Technical Data Sheet

Mini Top View LED

65-21/GHC-YS2U1G/2T

Features

- White SMT package.
- Optical indicator.
- Wide viewing angle.
- Soldering methods: reflow soldering
- Available on tape and reel
- Pb-free
- The product itself will remain within RoHS compliant version.

Descriptions

- The 65-21 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 the ideal for light pipe application.

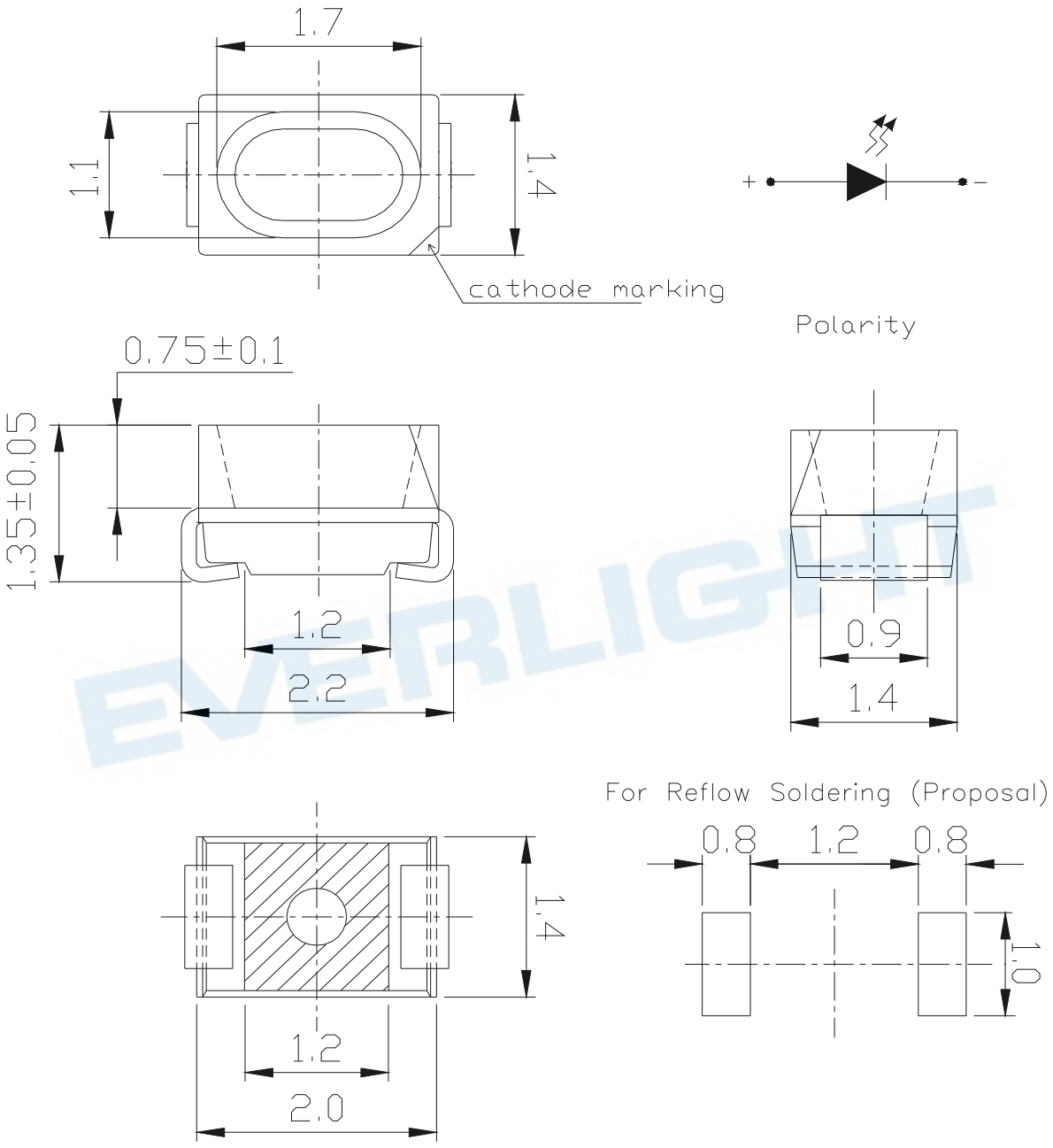
Applications

- Optical indicators.
- Coupling into light guides.
- Backlighting (LCD, cellular phones, switches, keys, displays, illuminated advertising, general lighting).
- Coupling into light guides; Interior automotive lighting (e.g. dashboard backlighting, etc.).

Device Selection Guide

Chip Material	Emitted Color	Resin Color
InGaN	Brilliant Green	Water Clear

Package Outline Dimensions



Notes: All dimensions are in millimeters; Tolerances unspecified are ±0.1mm.

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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
Power Dissipation	P_d	100	mW
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	95	mA
Electrostatic Discharge(HBM)	ESD	150	V
