



Technical Data Sheet
High Performance with Reflector LEDs

94-22SUBC/S400-XX

Features :

- White package.
- Dual-chip, wide-angle, low-profile LEDs .
- Excellent chip to chip consistency
- Super Intensity
- High performance
- Pb-free
- The product itself will remain within RoHS compliant version.



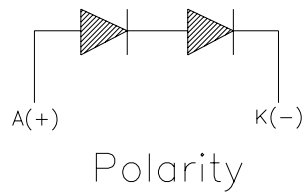
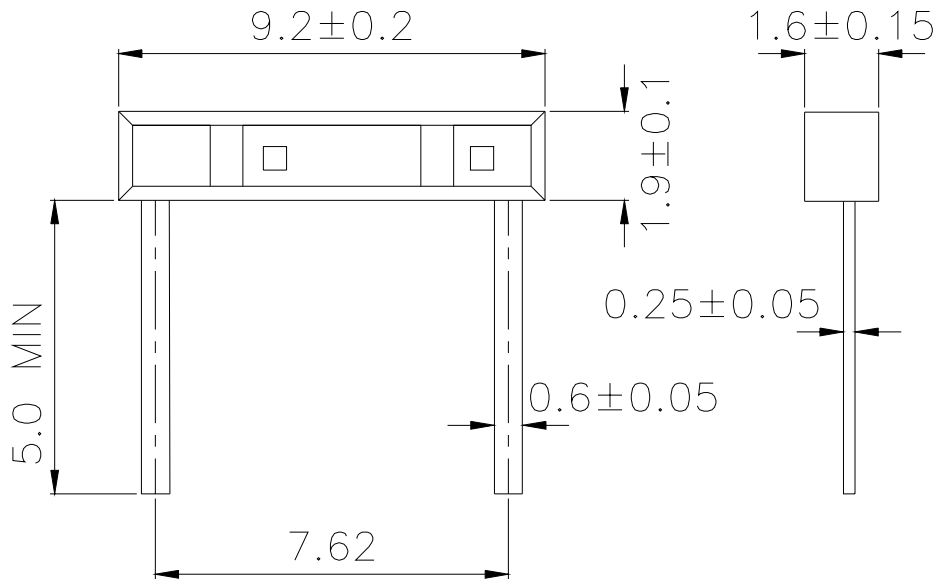
Applications :

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Indicator and backlight for audio and video equipment.
- Indicator and backlight for battery driven equipment.
- Display Screen Illumination on Portable Handheld Devices
- Indicator and backlight in office equipment.
- General use.

Device Selection Guide

| Chip | | Lens Color |
|----------|---------------|-------------|
| Material | Emitted Color | |
| InGaN | Blue | Water Clear |

Package Dimensions



Polarity

Notes: All dimensions are in millimeters.
Tolerances unspecified are $\pm 0.1 \text{ mm}$.

94-22SUBC/S400-XX
Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|--|------------------|---|------|
| Reverse Voltage | V _R | 5 | V |
| Forward Current | I _F | 25 | mA |
| Operating Temperature | T _{opr} | -40 ~ +85 | °C |
| Storage Temperature | T _{stg} | -40~ +100 | °C |
| Electrostatic Discharge(HBM) | ESD | 150 | V |
| Power Dissipation | P _d | 110 | mW |
| Peak Forward Current(Duty 1/10 @ 1KHz) | I _{FP} | 100 | mA |
| Soldering Temperature | T _{sol} | Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec. | |

