Technical Data Sheet

Side View LEDs (Height 0.8mm)

99-213/G6C-BQ1R2B/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

- Due to the package design, 99-213 has wide viewing angle , low power consumption and white LEDs are devices which are materialized by combing Blue LEDs and special phosphors . 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 Green	Water Clear

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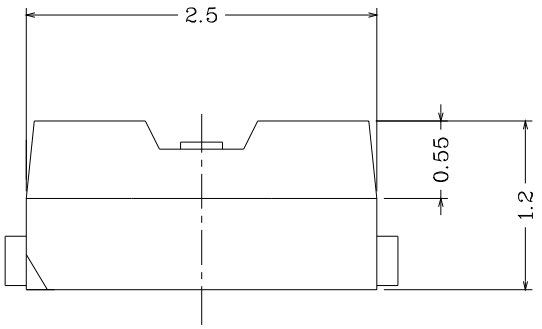
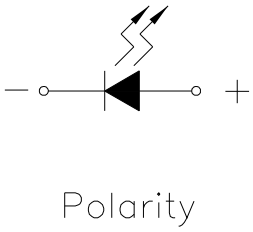
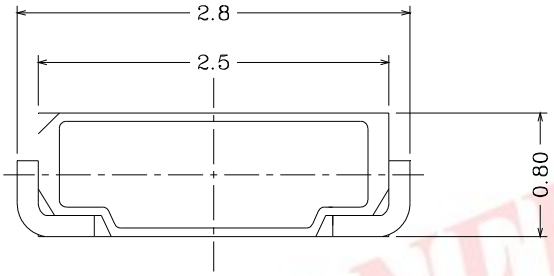
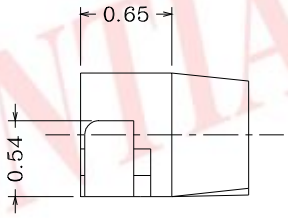
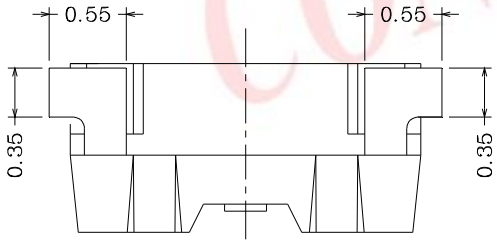
Package Outline Dimensions



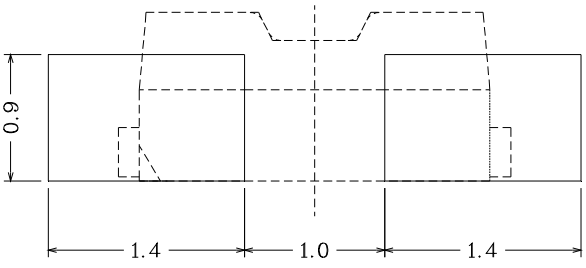








Recommended soldering pad design



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	25	mA
Peak Forward Current (Duty 1/10 @ 1KHz)	I_{FP}	60	mA
Power Dissipation	Pd	60	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	72.0	-----	180.0	mcd	I_F=20mA
Viewing Angle	2θ1/2	-----	110	-----	deg	
Peak Wavelength	λp	-----	575	-----	nm	
Dominant Wavelength	λd	567.5	-----	575.5	nm	
Spectrum Radiation Bandwidth	△λ	-----	20	-----	nm	
Forward Voltage	V_F	1.75	---	2.35	V	
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 Code	Min.	Max.	Unit	Conduction
Q1	72	90	mcd	I_F=20mA
Q2	90	112		
R1	112	140		
R2	140	180		

Bin Range of Dominant Wavelength

Group	Bin	Min.	Max.	Unit	Condition
B	C15	567.5	569.5	nm	I_F=20mA
	C16	569.5	571.5		
	C17	571.5	573.5		
	C18	573.5	575.5		

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

Revision : 1 Release Date:2009-11-26 10:44:27.0
LifecyclePhase:正式發行 Expired Period: Forever

