

Technical Data Sheet

Surface Mount Device (Power Top View LED)

67-31A/B7C-AT1U2MZ3/2T

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 67-31A series is available in soft orange, red 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

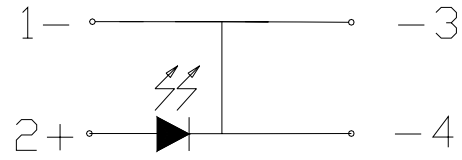
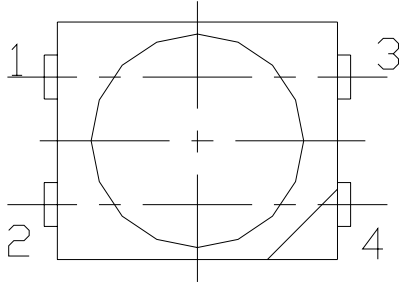
- Indicator and backlight for audio and video equipment.
- Indicator and backlight in office and family equipment.
- Flat backlight for LCD's, switches and symbols.
- Light pipe application.
- General use.

Device Selection Guide

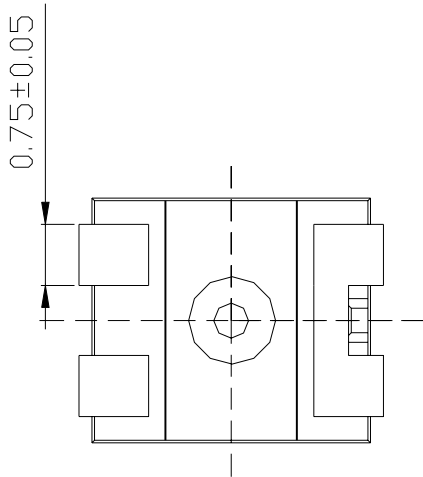
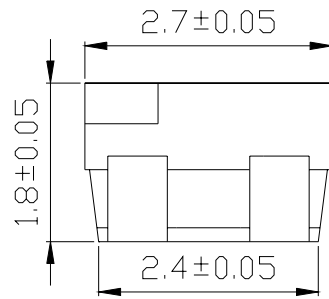
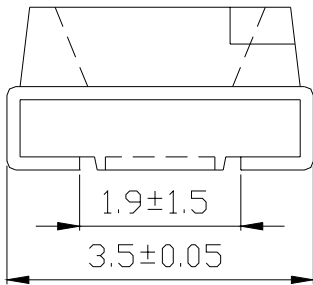
Chip		Lens Color
Material	Emitted Color	
InGaN	Blue	Water Clear

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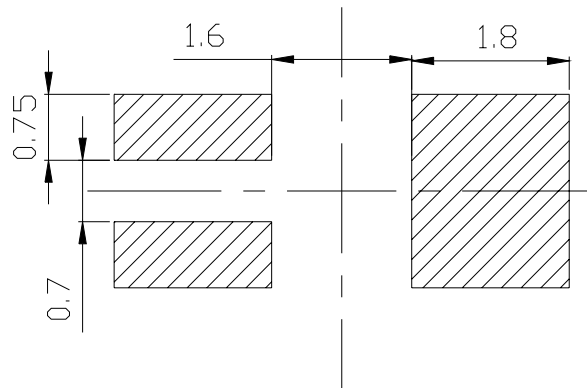
Package Dimensions



Polarity



for reflow
soldering (propose)



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

67-31A/B7C-AT1U2MZ3/2T**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
Operating Temperature	T_{opr}	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~ +100	$^\circ\text{C}$
Electrostatic Discharge(HBM)	ESD	150	V
Power Dissipation	P_d	110	mW
Peak Forward Current (Duty 1/10 @ 1KHz)	I_{FP}	100	mA
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	285	-----	715	mcd	$I_F=30\text{mA}$
Viewing Angle	$2\theta_{1/2}$	-----	120	-----	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	$\Delta\lambda$	-----	35	-----	nm	$I_F=30\text{mA}$
Forward Voltage	V_F	2.75	-----	3.95	V	$I_F=30\text{mA}$
Reverse Current	I_R	-----	-----	10	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 $\pm 0.1\text{V}$

