

Technical Data Sheet**Mini Top View LEDs****65-21/R6C-AQ1R2B/2T****Features**

- White SMT package.
- Optical indicator.
- Wide viewing angle.
- Soldering methods: IR 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. Besides, LED is mounted top down and emits through the PCB. This feature makes the LED 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

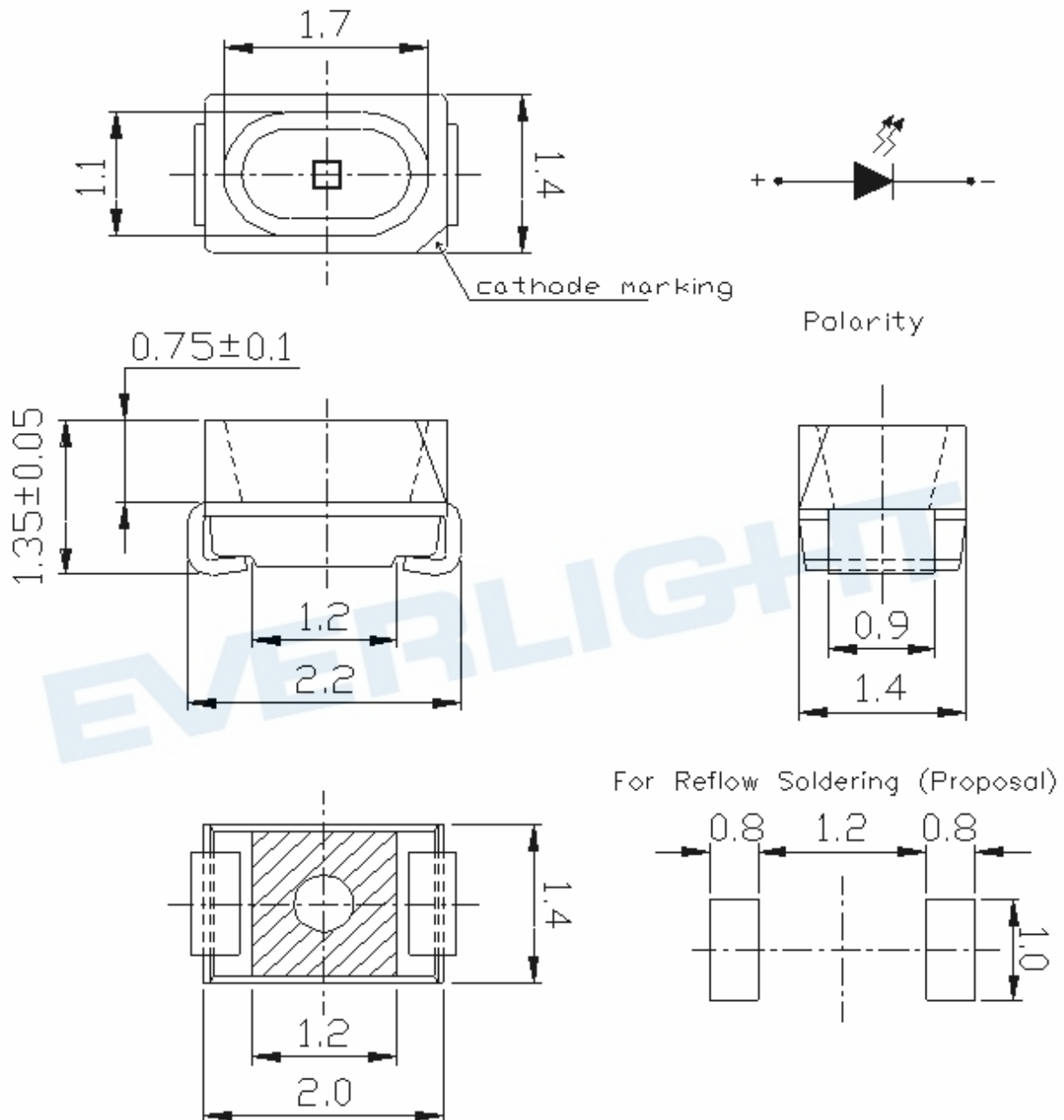
Chip	Emitted Color	Resin Color
Material		
AlGaInP	Brilliant Red	Water Clear

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Package Outline Dimensions



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

Technical Data Sheet**Mini Top View LEDs****65-21/R6C-AQ1R2B/2T****Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	50	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	P_d	110	mW
Electrostatic Discharge (HBM)	ESD	2000	V
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +90	°C
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	72	-----	180	mcd	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	-----	120	-----	deg	
Peak Wavelength	λ_p	-----	632	-----	nm	
Dominant Wavelength	λ_d	616.5	-----	634.5	nm	
Spectrum Radiation Bandwidth	$\Delta\lambda$	-----	20	-----	nm	
Forward Voltage	V_F	1.75	-----	2.35	V	$V_R=5V$
Reverse Current	I_R	-----	-----	10	μA	

