EVERLIGHT ELECTRONICS CO.,LTD.

Technical Data Sheet

Luminosity Full Color LED

61-236/RSC-AW1X1B/ET

Features

- Super-luminosity chip LED.
- White SMT package.
- Built in three Red chips
- Lead frame package with individual 6 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, 61-236 has wide viewing angle , low power consumption and adjusting each color is possible thanks to serial connection by 6 terminal connection (Individual driving by each terminal) in case of using several number of LED. And makes it ideal for light pipe application.

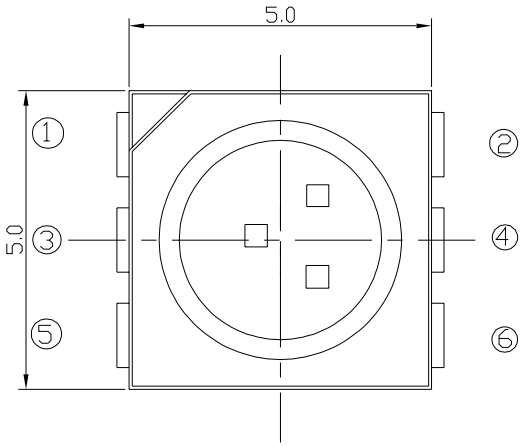
Applications

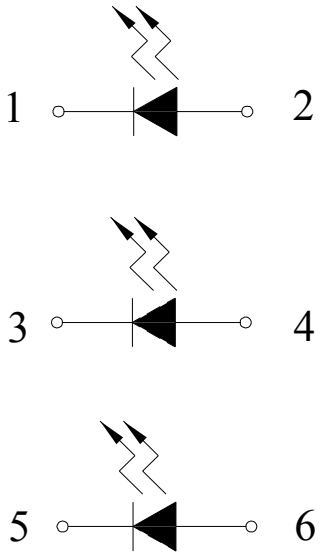
- Amusement equipment.
- Information boards.
- Flashlight for digital camera of cellular phone.

