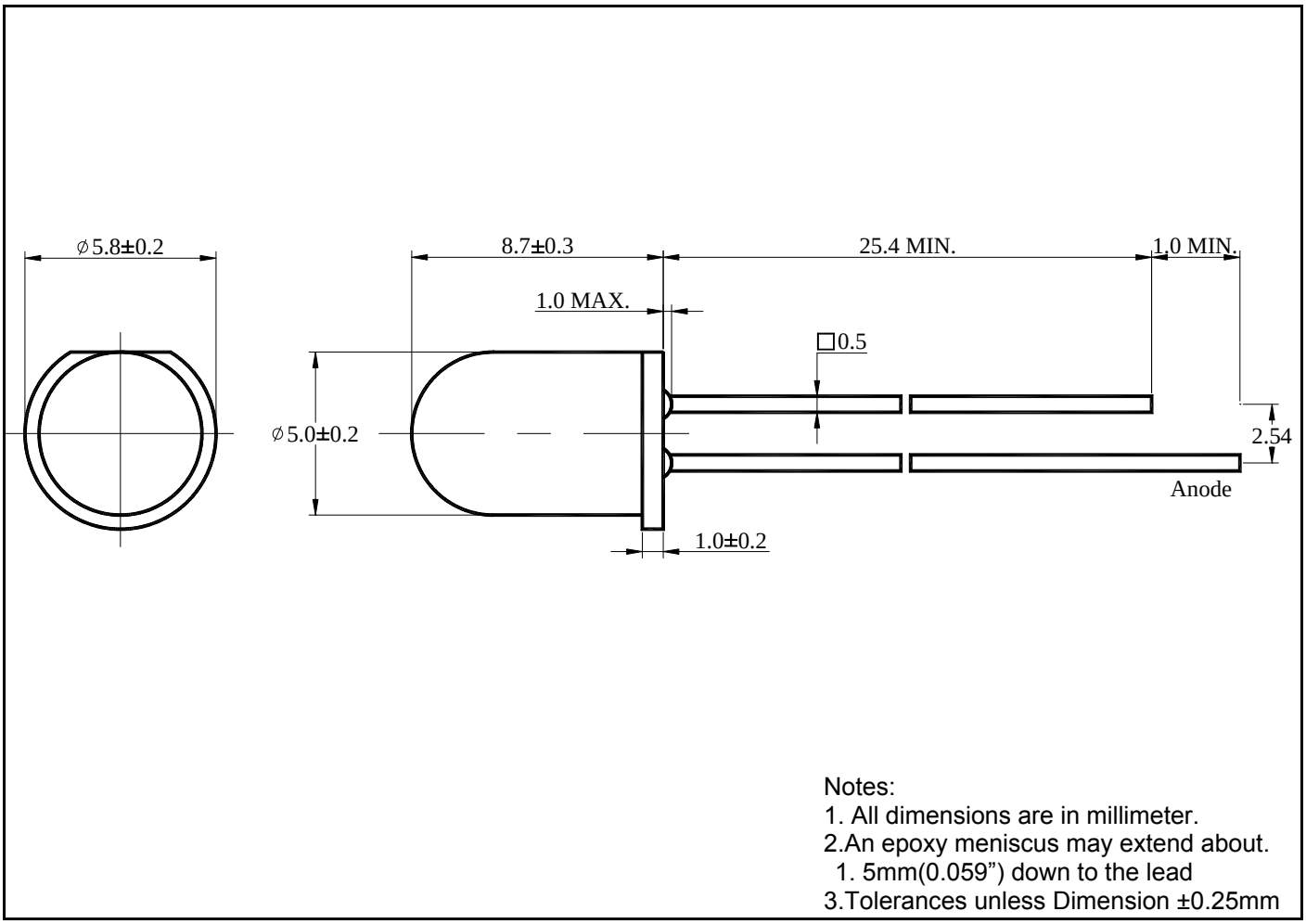
# A-BRIGHT INDUSTRIAL CO., LTD.

| Part No. | AL-513B8C-002 | Diff No.002 |
|---|---|---|
| 5 mm | Round | Type：LED Lamps |

## ■ Package Dimension:




Notes:
1. All dimensions are in millimeter.
2.An epoxy meniscus may extend about.
  1. 5mm(0.059”) down to the lead
3.Tolerances unless Dimension ±0.25mm

## ■ Features：

- Choice of various viewing angles.
- Available on Tape and Reel.
- Reliable and robust.

