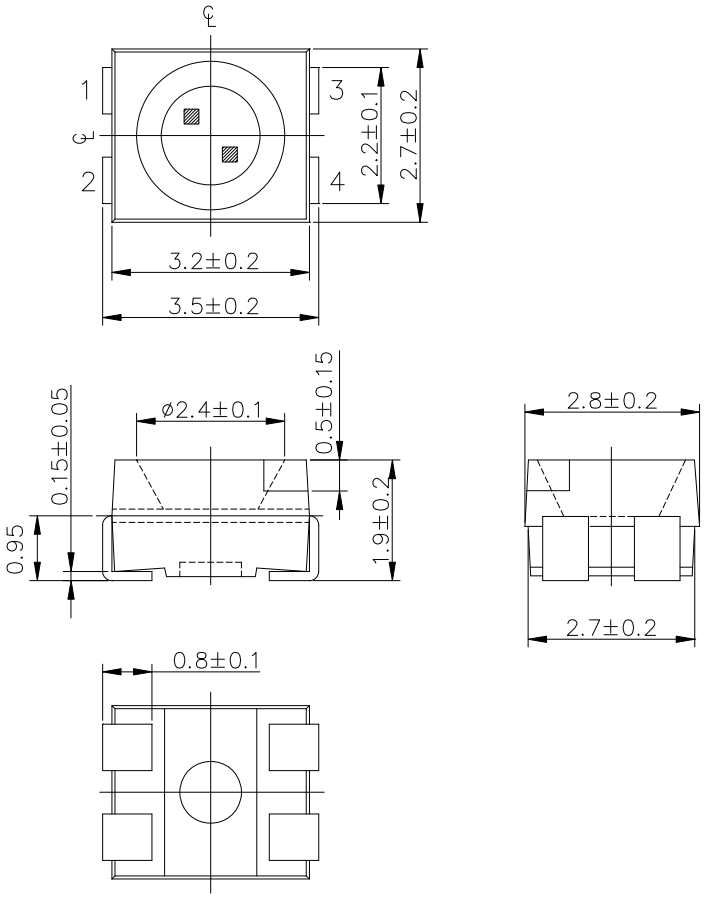
# A-BRIGHT INDUSTRIAL CO., LTD.

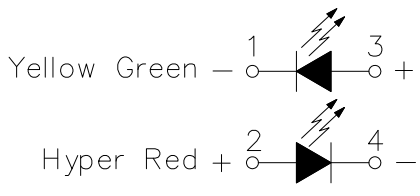
# SURFACE MOUNT CHIP LED LAMPS

## Top View LEDs With Bi-Color

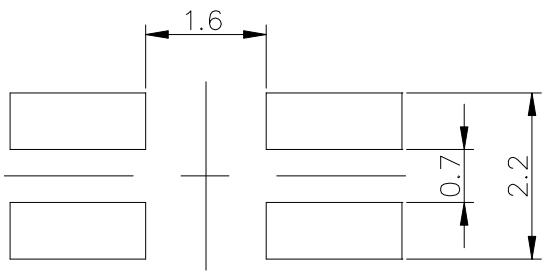
## Part Number: 67-22SURSYGC

## Package outlines & Re-flow Profile

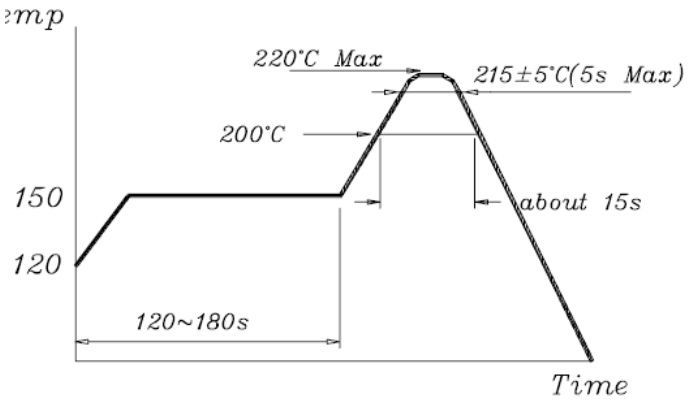



For Reflow Soldering




■Reflow Temp/Time




■Soldering iron

Basic spec is ≤ 5sec when 260℃. If temperature is higher, time should be shorter (+10℃→ -1sec ).Power dissipation of iron should be smaller than 15W, and temperatures should be controllable .Surface temperature of the device should be under 230℃ .

| ITEM | | MATERIALS | |
|---|---|---|---|
| Resin (mold) | | Epoxy | |
| Lens color | | Water Clear | |
| Printed circuit board | | BT | |
| Material & Emitted color | SUR | AlGaInP | Hyper Red |
| | SYG | AlGaInP | Super Yellow Green |

NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerances are ±0.1mm (0.004inch) unless otherwise noted.
3. Polarity referring onto the cathode mark is reversed on the red.