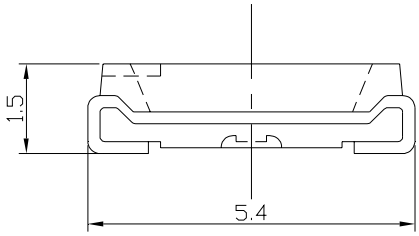
Device Selection Guide

Chip Material	Emitted Color	Resin Color
AlGaInP	Brilliant Red	Water Clear

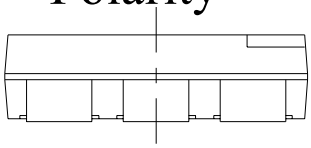
Package Outline Dimensions



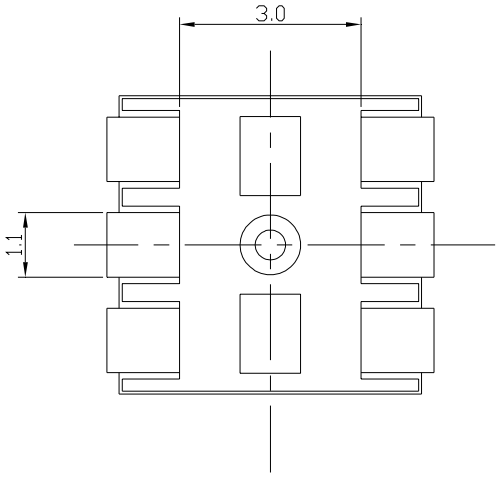


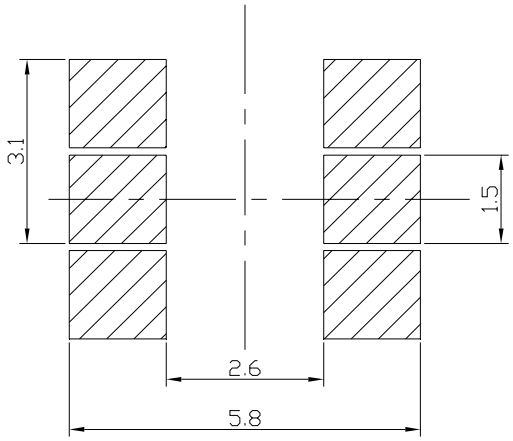


Polarity



Recommend solding pad design





Note: The tolerances unless mentioned is ±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	70	mA
Peak Forward Current (Duty 1/10 @ 1KHz)	I_{FP}	150	mA
Power Dissipation	Pd	200	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.	Units	Condition
Luminous Intensity*1	I_V	1120	-----	2250	mcd	I_F=20mA*2
Viewing Angle*1	2 θ 1/2	-----	120	-----	deg	I_F=20mA*2
Peak Wavelength*1	λ p	-----	632	-----	nm	I_F=20mA*2
Dominant Wavelength*1	λ d	617.5	-----	633.5	nm	I_F=20mA*2
Spectrum Radiation Bandwidth	△λ	-----	20	-----	nm	I_F=20mA
Forward Voltage	V_F	1.75	-----	2.35	V	I_F=20mA*2

*1 When three LED dies are operated simultaneously.
*2 For each die.

Notes:

1.Tolerance of Luminous Intensity ±11%

2.Tolerance of Dominant Wavelength ±1 nm

3.Tolerance of Forward Voltage ±0.1V

Bin Range Of Dominant Wavelength

Group	Bin Code	Min.	Max.	Unit	Condition
A	E4	617.5	621.5	nm	I_F=20mA*2
	E5	621.5	625.5		
	E6	625.5	629.5		
	E7	629.5	633.5		

Bin Range Of Luminous Intensity

Bin	Min	Max	Unit	Condition
W1	1120	1420	mcd	I_F=20mA*2
W2	1420	1800		
X1	1800	2250		

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. *2 For each die.

2.Tolerance of Luminous Intensity ±11%

3.Tolerance of Dominant Wavelength ±1 nm

4.Tolerance of Forward Voltage ±0.1V

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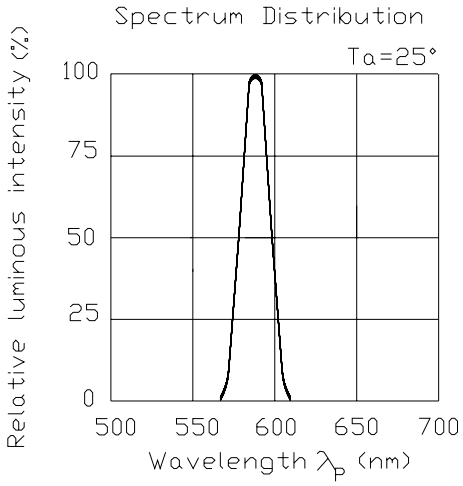

