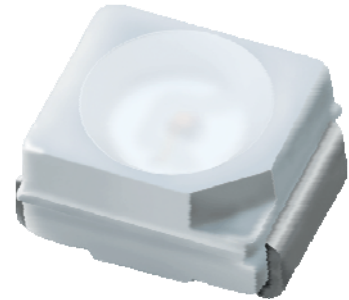


Technical Data Sheet Top View LEDs

67-21SUBC/S400-XX/TR8

Features

- P-LCC-2 package.
- White package.
- Optical indicator.
- Colorless clear window.
- Wide viewing angle.
- Suitable for vapor-phase reflow.
- Computable with automatic placement equipment.
- Available on tape and reel (8mm Tape).
- Pb-free.



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

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

Device Selection Guide

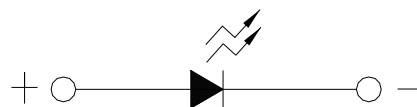
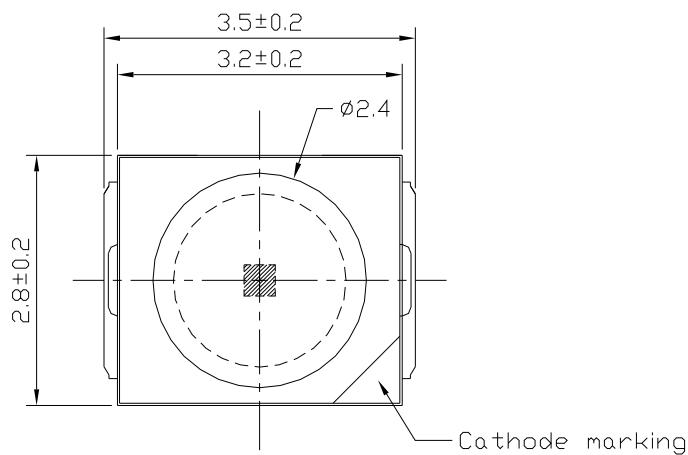
Chip	Emitted Color	Resin Color
Material		
InGaN	Blue	Water Clear

Technical Data Sheet

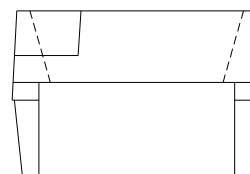
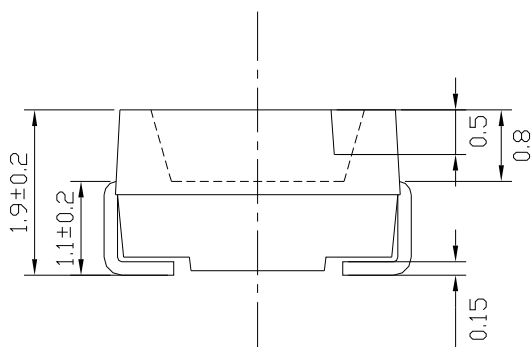
Top View LEDs

67-21SUBC/S400-XX/TR8

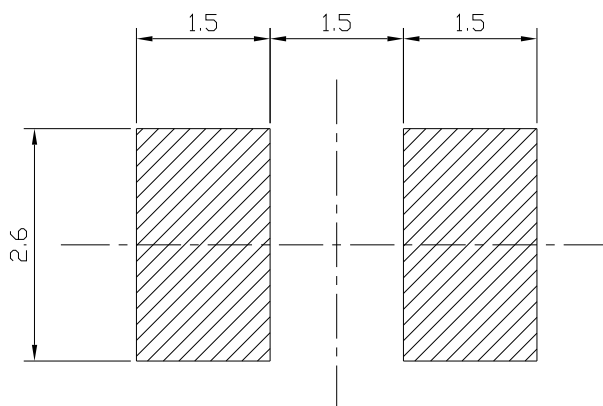
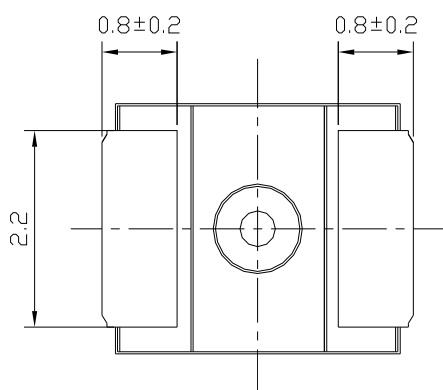
Package Dimensions



