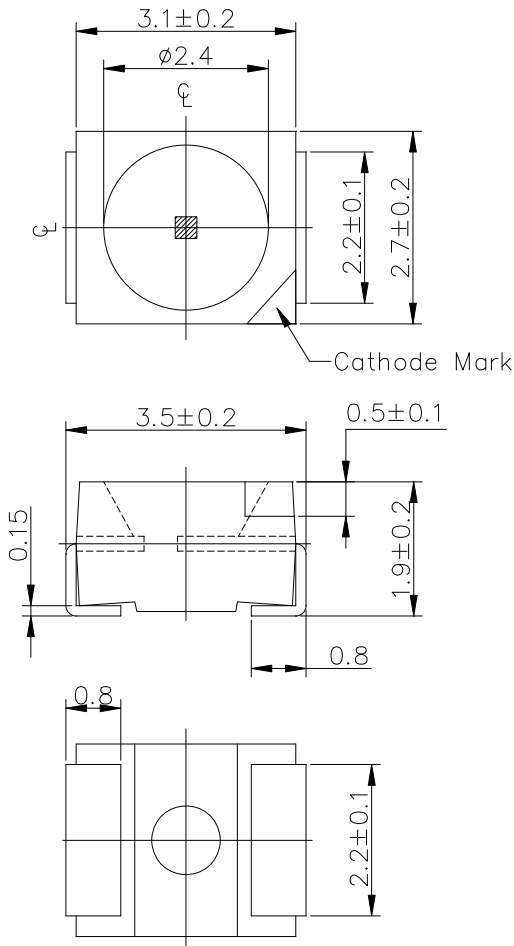


A-BRIGHT A-BRIGHT INDUSTRIAL CO., LTD. SURFACE MOUNT CHIP LED LAMPS

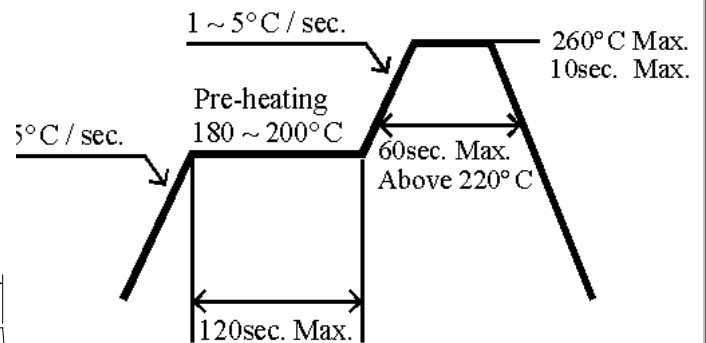
Top View LEDs

Part Number: 67-21SURC

Package outlines & Re-flow Profile

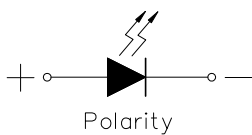


Reflow Temp/Time

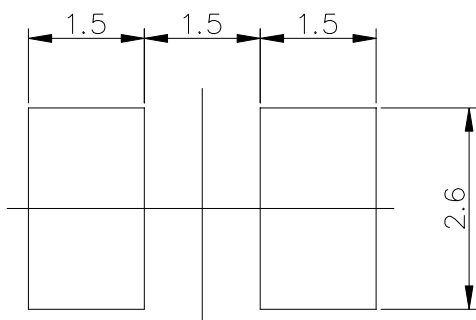


Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°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 15W , and temperatures should be controllable. Surface temperature of the device should be under 230°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 $\pm 0.1\text{mm}$ (0.004inch) unless otherwise noted.
- Polarity referring onto the cathode mark is reversed on the red.

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SURFACE MOUNT CHIP LED LAMPS

Part Number: 67-21SURC

ELECTRO-OPTICAL CHARACTERISTICS (T_A=25°C)

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

Absolute maximum ratings (T_A=25°C)

| Parameter | Symbol | Value | Unit |
|---|-----------------|------------|------|
| Forward current | I _F | 25 | mA |
| Peak pulsing current (1/10 duty f=1kHz) | I _{FP} | 60 | mA |
| Power Dissipation | P _D | 60 | mW |
| Reverse voltage | V _R | 5 | V |
| Operating temperature range | Top | -40 ~ +85 | °C |
| Storage temperature range | Tstg | -40 ~ +100 | °C |