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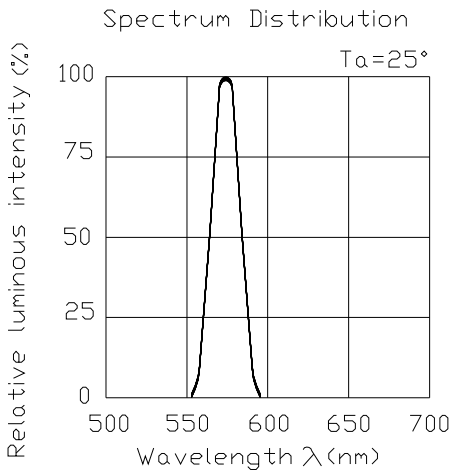
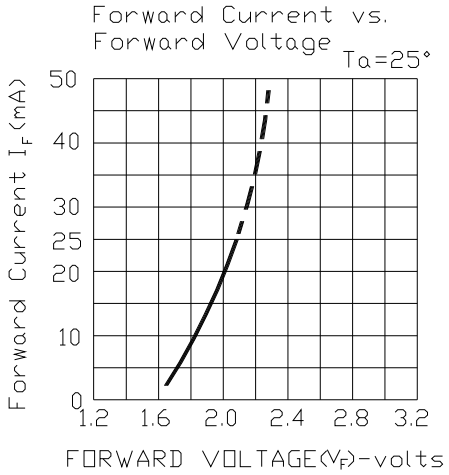
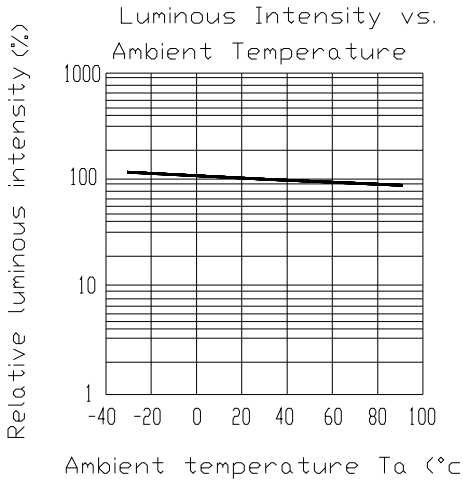
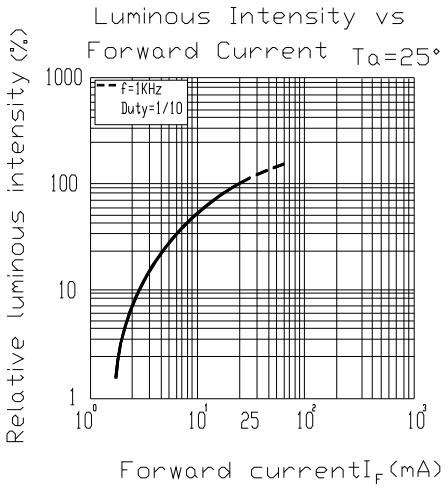
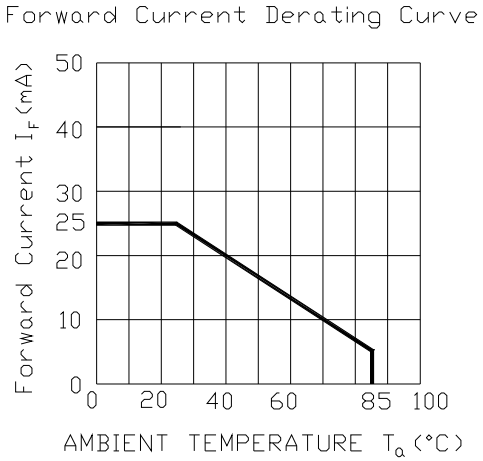
Typical Electro-Optical Characteristics curves

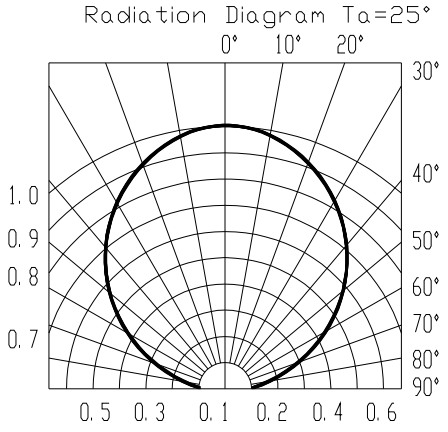












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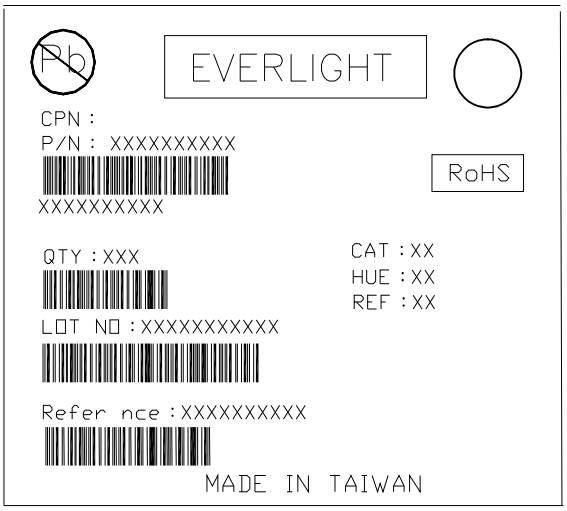
Label Explanation

