

SMD ■ Side View LEDs (0.8mm) 99-213/G6C-AN1P1B/2C



Features

- Side view LED.
- Lead frame package with individual 2 pins.
- Wide viewing angle.
- Soldering methods: IR reflow soldering.
- ESD protection.
- Pb-free.
- The product itself will remain within RoHS compliant version.
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).
- Precondition: Bases on JEDEC J-STD 020D Level 3

Description

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 Materials	Emitted Color	Resin Color
AlGaInP	Brilliant Yellow Green	Water Clear

Absolute Maximum Ratings (Ta=25°C)

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	P_d	60	mW
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +90	°C
ESD	ESD_{HBM}	2000	V
Soldering Temperature	T_{sol}	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_v	36	-----	90	mcd	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	-----	110	-----	deg	$I_F=20mA$
Peak Wavelength	λ_p	-----	575	-----	nm	$I_F=20mA$
Dominant Wavelength	λ_d	567.5	----	573.5	nm	$I_F=20mA$
Spectrum Radiation Bandwidth	$\Delta\lambda$	-----	20	-----	nm	$I_F=20mA$
Forward Voltage	V_F	1.75	----	2.35	V	$I_F=20mA$
Reverse Current	I_R	-----	-----	10	μA	$V_R=5V$

Note:

1. Tolerance of Luminous Intensity: $\pm 11\%$
2. Tolerance of Dominant Wavelength: $\pm 1nm$
3. Tolerance of Forward Voltage: $\pm 0.1V$
4. All reliability item are tested under good thermal management. Dynamic reliability are tested at 20mA.
5. LED components are not supposed to be reverse operated.

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
N2	36.0	45.0	mcd	$I_F = 20\text{mA}$
P1	45.0	56.0		
P2	56.0	71.0		
Q1	71.0	90.0		

Note:
 Tolerance of Luminous Intensity: $\pm 11\%$

Bin Range of Dominant Wavelength

Group	Bin Code	Min.	Max.	Unit	Condition
A	C15	567.5	569.5	nm	$I_F = 20\text{mA}$
	C16	569.5	571.5		
	C17	571.5	573.5		

