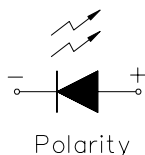
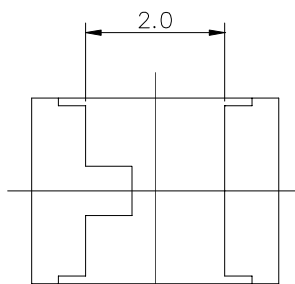
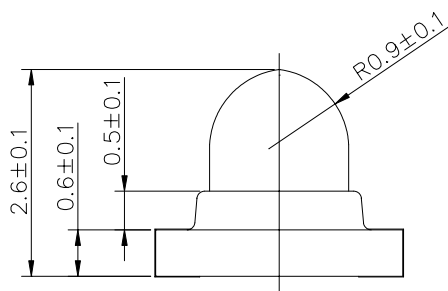
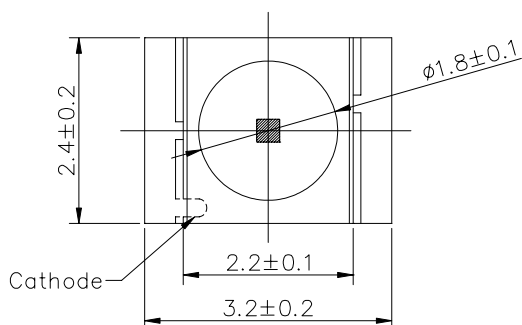
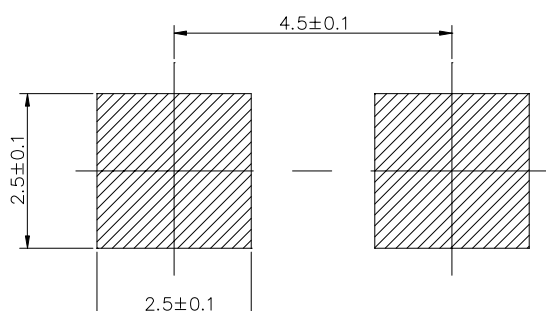
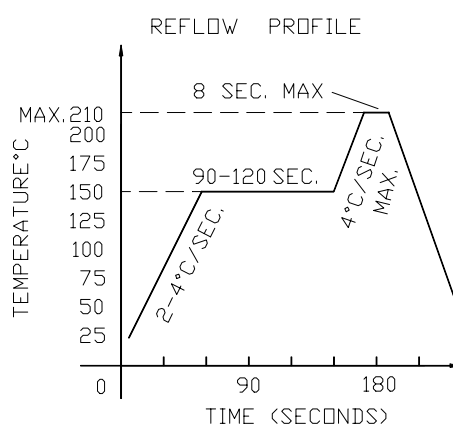


**SURFACE MOUNT LED LAMPS****1.8mm Round Subminiature SMD Chip LED Lamps****Part Number: 42-21UYC/S530-A4****Package outlines & Re-flow Profile**

Polarity

**For reflow soldering****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 15W, and temperatures should be controllable. Surface temperature of the device should be under  $230^{\circ}\text{C}$ .

| ITEM                  | MATERIALS    |
|-----------------------|--------------|
| Resin (mold)          | Epoxy        |
| Lens color            | Water Clear  |
| Printed circuit board | BT           |
| Dice                  | AlGaInP      |
| Emitted color         | Super Yellow |

**NOTES:**

1. All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.1\text{mm}$  (0.004inch) unless otherwise noted.

**SURFACE MOUNT LED LAMPS**

**Part Number: 42-21UYC/S530-A4**

**ELECTRO-OPTICAL CHARACTERISTICS**

**(T<sub>A</sub>=25°C)**

| Parameter                               | Test Condition       | Symbol          | Value      | Unit |
|-----------------------------------------|----------------------|-----------------|------------|------|
| Viewing angle at 50% I <sub>v</sub>     | I <sub>F</sub> =10mA | 2 θ 1/2         | 30         | Deg  |
| Forward voltage<br>(Typ.)<br>(Max.)     | I <sub>F</sub> =20mA | V <sub>F</sub>  | 2.0<br>2.4 | V    |
| Luminous intensity<br>(Min.)<br>(Typ.)  | I <sub>F</sub> =20mA | I <sub>v</sub>  | 310<br>470 | mcd  |
| Wavelength                              | I <sub>F</sub> =20mA | λ p<br>λ d      | 591<br>589 | nm   |
| Spectral Line Half-Width                | I <sub>F</sub> =20mA | △λ              | 15         | nm   |
| Peak pulsing current (1/10 duty f=1kHz) |                      | I <sub>FP</sub> | 160        | mA   |

