



# Technical Data Sheet

## 3.0mm Round Type LED Lamps

### 204-10SUBC/C470/S400-A6

#### ■ Features :

- Choice of various viewing angles
- Available on tape and reel.
- Reliable and robust
- Pb free
- The product itself will remain within RoHS compliant version.



#### ■ Descriptions :

- The series is specially designed for applications requiring higher brightness
- The led lamps are available with different colors, intensities.

#### ■ Applications :

- TV set
- Monitor
- Telephone
- Computer

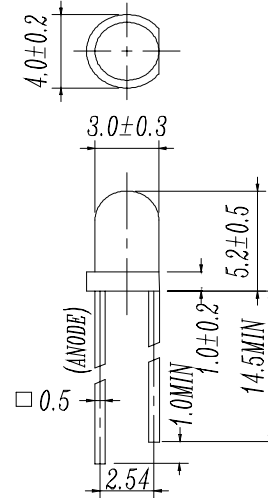
| PART NO.                | Material | Emitted Color | Lens Color  |
|-------------------------|----------|---------------|-------------|
| 204-10SUBC/C470/S400-A6 | InGaN    | Super Blue    | Water Clear |



Technical Data Sheet  
3.0mm Round Type LED Lamps

204-10SUBC/C470/S400-A6

Package Dimensions



- Notes: 1. All dimensions are in millimetres  
2. The height of flange must be less than 1.5mm(0.059").  
3. Without special declared,the tolerance is $\pm 0.25$ mm.

■ Absolute Maximum Ratings at  $T_a = 25^\circ\text{C}$

| Parameter               | Symbol    | Rating      | Unit             |
|-------------------------|-----------|-------------|------------------|
| Forward Current         | $I_F$     | 25          | mA               |
| Operating Temperature   | $T_{opr}$ | -40 to +85  | $^\circ\text{C}$ |
| Storage Temperature     | $T_{stg}$ | -40 to +100 | $^\circ\text{C}$ |
| Electrostatic Discharge | ESD       | 150         | V                |
| Soldering Temperature   | $T_{sol}$ | $260 \pm 5$ | $^\circ\text{C}$ |
| Power Dissipation       | $P_d$     | 110         | mW               |
| Reverse Voltage         | $V_R$     | 5           | V                |

Note: \*1:Soldering time  $\leq 5$  seconds.



Technical Data Sheet  
3.0mm Round Type LED Lamps

204-10SUBC/C470/S400-A6

Electro-Optical Characteristics (Ta=25°C)

| Parameter                    | Symbol         | Condition              | Min. | Typ. | Max. | Unit |
|------------------------------|----------------|------------------------|------|------|------|------|
| Forward Voltage              | V <sub>F</sub> | I <sub>F</sub> = 20 mA | /    | 3.4  | 4.0  | V    |
| Reverse Current              | I <sub>R</sub> | V <sub>R</sub> = 5 V   | /    | /    | 50   | μA   |
| Luminous Intensity           | I <sub>v</sub> | I <sub>F</sub> = 20 mA | 25   | 50   | /    | mcd  |
| Viewing Angle                | 2θ 1/2         | I <sub>F</sub> = 20 mA | /    | 20   | /    | deg  |
| Peak Wavelength              | λ <sub>p</sub> | I <sub>F</sub> = 20 mA | /    | 468  | /    | nm   |
| Dominant Wavelength          | λ <sub>d</sub> | I <sub>F</sub> = 20 mA | /    | 470  | /    | nm   |
| Spectrum Radiation Bandwidth | Δλ             | I <sub>F</sub> = 20 mA | /    | 35   | /    | nm   |



