

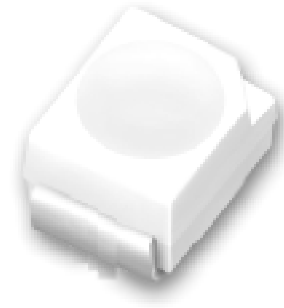
Technical Data Sheet

Top View LEDs

67-21SUGC/B116/TR8/AM

Features

- Pb-free.
- Inner reflector.
- White package.
- Optical indicator.
- P-LCC-2 package.
- Wide viewing angle.
- Colorless clear resin.
- Precondition : Base on JEDEC Level-3.
- The product itself will remain within RoHS compliant version.
- Suitable for vapor-phase reflow, infrared reflow and wave solder processes.



Descriptions

- The 67-21 series is available for orange, green, blue and yellow or other color due to the different raw material.
- Base on the package design, the device result in wide view angle.

Applications

- Automotive backlighting or indicators : Dashboards, switches, audio and video equipment...etc.
- Backlight : LCD, switches, symbols, mobile phones and illuminated advertising.
- Display for indoor and outdoor applications.
- Ideal for coupling into light guides.
- Substitution of traditional lights.
- Optical indicators.
- General applications.

Device Selection Guide

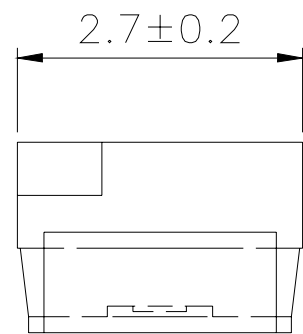
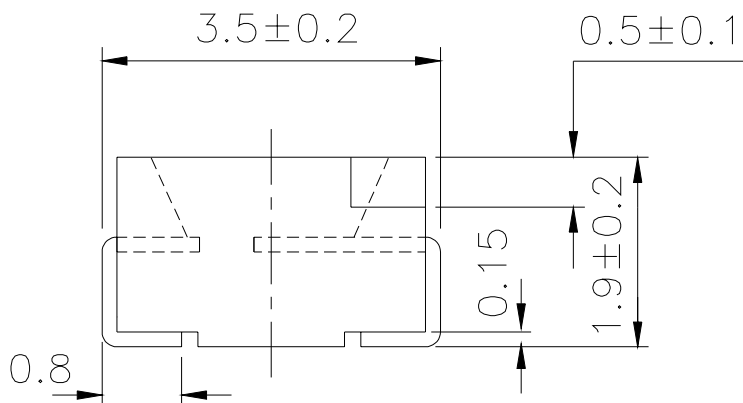
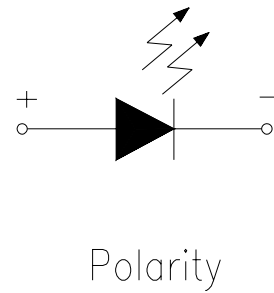
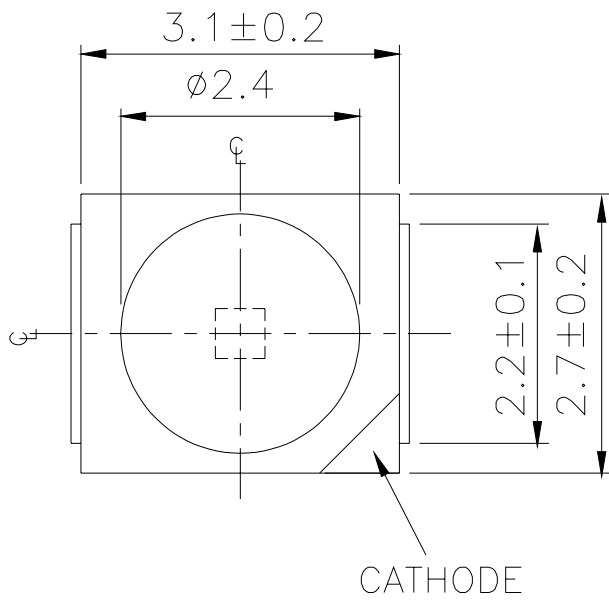
Chip	Emitted Color	Resin Color
Material		
InGaN/SiC	Brilliant Green	Water Clear