**Absolute maximum ratings**

**(T<sub>A</sub>=25°C)**

| Parameter                   | Symbol         | Value    | Unit |
|-----------------------------|----------------|----------|------|
| Forward current             | I <sub>F</sub> | 25       | mA   |
| Reverse voltage             | V <sub>R</sub> | 5        | V    |
| Reverse current             | I <sub>R</sub> | 25       | μA   |
| Power Dissipation           | P <sub>D</sub> | 60       | mW   |
| Operating temperature range | Top            | -40 ~+85 | °C   |
| Storage temperature range   | Tstg           | -40 ~+90 | °C   |

**SURFACE MOUNT LED LAMPS**
**Part Number: 42-21UYC/S530-A4**
**Test items and results of reliability**

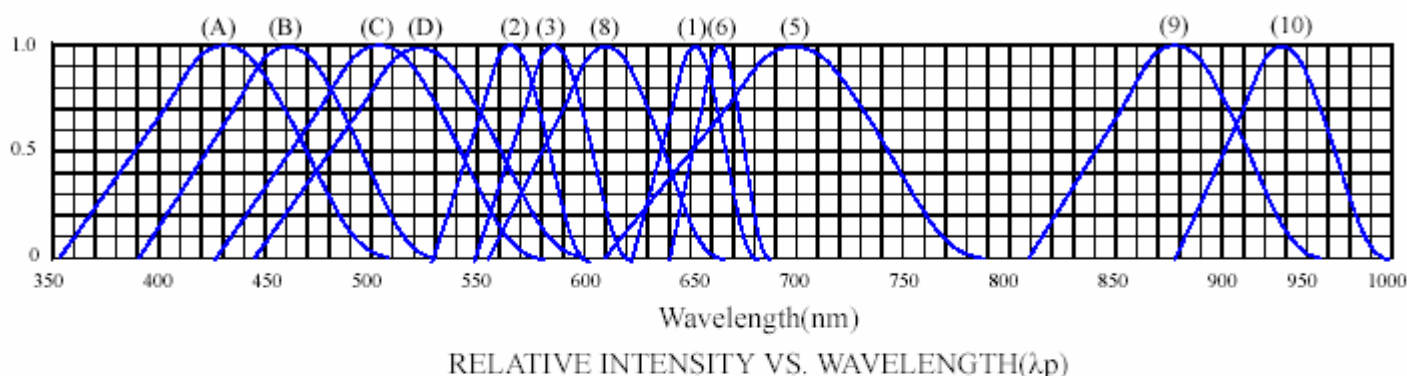
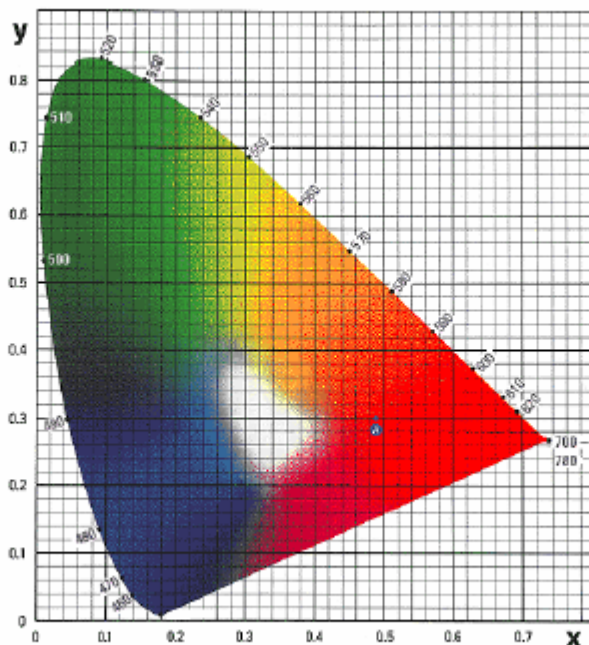
| Type                   | Test Item                    | REF. Standard         | Test Conditions                                                                                                                                    | Note      | Number of Damaged |
|------------------------|------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------|
| Environmental Sequence | Temperature Cycle            | JIS C 7021 (1977)A-4  | $-20^{\circ}\text{C} \Rightarrow 25^{\circ}\text{C} \Rightarrow 80^{\circ}\text{C} \Rightarrow 25^{\circ}\text{C}$<br>30mins, 5mins, 30mins, 5mins | 100 cycle | 0/100             |
|                        | Thermal Shock                | MIL-STD-107D          | $-20^{\circ}\text{C} \Rightarrow 80^{\circ}\text{C}$<br>15mins, 15mins                                                                             | 100 cycle | 0/100             |
|                        | High Humidity Heat Cycle     | JIS C 7021 (1977)A-5  | $30^{\circ}\text{C} \Rightarrow 65^{\circ}\text{C}$<br>90%RH 24hrs/1cycle                                                                          | 10 cycle  | 0/100             |
|                        | High Temperature Storage     | JIS C 7021 (1977)B-10 | $T_a=80^{\circ}\text{C}$                                                                                                                           | 1000 hrs  | 0/100             |
|                        | Humidity Heat Storage        | JIS C 7021 (1977)B-11 | $T_a=60^{\circ}\text{C}$<br>RH=90%                                                                                                                 | 1000 hrs  | 0/100             |
|                        | Low Temperature Storage      | JIS C 7021 (1977)B-12 | $T_a=-30^{\circ}\text{C}$                                                                                                                          | 1000 hrs  | 0/100             |
| Operation Sequence     | Life Test                    | JIS C 7035 (1985)     | $T_a=25^{\circ}\text{C}$<br>$I_F=20\text{mA}$                                                                                                      | 1000 hrs  | 0/100             |
|                        | High Humidity Heat Life Test | *                     | $60^{\circ}\text{C}$ RH=90%<br>$I_F=20\text{mA}$                                                                                                   | 500 hrs   | 0/100             |
|                        | Low Temperature Life Test    | *                     | $T_a=-20^{\circ}\text{C}$<br>$I_F=20\text{mA}$                                                                                                     | 1000 hrs  | 0/100             |