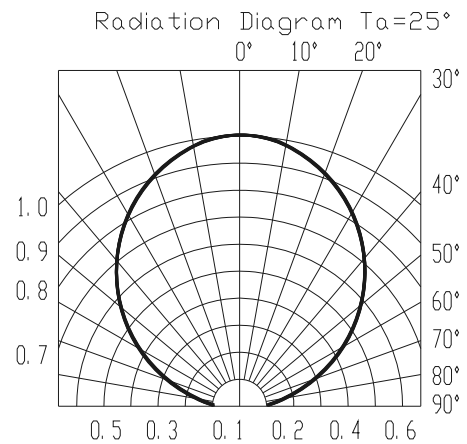
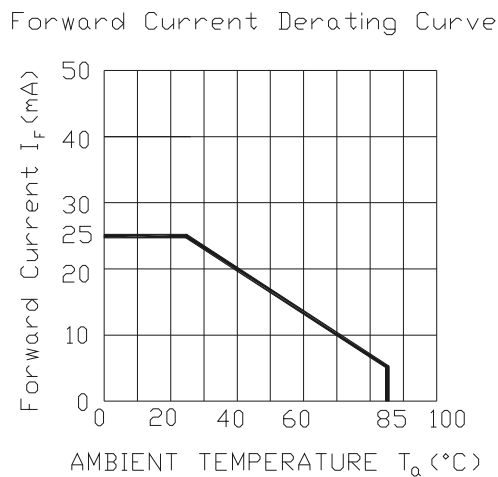
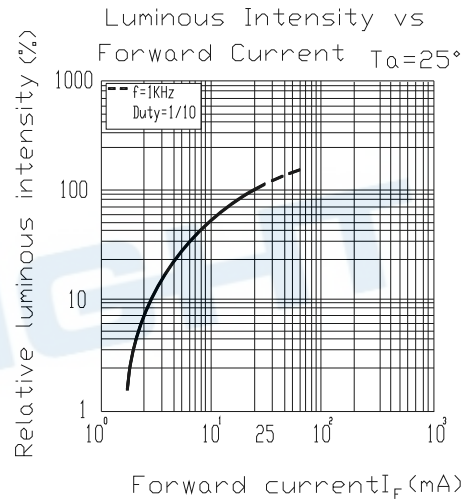
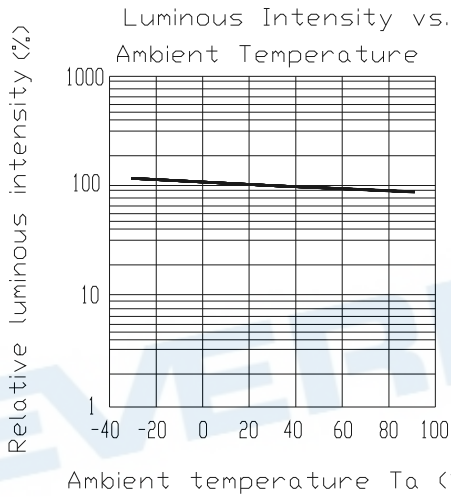
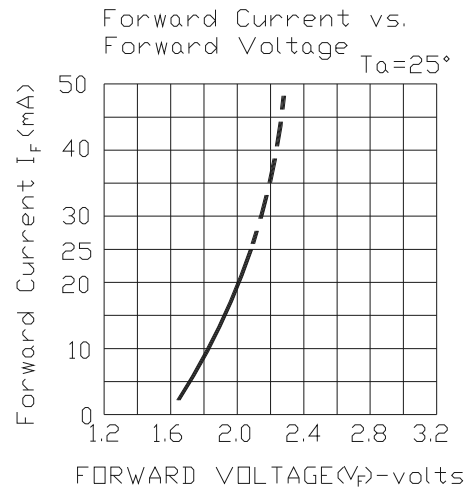
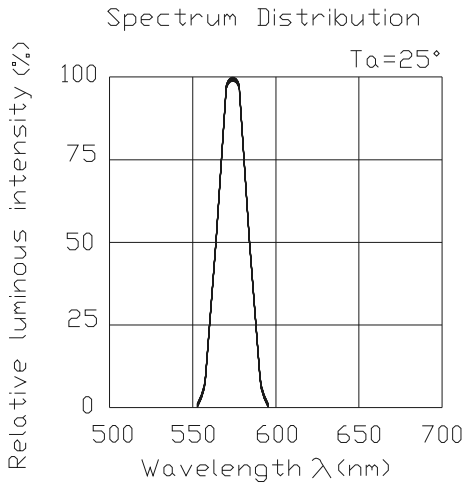
Note:
 Tolerance of Dominant Wavelength: $\pm 1\text{nm}$

Bin Range of Forward Voltage

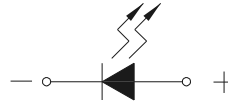
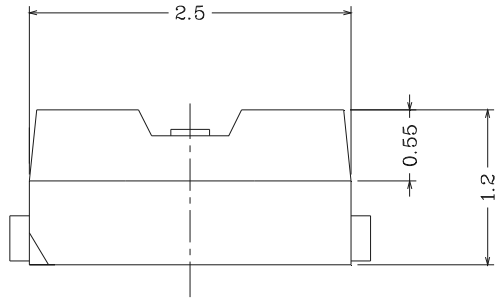
Group	Bin Code	Min.	Max.	Unit	Condition
B	0	1.75	1.95	V	$I_F = 20\text{mA}$
	1	1.95	2.15		
	2	2.15	2.35		

Note:
 Tolerance of Forward Voltage: $\pm 0.1\text{V}$

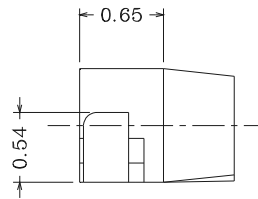
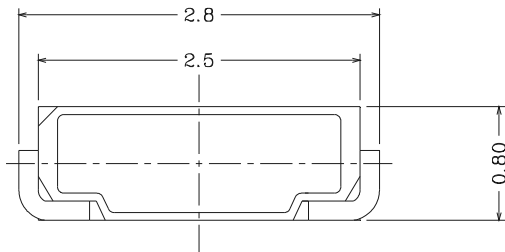
Typical Electro-Optical Characteristics Curves