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Package Dimensions



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

**Technical Data Sheet****Top View LEDs****67-21SUGC/B116/TR8/AM****Absolute Maximum Ratings (Ta=25)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	12	V
Forward Current	I _F	30	mA
Peak Forward Current (Duty 1/10 @1KHz)	I _{FP}	100	mA
Power Dissipation	P _d	120	mW
Junction Temperature	T _j	125	
Operating Temperature	T _{opr}	-40 ~ +100	
Storage Temperature	T _{stg}	-40 ~ +110	
Thermal resistance	R _{th J-A}	500	K/W
	R _{th J-S}	300	K/W
Soldering Temperature	T _{sol}	Reflow Soldering : 260 for 10 sec. Hand Soldering : 350 for 3 sec.	



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Electro-Optical Characteristics (Ta=25)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	90	-----	225	mcd	I _F =10mA
Viewing Angle	2 1/2	-----	120	-----	deg	I _F =10mA
Peak Wavelength	λ _p	-----	518	-----	nm	I _F =10mA
Dominant Wavelength	λ _d	520	-----	540	nm	I _F =10mA
Spectrum Radiation Bandwidth	Δλ	-----	36	-----	nm	I _F =10mA
Forward Voltage	V _F	2.70	3.10	3.80	V	I _F =10mA
Reverse Current	I _R	-----	-----	50	μ A	V _R =12V
Temperature coefficient of λ _p	TC _{λ_p}	-----	0.023	-----	nm/K	I _F =10mA
Temperature coefficient of λ _d	TC _{λ_d}	-----	0.023	-----	nm/K	I _F =10mA
Temperature coefficient of V _F	TC _V	-----	-3.4	-----	mV/K	I _F =10mA

Notes :

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

**Technical Data Sheet****Top View LEDs**

67-21SUGC/B116/TR8/AM**Bin Range of Luminous Intensity**

Bin Code	Min.	Max.	Unit	Condition
Q2	90	112	mcd	If=10mA
R1	112	140		
R2	140	180		
S1	180	225		