Polarity



Recommended Solder Pad



Note: All dimensions are in millimeters, Unit = mm

Technical Data Sheet

Top View LEDs

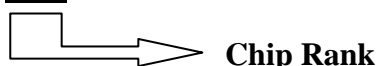
67-21SUBC/S400-XX/TR8

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I _{FP}	100	mA
Power Dissipation	P _d	110	mW
Electrostatic Discharge	ESD	150	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.	

Technical Data Sheet**Top View LEDs****67-21SUBC/S400-XX/TR8****Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	*Chip Rank.	Min.	Typ.	Ma.	Unit	Condition
Luminous Intensity	I_v	A3	32.0	38.0	-----	mcd	$I_F=20mA$
		A4	42.5	48.0			
		A5	53.0	58.5			
		A6	64.0	70.5			
		X7	75.0	80.5			
		X8	88.0	100.0			
		X9	105	135			
Viewing Angle	2θ 1/2	-----	-----	120	-----	deg	$I_F=20Ma$
Peak Wavelength	λ_p	-----	-----	468	-----	nm	$I_F=20mA$
Dominant Wavelength	λ_d	-----	-----	470	-----	nm	$I_F=20mA$
Spectrum Radiation Bandwidth	$\Delta\lambda$	-----	-----	25	-----	nm	$I_F=20mA$
Forward Voltage	V_F	-----	-----	3.5	4.3	V	$I_F=20mA$
Reverse Current	I_R	-----	-----	-----	50	μA	$V_R=5V$

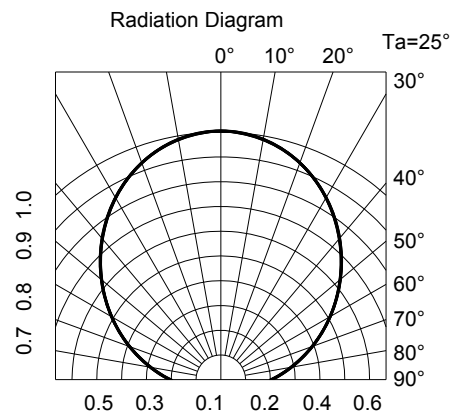
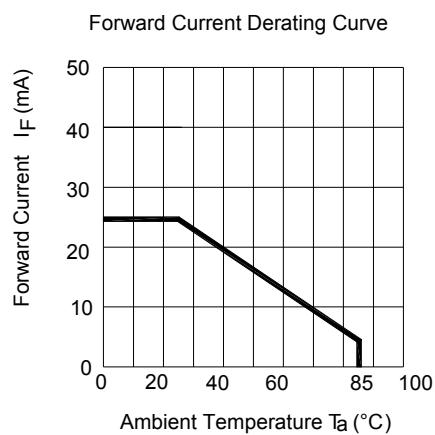
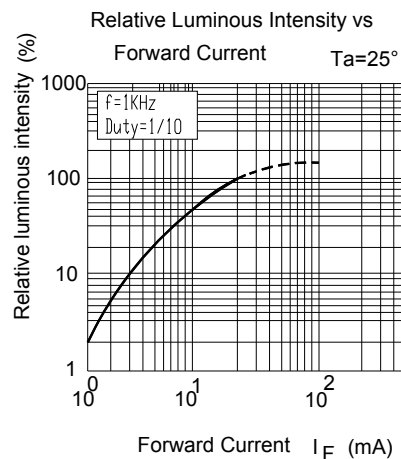
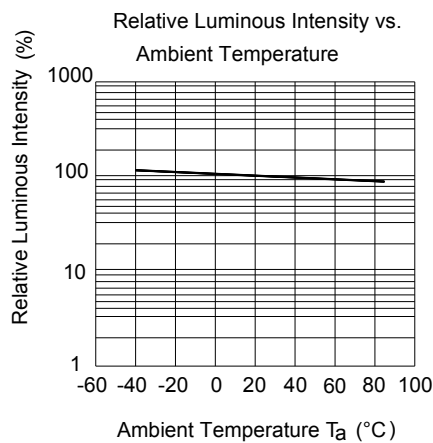
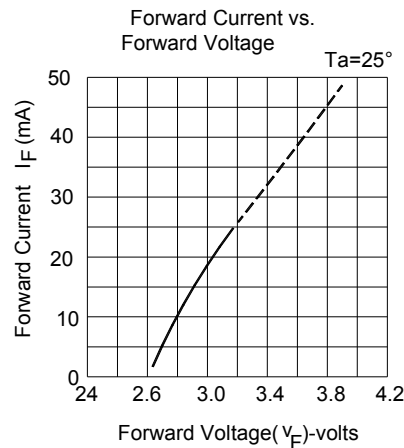
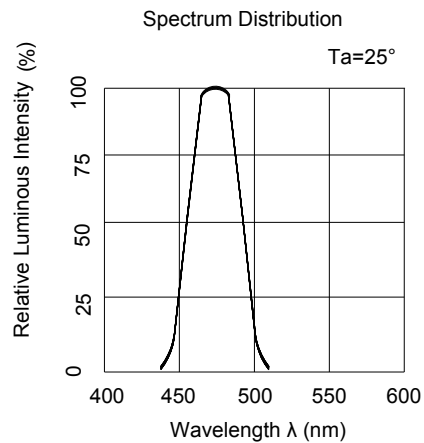
***67-21SUBC/S400-XX/TR8****Notes:**

