

L820-__ _AU

Infrared LED Lamp

This series of L820-__ _AU is an AlGaAs LED mounted on a lead frame and encapsulated in various types of epoxy lens which offer different design settings.

On forward bias, it emits a high power radiation of typical 18mW with a peak wavelength at 820nm.

Specifications

- | | |
|--------------------|-------------|
| 1. Chip material | AlGaAs |
| 2. Peak wavelength | 820nm |
| 3. Resin Material | Epoxy resin |
| 4. Solder | Lead free |



Absolute Maximum Ratings

| Item | Symbol | Maximum Rated Value | Unit | Ambient Temperature |
|-----------------------|-----------|---------------------|--------------------|--------------------------|
| Power Dissipation | P_D | 170 | mW | $T_a=25^{\circ}\text{C}$ |
| Forward Current | I_F | 100 | mA | $T_a=25^{\circ}\text{C}$ |
| Pulse Forward Current | I_{FP} | 500 | mA | $T_a=25^{\circ}\text{C}$ |
| Reverse Voltage | V_R | 5 | V | $T_a=25^{\circ}\text{C}$ |
| Operating Temperature | T_{OPR} | -30 ~ +85 | $^{\circ}\text{C}$ | $T_a=25^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -40 ~ +100 | $^{\circ}\text{C}$ | |
| Soldering Temperature | T_{SOL} | 265 | $^{\circ}\text{C}$ | |

Electro-Optical Characteristics ($T_a=25^{\circ}\text{C}$)

| Item | Symbol | Condition | Minimum | Typical | Maximum | Unit |
|----------------------|-----------------|-------------------|---------|---------|---------|---------------|
| Forward Voltage | V_F | $I_F=50\text{mA}$ | | 1.6 | 1.8 | V |
| Reverse Current | I_R | $V_R=5\text{V}$ | | | 10 | μA |
| Total Radiated Power | P_O | $I_F=50\text{mA}$ | 16.0 | 18.0 | | mW |
| Peak Wavelength | λ_P | $I_F=50\text{mA}$ | 805 | 820 | 835 | nm |
| Half Width | $\Delta\lambda$ | $I_F=50\text{mA}$ | | 35 | | nm |
| Rise Time | t_r | $I_F=50\text{mA}$ | | 50 | | ns |
| Fall Time | t_f | $I_F=50\text{mA}$ | | 25 | | ns |