67-31A/B7C-AT1U2MZ3/2T**Bin Range Of Dominant Wavelengths**

Group	Bin Code	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 Luminous Intensity

Bin	Min	Max	Unit	Condition
T1	285	360	mcd	I _F =30mA
T2	360	450		
U1	450	565		
U2	565	715		

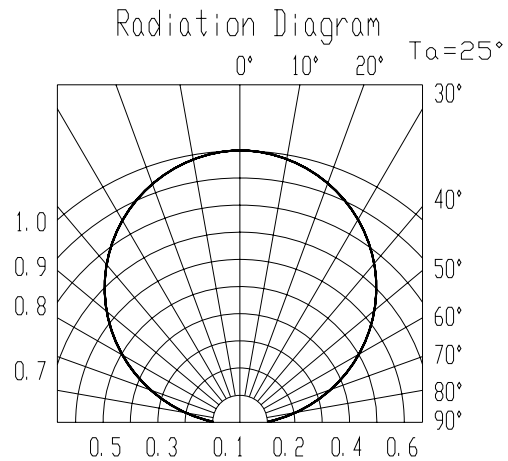
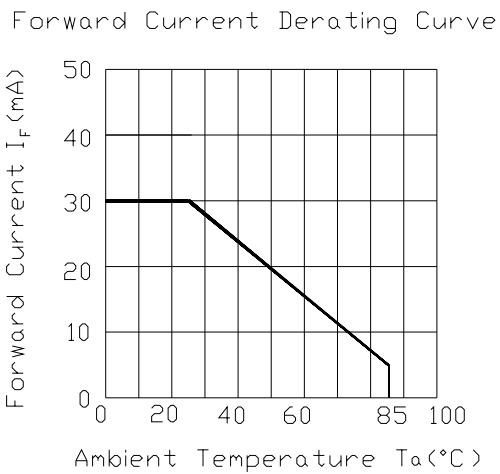
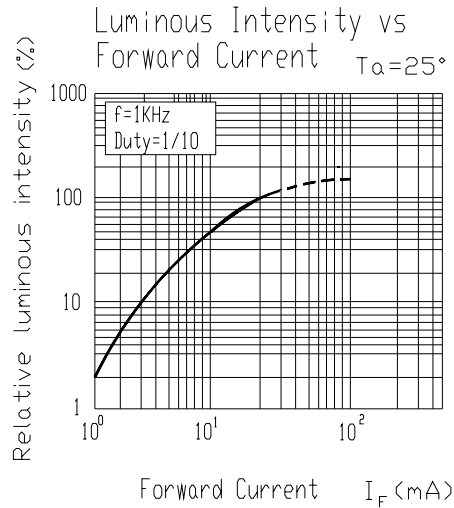
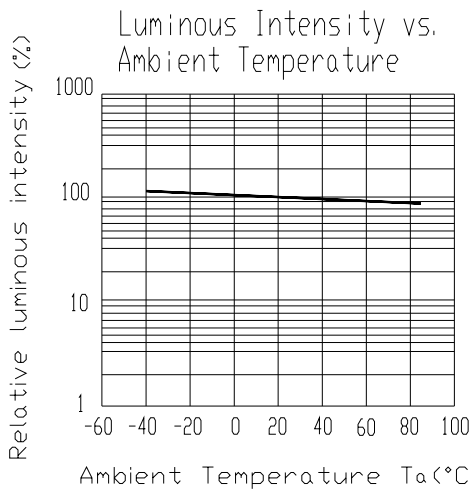
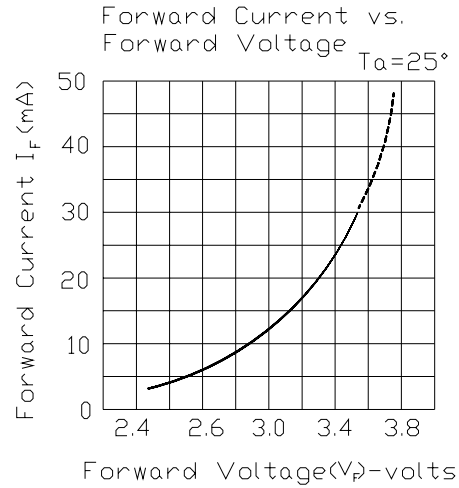
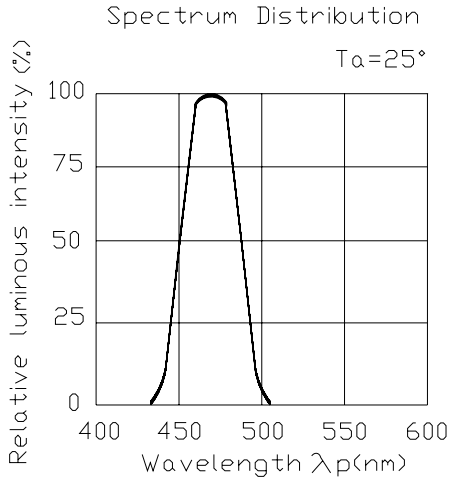
Bin Range Of Forward Voltage