Notes:

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

Technical Data Sheet**Mini Top View LEDs****65-21/R6C-AQ1R2B/2T****Bin Range of Dominant Wavelength**

Group	Bin	Min	Max	Unit	Condition
A	E4	616.5	622.5	nm	I _F =20mA
	E5	620.5	626.5		
	E6	624.5	630.5		
	E7	628.5	634.5		

Bin Range of Luminous Intensity

Bin	Min	Max	Unit	Condition
Q1	72	90	mcd	I _F =20mA
Q2	90	112		
R1	112	140		
R2	140	180		

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:

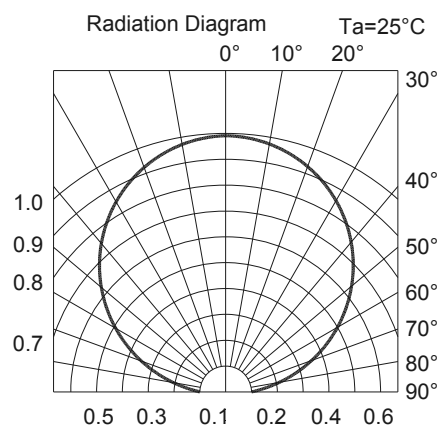
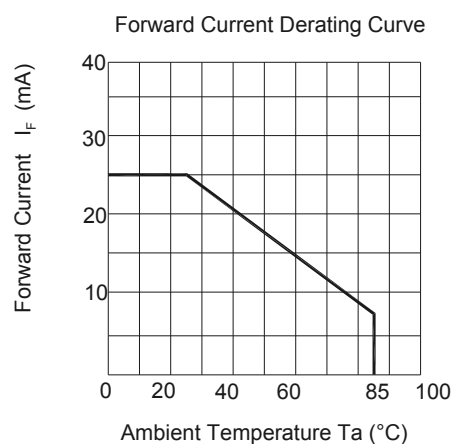
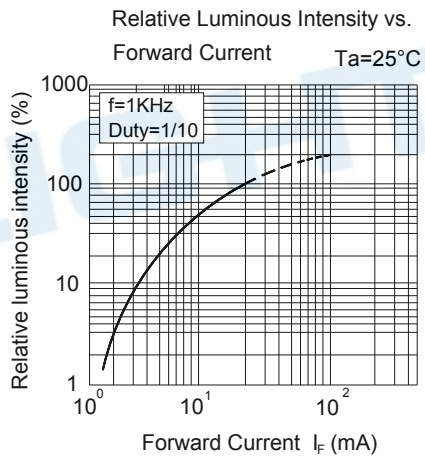
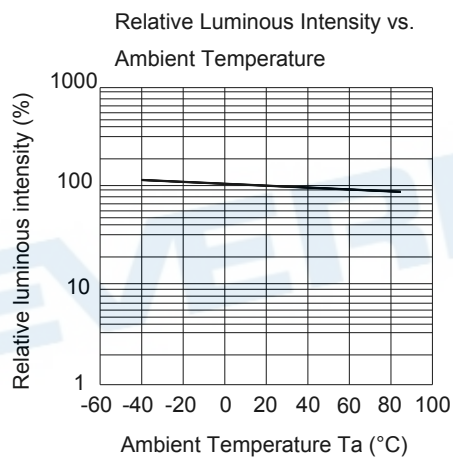
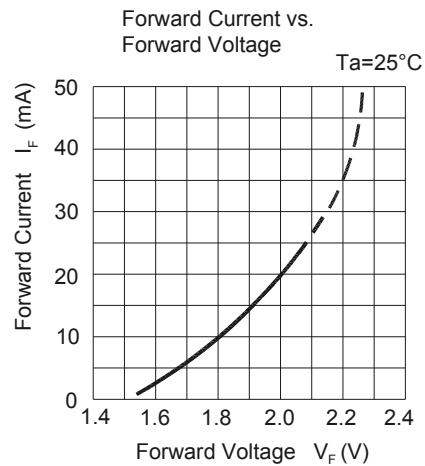
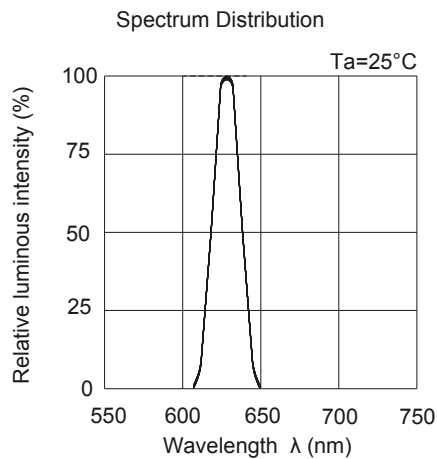
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2. Tolerance of Dominant Wavelength: $\pm 1\text{nm}$
3. Tolerance of Forward Voltage: $\pm 0.1\text{V}$