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

**Part Number: 42-21UYC/S530-A4**

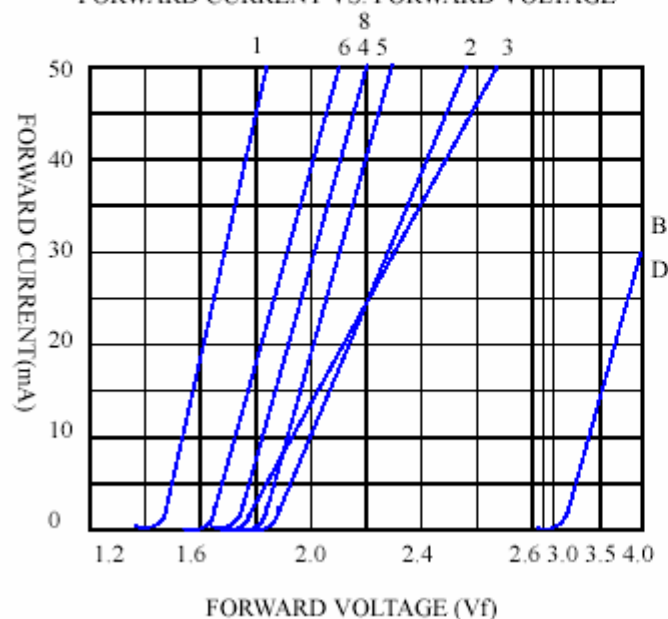
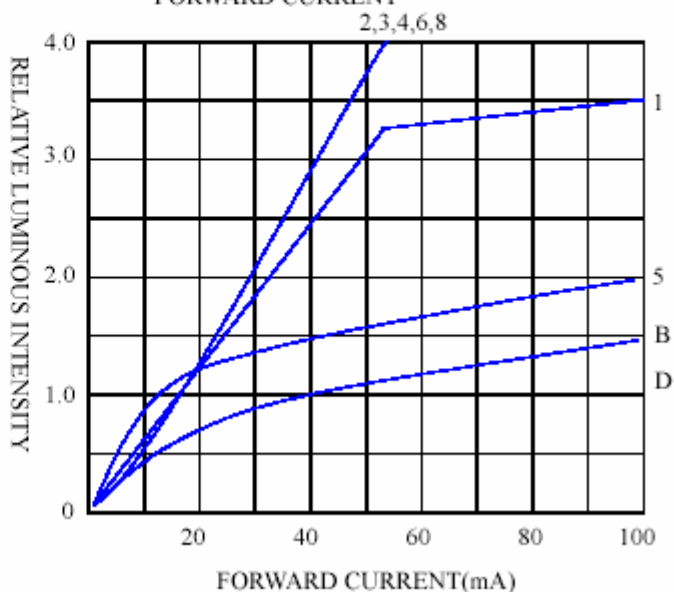
## Typical Electro-Optical Characteristics

### ◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



- (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 LED LAMPS****Part Number: 42-21UYC/S530-A4****Typical Electro-Optical Characteristics**◆ **CHARACTERISTICS DIAGRAMS****FORWARD CURRENT VS. FORWARD VOLTAGE****RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT****FORWARD CURRENT VS. AMBIENT TEMPERATURE**