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:

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

Typical Electro-Optical Characteristic Curves



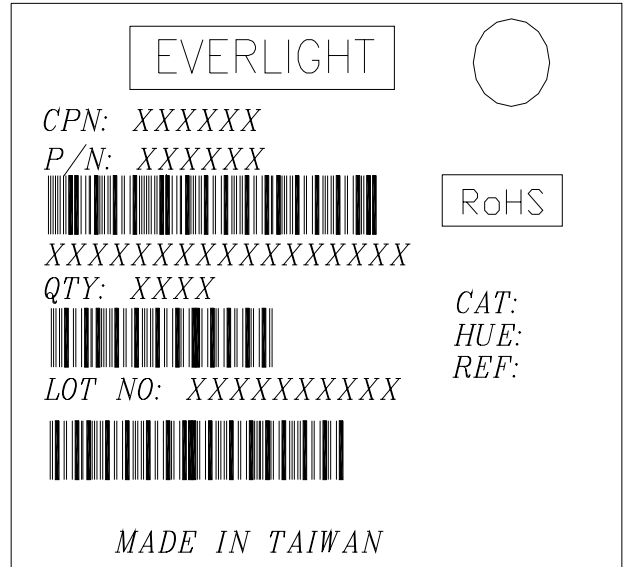
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Label explanation

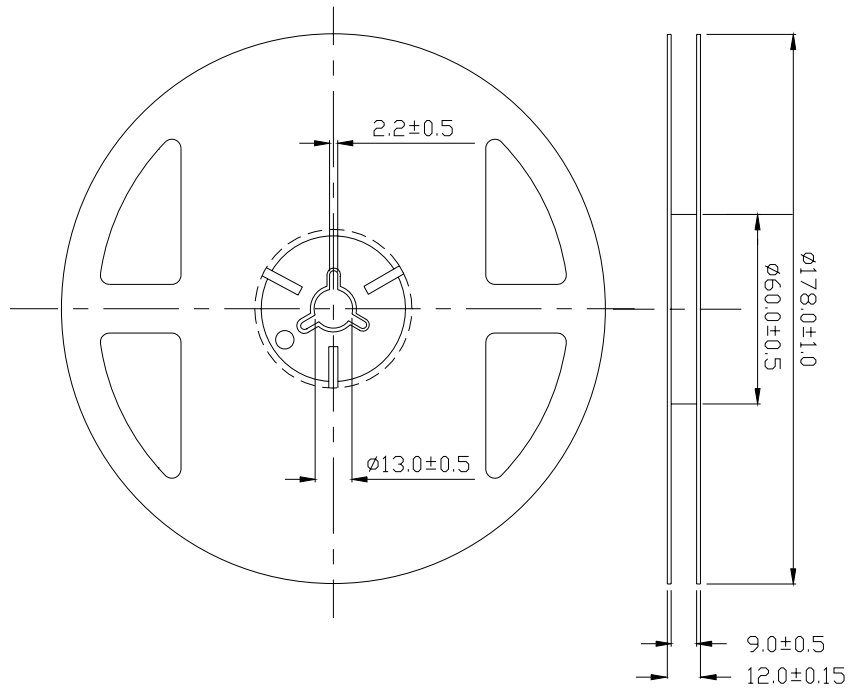
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

