



## Technical Data Sheet

### Side View White LED (0.6mm)

**99-216/R6C-AQ2S1B/2C**

#### Features

- Side view LED.
- 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

- The 99-216 series is available in soft orange, green, blue and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes the LED ideal for light guide application.

#### Applications

- LCD Back Light.
- Mobile phones .
- Indicators.
- Illuminations.
- Switch Lights.

#### Device Selection Guide

Chip		Resin Color
Material	Emitted Color	
AlGaInP	Brilliant Red	Water Clear

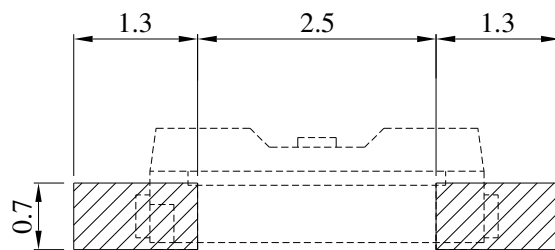
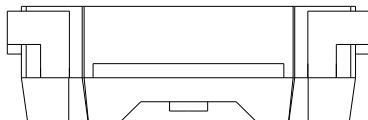
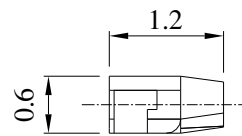
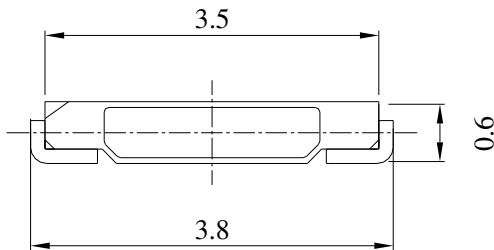
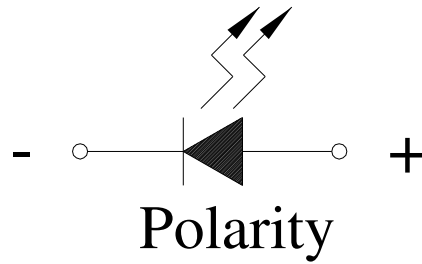
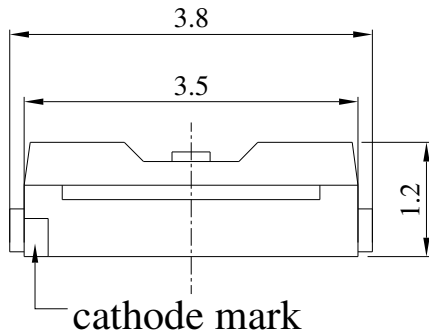


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Package Outline Dimensions



Recommended soldering pad design

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

**Technical Data Sheet****Side View White LED (0.6mm)****99-216/R6C-AQ2S1B/2C****Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	5	V
Forward Current	I <sub>F</sub>	25	mA
Peak Forward Current (Duty 1/10 @10ms)	I <sub>FP</sub>	60	mA
Power Dissipation	P <sub>d</sub>	60	mW
Electrostatic Discharge(HBM)* <sup>1</sup>	ESD	2000	V
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +90	°C
Soldering Temperature	Tsol	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	90	---	225	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	-----	110	-----	deg	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	617.5	-----	633.5	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	-----	624	-----	nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	Δλ	-----	20	-----	nm	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	1.75	-----	2.35	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	-----	-----	10	μA	V <sub>R</sub> =5V

**Notes:**

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

**Technical Data Sheet****Side View White LED (0.6mm)****99-216/R6C-AQ2S1B/2C****Bin Range of Luminous Intensity**

Bin	Min	Max	Unit	Condition
Q2	90	112	mcd	I <sub>F</sub> =20mA
R1	112	140		
R2	140	180		
S1	180	225		

**Bin Range of Dominant Wavelength**

Group	Bin Code	Min.	Max.	Unit	Condition
A	E4	617.5	621.5	nm	I <sub>F</sub> =20mA
	E5	621.5	625.5		
	E6	625.5	629.5		
	E7	629.5	633.5		

**Bin Range of Forward Voltage**

Group	Bin Code	Min.	Max.	Unit	Condition
B	0	1.75	1.95	V	I <sub>F</sub> =20mA
	1	1.95	2.15		
	2	2.15	2.35		

