

SMD ■ REFLECTOR 67-21/GBC-YV2W2N/2T



Features

- P-LCC-2 package.
- White package.
- Optical indicator.
- Colorless clear window.
- Wide viewing angle.
- Suitable for vapor-phase reflow, Infrared reflow and wave solder processes.
- Computable with automatic placement equipment.
- Available on tape and reel (8mm Tape).
- Pb-free
- The product itself will remain within RoHS compliant version

Descriptions

• The 67-21 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 TOP LED ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- Light pipe application.
- General use.

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN/SiC	Brilliant Green	Water Clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	30	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	P_d	110	mW
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +90	°C
Soldering Temperature	T_{sol}	Reflow Soldering : 260 °C for 30 sec. Hand Soldering : 350 °C for 3 sec.	

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_v	900	-----	1800	mcd	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	-----	120	-----	deg	$I_F=20mA$
Peak Wavelength	λ_p	-----	518	-----	nm	$I_F=20mA$
Dominant Wavelength	λ_d	520	-----	535	nm	$I_F=20mA$
Spectrum Radiation Bandwidth	$\Delta\lambda$	-----	35	-----	nm	$I_F=20mA$
Forward Voltage	V_F	2.7	-----	3.5	V	$I_F=20mA$
Reverse Current	I_R	-----	-----	50	μA	$V_R=5V$

Note:

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

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
V2	900	1120	mcd	$I_F = 20\text{mA}$
W1	1120	1420		
W2	1420	1800		

Note:

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

Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
X	520	525	nm	$I_F = 20\text{mA}$
Y	525	530		
Z	530	535		

Note:

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

Bin Range of Forward Voltage

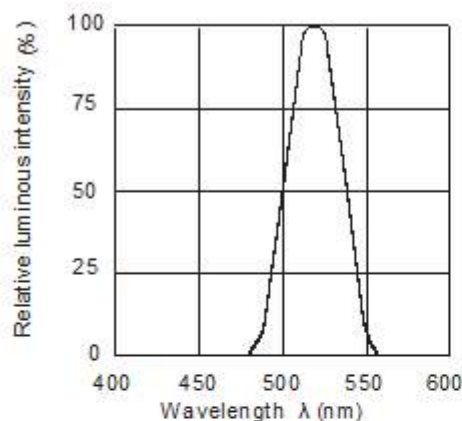
Bin Code	Min.	Max.	Unit	Condition
10	2.70	2.90	V	$I_F = 20\text{mA}$
11	2.90	3.10		
12	3.10	3.30		
13	3.30	3.50		

Note:

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

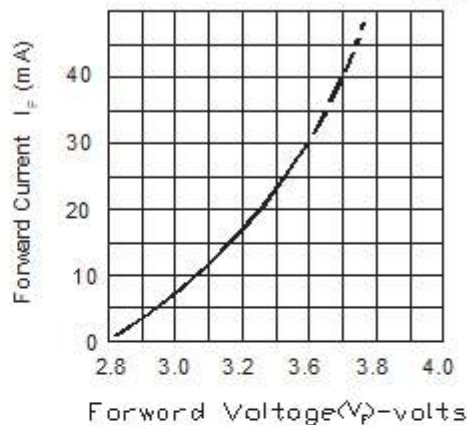
Typical Electro-Optical Characteristics

Spectrum Distribution

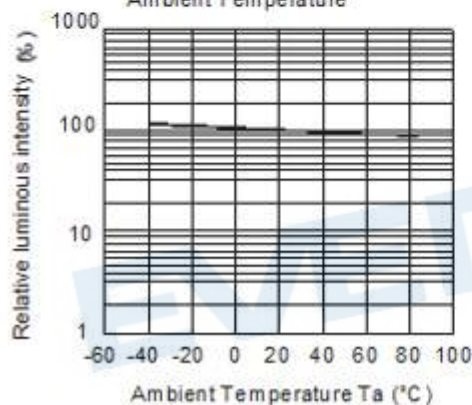


Forward Current vs. Forward Voltage

$T_a = 25^\circ\text{C}$

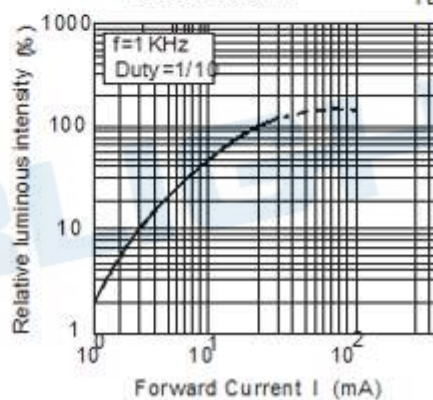


Relative Luminous Intensity vs. Ambient Temperature



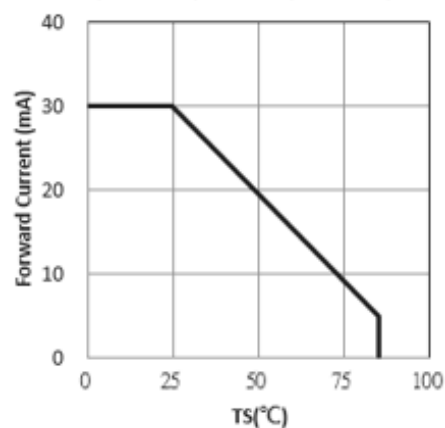
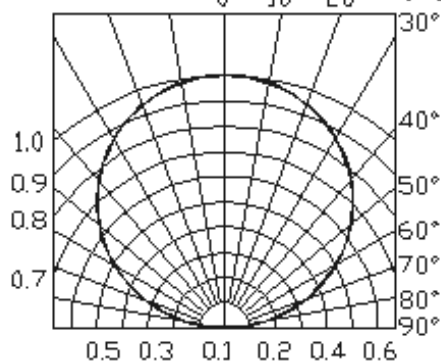
Relative Luminous Intensity vs Forward Current

$T_a = 25^\circ\text{C}$

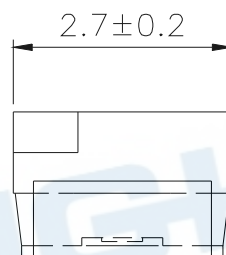
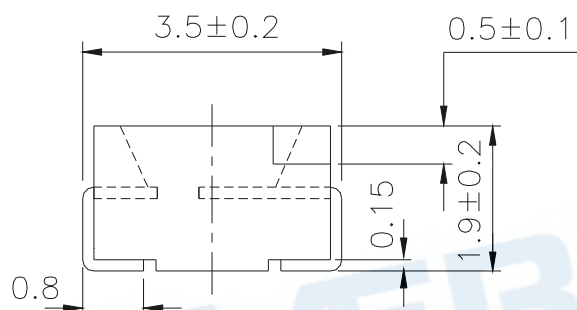
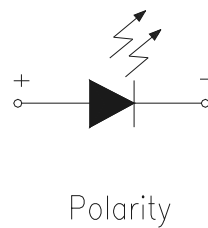
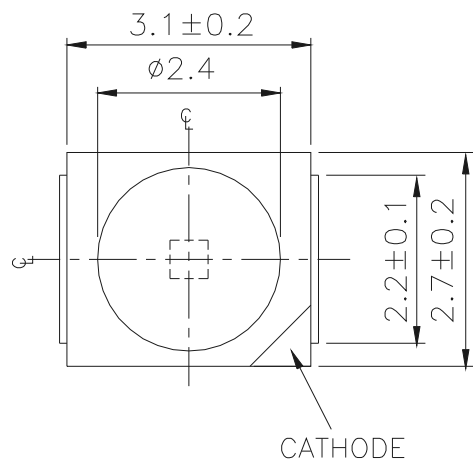