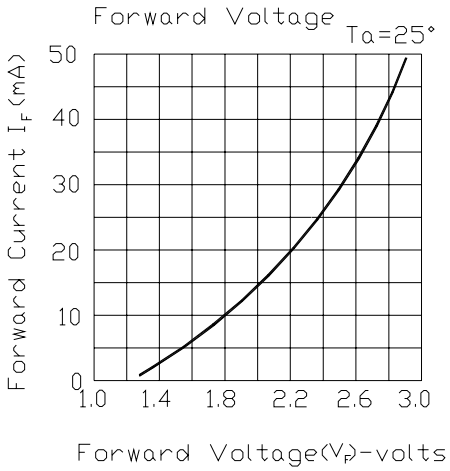

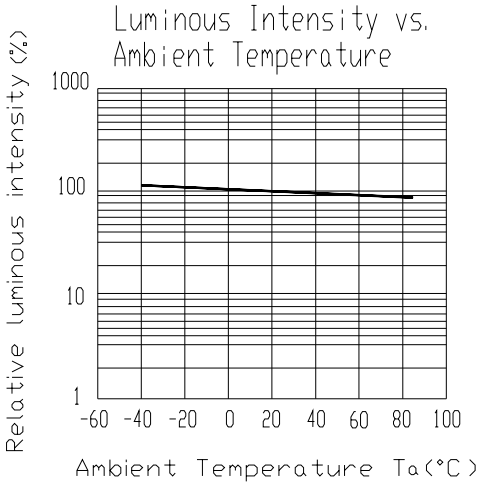

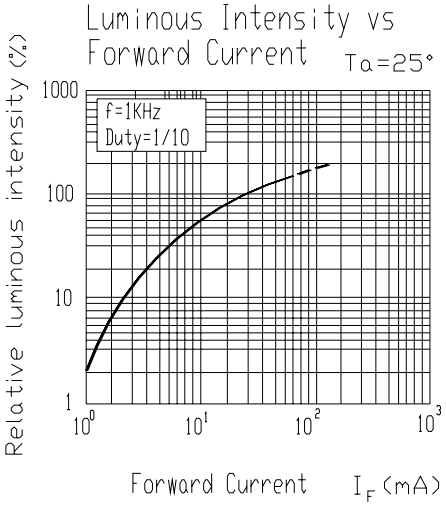

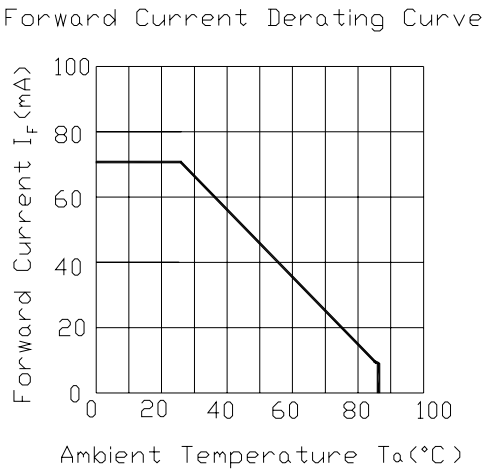

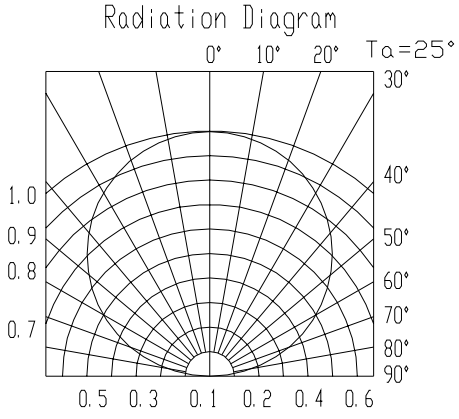

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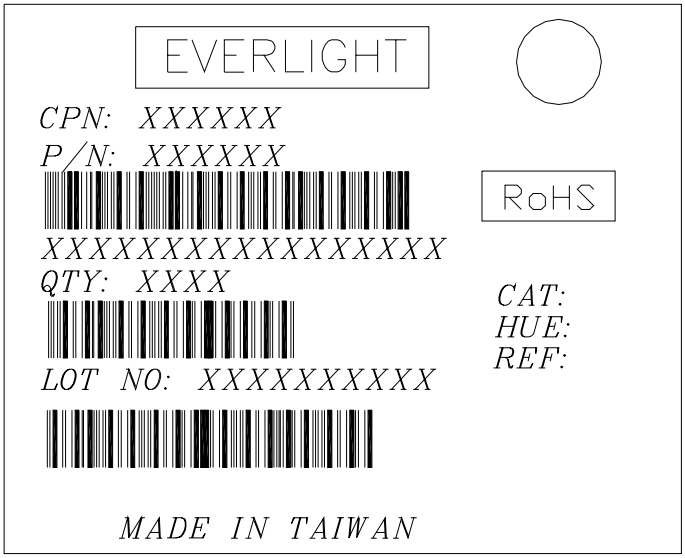
Label explanation