**Notes:**

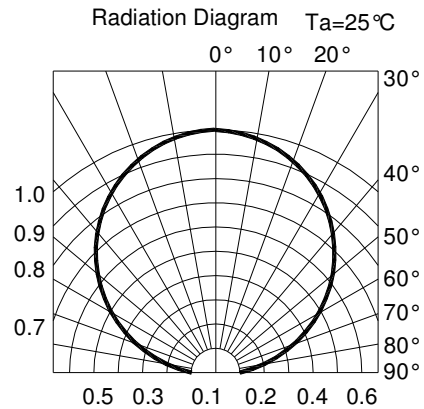
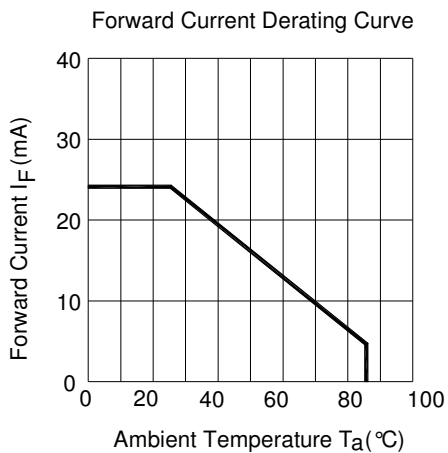
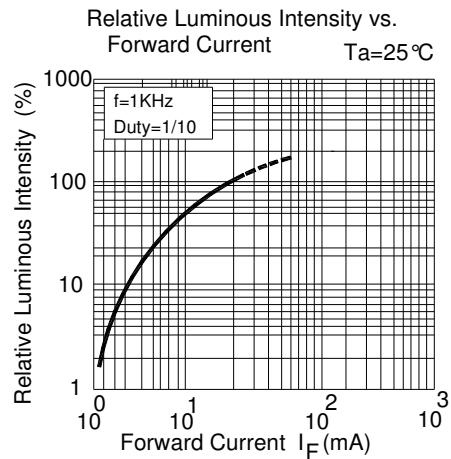
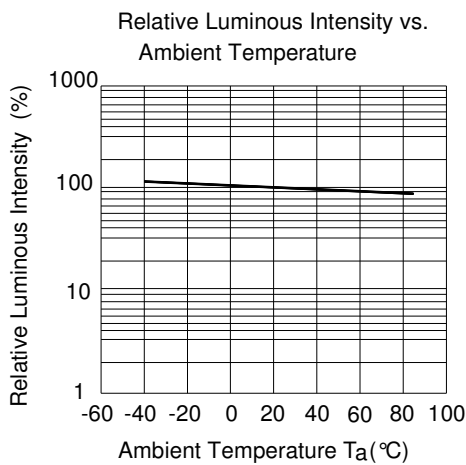
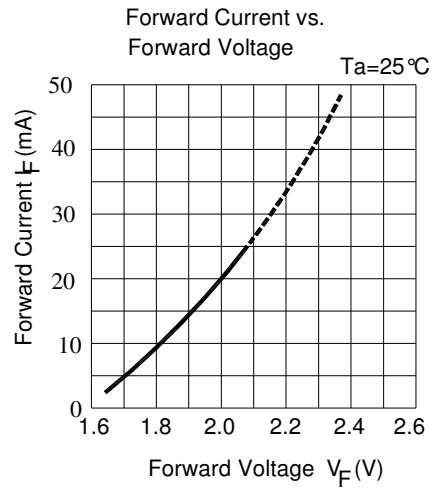
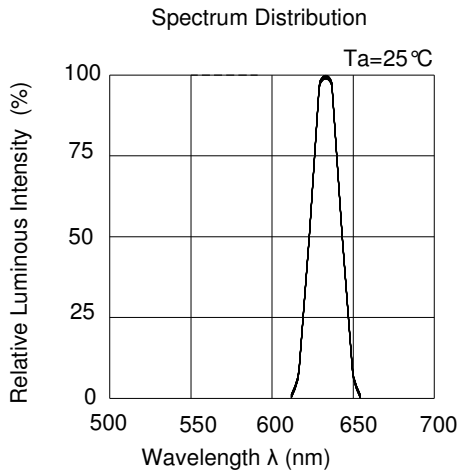
- 1.Tolerance of Luminous Intensity :  $\pm 11\%$
- 2.Tolerance of Dominant Wavelength :  $\pm 1\text{nm}$
- 3.Tolerance of Forward Voltage :  $\pm 0.1\text{V}$