Operating Temperature	T_{opr}	-40 ~ +85	℃
Storage Temperature	T_{stg}	-40~ +90	℃
Soldering Temperature	T_{sol}	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	Iv	225	-----	565	mcd	I_F=20mA
Viewing Angle	2θ1/2	----	120	----	deg	
Peak Wavelength	λp	----	518	----	nm	
Dominant Wavelength	λd	520	----	535	nm	
Spectrum Radiation Bandwidth	Δλ	----	20	----	nm	
Forward Voltage	V_F	2.70	----	3.70	V	
Reverse Current	I_R	----	----	50	μA	V_R=5V

Notes:

1.Tolerance of Luminous Intensity : ±11%

2.Tolerance of Dominant Wavelength : ±1nm

3.Tolerance of Forward Voltage : ±0.05V

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Bin Range of Luminous intensity:

Bin	Min	Max	Unit	Condition
S2	225	285	mcd	I_F=20mA
T1	285	360		
T2	360	450		
U1	450	565		

Bin Range of Dominate Wavelength:

Group	Bin	Min	Max	Unit	Condition
Y	X	520	525	nm	I_F=20mA
	Y	525	530		
	Z	530	535		

Bin Rang of Forward Voltage

Group	Bin	Min	Max	Unit	Condition
G	34	2.70	2.80	V	I_F=20mA
	35	2.80	2.90		
	36	2.90	3.00		
	37	3.00	3.10		
	38	3.10	3.20		
	39	3.20	3.30		
	40	3.30	3.40		
	41	3.40	3.50		
	42	3.50	3.60		
	43	3.60	3.70		

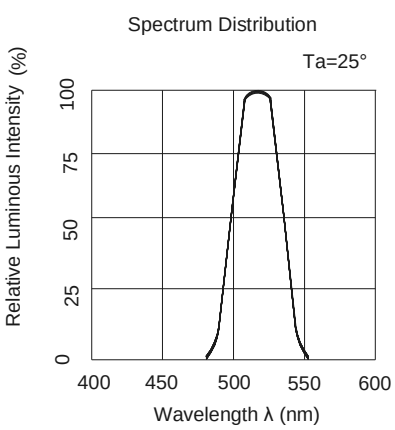
Notes:

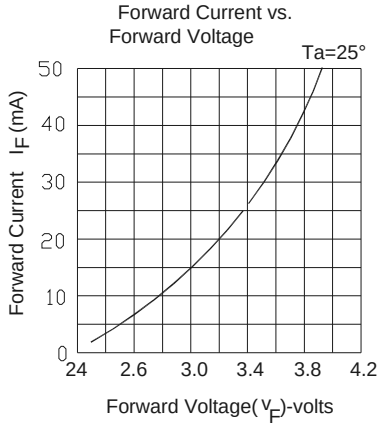
1.Tolerance of Luminous Intensity ±11%

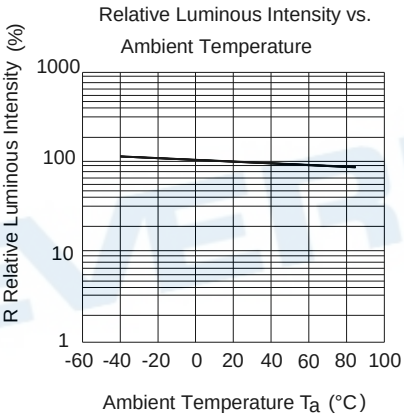
2.Tolerance of Dominant Wavelength ±1nm

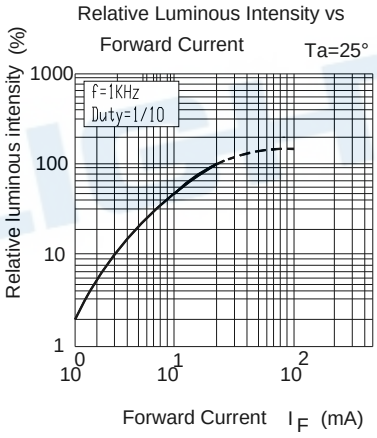
3.Tolerance of Forward Voltage ±0.05V

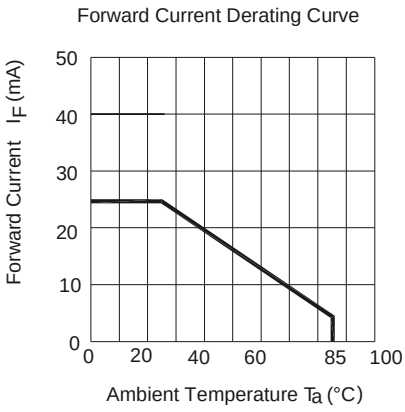
Typical Electro-Optical Characteristics Curves

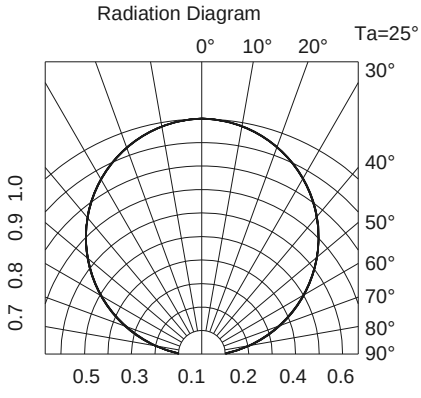












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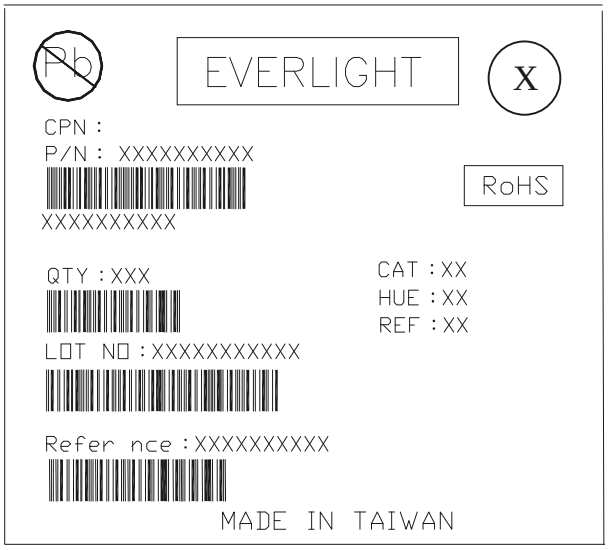
Label Explanation