Radiation Diagram

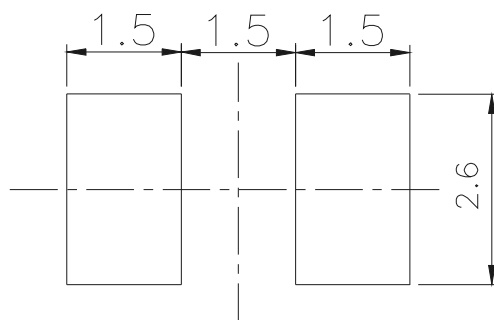
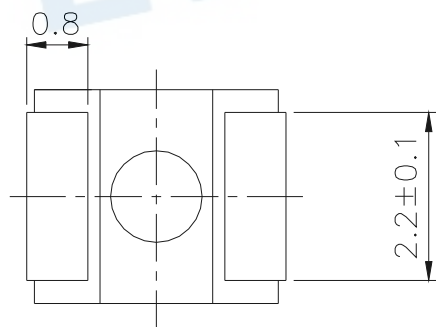
0° 10° 20° $T_a = 25^\circ\text{C}$



Package Dimensions

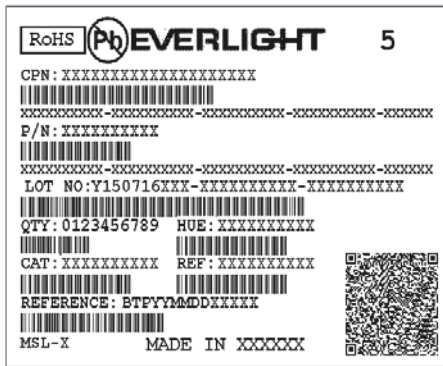


For reflow soldering (Proposal)



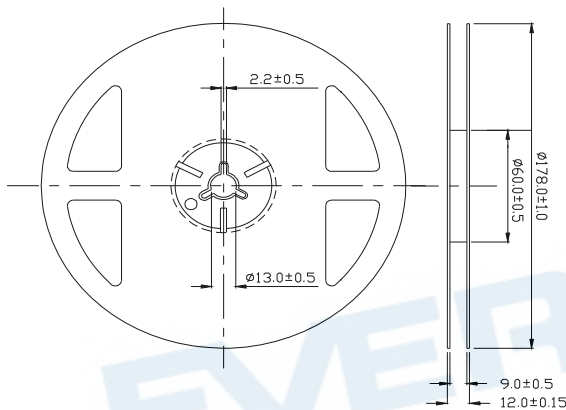
Moisture Resistant Packing Materials

Label Explanation



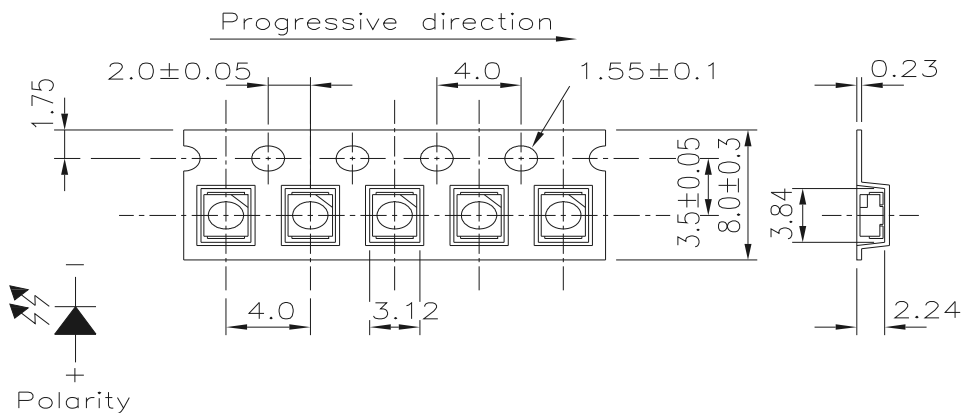
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