- 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 Top View LEDs

67-21SUBC/S400-XX/TR8

Typical Electro-Optical Characteristics Curves



Technical Data Sheet

Top View LEDs

67-21SUBC/S400-XX/TR8

Label Explanation

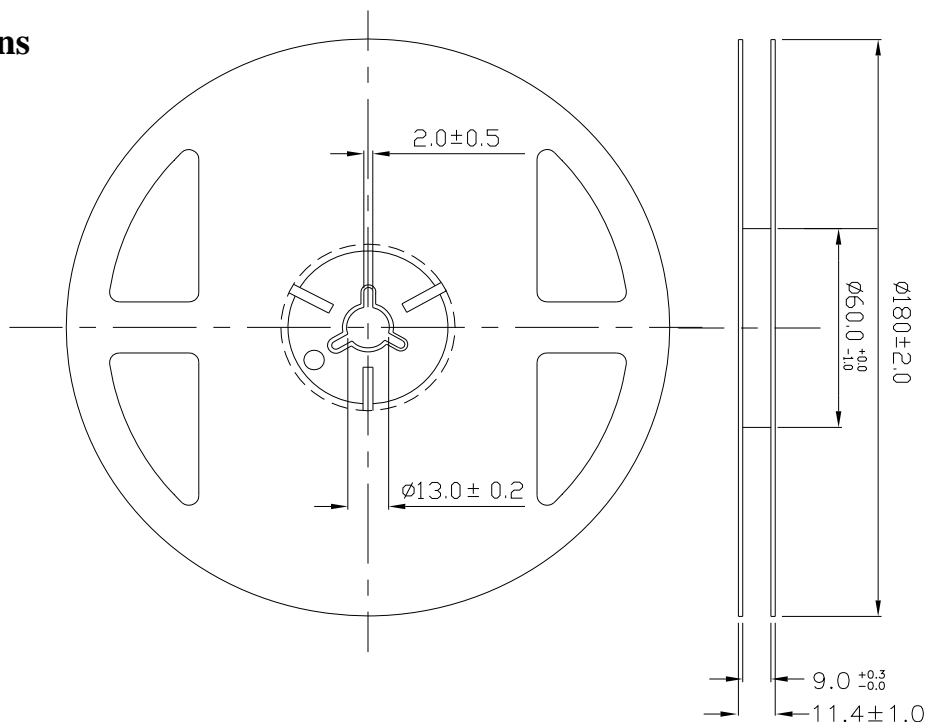
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank



Reel Dimensions

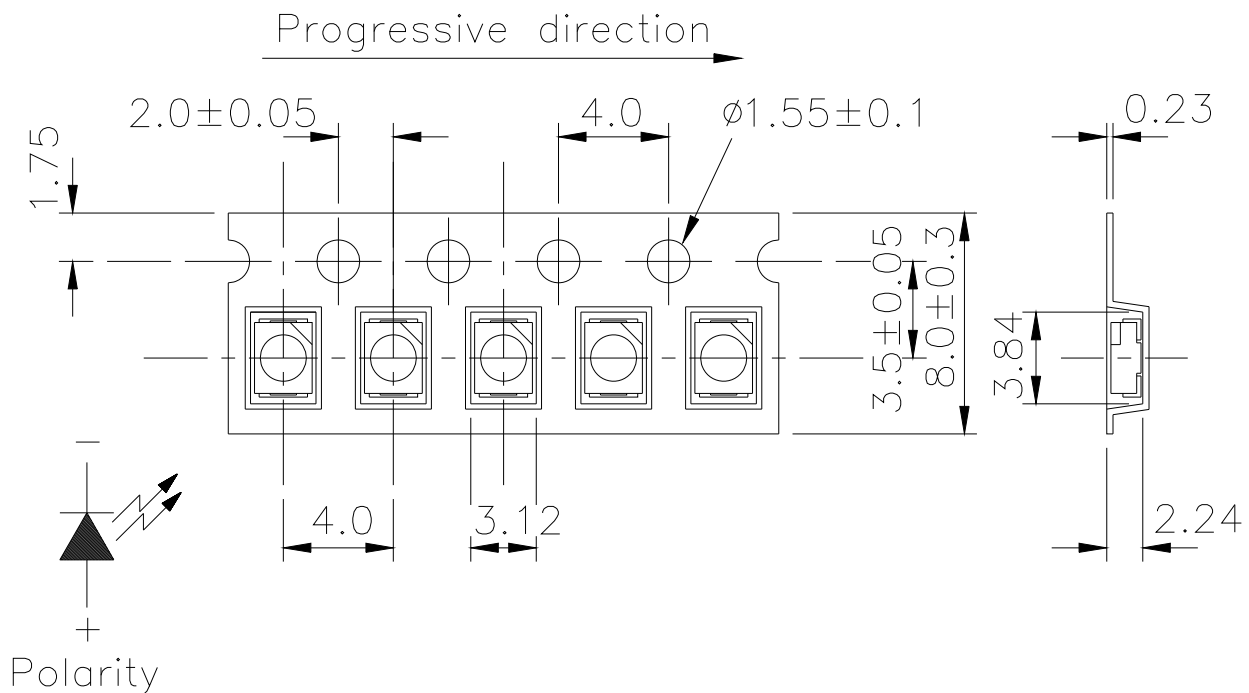


Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm

Technical Data Sheet Top View LEDs

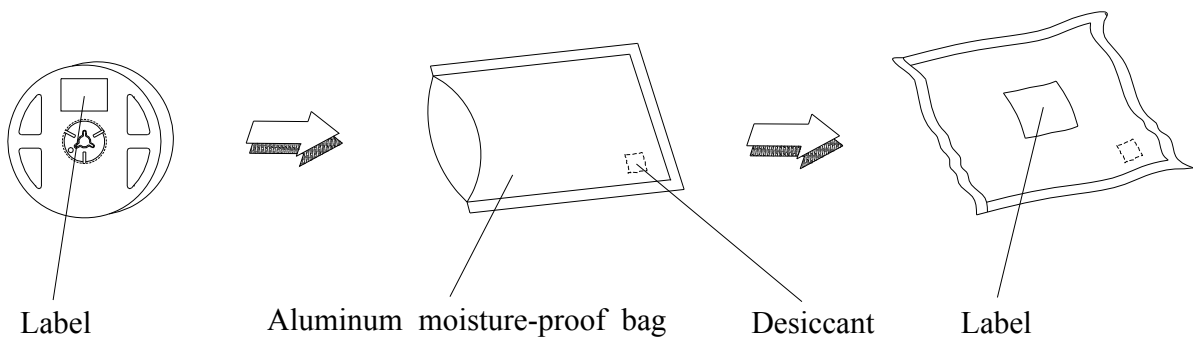
67-21SUBC/S400-XX/TR8

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel.



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

Moisture Resistant Packaging



Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.

Technical Data Sheet**Top View LEDs****67-21SUBC/S400-XX/TR8**

Confidence level : 90%

LTPD : 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260°C±5°C Min. 10sec.	6 Min.	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. : -40°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 / 85%RH	1000 Hrs.	22 PCS.	0/1