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

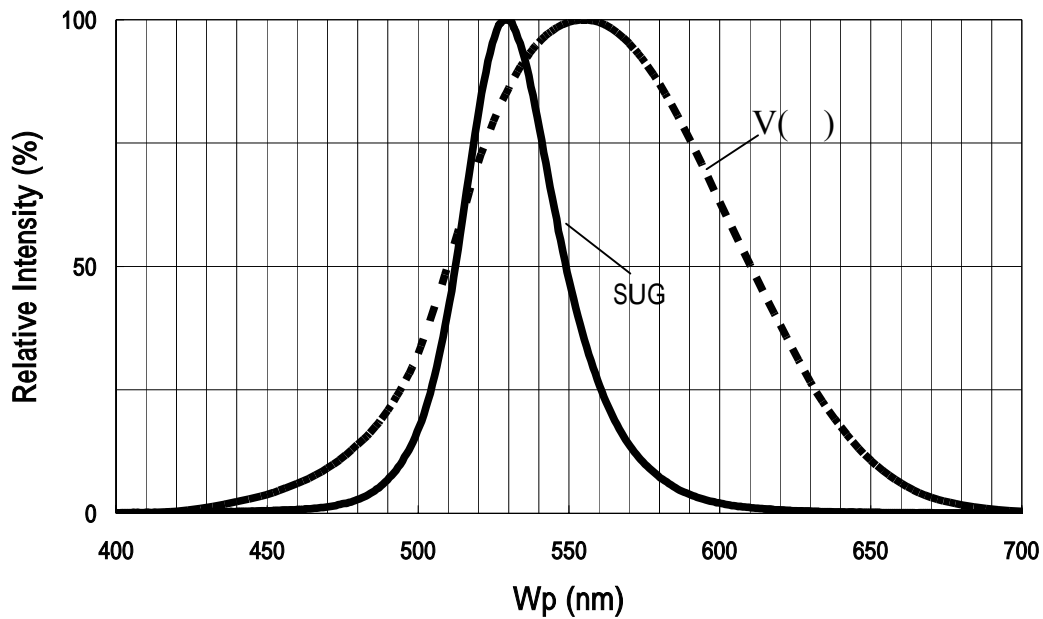
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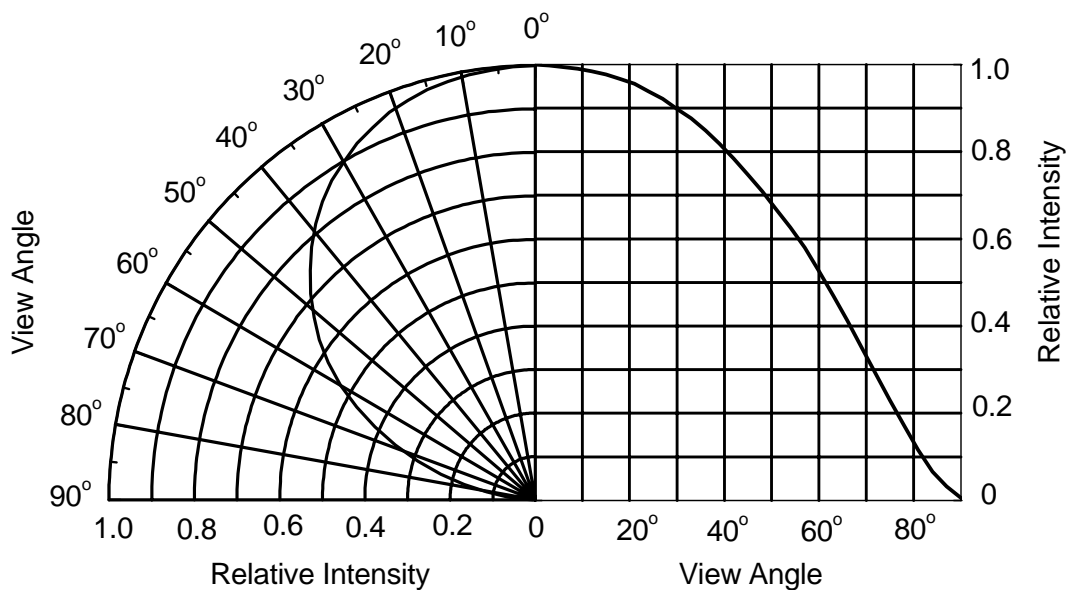
Typical Electro-Optical Characteristics Curves(Ta=25)

Typical Curve of Spectral Distribution:



Note : $V(\lambda)$ =Standard eye response curve ; $I_F=10\text{mA}$

Diagram characteristics of radiation

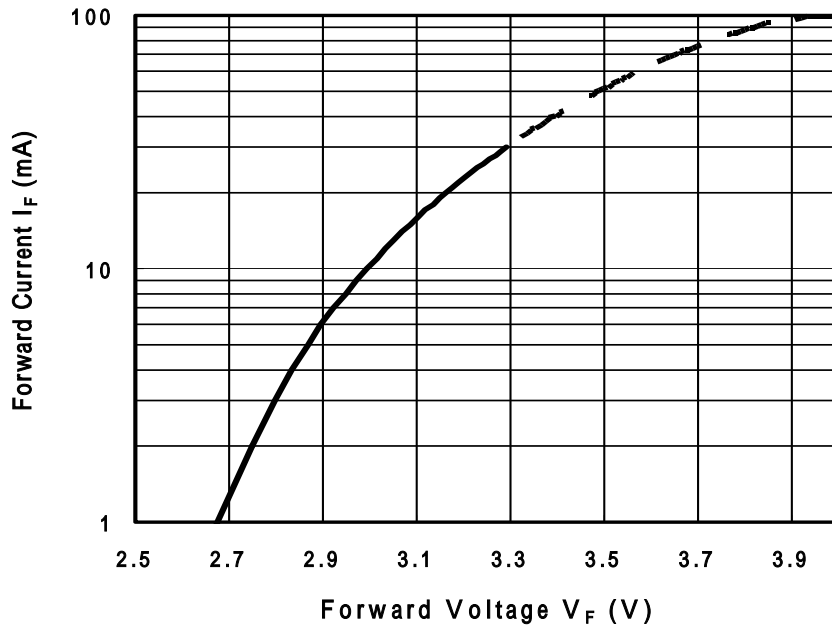


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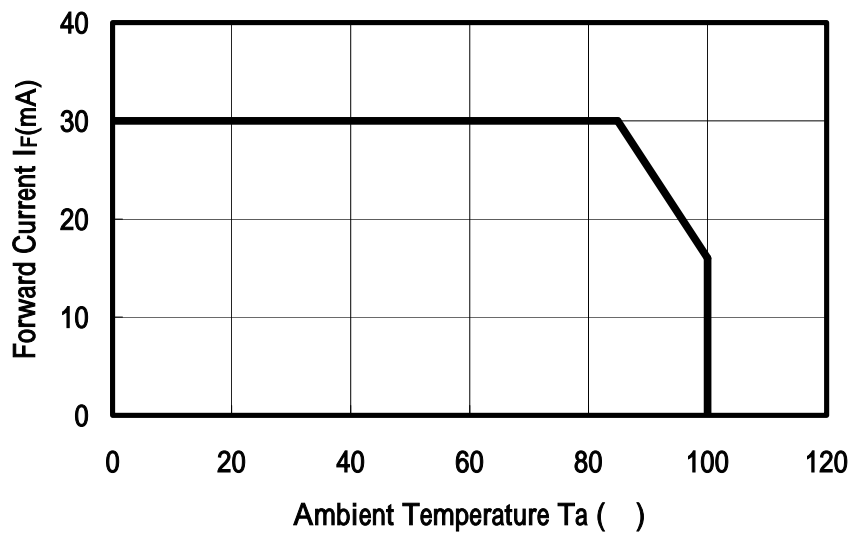
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Forward Current vs. Forward Voltage (Ta=25 °C)



