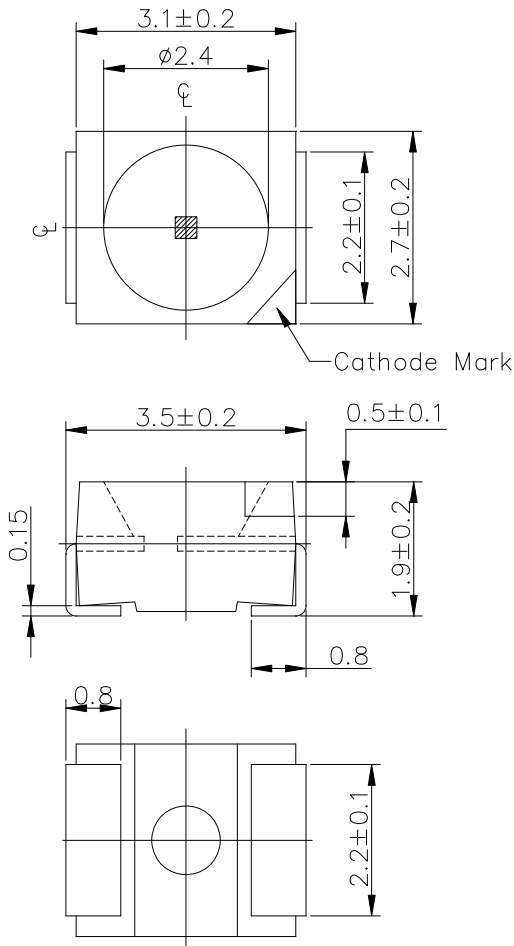


# **A-BRIGHT** A-BRIGHT INDUSTRIAL CO., LTD. SURFACE MOUNT CHIP LED LAMPS

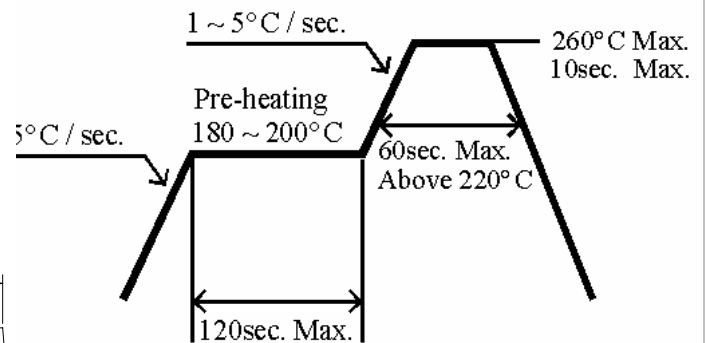
## Top View LEDs

Part Number: 67-21SURC

## Package outlines & Re-flow Profile

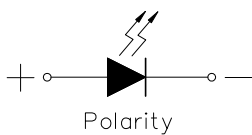


### Reflow Temp/Time

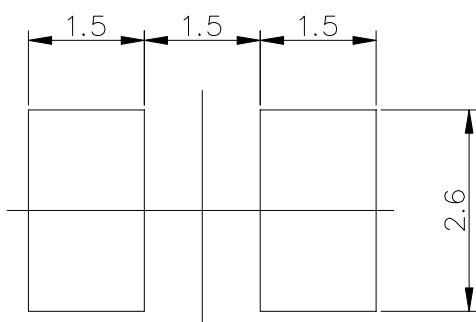


### Soldering iron

Basic spec is  $\leq 5\text{sec}$  when  $260^\circ\text{C}$ . If temperature is higher, time should be shorter ( $+10^\circ\text{C} \rightarrow -1\text{sec}$ ). Power dissipation of iron should be smaller than  $15\text{W}$ , and temperatures should be controllable. Surface temperature of the device should be under  $230^\circ\text{C}$ .



For Reflow Soldering



ITEM	MATERIALS
Resin (mold)	Epoxy
Lens color	Water Clear
Printed circuit board	BT
Material	AlGaInP
Emitted color	Hyper Red

### NOTES:

- All dimensions are in millimeters (inches).
- Tolerances are  $\pm 0.1\text{mm}$  ( $0.004\text{inch}$ ) unless otherwise noted.
- Polarity referring onto the cathode mark is reversed on the red.