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## ELECTRO-OPTICAL CHARACTERISTICS ($T_A$=25℃)

| Parameter | Emitted Color | Test Condition | Symbol | Value MIN. | Value TYP. | Value MAX. | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | SUR | $I_F$=20mA | $V_F$ | – | 2.0 | 2.4 | V |
| | SYG | | | – | 2.0 | 2.4 | |
| Luminous intensity | SUR | $I_F$=20mA | $I_V$ | – | 60 | – | mcd |
| | SYG | | | – | 25 | – | |
| Wavelength | SUR | $I_F$=20mA | λp | – | 630 | – | nm |
| | SYG | | | – | 575 | – | |
| | SUR | $I_F$=20mA | λd | – | 625 | – | |
| | SYG | | | – | 570 | – | |
| Spectral Line Half-Width | SUR | $I_F$=20mA | △λ | – | 20 | – | nm |
| | SYG | | | – | 20 | – | |
| Peak pulsing current (1/10 duty f=1kHz) | SUR | | $I_{FP}$ | | 160 | | mA |
| | SYG | | | | 160 | | |
| Power Dissipation | SUR | | $P_D$ | | 60 | | mW |
| | SYG | | | | 60 | | |
| Reverse current | SUR | $V_R$=5V | $I_R$ | | 10 | | μA |
| | SYG | | | | | | |
| Electrostatic Discharge | SUR | | ESD | | 2000 | | mA |
| | SYG | | | | | | |

## Absolute maximum ratings ($T_A$=25℃)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Viewing angle at 50% $I_V$ | 2θ 1/2 | 120 | Deg |
| Forward current | $I_F$ | 20 | mA |
| Reverse voltage | $V_R$ | 5 | V |
| Operating temperature range | Top | -40 ~+85 | ℃ |
| Storage temperature range | Tstg | -40 ~+90 | ℃ |

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# SURFACE MOUNT CHIP LED LAMPS

## Part Number: 67-22SURSYGC

## Test items and results of reliability

| NO | Item | Test Conditions | Test Hours/Cycle | Sample Size | Ac/Re |
|---|---|---|---|---|---|
| 1 | Reflow | TEMP：240±5℃<br>Min. 5sec. | 6 MIN. | 22 PCS | 0/1 |
| 2 | Temperature Cycle | H：+100℃ 15min<br>∫ 5min<br>L：-40℃ 15min | 300 CYCLES | 22 PCS | 0/1 |
| 3 | Thermal Shock | H：+100℃ 5min<br>∫ 10set<br>L：-10℃ 5min | 300 CYCLES | 22 PCS | 0/1 |
| 4 | High Temperature Storage | TEMP：100℃ | 1000 HRS | 22 PCS | 0/1 |
| 5 | Low Temperature Storage | TEMP：-55℃ | 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℃ / 85%RH | 1000 HRS | 22 PCS | 0/1 |