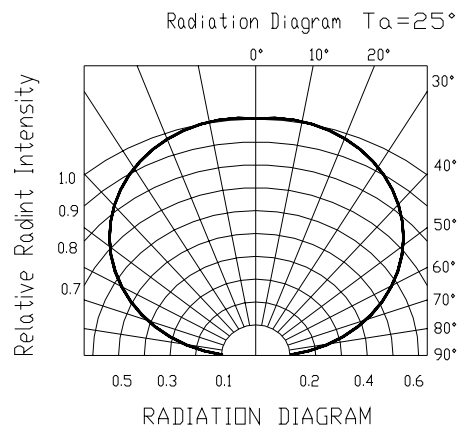
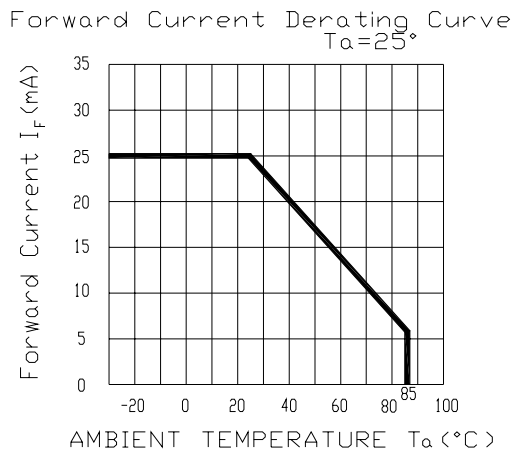
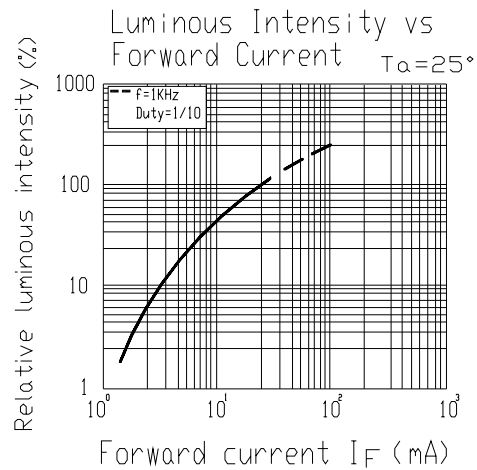
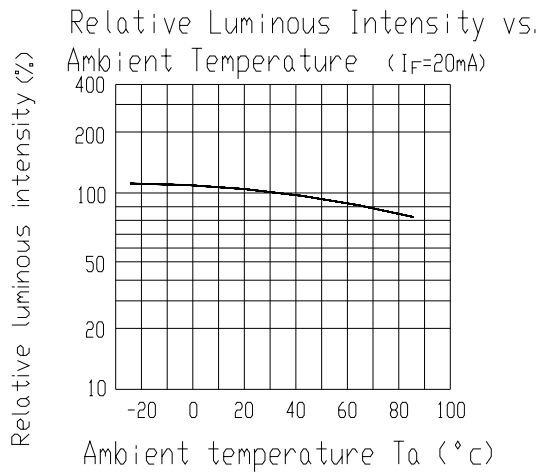
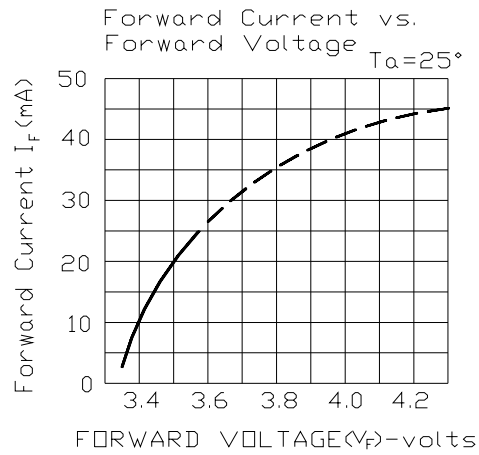
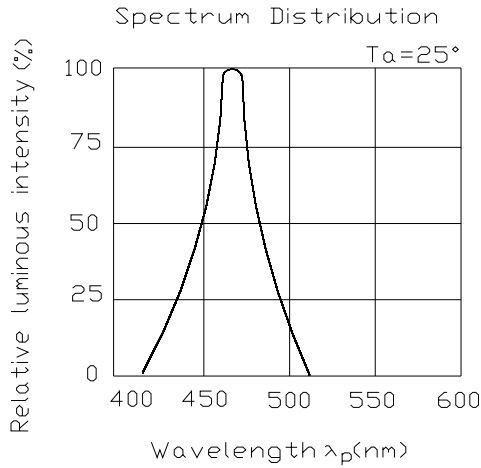
Electro-Optical Characteristics (Ta=25°C)

