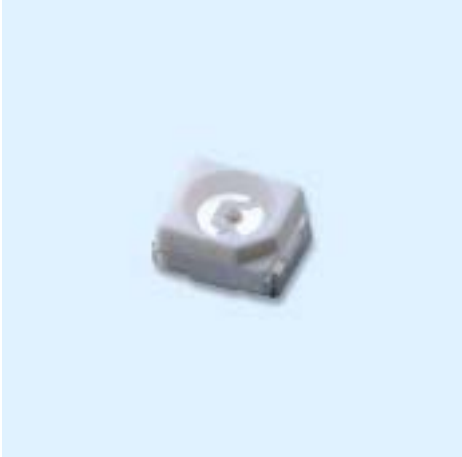
Technical Data Sheet

TOP LEDs

67-21 SUBC/S666/TR8



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).

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 the SMT 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.

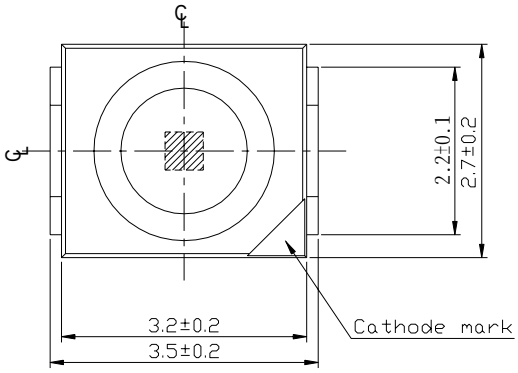
Applications

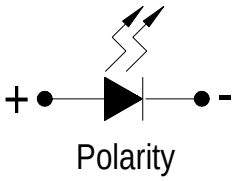
- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- Light pipe application.
- General use.

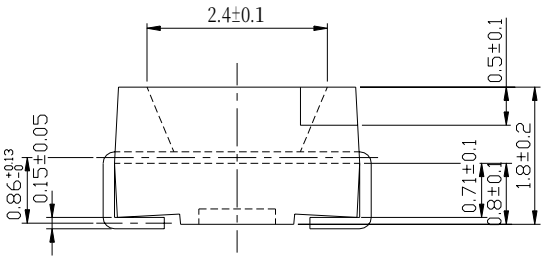
Device Selection Guide

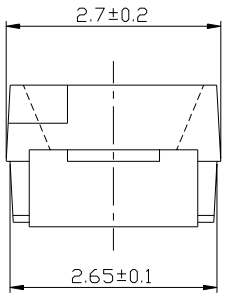
Chip		Lens Color
Material	**Emitted Color**	
InGaN	Super Blue	Water Clear

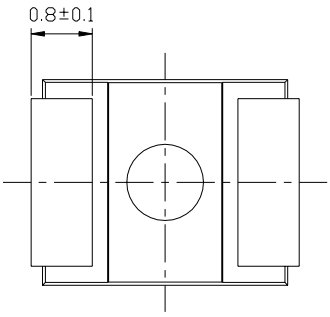
Package Dimensions



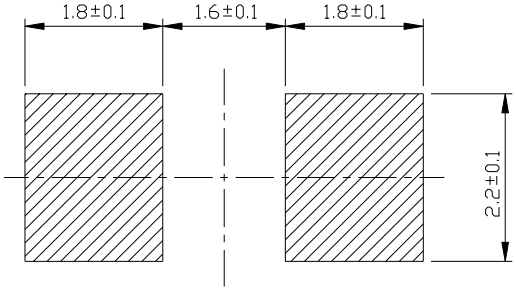








For reflow soldering (propose)



Notes: All dimensions are in millimeters.

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	25	mA
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40~ +100	℃
Soldering Temperature	Tsol	260 (for 5 second)	℃
Electrostatic Discharge	ESD	150	V
Power Dissipation	Pd	110	mW
Peak Forward Current(Duty 1/10 @ 1KHz)	I_{FP}	100	mA

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	90	-----	225	mcd	I_F=20mA
Viewing Angle	2 θ 1/2	-----	120	-----	deg	I_F=20mA
Peak Wavelength	λp	-----	468	-----	nm	I_F=20mA
Dominant Wavelength	λd	464.5	-----	476.5	nm	I_F=20mA
Spectrum Radiation Bandwidth	Δλ	-----	35	-----	nm	I_F=20mA
Forward Voltage	V_F	-----	3.5	4.3	V	I_F=20mA
Reverse Current	I_R	-----	-----	50	μA	V_R=5V