## ■ Descriptions：

- The series is specially designed for application requiring higher brightness.
- The LED lamps are available with different color, intensities, epoxy colors etc.

## ■ Applications：

- TV set
- Monitor
- Telephone

Part No. **AL-513B8C-002** Diff No.002

5 mm Round Type：LED Lamps

| LED Parts P/N. | Chip | | Lens Color |
|---|---|---|---|
| | Material | Emitted Color | |
| AL-513B8C-002 | InGaN | Super Blue | Water Clear |

■ Absolute Maximum Ratings at Ta=25℃

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Continuous Forward Current | $I_F$ | 30 | mA |
| Operating Temperature | Topr | -40~+85 | ℃ |
| Storage Temperature | Tstg | -40~+100 | ℃ |
| Soldering Temperature | Tsol | 260±3 | ℃ |
| Electrostatic Discharge | ESD | 1000 | V |
| Power Dissipation | $P_D$ | 120 | mW |
| Peak Forward Current （Duty 1/10@1KHz） | $I_F$（Peak） | 100 | mA |
| Reverse Voltage | $V_R$ | 5 | V |

■ **Electronic Optical Characteristics :**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|---|---|---|---|---|---|---|
| Luminous Intensity | $I_V$ | 9000 | 13500 | ／ | mcd | $I_F$=20mA |
| Viewing Angle | 2θ 1/2 | ／ | 15 | ／ | deg | - - - |
| Peak Wavelength | λp | ／ | 468 | ／ | nm | $I_F$=20mA |
| Dominant Wavelength | λd | ／ | 470 | ／ | nm | $I_F$=20mA |
| Spectrum Radiation Bandwidth | △λ | ／ | 30 | ／ | nm | $I_F$=20mA |
| Forward Voltage | $V_F$ | ／ | 3.2 | 3.8 | V | $I_F$=20mA |
| Reverse Current | $I_R$ | ／ | ／ | 10 | μA | $V_R$=5V |

Part No. **AL-513B8C-002** Diff No.002

5 mm Round Type：LED Lamps

## ■ Reliability test items and conditions :

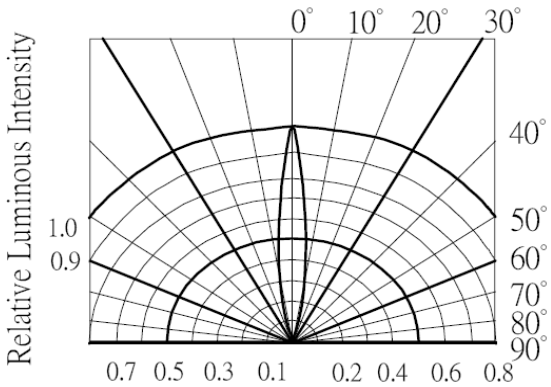
The reliability of products shall be satisfied with items listed below.
Confidence level: 90%
LTPD: 10%

| NO | ITEM | Test Conditions | Test hours/cycle | Sample Q'ty | Ac/Re |
|---|---|---|---|---|---|
| 1 | Solder Heat | Temp：260℃±3℃ | 3 sec | 22 pcs | 0/1 |
| 2 | Temperature Cycle | H：+100℃ 15min<br>〉 5min<br>L：-40℃ 15min | 50 cycles | 22 pcs | 0/1 |
| 3 | Thermal Shock | H：+100℃ 15min<br>〉 10sec<br>L：-10℃ 15min | 50 cycles | 22 pcs | 0/1 |
| 4 | High Temperature Storage | Temp：100℃ | 1000 hrs | 22 pcs | 0/1 |
| 5 | Low Temperature Storage | Temp：-40℃ | 1000 hrs | 22 pcs | 0/1 |
| 6 | DC Operating Life | $I_F$=20mA | 1000 hrs | 22 pcs | 0/1 |
| 7 | High Temperature／<br>High Humidity | 85℃／85%RH | 1000 hrs | 22 pcs | 0/1 |