| Parameter | Symbol | *Chip Rank | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|----------------|------------|-------|-------|-------|------|----------------------|
| Luminous intensity | I _v | A3 | 30 | 40 | ----- | mcd | I _F =20mA |
| | | A4 | 40 | 50 | | | |
| | | A5 | 50 | 60 | | | |
| | | A6 | 60 | 70 | | | |
| Viewing Angle | 2θ 1/2 | ----- | ----- | 130 | ----- | deg | I _F =20mA |
| Peak Wavelength | λ _p | ----- | ----- | 468 | ----- | nm | I _F =20mA |
| Dominant Wavelength | λ _d | ----- | ----- | 470 | ----- | nm | I _F =20mA |
| Spectrum Radiation Bandwidth | Δλ | ----- | ----- | 35 | ----- | nm | I _F =20mA |
| Forward Voltage | V _F | ----- | ----- | 7.0 | 8.6 | V | I _F =20mA |
| Reverse Current | I _R | ----- | ----- | ----- | 10 | μA | V _R =5V |

* **94-22SUBC/S400-XX**

↳ **Chip Rank**

Typical Electro-Optical Characteristics Curves

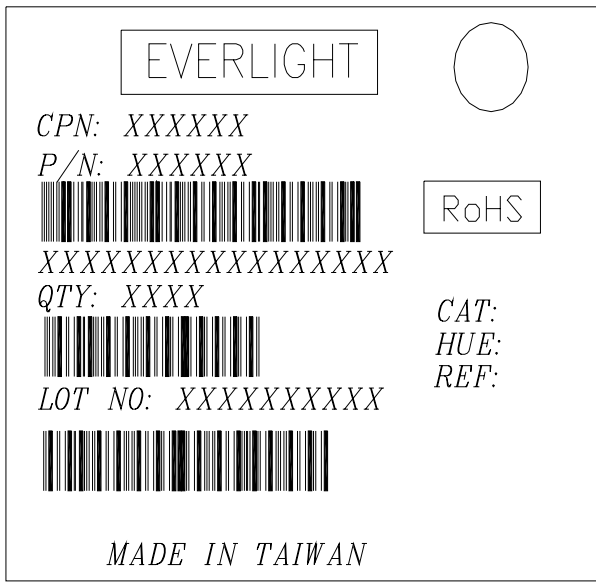


Label explanation

CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank



Reliability Test Items And Conditions

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

Confidence level : 90 % LTPD : 10 %

| No. | Items | Test Condition | Test Hours/Cycles | Sample Size | Ac/Re |
|-----|----------------------------------|---|-------------------|-------------|-------|
| 1 | Solder Heat | Temp : 260°C±5°C | 10sec. | 22 Pcs | 0/1 |
| 2 | Temperature Cycle | H : +100°C 15min. ∫ 5 min. L : -40°C 15min. | 300 Cycles | 22 Pcs. | 0/1 |
| 3 | Thermal Shock | H : +100°C 5min. ∫ 10 sec. 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. : -40°C | 1000 Hrs. | 22 Pcs. | 0/1 |
| 6 | DC Operating Life | IF = 20 mA | 1000 Hrs. | 22 Pcs. | 0/1 |
| 7 | High Temperature / High Humidity | 85°C/R.H85% | 1000 Hrs. | 22 Pcs. | 0/1 |



Precautions For Use

1. Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the LEDs should be kept at 30°C or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30 deg C or less and 60% RH or less.

If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5°C for 24 hours.

3.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

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