Forward Current vs. Ambient Temperature

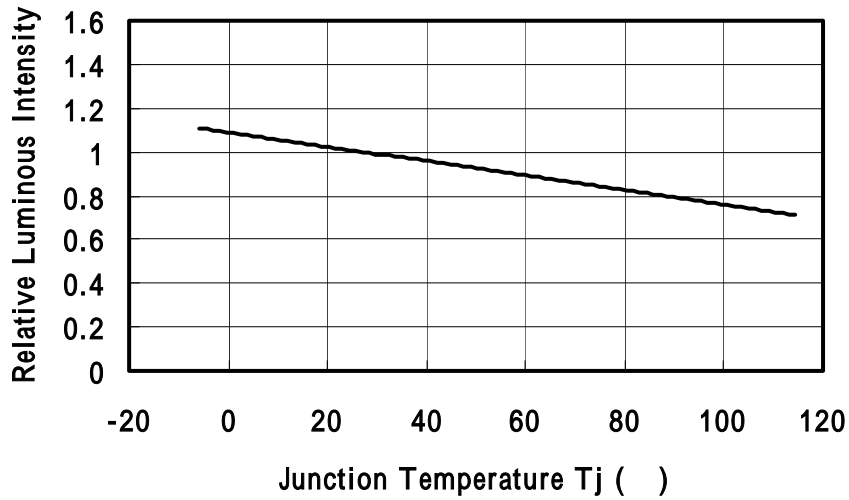


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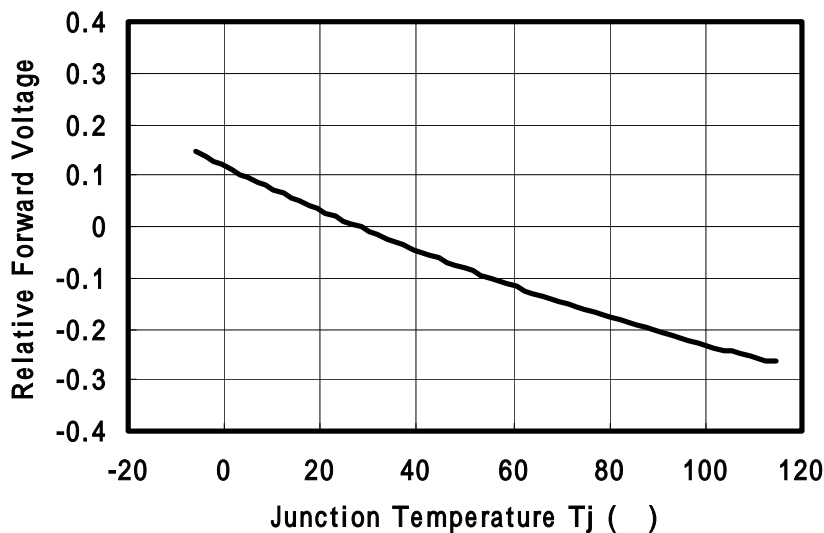
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Relative Luminous Intensity vs. Junction Temperature



Note : $f(T_j) = I_v / I_v(25^\circ\text{C})$; $I_F=10\text{mA}$

