordinates：±0.01

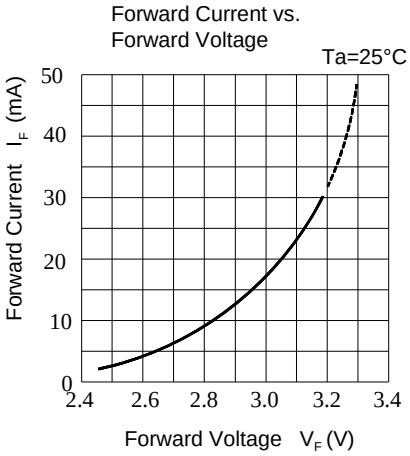
The C.I.E. 1931 Chromaticity Diagram

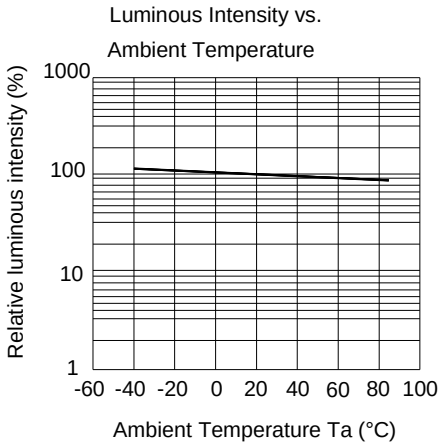


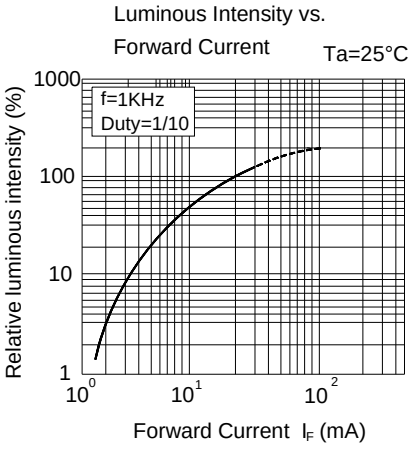
***The C.I.E. 1931 chromaticity diagram (Tolerance ±0.01).**

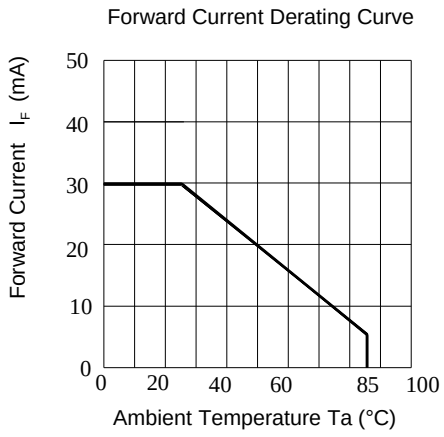
Typical Electro-Optical Characteristics Curves