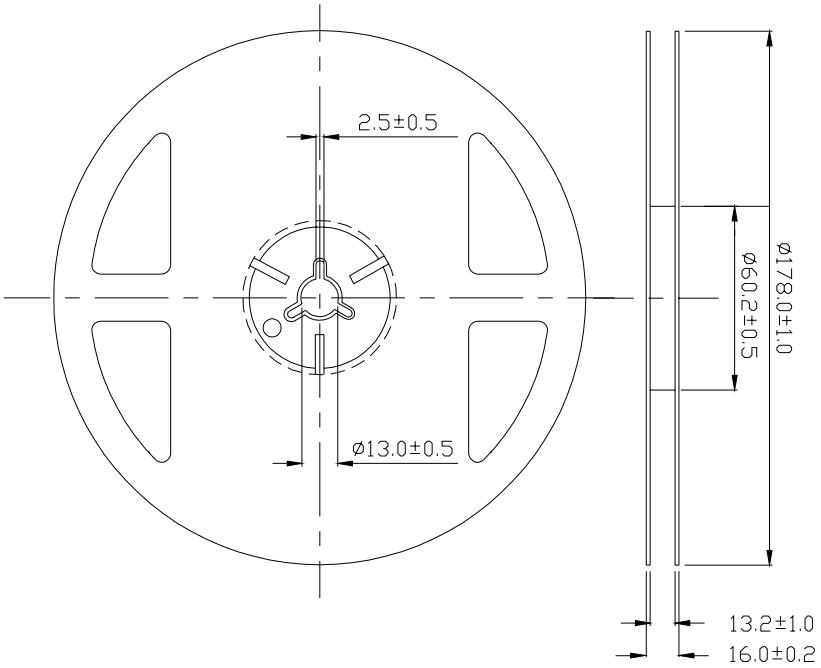
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