Relative Forward Voltage vs. Junction Temperature



Note : $V_F = V_F - V_F(25^\circ\text{C}) = f(T_j)$; $I_F=10\text{mA}$

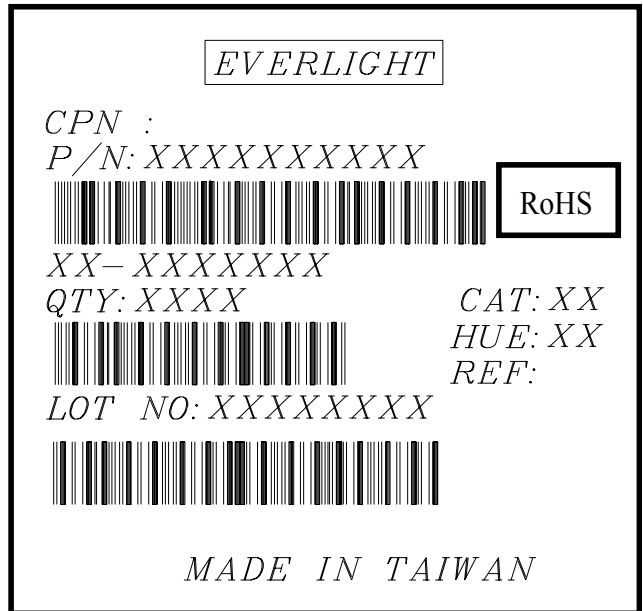
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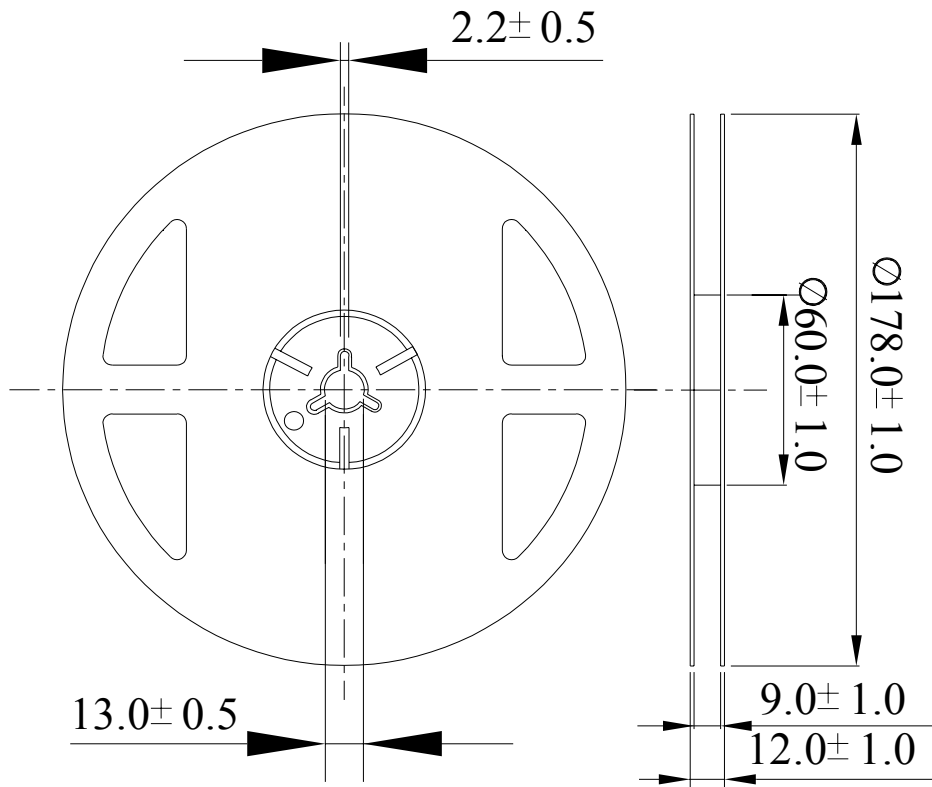
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Label Explanation