Bin Range of Luminous Intensity and Dominant Wavelength at I_F= 20mA

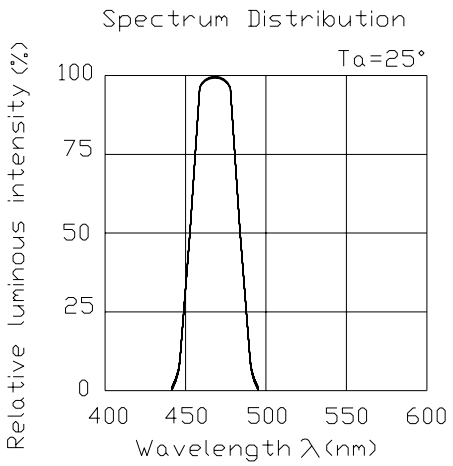
Symbol	Bin Code	Min.	Max.	Unit
Iv*	Q2	90	112	mcd
	R1	112	140	
	R2	140	180	
	S1	180	225	
λd*	A9	464.5	467.5	nm
	A10	467.5	470.5	
	A11	470.5	473.5	
	A12	473.5	476.5	

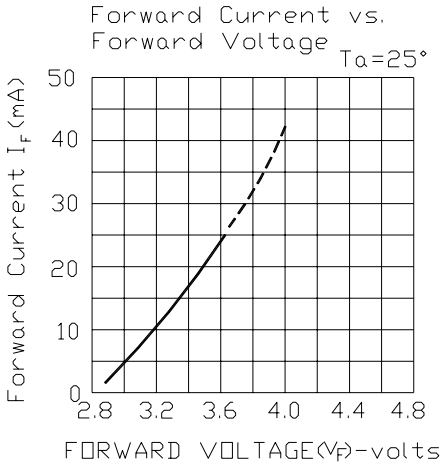
Notes:

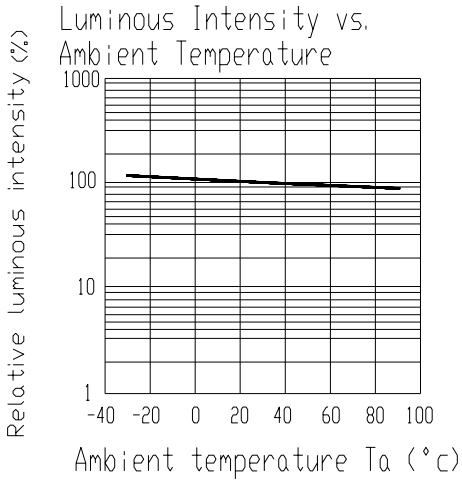
*The luminous intensity data did not including ±15% testing tolerance.

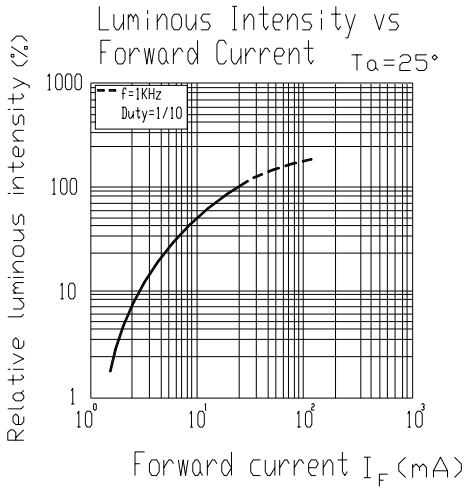
*Tolerance of dominant wavelength ±1nm.

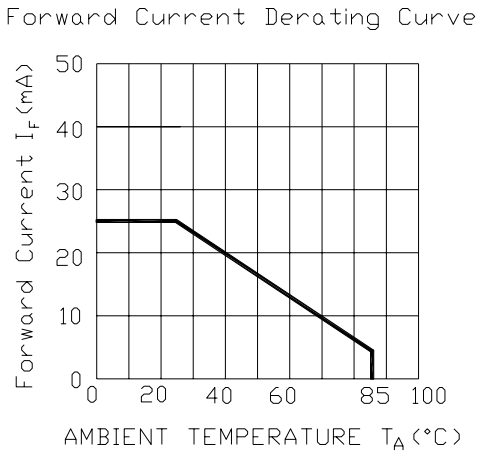
Typical Electro-Optical Characteristics Curves

