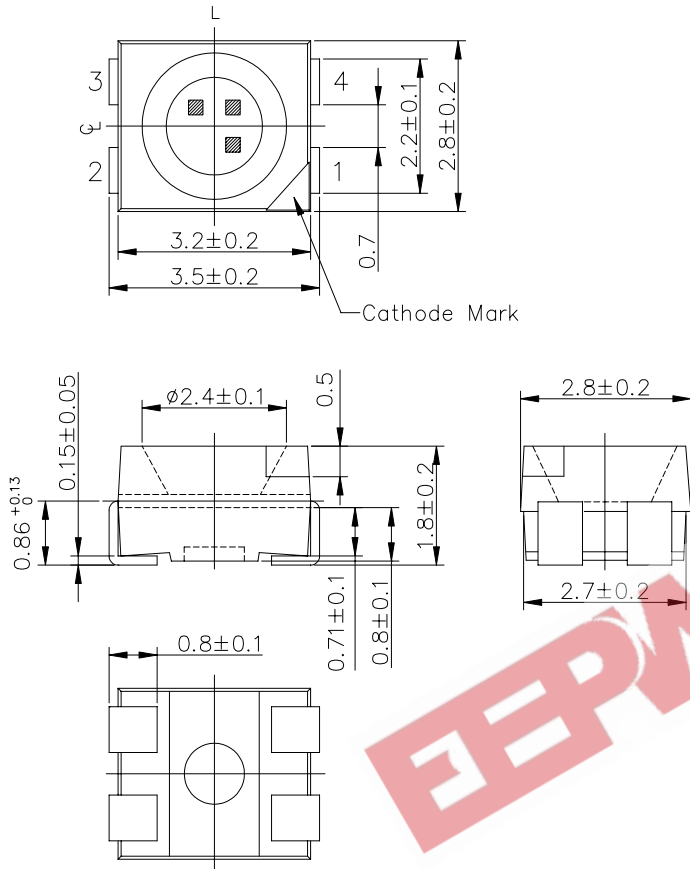


A-BRIGHT A-BRIGHT INDUSTRIAL CO., LTD. SURFACE MOUNT CHIP LED LAMPS

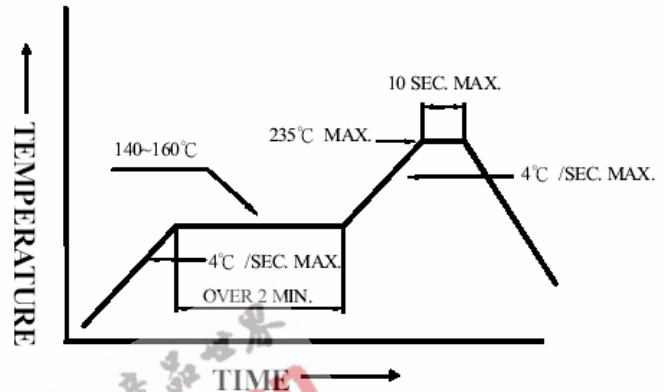
Top View With Full Color LEDs

Part Number: 67-23SURSUGSUBC

Package outlines & Re-flow Profile

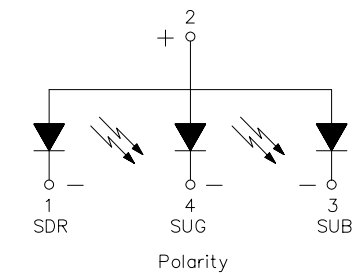


Reflow Temp/Time

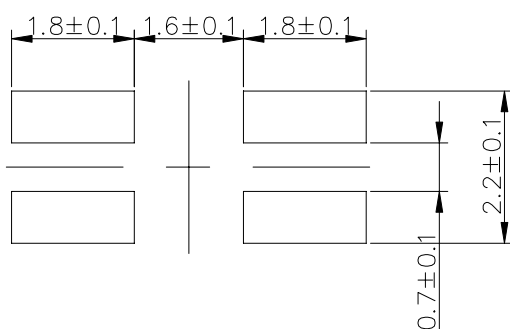


Soldering iron

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 |
| Dice | AlGaInP |
| | InGaN |
| | InGaN |
| Emitted color | Super Amber |
| | Super Green |
| | Super Blue |

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.