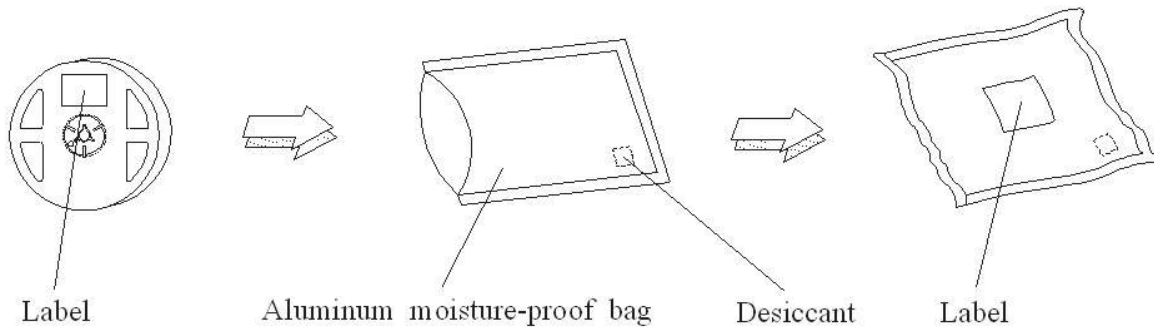
Note: Tolerances unless mentioned ± 0.1 mm. Unit = mm

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Note: 1. Tolerances unless mentioned ± 0.1 mm. Unit = mm
 2. Minimum packing amount is 250/500/1000/2000 pcs per reel

Moisture Resistant Packing Process

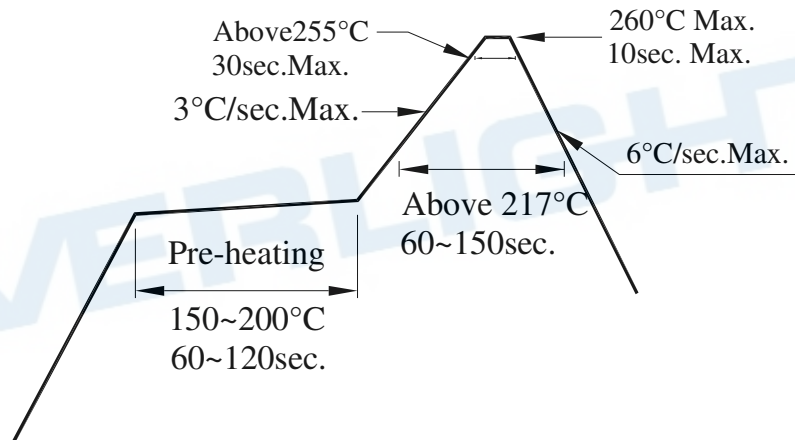


Note: Tolerances unless mentioned $\pm 0.1\text{mm}$. Unit = mm

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 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.
- 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

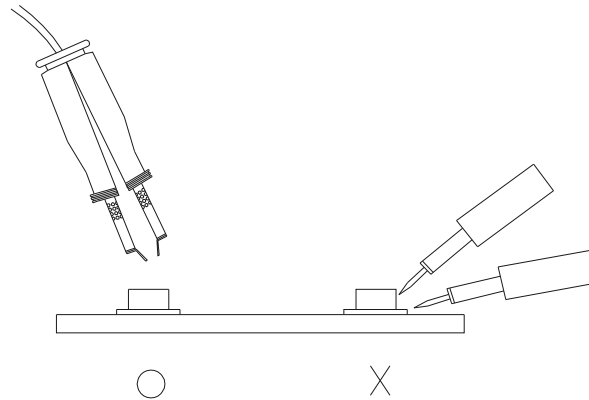
- 3.1 Pb-free solder temperature profile
- 3.2 Reflow soldering should not be done more than two times.
- 3.3 When soldering, do not put stress on the LEDs during heating.
- 3.4 After soldering, do not warp the circuit board.

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.

DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
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.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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