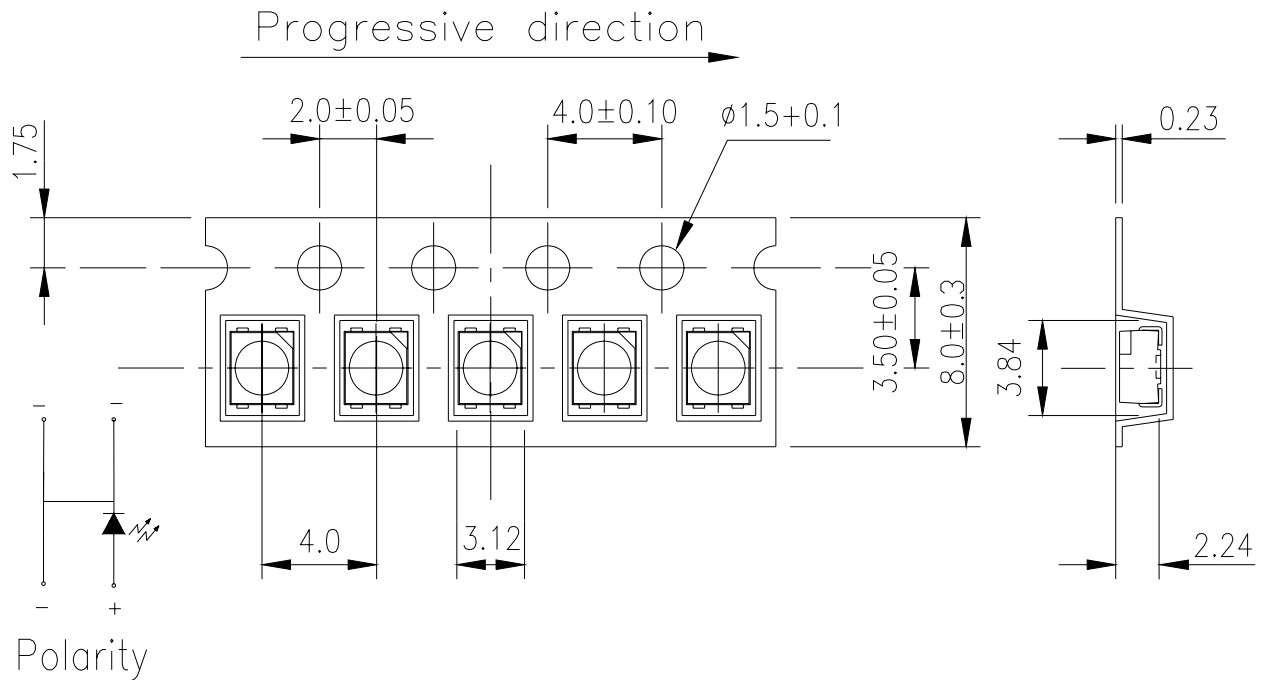


Reel Dimensions



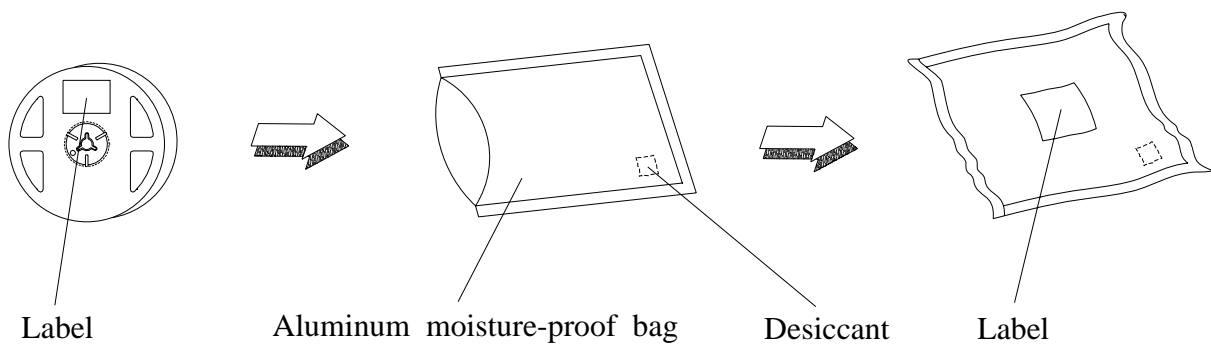
Note: The tolerances unless mentioned is ± 0.1 mm, Unit = mm

Carrier Tape Dimensions; Loaded quantity per reel 2000 PCS/reel



Note: Tolerances Unless Dimension $\pm 0.1\text{mm}$ Unit = mm

Moisture Resistant Packaging



67-31A/B7C-AT1U2MZ3/2T

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 = 20 mA / 25°C	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C/85%RH	1000 Hrs.	22 PCS.	0/1