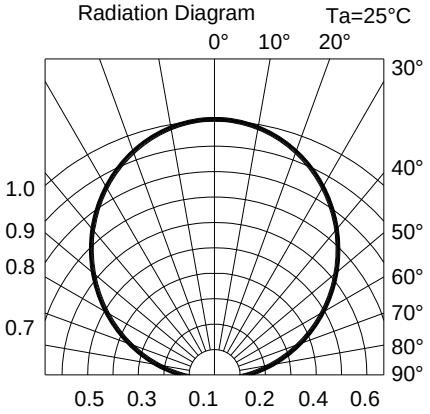






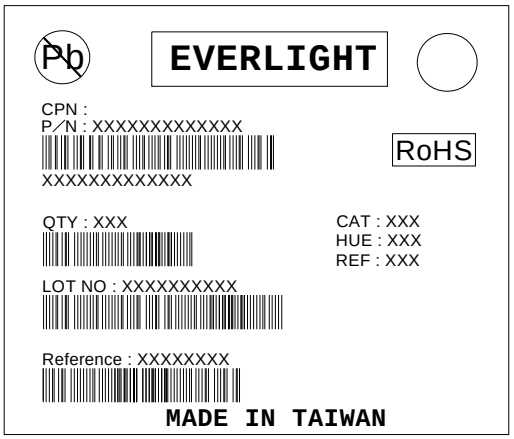




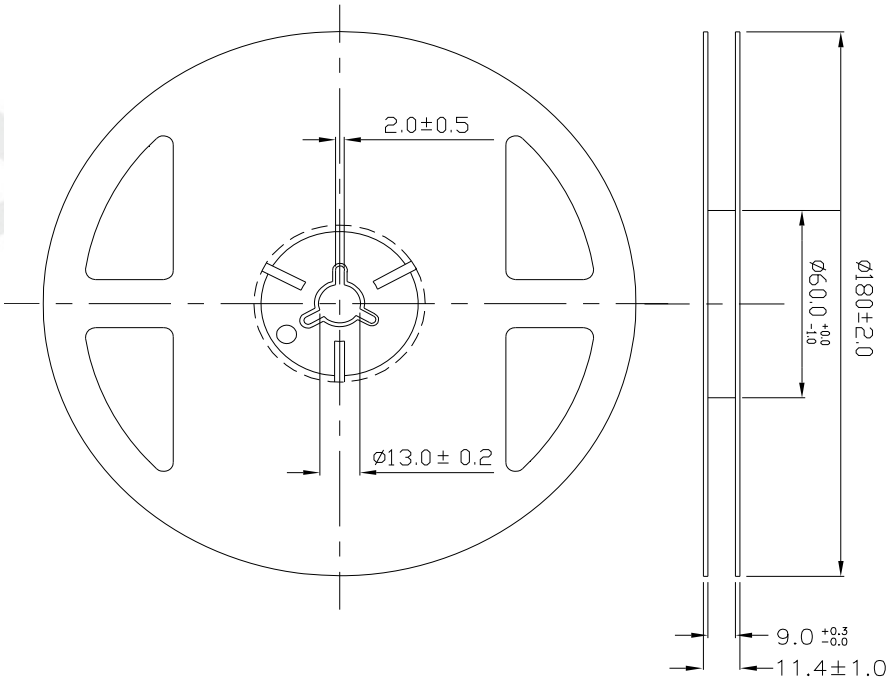


Label Explanation

CAT: Luminous Intensity Rank
HUE: Chromaticity Coordinates
REF: Forward Voltage Rank

