

Technical Data Sheet**Power Top View LEDs with Lens****67-31B/B7C-AV2X1MZ3/BT****Features**

- PLCC-3 package.
- High flux output.
- High current capability.
- White package.
- Optical indicator.
- Colorless clear window.
- Ideal for backlight and light pipe application.
- Inter reflector.
- Wide viewing angle.
- Suitable for automatic placement equipment.
- Suitable for reflow and wave solder processes.
- Available on tape and reel (8mm Tape).
- Pb-free.
- The product itself will remain within RoHS compliant version.

**Descriptions**

The 67-31B series is available in soft orange, red, 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. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications

- Indicator and backlight for audio and video equipment.
- Indicator and backlight in office and family equipment.
- Flat backlight for LCD's, switches and symbols.
- Light pipe application.
- General use.

Device Selection Guide

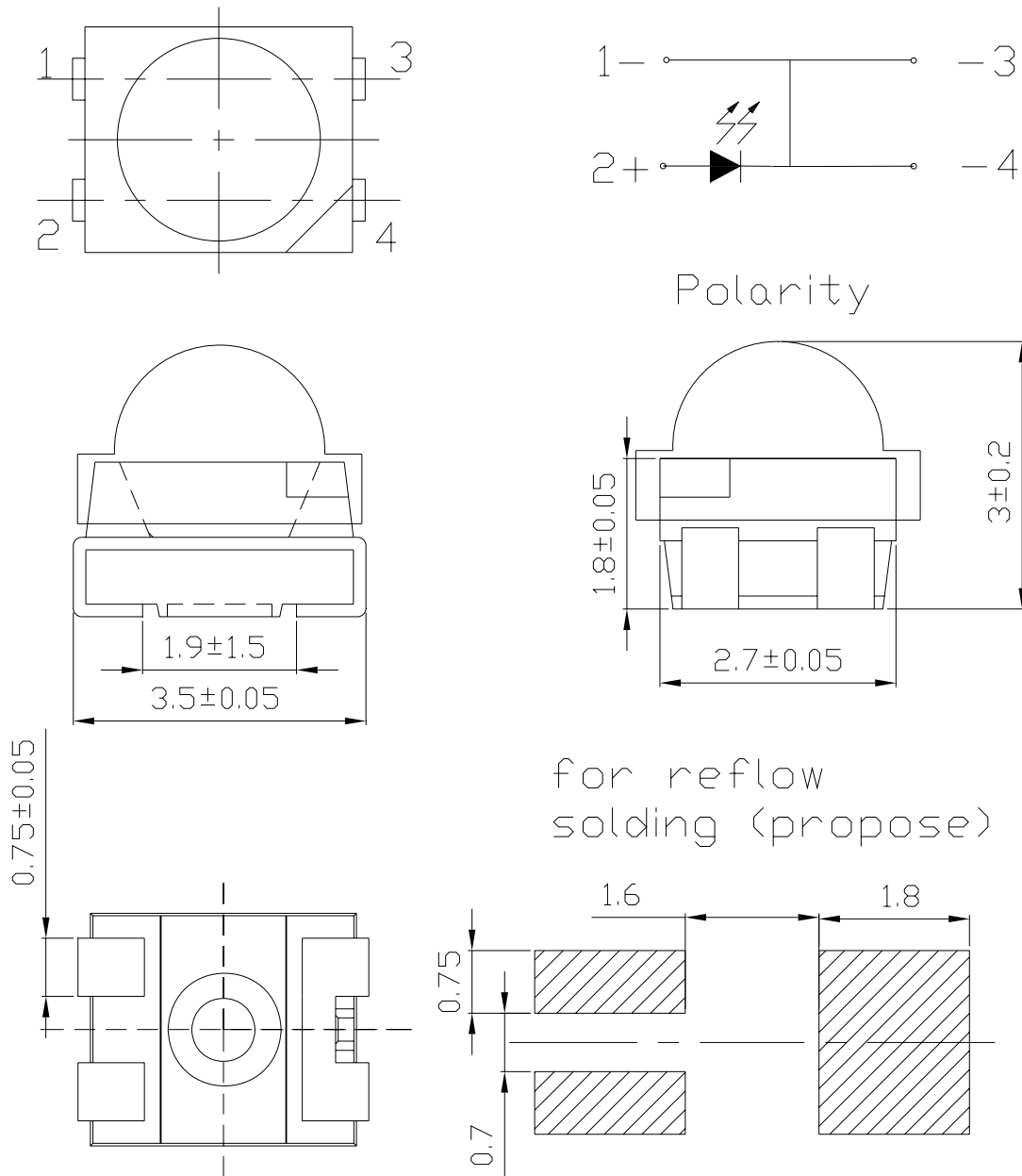
Chip	Emitted Color	Resin Color
Material		
InGaN	Blue	Water Clear