67-31A/B7C-AT1U2MZ3/2T**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 deg C or less and 60% RH or less.

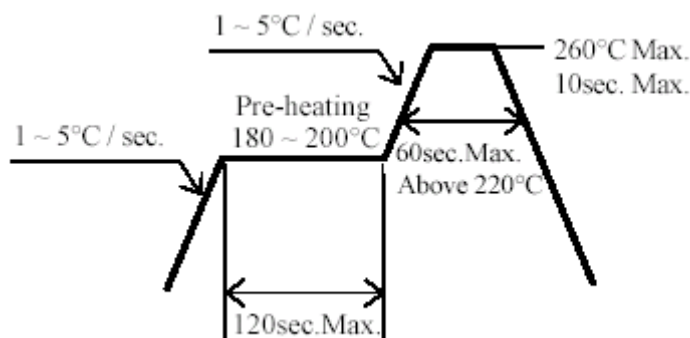
If unused LEDs remain, it should be stored in moisture proof packages.

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.

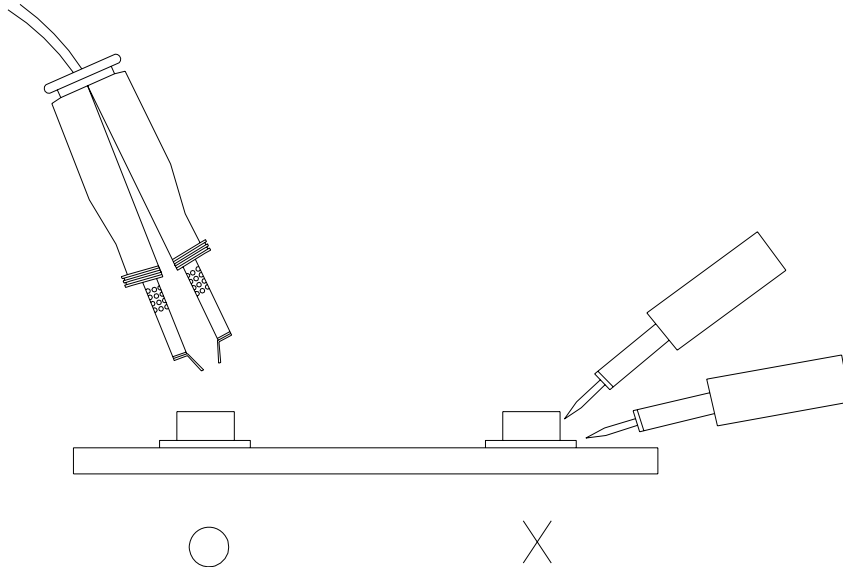
3.4 After soldering, do not warp the circuit board.

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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