- 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



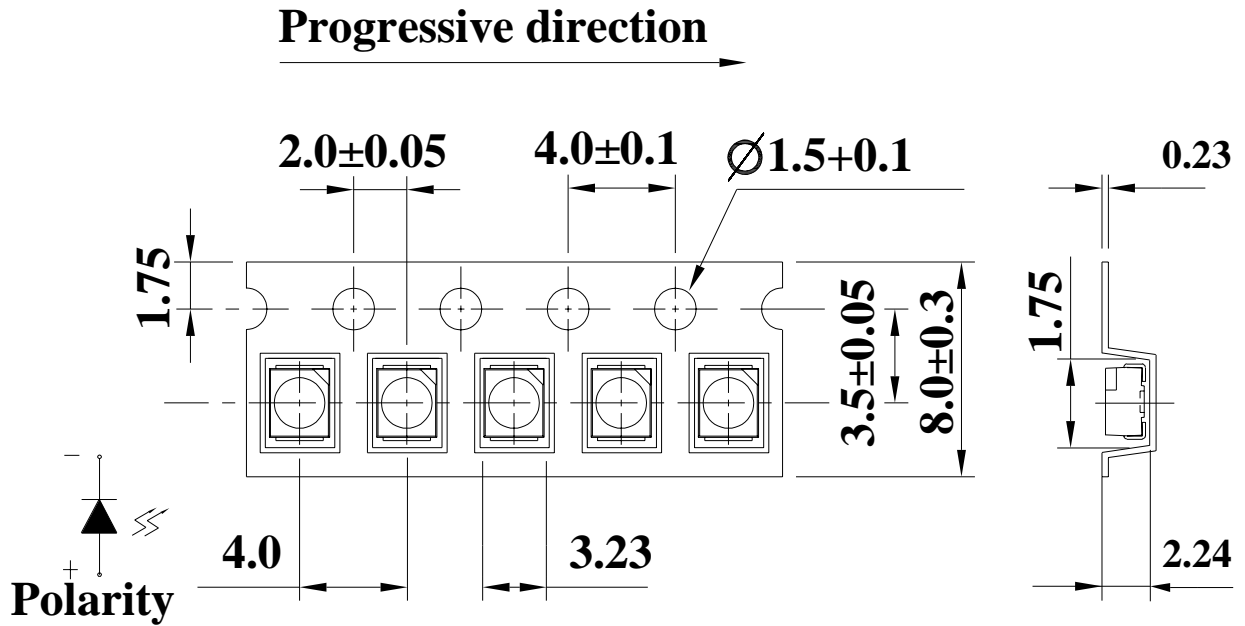
Note : Unit = mm

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Top View LEDs

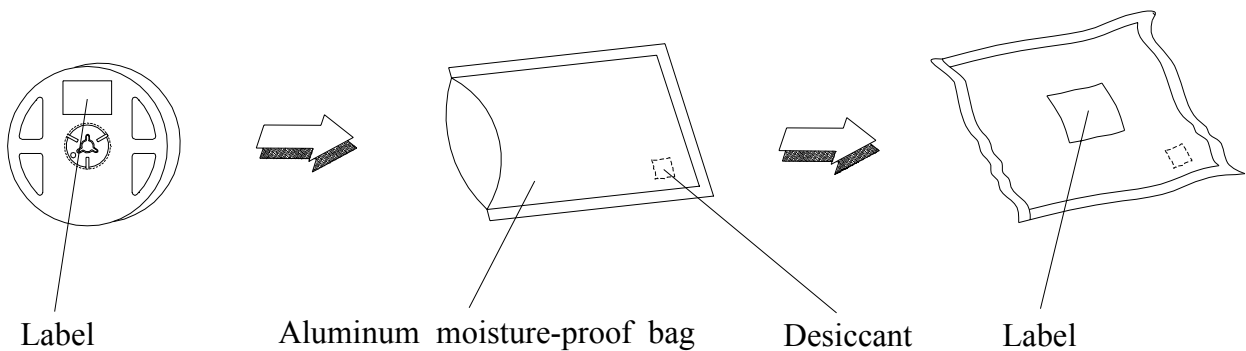
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Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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

Moisture Resistant Packaging Process and Materials



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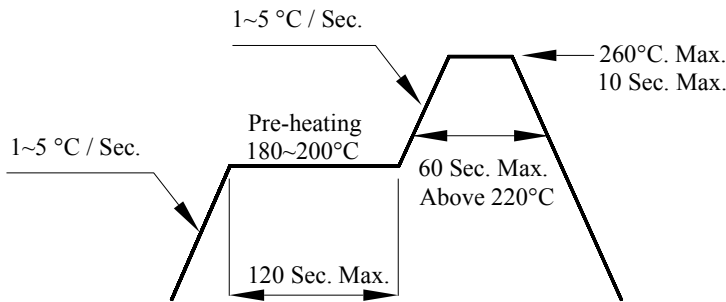
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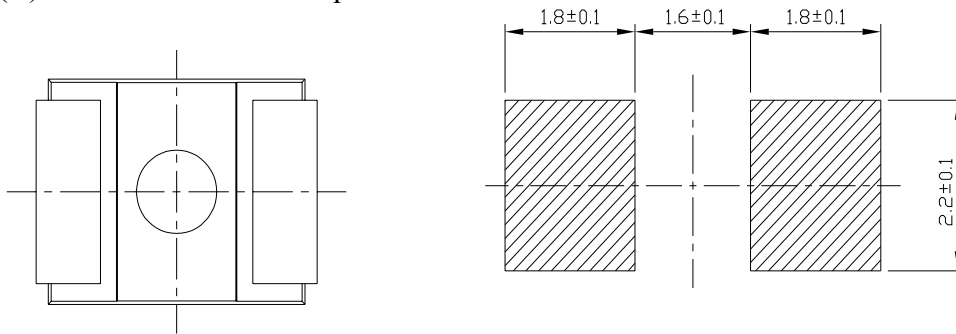
Precautions for Use

1. Soldering Condition

1.1 (A) Pb-free solder temperature profile



(B) Recommended solder pad



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

1.2 Do not put stress on the LED during heating.

1.3 After soldering, do not warp the circuit board.

2. Over-current-protection

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

3. Storage

3.1 Do not unseal moisture proof bag before the products are ready to use.

3.2 Before opening the package: The LED should be in a condition of 30 or less and 90% RH.

3.3 After opening the package: The LED floor life is 1 year under 30 or less and 60% RH. or less. If unused LED remain, it should be stored in moisture proof packages.



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3.4 If the moisture absorbent material (silica gel) has failed or the LED have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60 ± 5 for 24 hours.

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.