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

Part Number: 67-23SURSUGSUBC

ELECTRO-OPTICAL CHARACTERISTICS

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

| Parameter | Emitted Color | Test Condition | Symbol | Value | | | Unit |
|-----------------------------------------|---------------|-------------------|-----------------|-------|------|------|------|
| | | | | MIN. | TYP. | MAX. | |
| Forward voltage | R | $I_F=20\text{mA}$ | V_F | - | 2.0 | 2.4 | V |
| | G | | | - | 3.5 | 4.3 | |
| | B | | | - | 3.5 | 4.3 | |
| Luminous intensity | R | $I_F=20\text{mA}$ | I_v | 100 | 160 | - | mcd |
| | G | | | 190 | 280 | - | |
| | B | | | 45 | 70 | - | |
| Wavelength | R | $I_F=20\text{mA}$ | λ_p | - | 632 | - | nm |
| | G | | | - | 530 | - | |
| | B | | | - | 470 | - | |
| | R | | λ_d | - | 625 | - | |
| | G | | | - | 525 | - | |
| | B | | | - | 470 | - | |
| Spectral Line Half-Width | R | $I_F=20\text{mA}$ | $\Delta\lambda$ | 20 | | | nm |
| | G | | | 30 | | | |
| | B | | | 30 | | | |
| Peak pulsing current (1/10 duty f=1kHz) | R | $I_F=20\text{mA}$ | I_{FP} | 100 | | | mA |
| | G | | | 100 | | | |
| | B | | | 100 | | | |
| Power Dissipation | R | $I_F=20\text{mA}$ | P_D | 120 | | | mW |
| | G | | | 120 | | | |
| | B | | | 120 | | | |

Absolute maximum ratings

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

| Parameter | Symbol | Value | Unit |
|-----------------------------|-----------------|-----------|--------------------|
| Viewing angle at 50% I_v | $2\theta_{1/2}$ | 120 | Deg |
| Forward current | I_F | 30 | mA |
| Reverse voltage | V_R | 5 | V |
| Reverse current | I_R | 100 | μA |
| Operating temperature range | Top | -25 ~ +80 | $^{\circ}\text{C}$ |
| Storage temperature range | Tstg | -30 ~ +85 | $^{\circ}\text{C}$ |

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

Part Number: 67-23SURSUGSUBC

Test items and results of reliability

| Classification | Test Item | Reference Standard | Test Conditions | Result |
|--------------------|----------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------|
| Endurance Test | Operation Life | MIL-STD-750:1026 MIL-STD-883:1005 JIS C 7021 :B-1 | Connect with a power $I_f=20\text{mA}$ T_a =Under room temperature Test time=1,000hrs | 0/20 |
| | High Temperature High Humidity Storage | MIL-STD-202:103B JIS C 7021 :B-11 | $T_a=+65^\circ\text{C} \pm 5^\circ\text{C}$ RH=90%-95% Test time=240hrs | 0/20 |
| | High Temperature Storage | MIL-STD-883:1008 JIS C 7021 :B-10 | High $T_a=+85^\circ\text{C} \pm 5^\circ\text{C}$ Test time=1,000hrs | 0/20 |
| | Low Temperature Storage | JIS-C-7021 :B-12 | Low $T_a=-35^\circ\text{C} \pm 5^\circ\text{C}$ Test time=1,000hrs | 0/20 |
| Environmental Test | Temperature Cycling | MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS C 7021 :A-4 | $-35^\circ\text{C} \sim +25^\circ\text{C} \sim +85^\circ\text{C} \sim +25^\circ\text{C}$ 60min 20min 60min 20min Test Time=5cycle | 0/20 |
| | Thermal Shock | MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011 | $-35^\circ\text{C} \pm 5^\circ\text{C} \sim +85^\circ\text{C} \pm 5^\circ\text{C}$ 20min 20min Test Time=10cycle | 0/20 |
| | Solder Resistance | MIL-STD-202:201A MIL-STD-750:2031 JIS C 7021 :A-1 | Preheating : 140°C -160°C ,within 2 minutes. Operation heating : 235°C(Max.), within 10seconds. (Max.) | 0/20 |

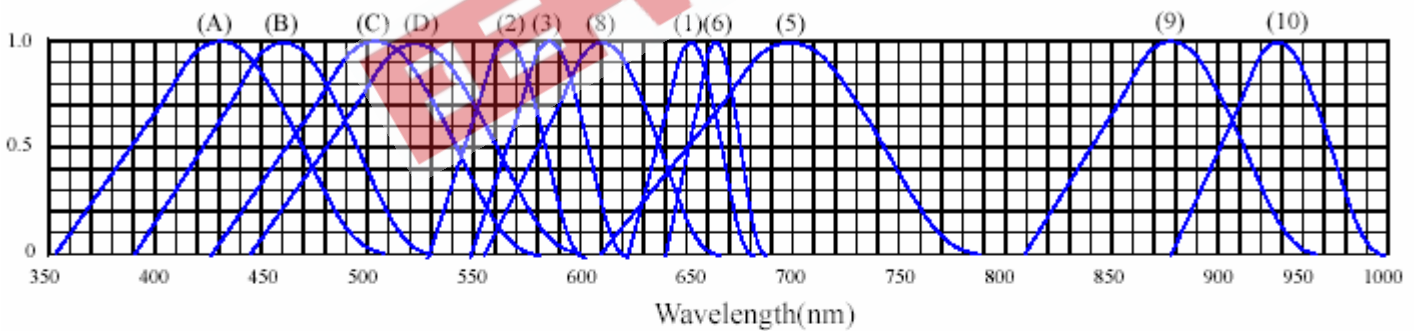
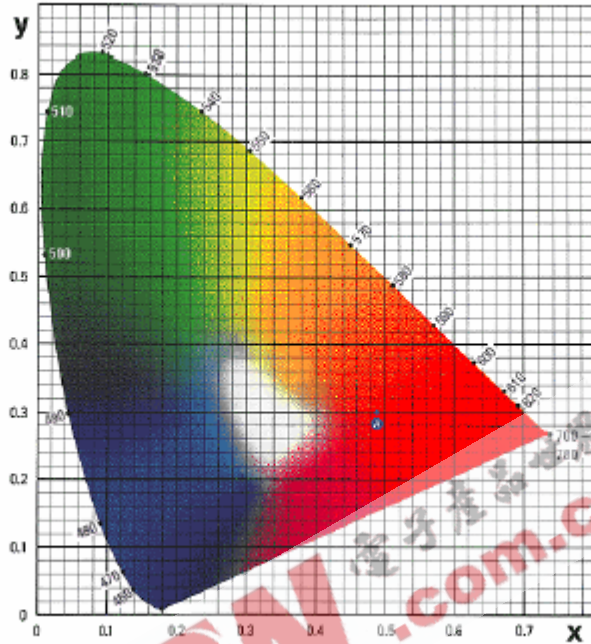
* Refer to reliability test standard specification for in this line.