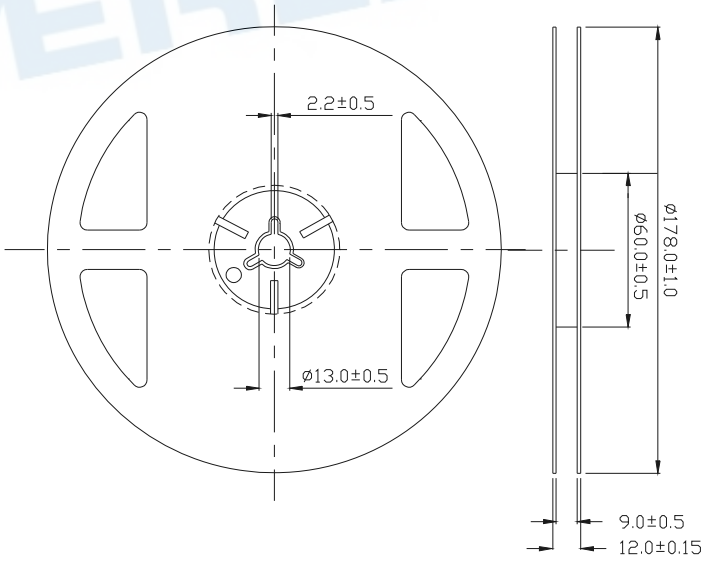
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

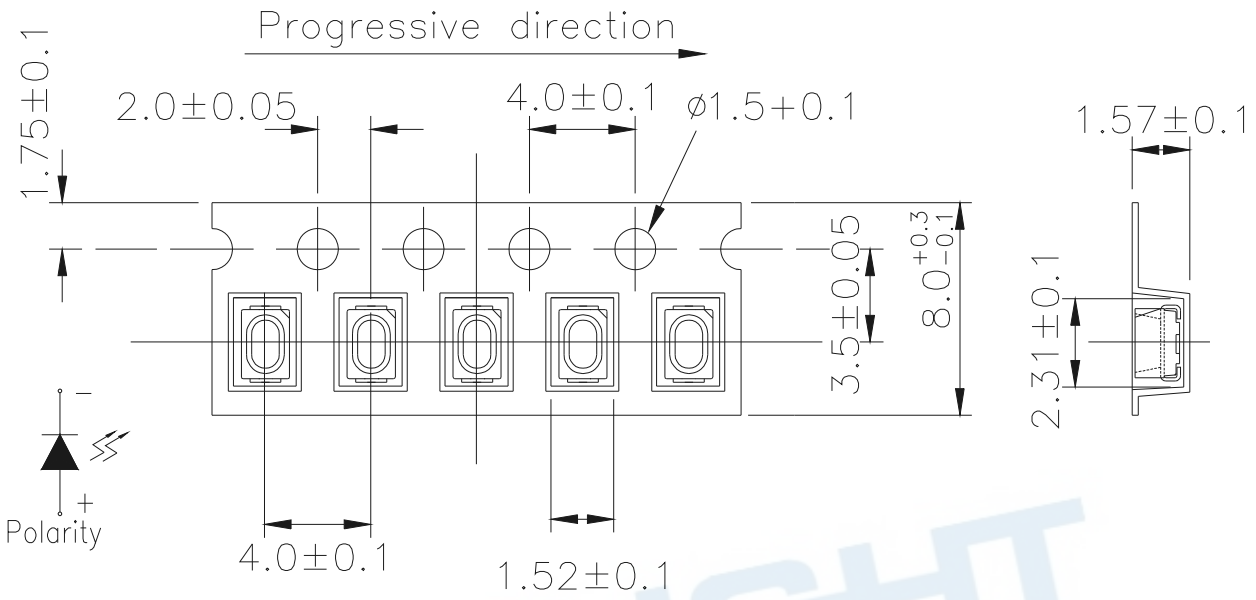


Reel Dimensions



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

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel.