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Power Top View LEDs with Lens

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Package Dimensions



for reflow
soldering (propose)

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

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Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	30	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	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 ~ +90	$^{\circ}\text{C}$
Soldering Temperature	T_{sol}	Reflow Soldering : 260 $^{\circ}\text{C}$ for 10 sec. Hand Soldering : 350 $^{\circ}\text{C}$ for 3 sec.	

Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_v	900	-----	2250	mcd	$I_F=30\text{mA}$
Viewing Angle	$2\theta_{1/2}$	-----	60	-----	deg	$I_F=30\text{mA}$
Peak Wavelength	λ_P	-----	468	-----	nm	$I_F=30\text{mA}$
Dominant Wavelength	λ_d	464.5	-----	476.5	nm	$I_F=30\text{mA}$
Spectrum Radiation Bandwidth	$\Delta\lambda$	-----	25	-----	nm	$I_F=30\text{mA}$
Forward Voltage	V_F	2.75	-----	3.95	V	$I_F=30\text{mA}$
Reverse Current	I_R	-----	-----	50	μA	$V_R=5\text{V}$

Notes:

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

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Bin Range of Luminous Intensity

Bin	Min.	Max.	Unit	Condition
V2	900	1120	mcd	I _F =30mA
W1	1120	1420		
W2	1420	1800		
X1	1800	2250		

Bin Range of Dominant Wavelengths

Group	Bin	Min.	Max.	Unit	Condition
A	A9	464.5	467.5	nm	I _F =30mA
	A10	467.5	470.5		
	A11	470.5	473.5		
	A12	473.5	476.5		

Bin Range of Forward Voltage

Group	Bin	Min.	Max.	Unit	Condition
M	5	2.75	3.05	V	I _F =30mA
	6	3.05	3.35		
	7	3.35	3.65		
	8	3.65	3.95		

Notes:

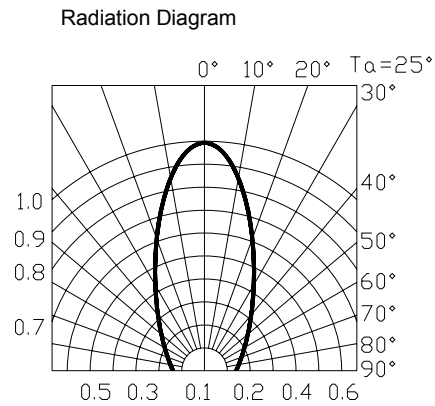
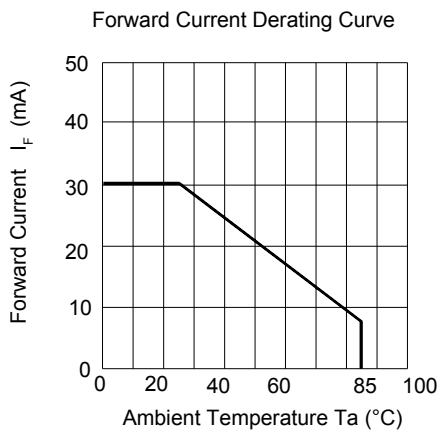
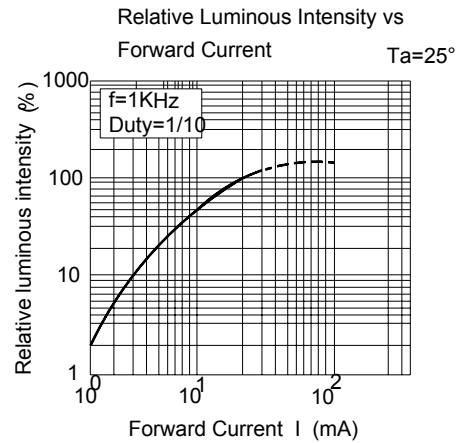
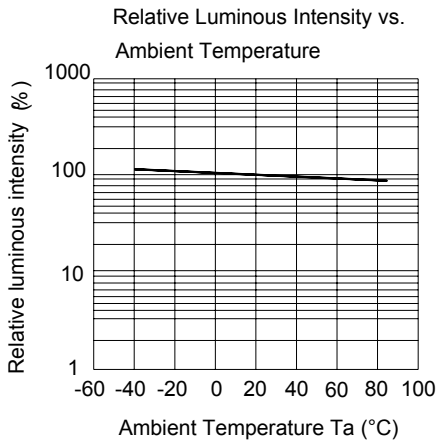
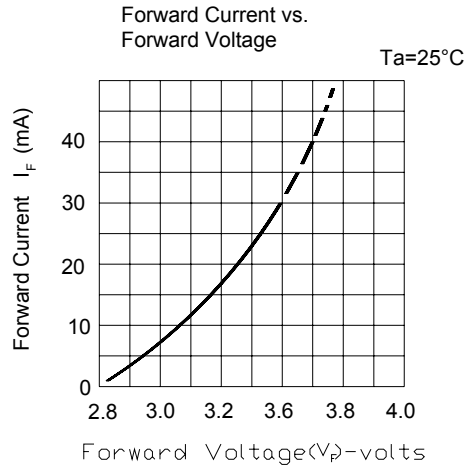
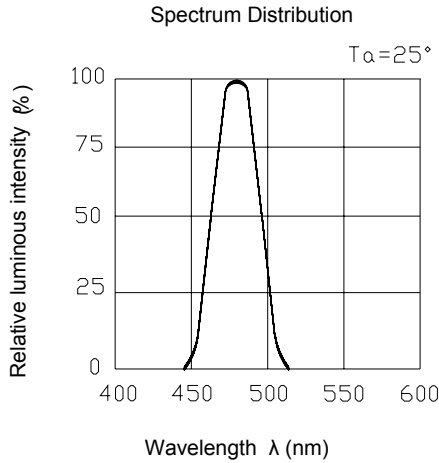
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- 2.Tolerance of Dominant Wavelength : $\pm 1\text{nm}$
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Typical Electro-Optical Characteristic Curves