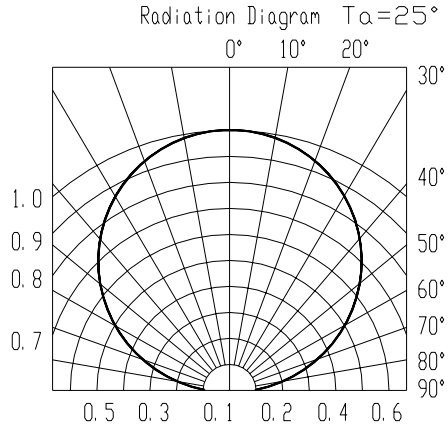












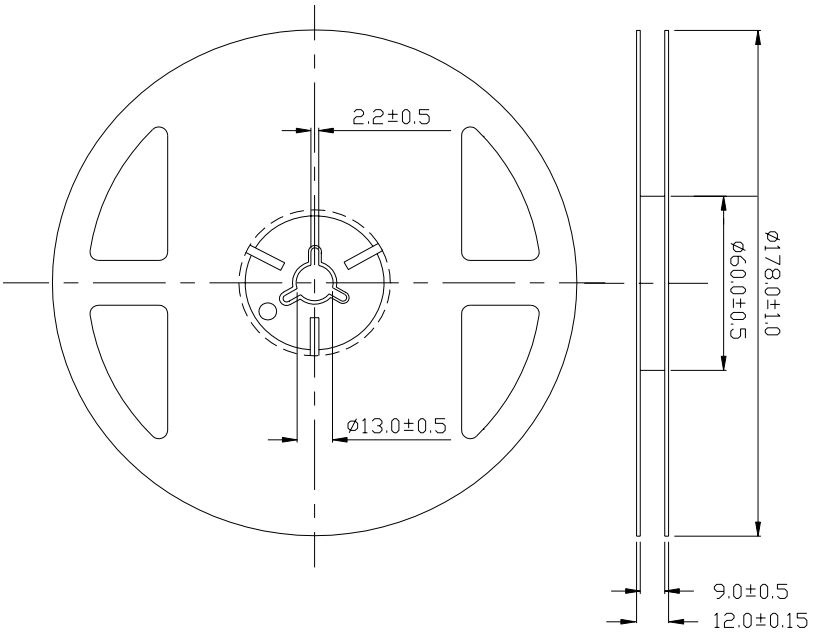
Label explanation

CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

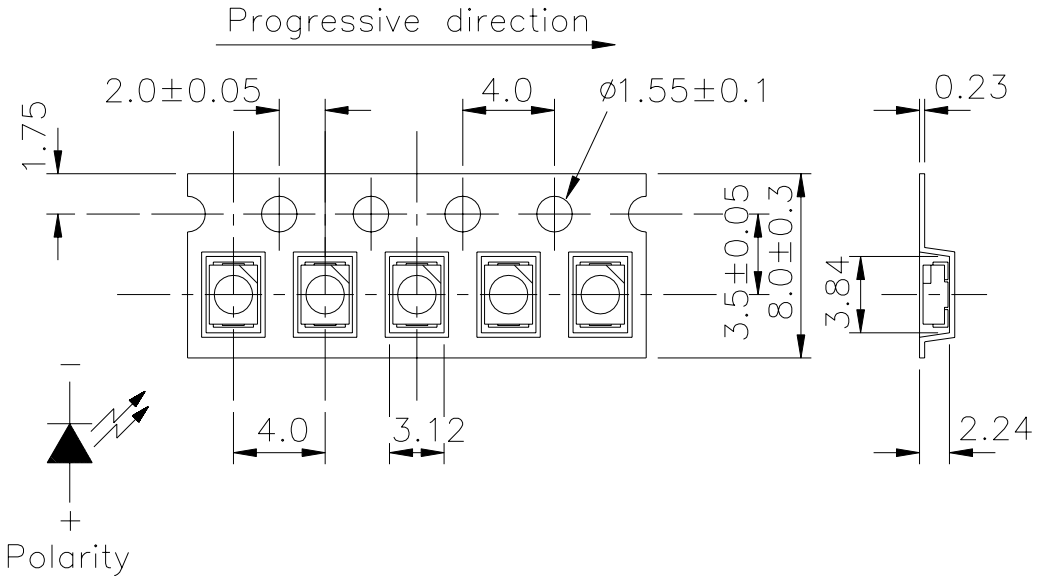
Reel Dimensions



Taping Quantity: 2000pcs

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

Carrier Tape Dimensions



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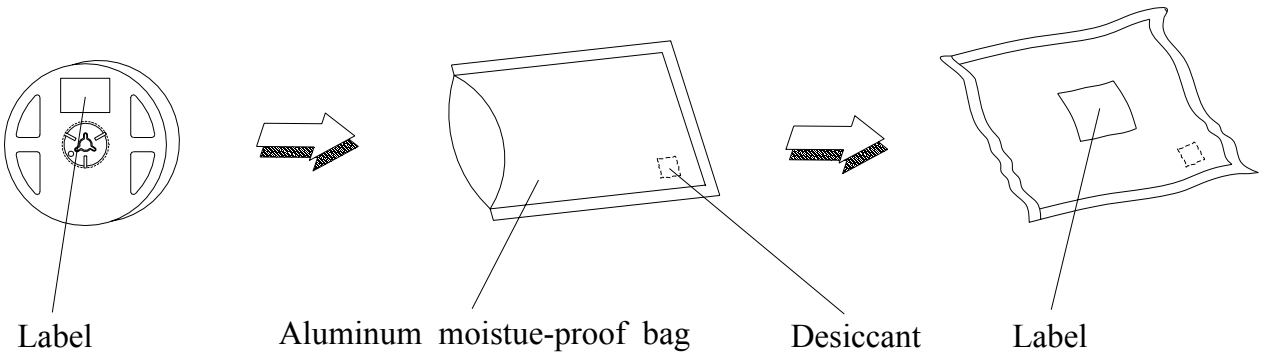
Moisture Resistant Packaging



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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	Temp. : 240°C±5°C 5 Sec.	6Min.	22 PCS.	0/1
2	Temperature Cycle	H : +100°C 15min ∫ 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -55°C	