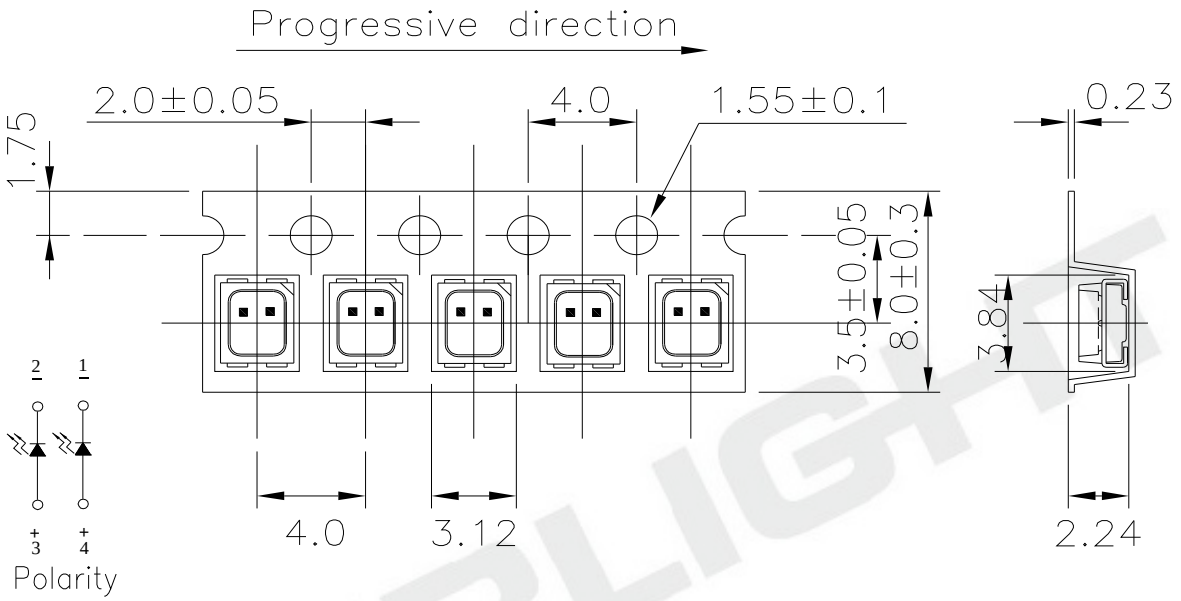


Reel Dimensions



Note: The tolerances unless mentioned is: ±0.1mm, Unit = mm

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel.



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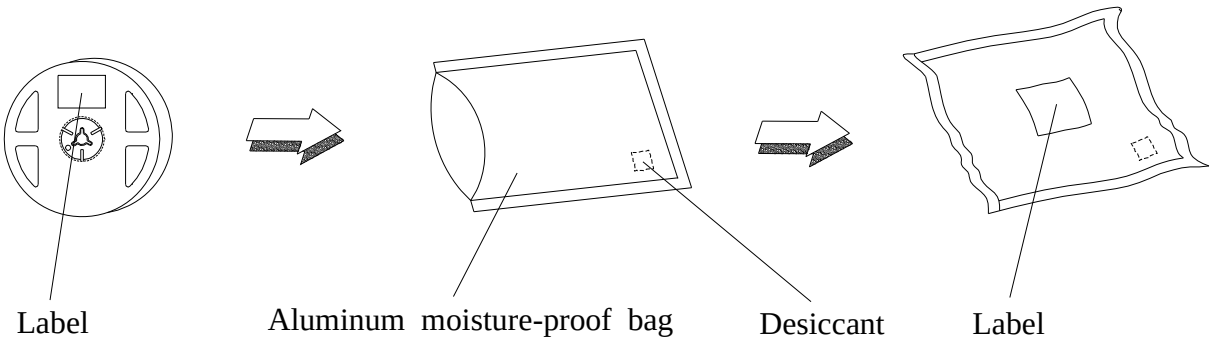
Moisture Resistant Packaging



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[*1]	I_F = 20 mA[*2]	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 Hrs.	22 PCS.	0/1

[*1]When two LED dies are operated simultaneously.

[*2]For each die.

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.

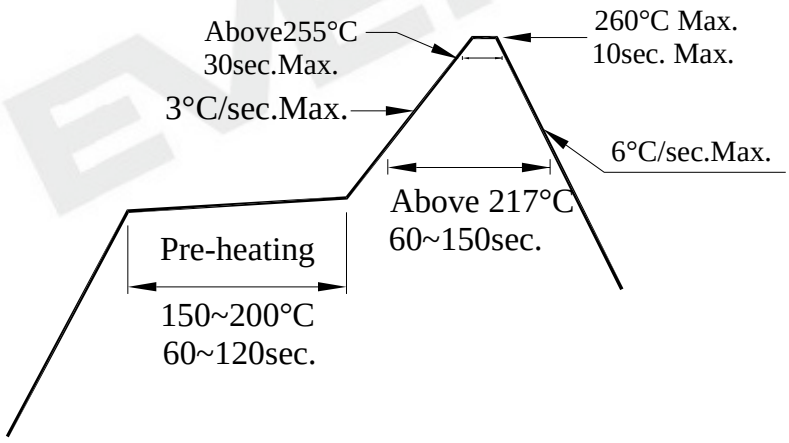
   2.2 Before opening the package, the LEDs should be kept at 30℃ or less and 90%RH or less.

   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.