LIGHTING FOREVER

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Label Explanation

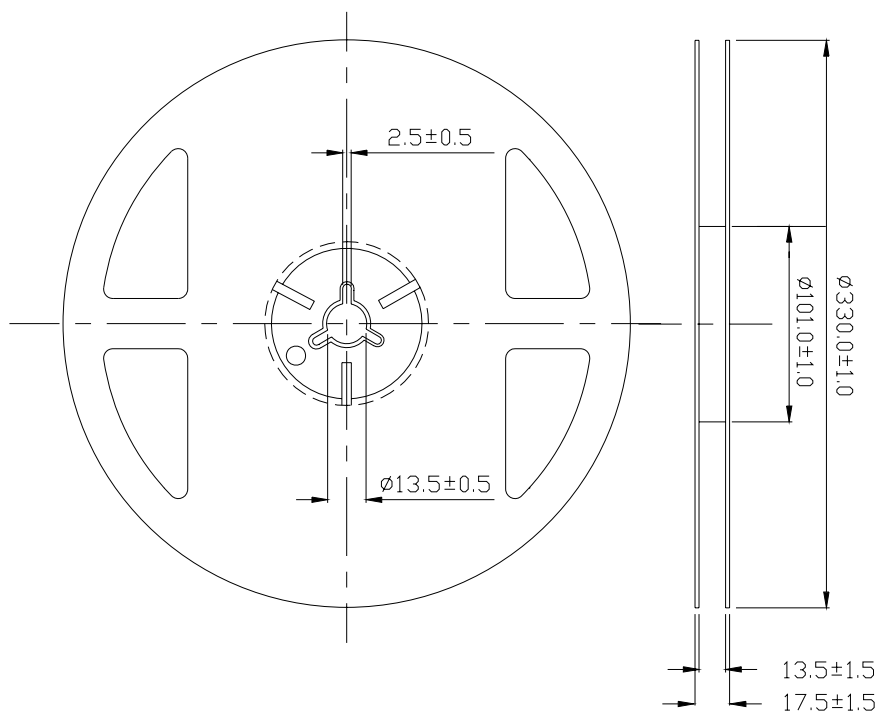
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank



Reel Dimensions



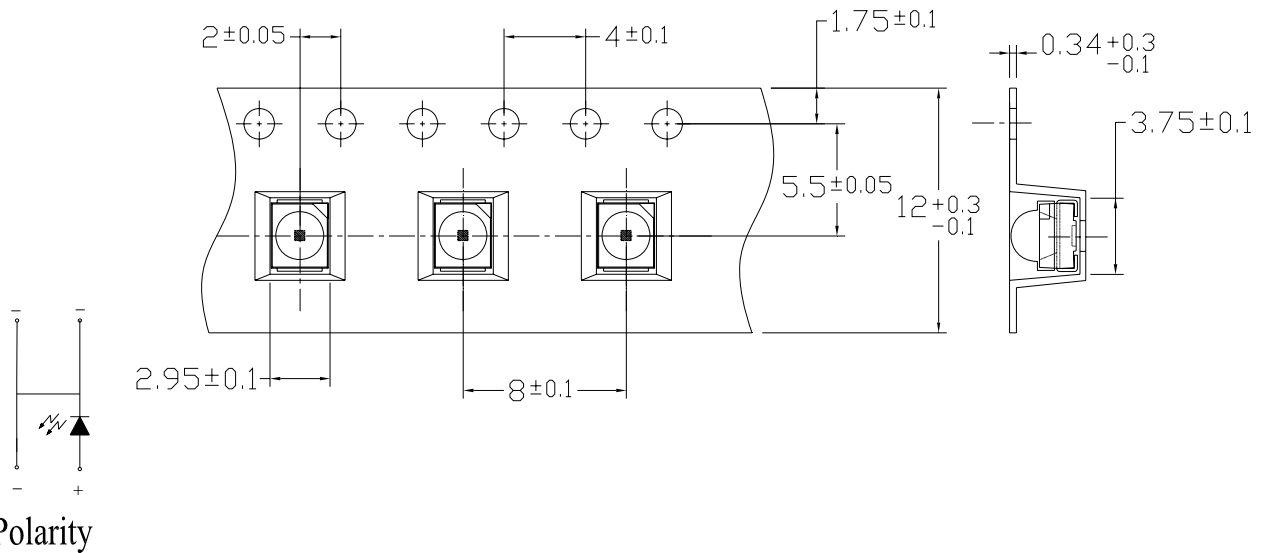
Note: The tolerances unless mentioned is ± 0.1 mm, Unit = mm

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Power Top View LEDs with Lens