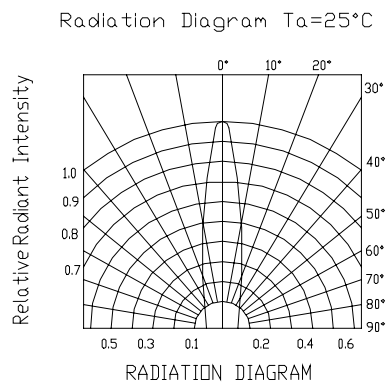
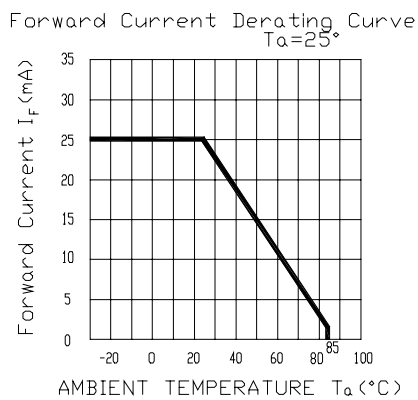
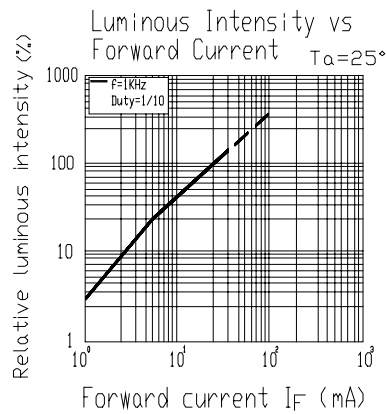
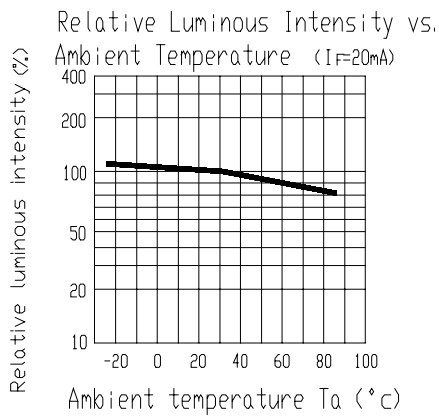
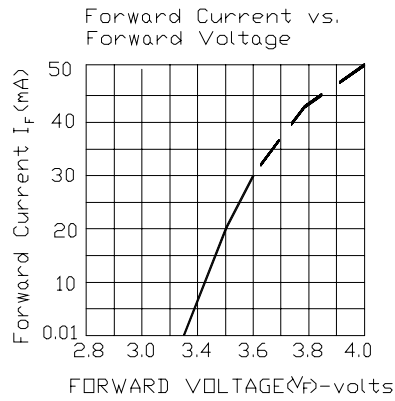
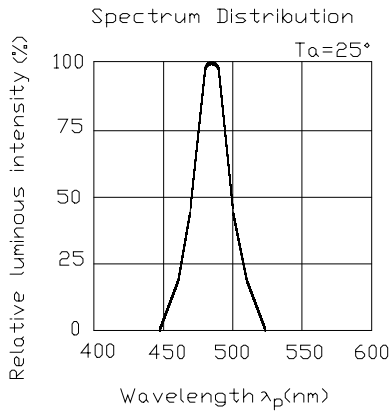
# Technical Data Sheet

## 3.0mm Round Type LED Lamps

204-10SUBC/C470/S400-A6

### Typical Electro-Optical Characteristic Curves:

SUB





# Technical Data Sheet

## 3.0mm Round Type LED Lamps

204-10SUBC/C470/S400-A6

### ■ Reliability test items and conditions:

The reliability of products shall be satisfied with items listed below.

Confidence level : 97%

LTPD : 3%

| NO | Item                             | Test Conditions                                     | Test Hours/Cycle | Sample Size | Failure Judgment Criteria                                     | Ac/Re |
|----|----------------------------------|---|------------------|-------------|---|-------|
| 1  | Solder Heat                      | TEMP : 260°C ± 5 °C                                 | 10 SEC           | 76 PCS      | $I_v \leq I_{vt} * 0.5$ or<br>$V_f \geq U$ or<br>$V_f \leq L$ | 0/1   |
| 2  | Temperature Cycle                | H : +100°C 15min<br>$\int$ 5 min<br>L : -40°C 15min | 300 CYCLES       | 76 PCS      |   | 0/1   |
| 3  | Thermal Shock                    | H : +100°C 5min<br>$\int$ 10 sec<br>L : -10°C 5min  | 300 CYCLES       | 76 PCS      |   | 0/1   |
| 4  | High Temperature Storage         | TEMP : 100°C  | 1000 HRS         | 76 PCS      |   | 0/1   |
| 5  | Low Temperature Storage          | TEMP : -40°C  | 1000 HRS         | 76 PCS      |   | 0/1   |
| 6  | DC Operating Life                | TEMP : 25°C<br>$I_F = 20mA$                         | 1000 HRS         | 76 PCS      |   | 0/1   |
| 7  | High Temperature / High Humidity | 85°C / 85% RH                                       | 1000 HRS         | 76 PCS      |   | 0/1   |

Note :  $I_{vt}$  : To test  $I_v$  value of the chip before the reliability test  
 $I_v$  : The test value of the chip that has completed the reliability test  
U : Upper Specification Limit  
L : Lower Specification Limit



Technical Data Sheet  
3.0mm Round Type LED Lamps

204-10SUBC/C470/S400-A6

Packing Quantity Specification

1.1000PCS/1Bag · 4Bags/1Box

2.10Boxes/1Carton

Label Form Specification

EVERLIGHT

CPN:

P/N:



204-10SUBC/C470/S400-A6

QTY:



CAT:

HUE:

REF:

LOT NO: EL



MADE IN TAIWAN

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Dominant Wavelength

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place

Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.

2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.

3. These specification sheets include materials protected under copyright of EVERLIGHT corporation.

Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.

EVERLIGHT ELECTRONICS CO., LTD.

Office: No 25, Lane 76, Sec 3, Chung Yang Rd,  
Tucheng, Taipei 236, Taiwan, R.O.C

Tel: 886-2-2267-2000, 2267-9936

Fax: 886-2267-6244, 2267-6189, 2267-6306  
<http://www.everlight.com>