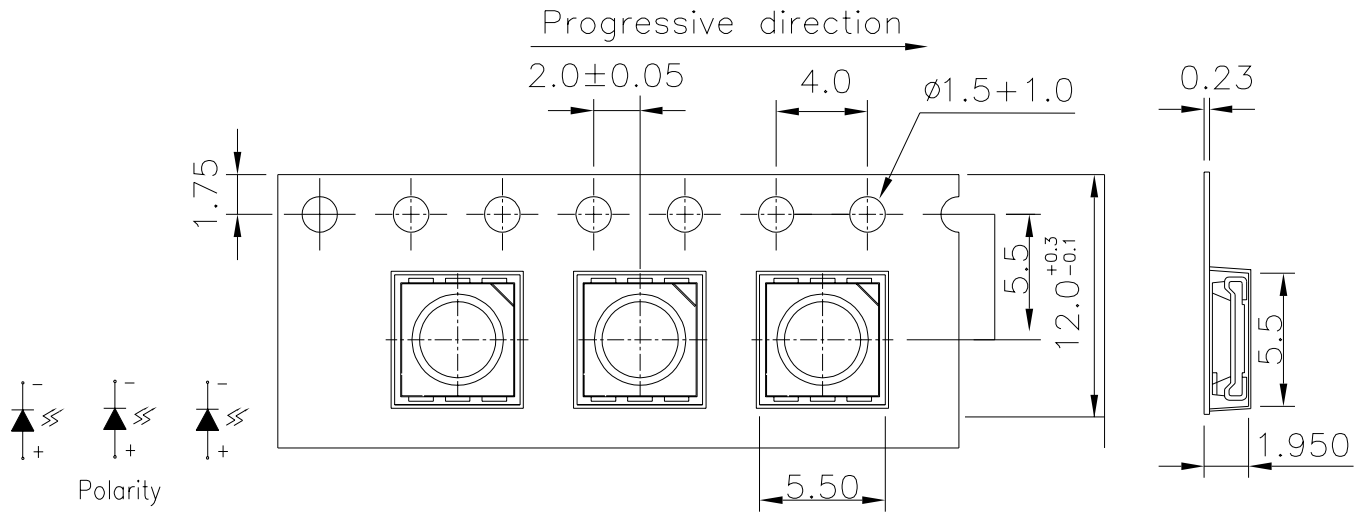


Reel Dimensions



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

Carrier Tape Dimensions;Loaded quantity per reel 800 PCS/reel



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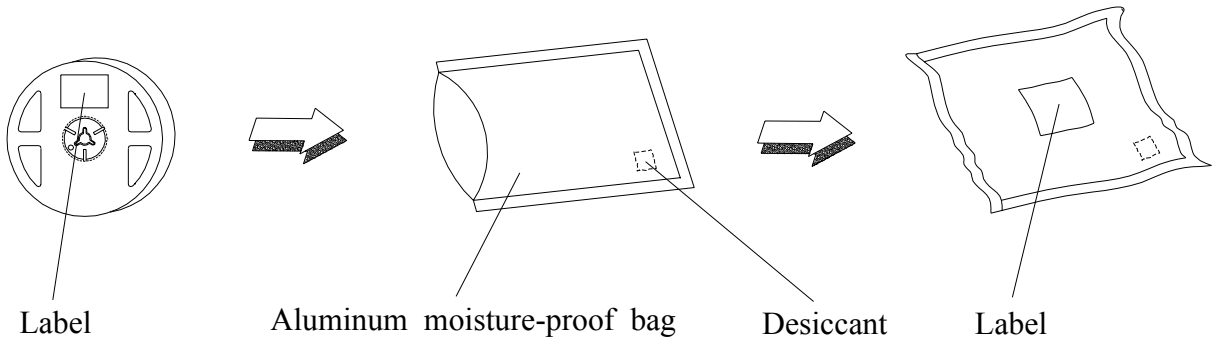
Moisture Resistant Packaging



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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. 5sec.	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

* 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.

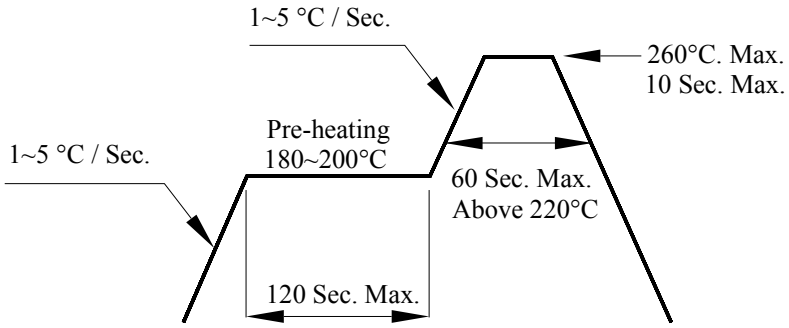
2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year 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.

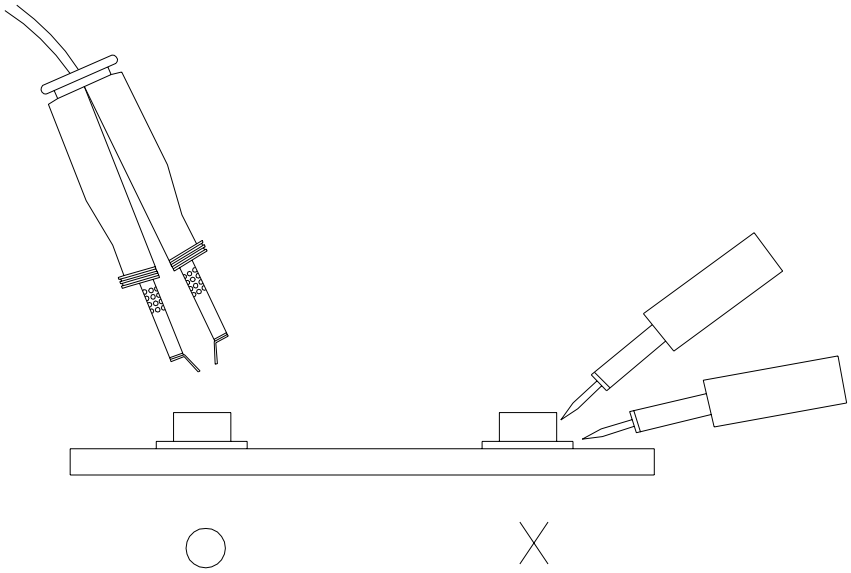
3.4 After soldering, do not warp the circuit board.

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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