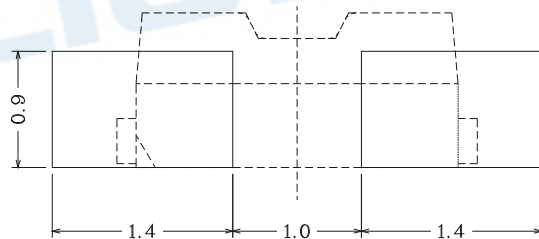
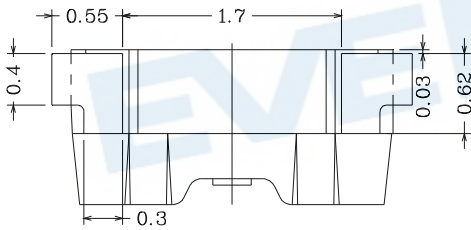
Package Dimension



Polarity



Recommended soldering pad design



Note: Tolerances unless mentioned ± 0.1 mm. Unit = mm

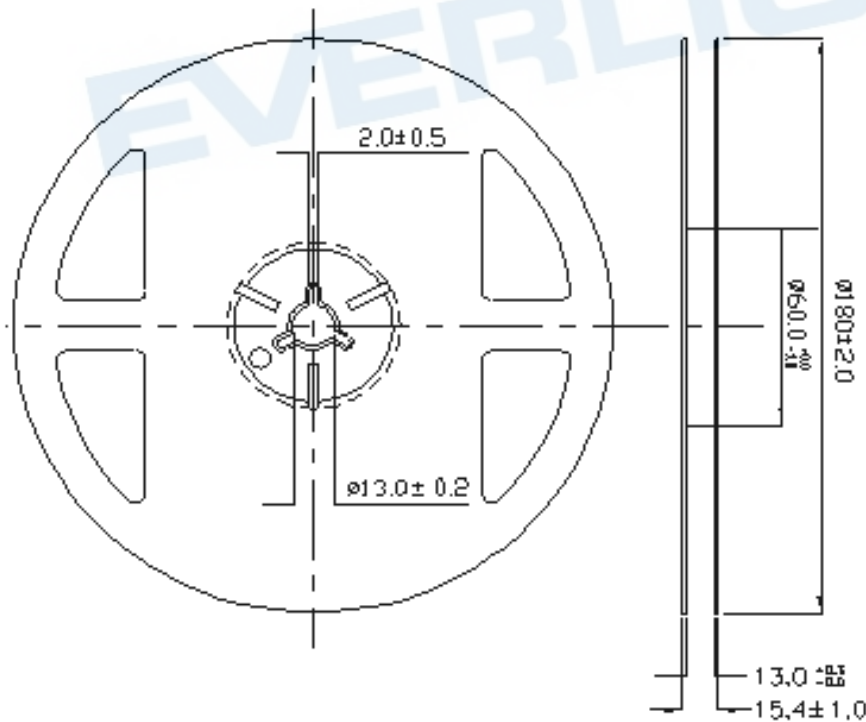
Moisture Resistant Packing Materials

Label Explanation

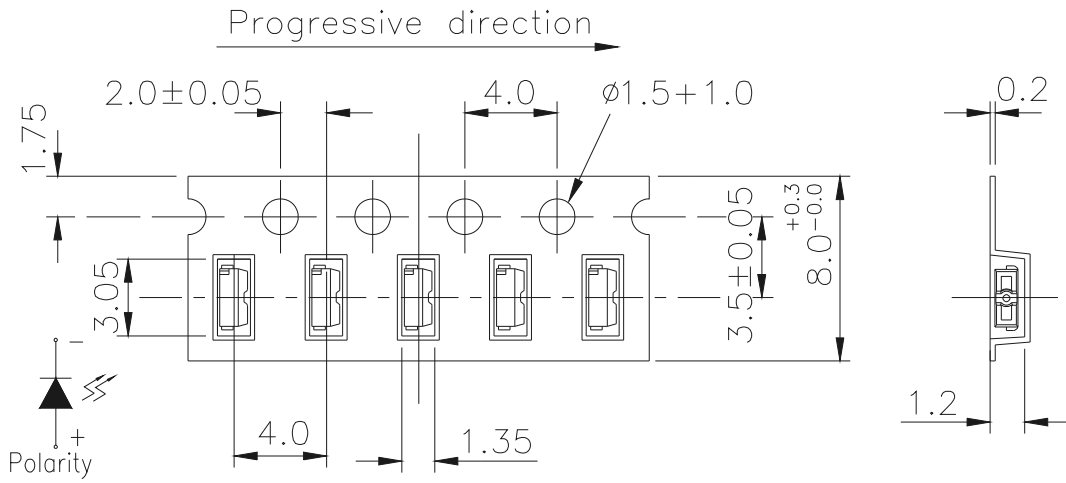


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions

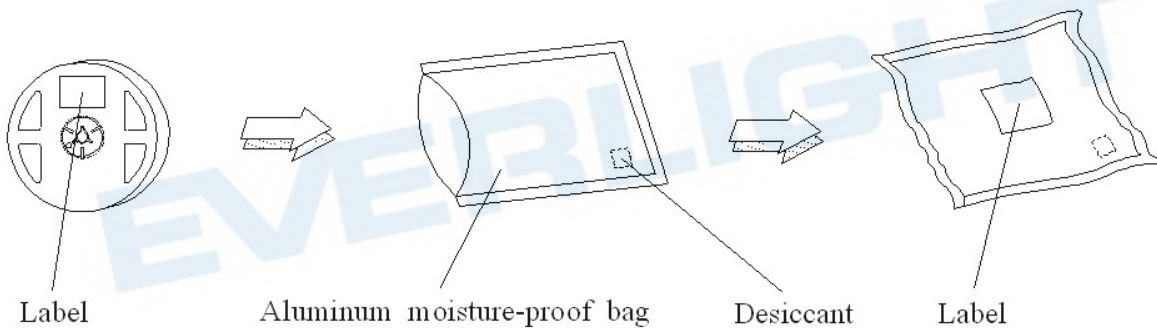


Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Note: Tolerances unless mentioned ± 0.1 mm. Unit = mm

Moisture Resistant Packing Process

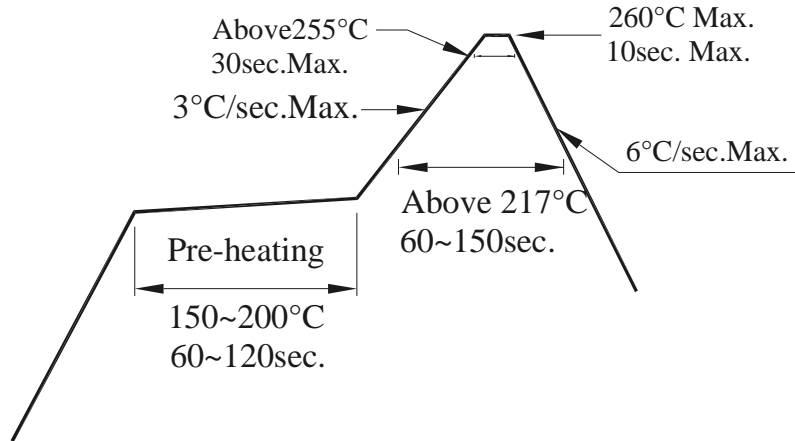


Note: Tolerances unless mentioned ± 0.1 mm. Unit = mm

Precautions for Use

1. Over-current-proof

1.1 Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).



2. Storage

2.1 Moisture proof bag should only be opened immediately prior to usage..

2.2 Environment should be less than 30°C and 60% RH when moisture proof bag is opened

2.3 After opening the package MSL Conditions stated on page 1 of this spec should not be exceeded.

If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture sensitivity card indicates higher than acceptable moisture, the component should be baked at min. 60deg +/-5deg 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.

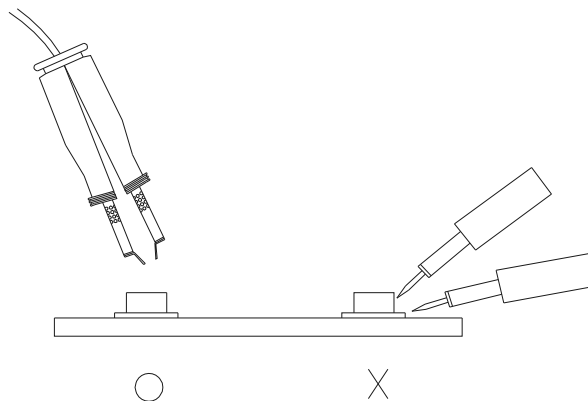
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°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.



Application Restrictions

High reliability applications such as military/aerospace, automotive safety/security systems, and medical equipment may require different product. If you have any concerns, please contact Everlight before using this product in your application. This specification guarantees the quality and performance of the product as an individual component. Do not use this product beyond the specification described in this document.

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2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
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