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Typical Electro-Optical Characteristics Curves



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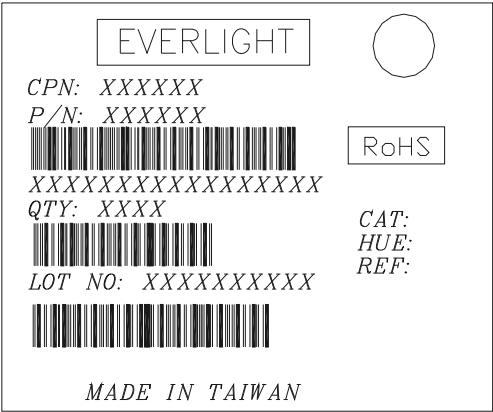
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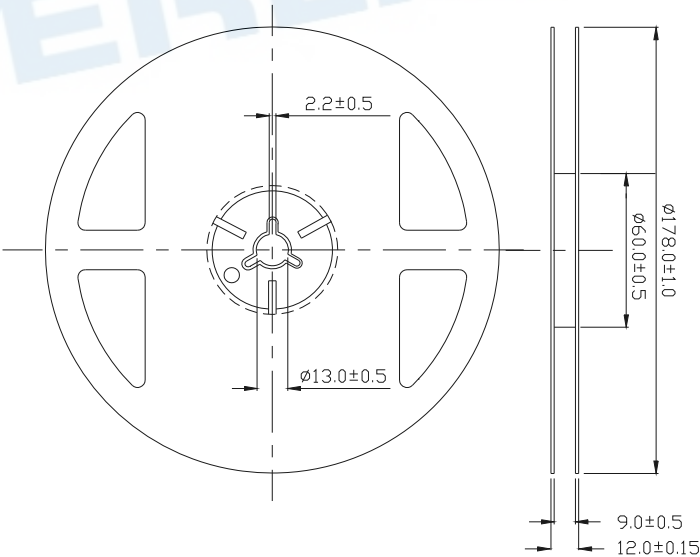
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Label Explanation

- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank



Reel Dimensions



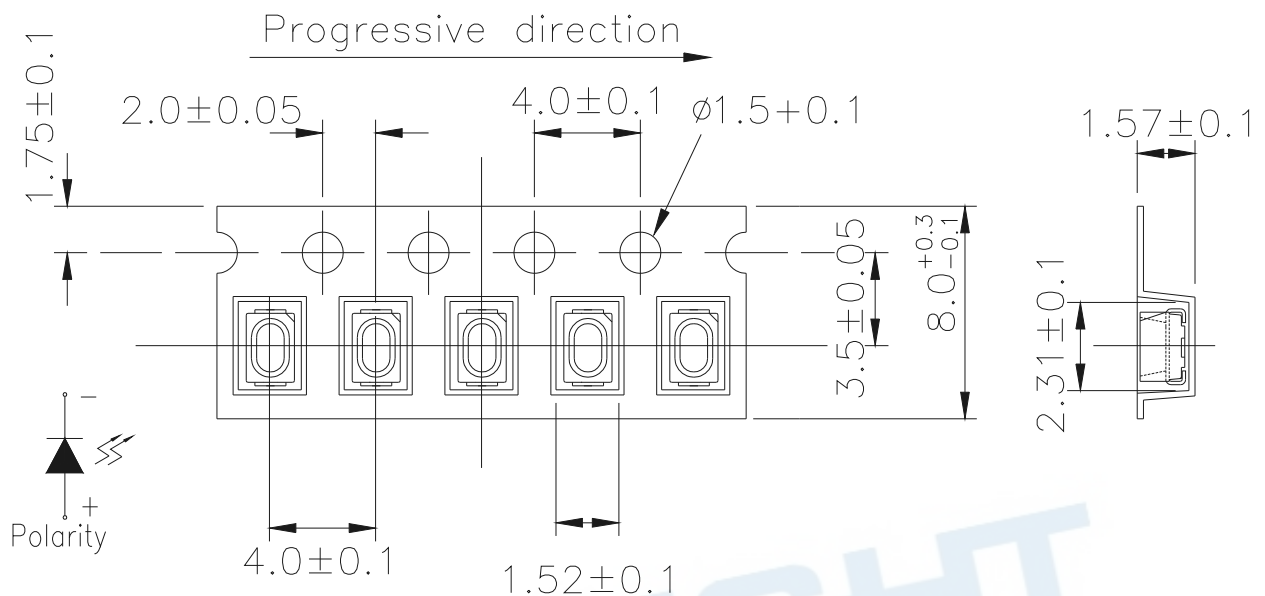
Note: The tolerances unless mentioned is ±0.1mm; Unit = mm