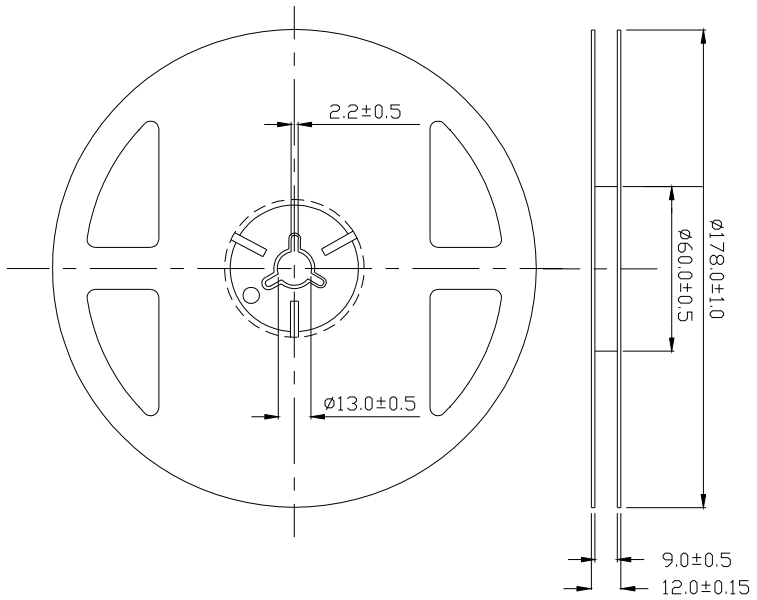
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank



Reel Dimensions



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

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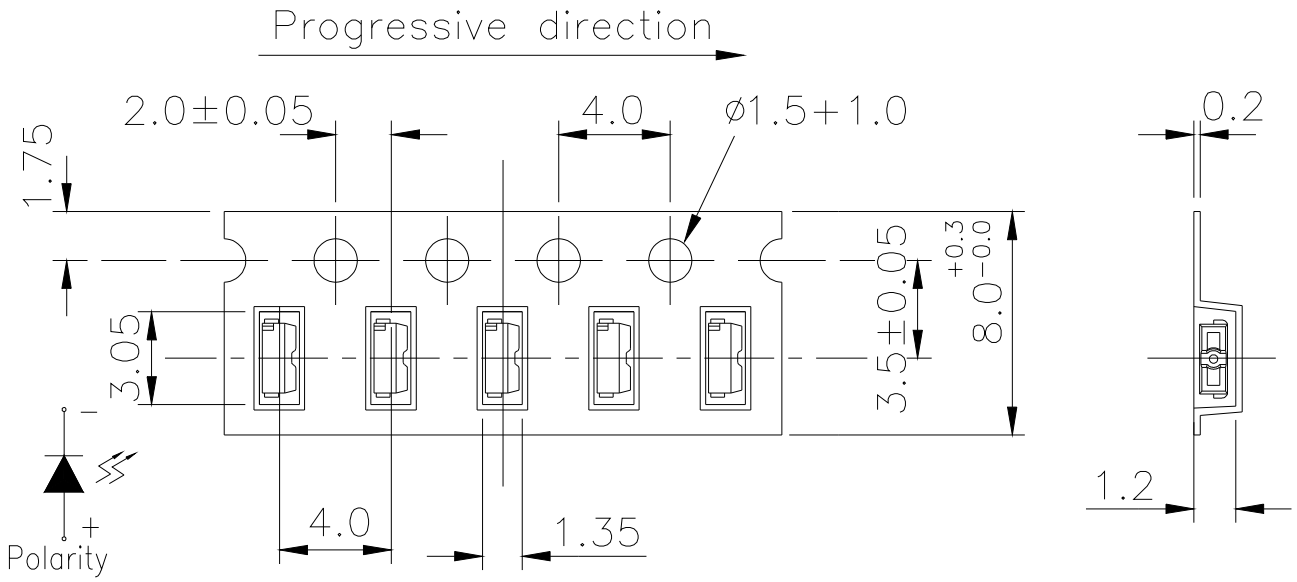
Carrier Tape Dimensions: Loaded Quantity 2000 pcs. Per Reel