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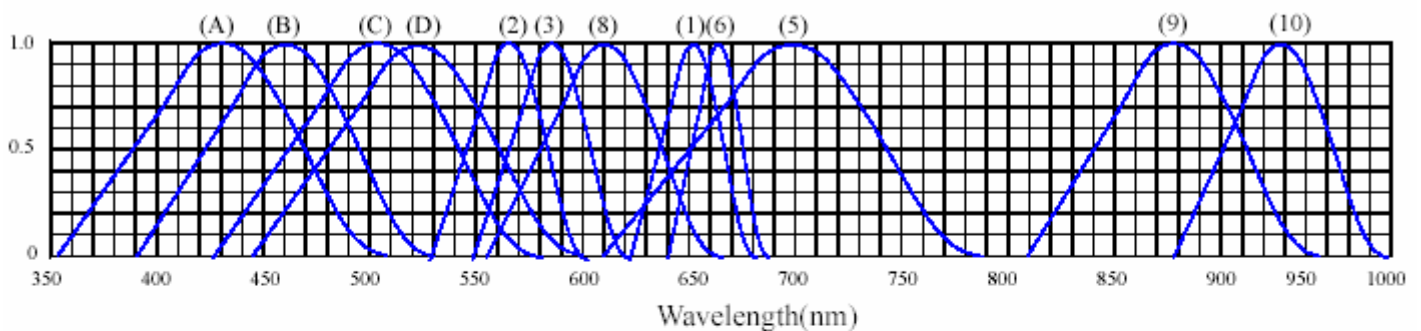
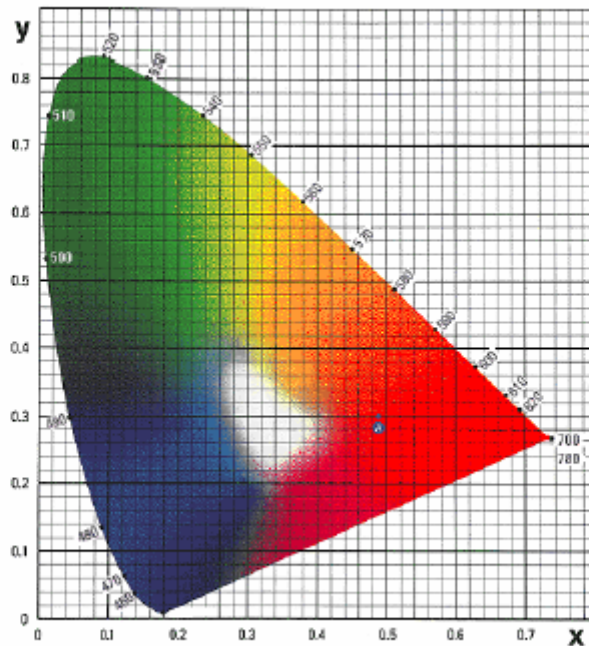
Test items and results of reliability

| 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 _F =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(λ_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

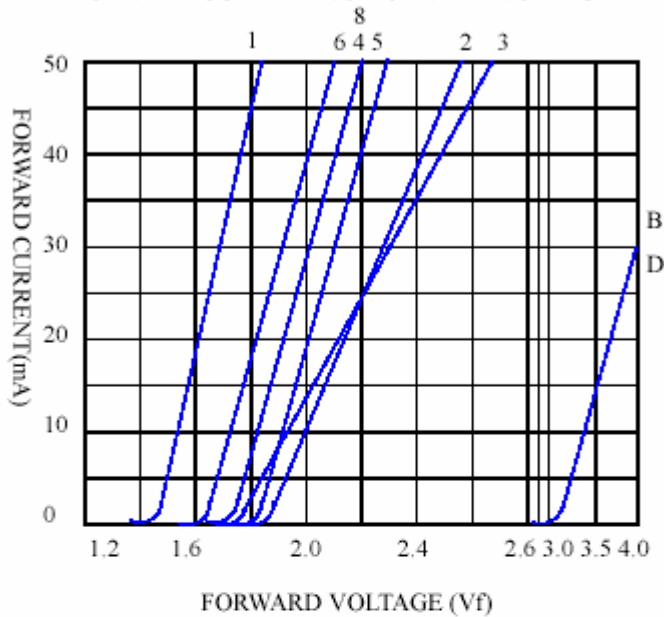
- (9)- GaAlAs 880nm
- (10)-GaAs/GaAs&GaAlAs/GaAs 940nm
- (A)- GaN 430nm/Blue
- (B)- InGaN 470nm/Blue
- (C)- InGaN 502nm/Ultra Green
- (D)- InGaN 523nm/Ultra Green

SURFACE MOUNT CHIP LED LAMPS

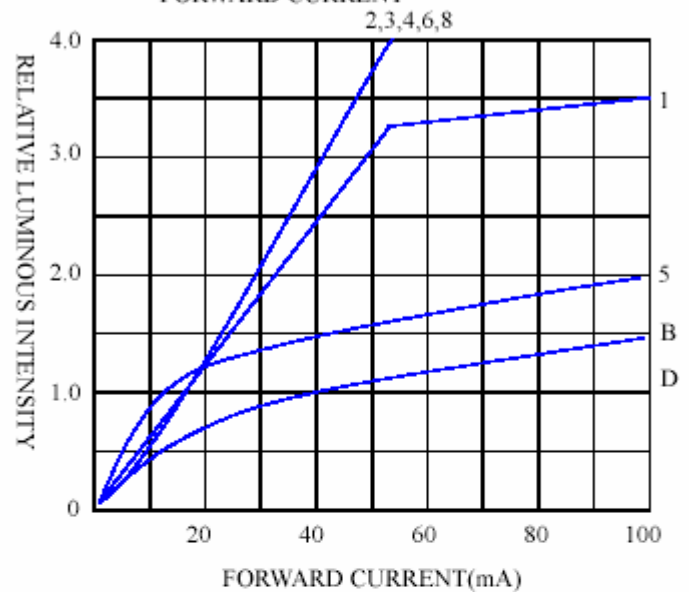
Part Number: 67-21SURC

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

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