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**ELECTRO-OPTICAL CHARACTERISTICS** (T<sub>A</sub>=25°C)

Parameter	Test Condition	Symbol	Value			Unit
			MIN.	TYP.	MAX.	
Viewing angle at 50% I <sub>v</sub>	I <sub>F</sub> =20mA	2 θ 1/2	120			Deg
Forward voltage	I <sub>F</sub> =20mA	V <sub>F</sub>	—	2.0	2.4	v
Luminous intensity	I <sub>F</sub> =20mA	I <sub>v</sub>	—	95	—	mcd
Peak Wavelength	I <sub>F</sub> =20mA	λ <sub>p</sub>	—	630	—	nm
Dominant Wavelength	I <sub>F</sub> =20mA	λ <sub>d</sub>	—	625	—	nm
Spectral Line Half-Width	I <sub>F</sub> =20mA	Δλ	—	20	—	nm
Reverse current	V <sub>R</sub> =5V	I <sub>R</sub>	10			μA
Electrostatic Discharge		ESD	2000			mA

**Absolute maximum ratings** (T<sub>A</sub>=25°C)

Parameter	Symbol	Value	Unit
Forward current	I <sub>F</sub>	25	mA
Peak pulsing current (1/10 duty f=1kHz)	I <sub>FP</sub>	60	mA
Power Dissipation	P <sub>D</sub>	60	mW
Reverse voltage	V <sub>R</sub>	5	v
Operating temperature range	Top	-40 ~+85	°C
Storage temperature range	Tstg	-40 ~+100	°C

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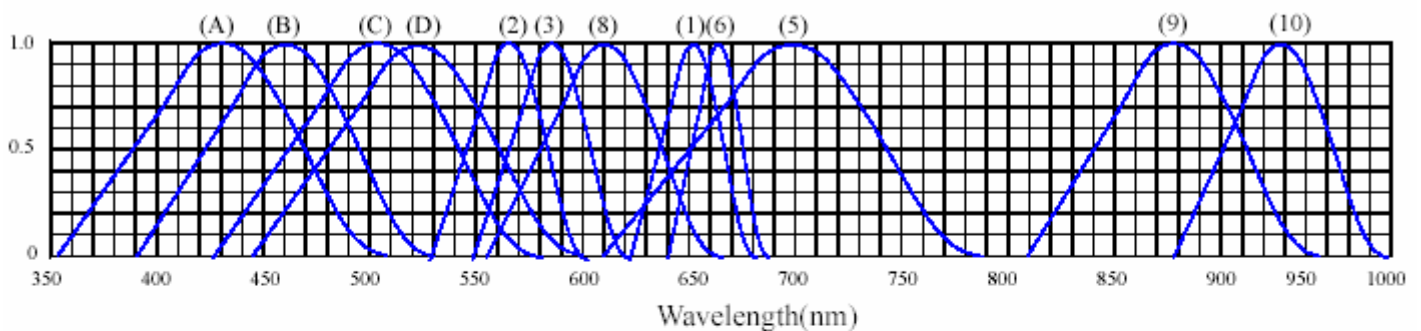
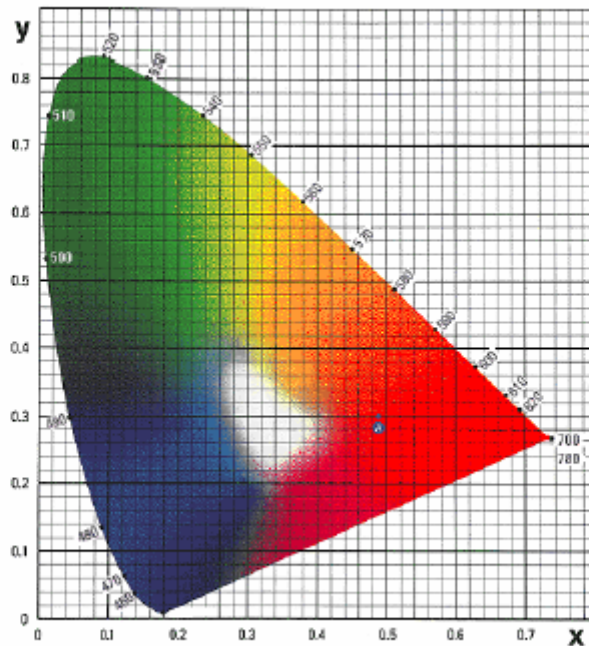
**Test items and results of reliability**

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Reflow	TEMP : 240±5°C Min. 5sec.	6 MIN.	22 PCS	0/1
2	Temperature Cycle	H : +100°C 15min ∫ 5min L : -40°C 15min	300 CYCLES	22 PCS	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10set 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 <sub>F</sub> =20mA	1000 HRS	22 PCS	0/1
7	High Temperature / High Humidity	85°C / 85%RH	1000 HRS	22 PCS	0/1

\* Refer to reliability test standard specification for in this line.