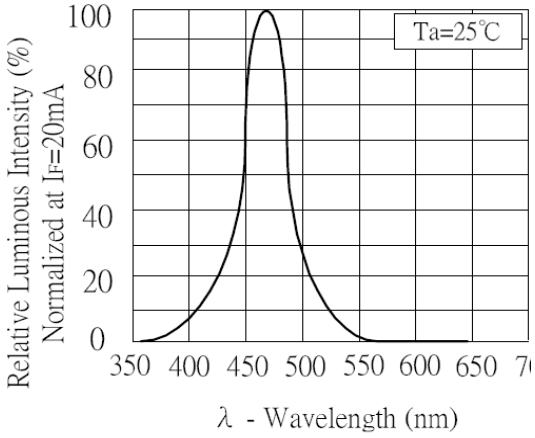
| Part No. | AL-513B8C-002 | Diff No.002 |
|---|---|---|
| 5 mm | Round | Type：LED Lamps |

## ■ Typical electro-optical characteristics curves :

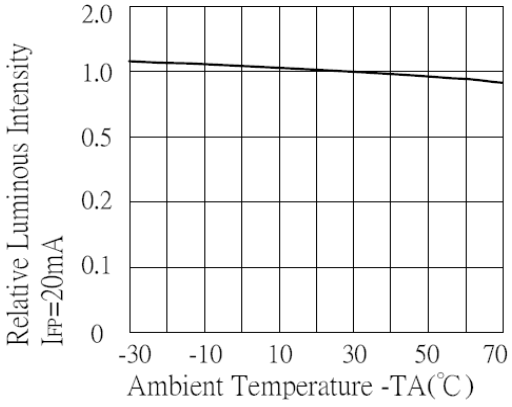
The data typical and the value are not guaranteed.



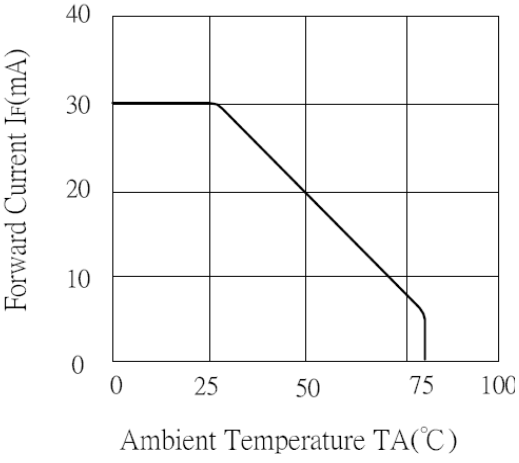

**RADIATION DIAGRAM**



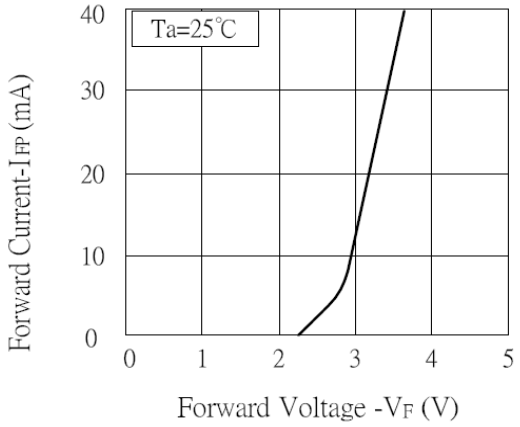

**RELATIVE LUMINOUS INTENSITY Vs. WAVELENGTH**



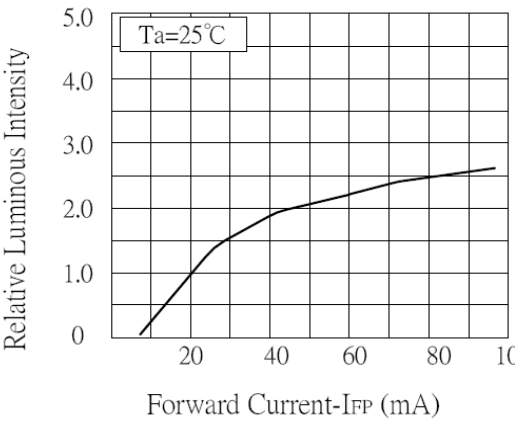

**LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE**




**MAX FORWARD CURRENT Vs. AMBIENT TEMPERATURE**




**FORWARD CURRENT Vs. FORWARD VOLTAGE**




**LUMINOUS INTENSITY Vs. FORWARD CURRENT**