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

2009/2/20

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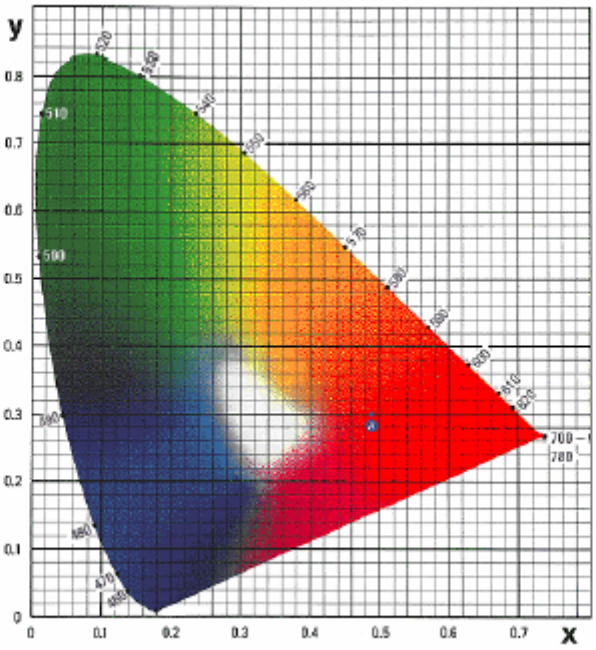
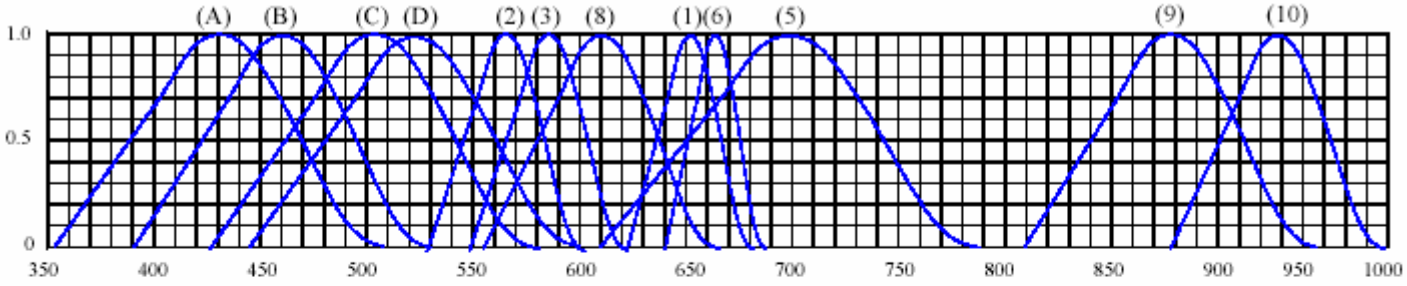
## Typical Electro-Optical Characteristics

◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES




RELATIVE INTENSITY VS. WAVELENGTH(λp)

(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

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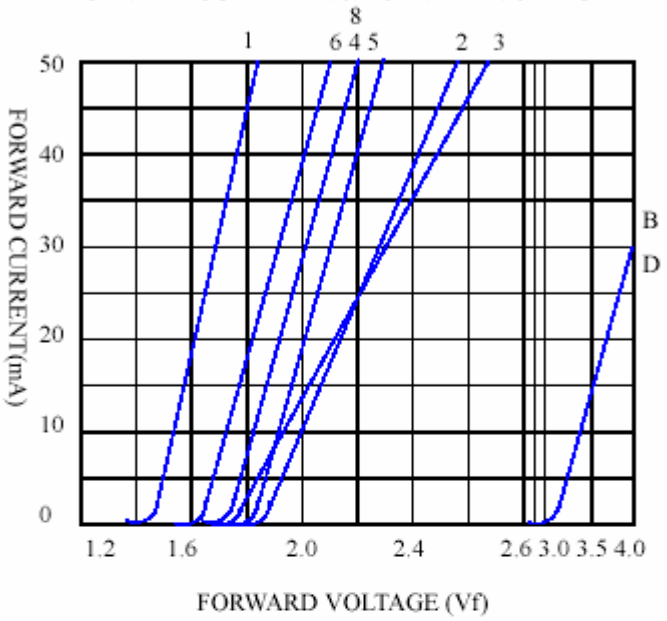
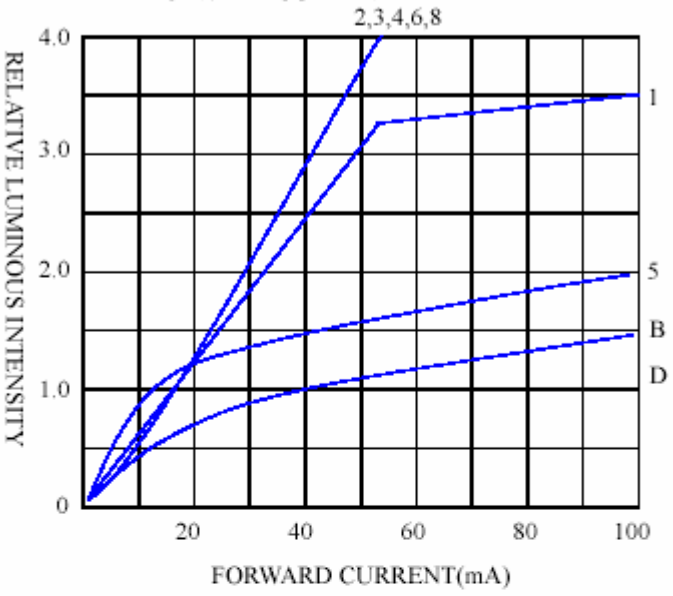
## Typical Electro-Optical Characteristics

◆ **CHARACTERISTICS DIAGRAMS**

FORWARD CURRENT VS. FORWARD VOLTAGE




RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT




FORWARD CURRENT VS. AMBIENT TEMPERATURE