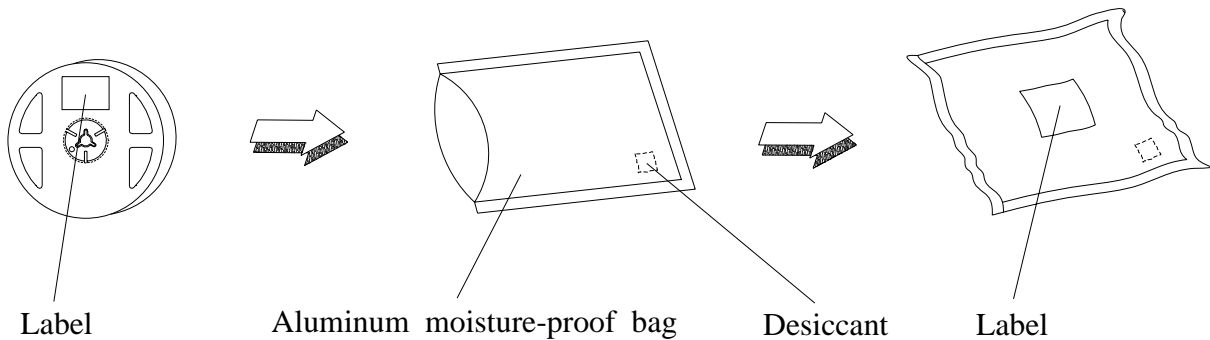
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Carrier Tape Dimensions: Loaded Quantity 500 pcs Per Reel.



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

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 Soldering	Temp. : 260°C±5°C Min. 5 sec.	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 = 30 mA / 25°C	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C/85%RH	1000 Hrs.	22 PCS.	0/1

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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.

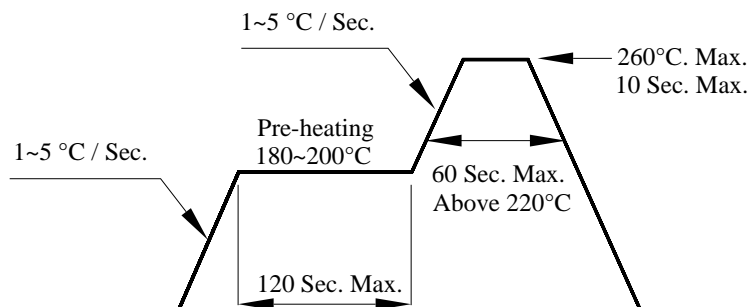
If unused LEDs remain, it should be stored in moisture proof packages.

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.

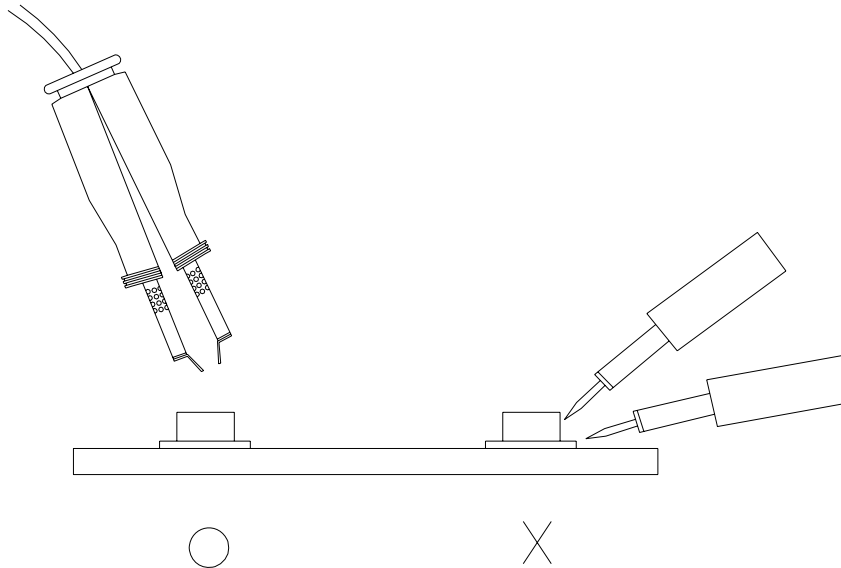
4. Soldering Iron

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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