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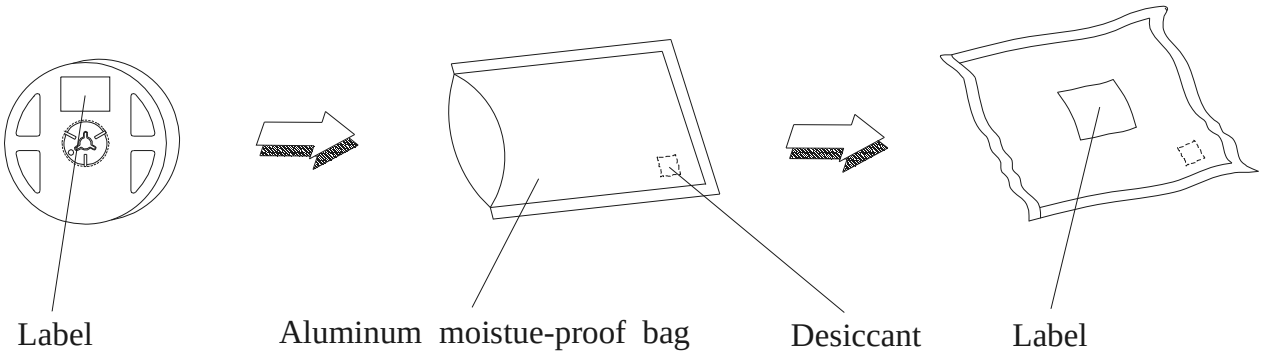
Moisture Resistant Packaging



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

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.

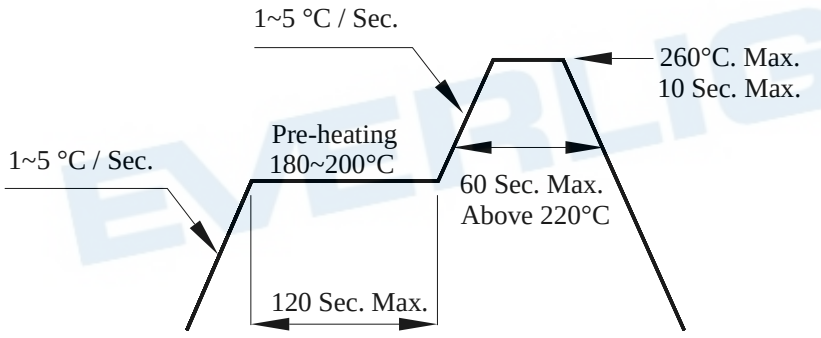
   2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

   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.

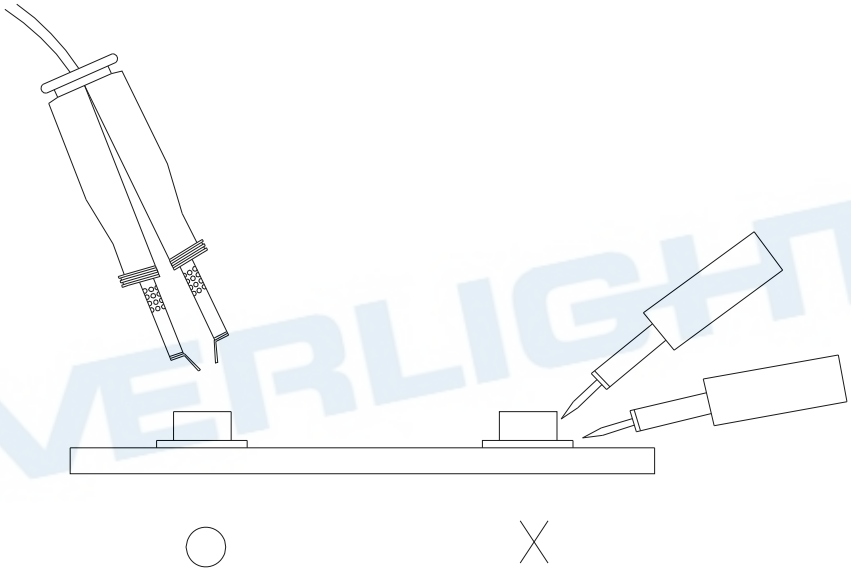
   3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 280℃ 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.



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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