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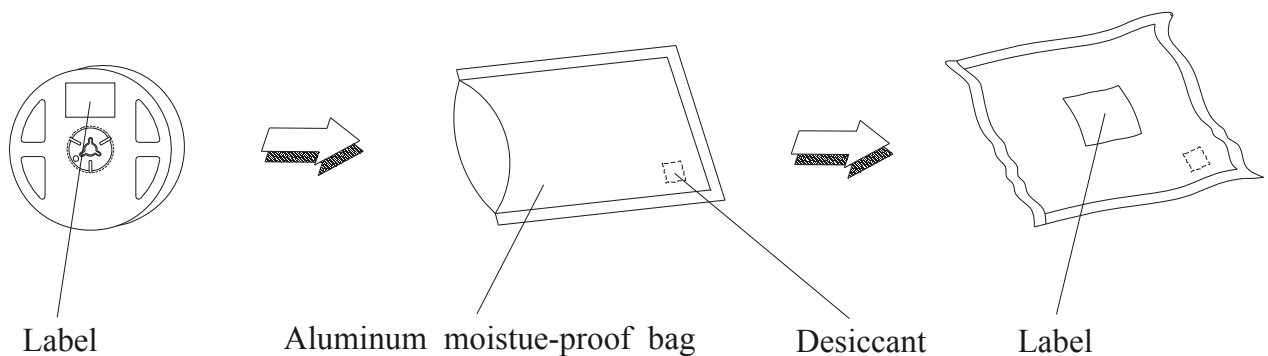
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Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel.



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

Moisture Resistant Packaging



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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°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.

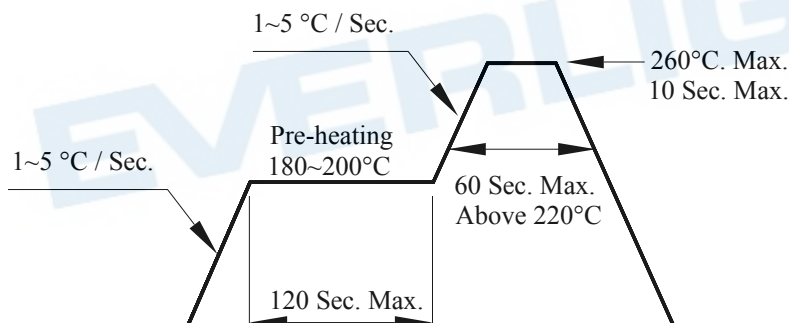
If unused LEDs remain, it should be stored in moisture proof packages.

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.

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.

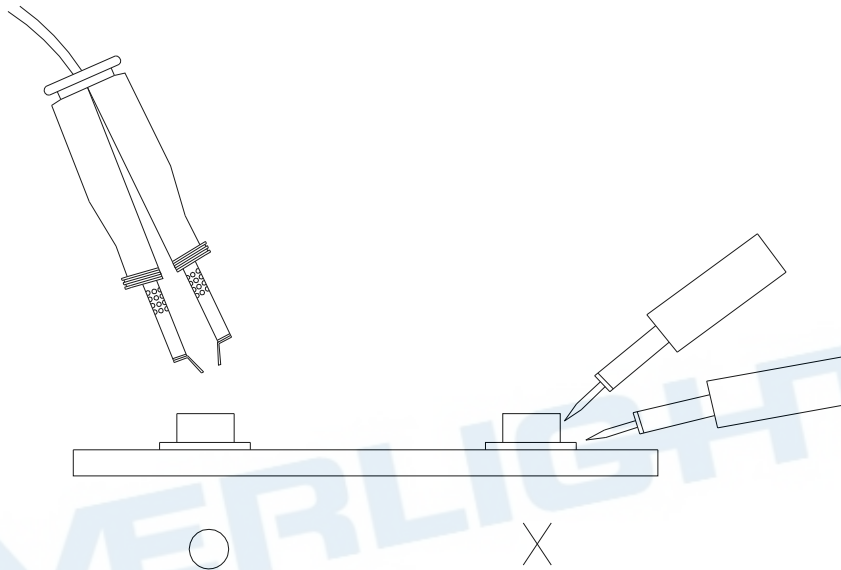
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5. Repairing

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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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.
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