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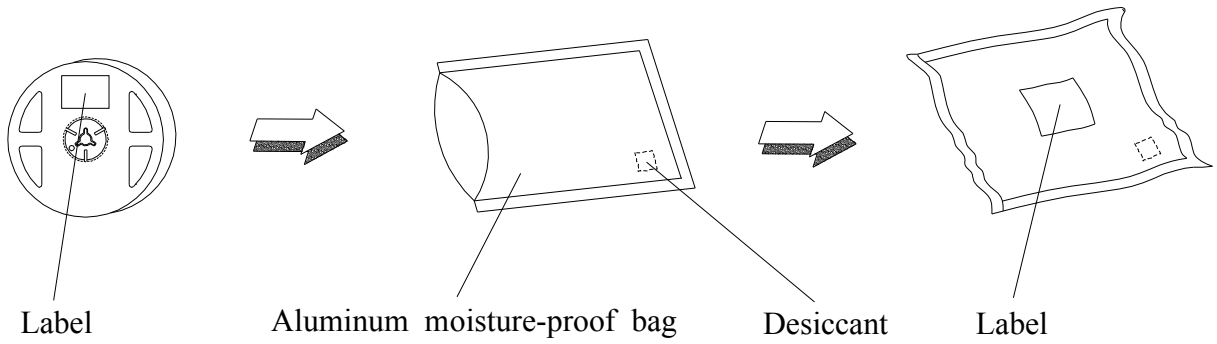
Moisture Resistant Packaging



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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℃ 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	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.

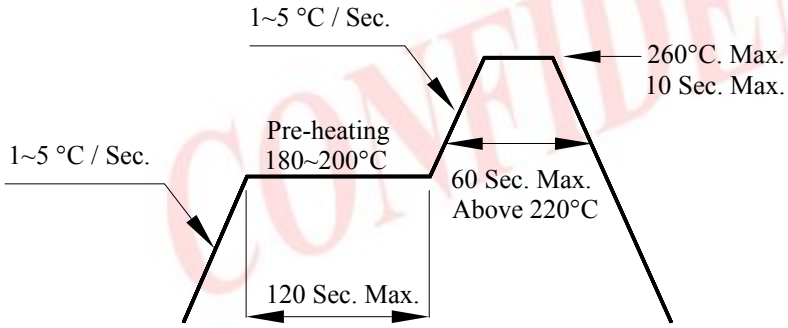
   2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

   2.3 After opening the package: The LED's floor life is 1 year under 30℃ 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.

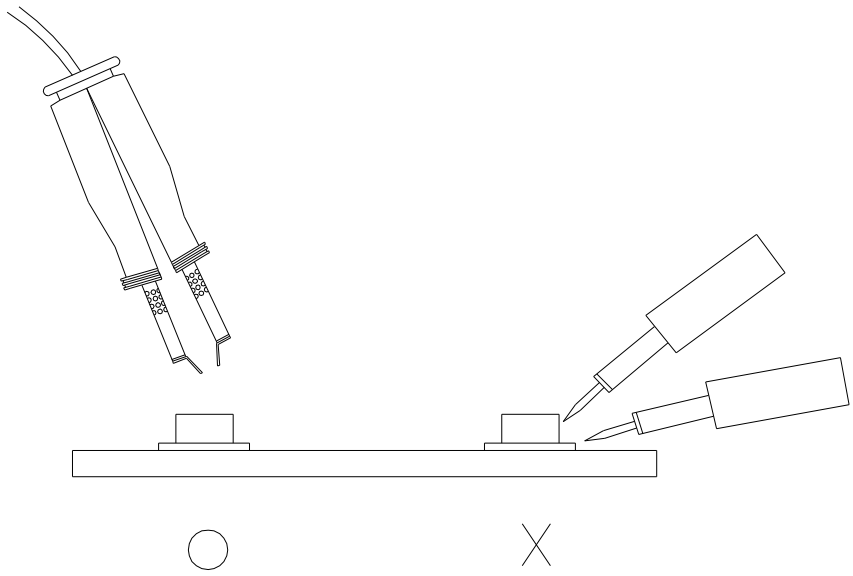
   3.4 After soldering, do not warp the circuit board.

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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