Technical Data Sheet Top View LEDs

67-21SUBC/S400-XX/TR8

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.

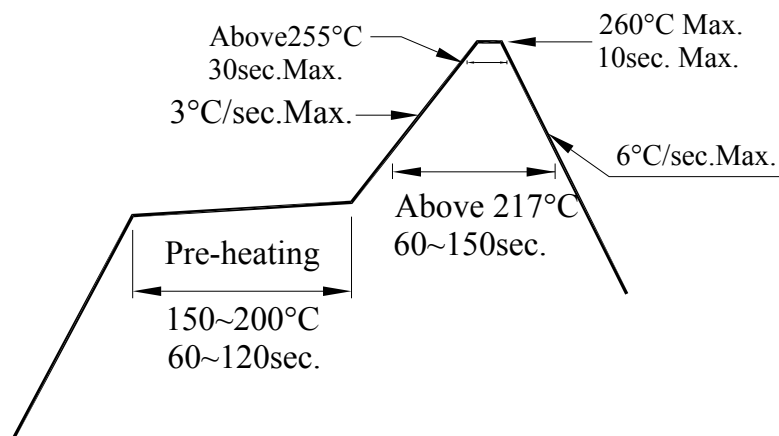
2.3 After opening the package: The LED's floor life are 168 hours under 30 deg C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

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.

Technical Data Sheet Top View LEDs

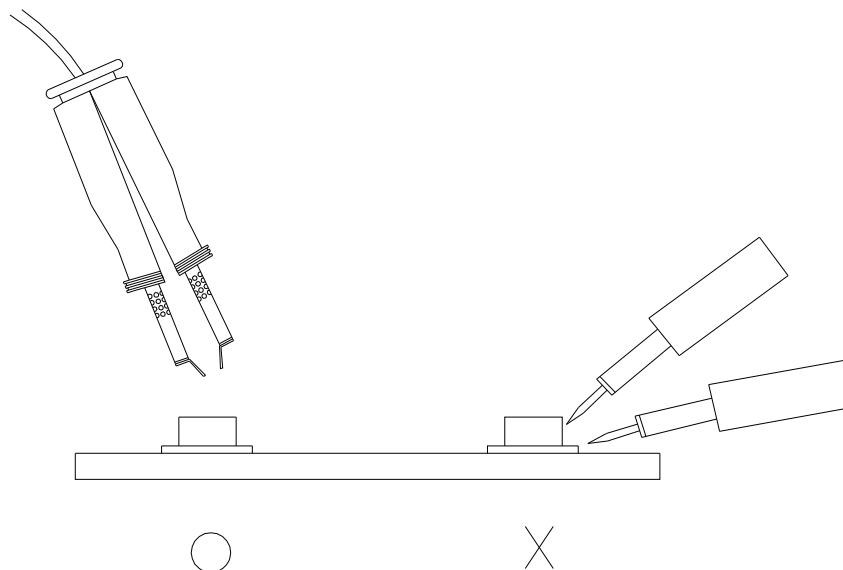
67-21SUBC/S400-XX/TR8

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.



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