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

Part Number: 67-23SURSUGSUBC

Typical Electro-Optical Characteristic Curves

◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



- | | |
|-----------------------------------------|----------------------------------|
| (1) GaAsP/GaAs 655nm/Red | (9)- GaAlAs 880nm |
| (2) GaP 568nm/ Yellow Green | (10)-GaAs/GaAs&GaAlAs/GaAs 940nm |
| (3) GaAsP/GaP 585nm/Yellow | (A)- GaN 430nm/Blue |
| (4) GaAsP/GaP 635nm/Orange & Hi-Eff Red | (B)- InGaN 470nm/Blue |
| (5) GaP 700nm/Bright Red | (C)- InGaN 502nm/Ultra Green |
| (6) GaAlAs/GaAs 660nm/Super Red | (D)- InGaN 523nm/Ultra Green |
| (8) GaAsP/GaP 610nm/Super Red | |

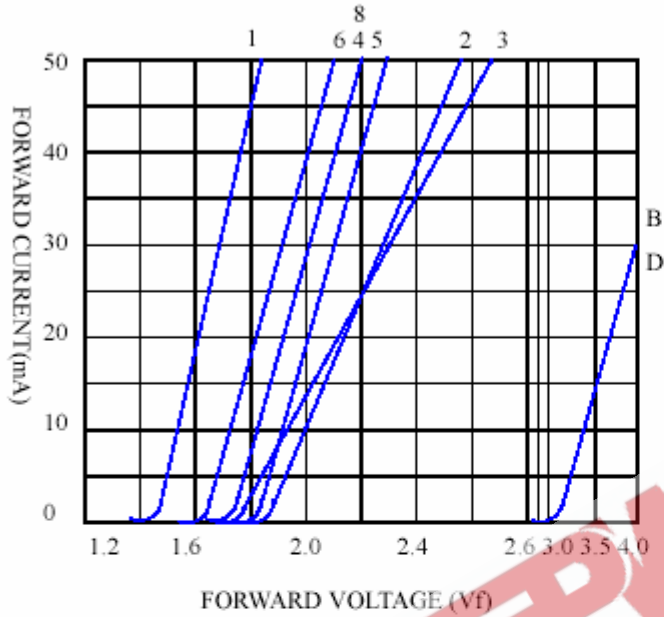
A-BRIGHT A-BRIGHT INDUSTRIAL CO., LTD. SURFACE MOUNT CHIP LED LAMPS

Part Number: 67-23SURSUGSUBC

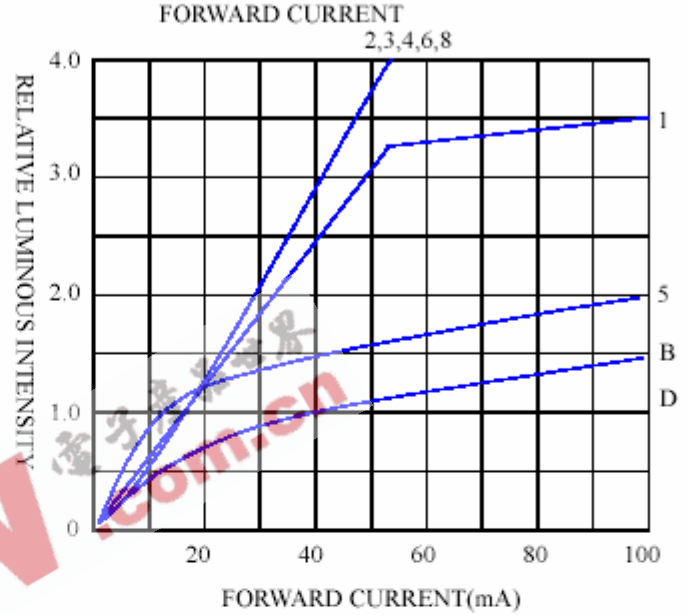
Typical Electro-Optical Characteristic Curves

◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