**SURFACE MOUNT CHIP LED LAMPS**

Part Number: 67-21SURC

**Typical Electro-Optical Characteristics**◆ **TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES**RELATIVE INTENSITY VS. WAVELENGTH( $\lambda_p$ )

- (1) GaAsP/GaAs 655nm/Red
- (2) GaP 568nm/ Yellow Green
- (3) GaAsP/GaP 585nm/Yellow
- (4) GaAsP/GaP 635nm/Orange & Hi-Eff Red
- (5) GaP 700nm/Bright Red
- (6) GaAlAs/GaAs 660nm/Super Red
- (8) GaAsP/GaP 610nm/Super Red

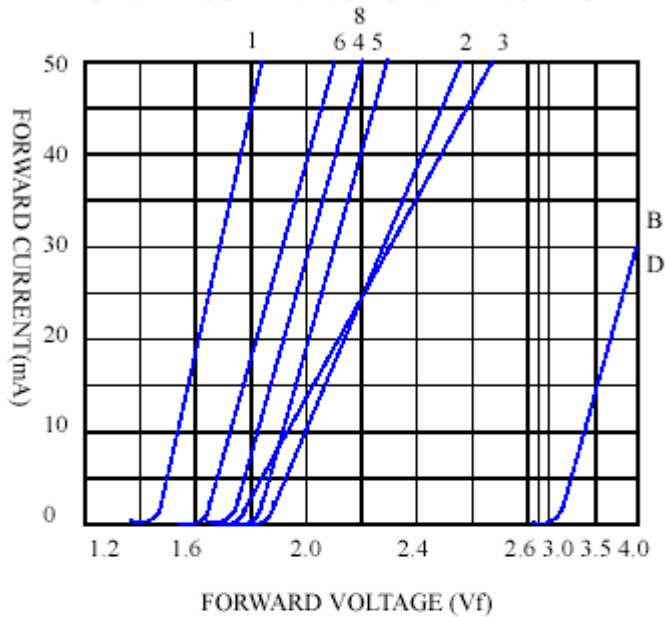
- (9)- GaAlAs 880nm
- (10)-GaAs/GaAs&GaAlAs/GaAs 940nm
- (A)- GaN 430nm/Blue
- (B)- InGaN 470nm/Blue
- (C)- InGaN 502nm/Ultra Green
- (D)- InGaN 523nm/Ultra Green

**SURFACE MOUNT CHIP LED LAMPS**

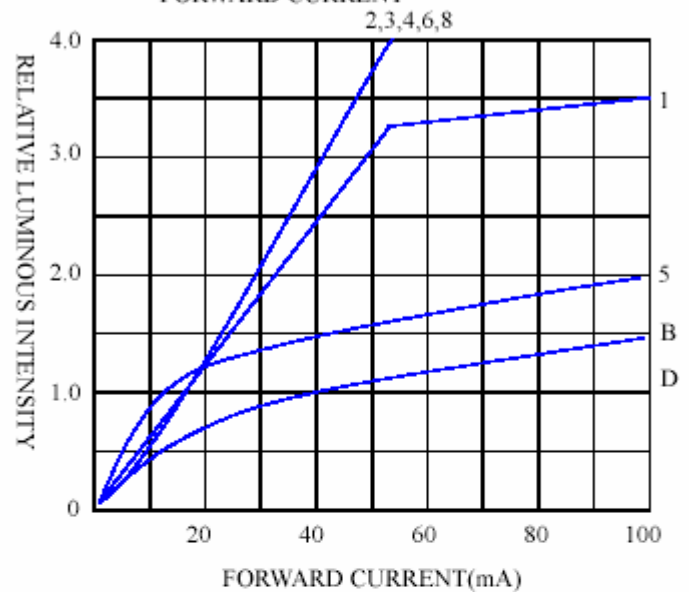
Part Number: 67-21SURC

**Typical Electro-Optical Characteristics**◆ **CHARACTERISTICS DIAGRAMS**

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