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°C/RH85%	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 The LEDs should be used within a year.

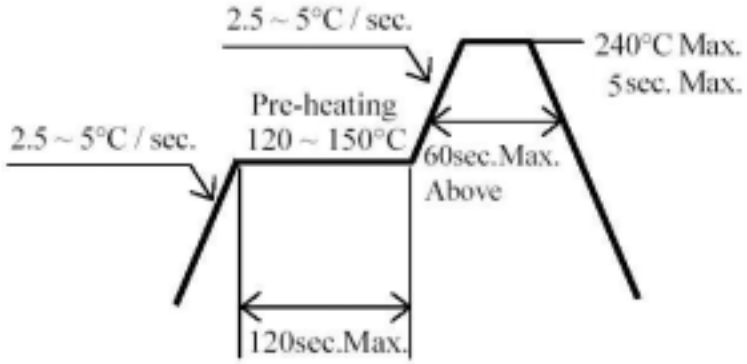
2.4 After opening the package, the LEDs should be kept at 30℃ or less and 70%RH or less.

2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

2.6 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 Lead solder temperature profile



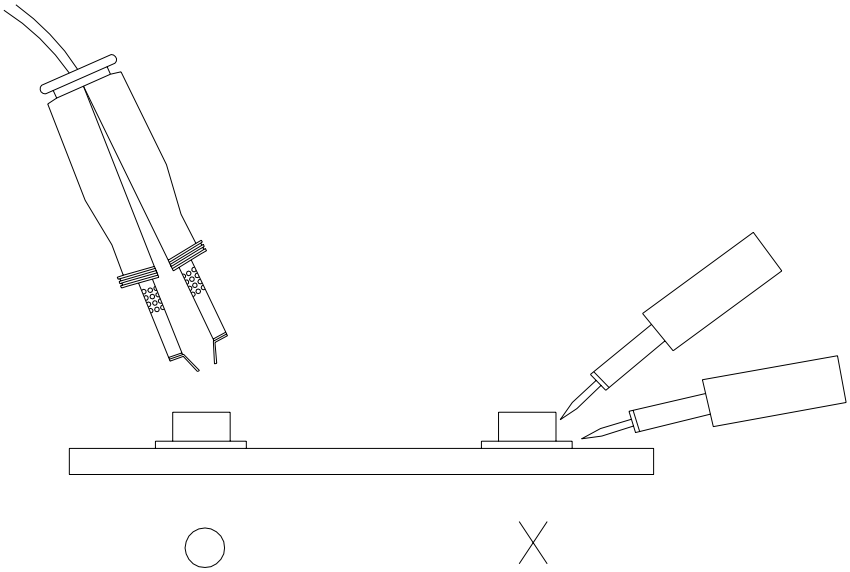
3.2 Reflow soldering should not be done more than two times.
3.3 When soldering, do not put stress on the LEDs during heating.
3.4 After soldering, do not warp the circuit board.

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.



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