**Technical Data Sheet**

**Side View White LED (0.6mm)**

**99-216/R6C-AQ2S1B/2C**

**Typical Electro-Optical Characteristics Curves**





# EVERLIGHT ELECTRONICS CO.,LTD.

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#### Label Explanation

CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

EVERLIGHT

CPN: XXXXXX

P/N: XXXXXX

XXXXXXXXXXXXXXXXXXXX

QTY: XXXX

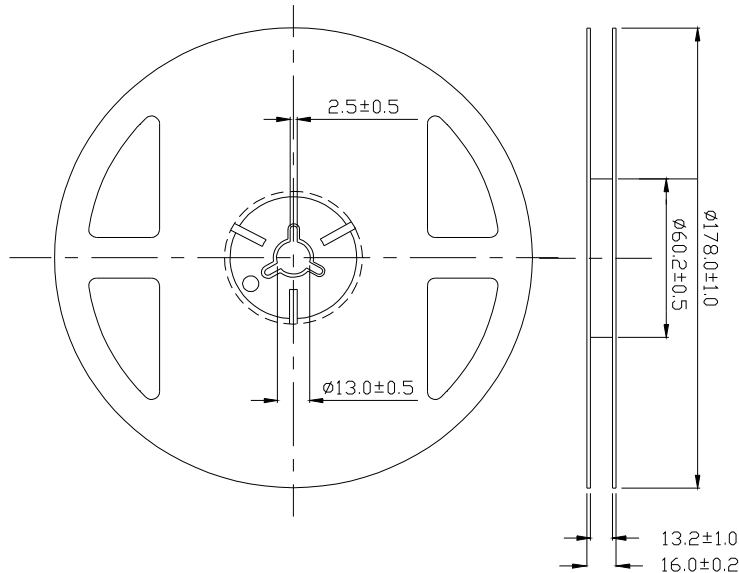
LOT NO: XXXXXXXXXXXX

MADE IN TAIWAN

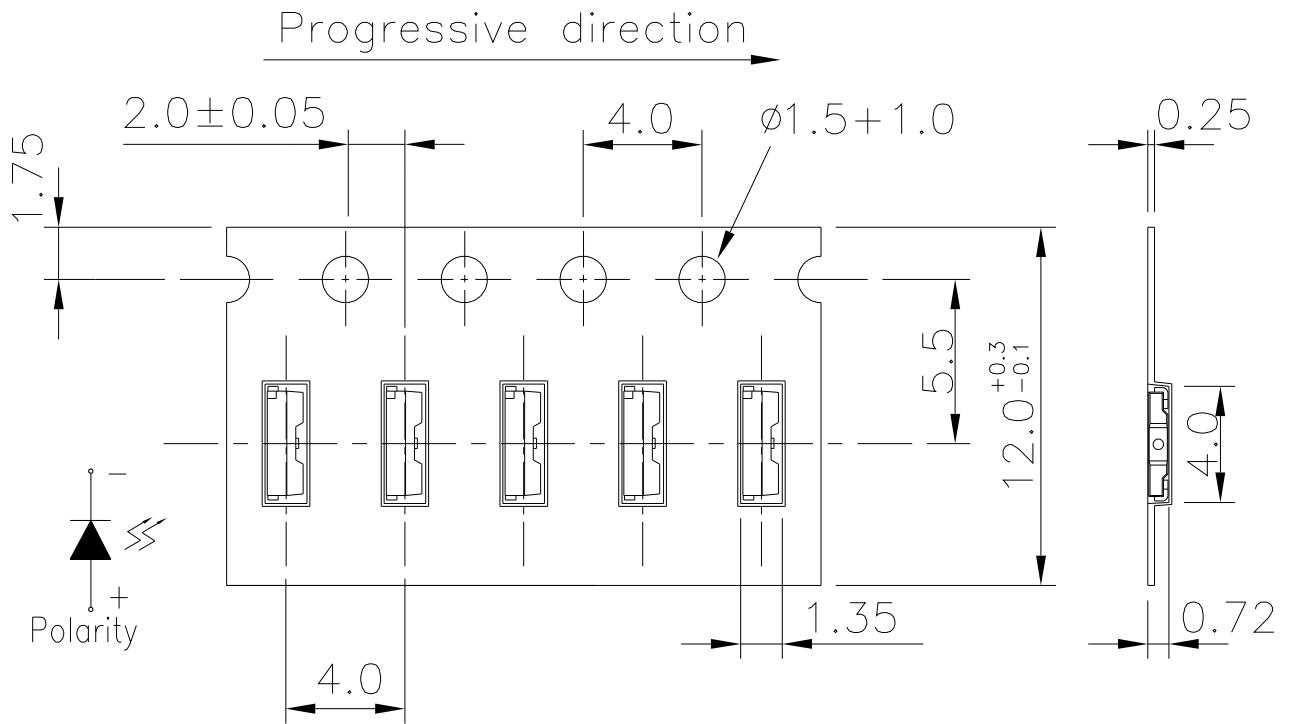
RoHS

CAT:  
HUE:  
REF:

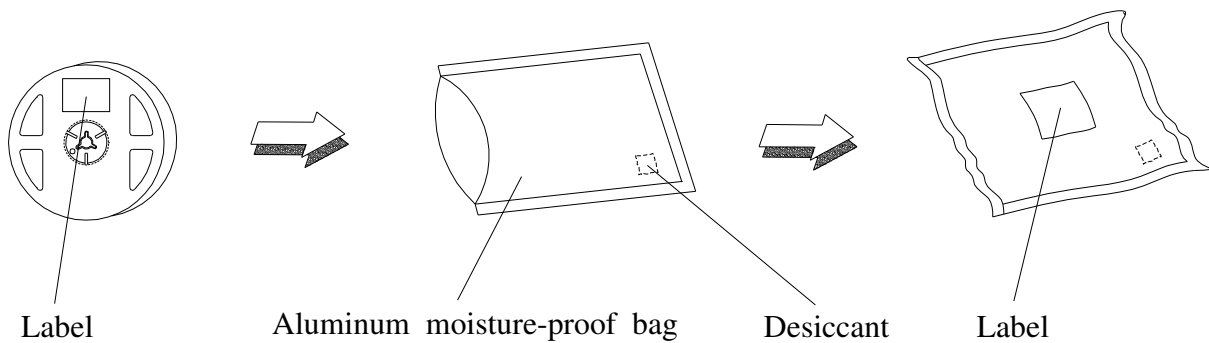
#### Reel Dimensions



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

**Technical Data Sheet**
**Side View White LED (0.6mm)**
**99-216/R6C-AQ2S1B/2C**
**Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel**


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

**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°C ±5°C Max. 10 sec.	6 Min.	22 PCS	0/1
2	Temperature Cycle	H : +100°C 15min ∫ 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40°C	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	I <sub>F</sub> = 20 mA / 25°C	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C/85%RH	1000 Hrs.	22 PCS.	0/1



**Technical Data Sheet****Side View White LED (0.6mm)****99-216/R6C-AQ2S1B/2C****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.

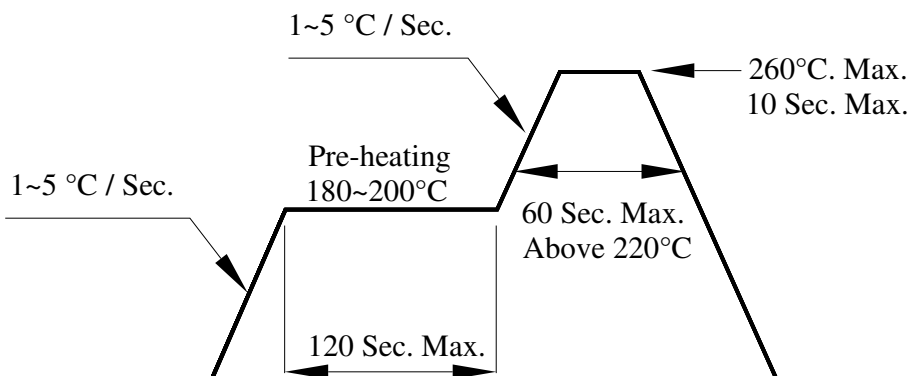
2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

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.

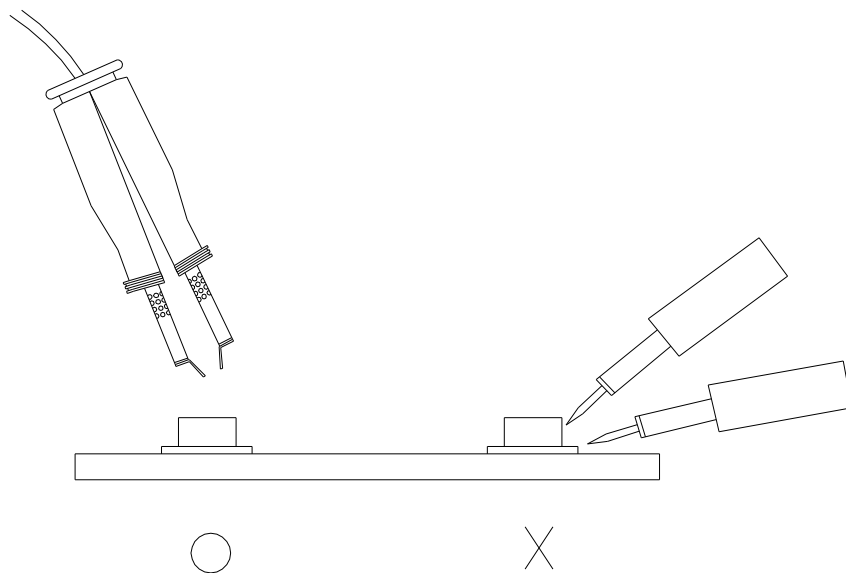
3.4 After soldering, do not warp the circuit board.

**Technical Data Sheet****Side View White LED (0.6mm)****99-216/R6C-AQ2S1B/2C****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.

**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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