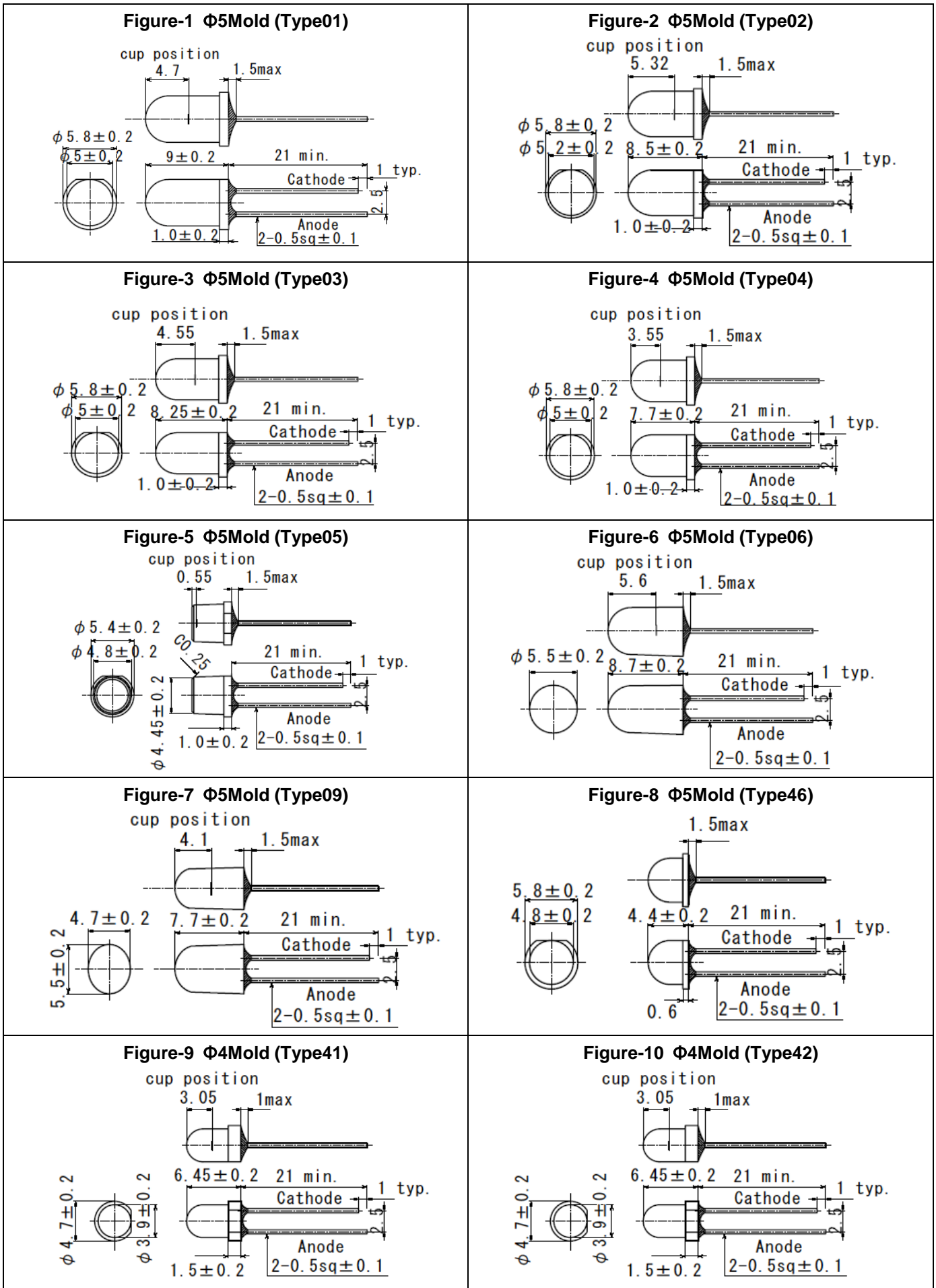
Characteristics of Radiant Intensity (Ta=25°C)

| Type | Viewing Half Angle | Radiant Intensity I _F =50mA Unit : mW/sr | | | Outer Dimension | Dimension Figure |
|-----------|---------------------------|--|---------|---------|-----------------|------------------|
| | | Minimum | Typical | Maximum | | |
| L820-01AU | ±10° | | 100 | | Φ5 | 1 |
| L820-02AU | ±7° | | 100 | | Φ5 | 2 |
| L820-03AU | ±10° | | 110 | | Φ5 | 3 |
| L820-04AU | ±20° | | 45 | | Φ5 | 4 |
| L820-05AU | ±40° | | 12 | | Φ5 | 5 |
| L820-06AU | ±7° | | 130 | | Φ5 | 6 |
| L820-09AU | ±25°(Long) ±15°(Short) | | 60 | | Φ5 Oval | 7 |
| L820-46AU | | | | | Φ5 | 8 |
| L820-41AU | ±16° | | 75 | | Φ4 | 9 |
| L820-42AU | ±23° | | 40 | | Φ4 | 10 |
| L820-31AU | | | | | Φ3 | 11 |
| L820-33AU | ±18° | | 45 | | Φ3 | 12 |
| L820-34AU | | | | | Φ3 | 13 |
| L820-36AU | ±33° | | 20 | | Φ3 | 14 |

Total Radiant Power is measured by Photodyne #500

Brightness is measured by Tektronix J-16

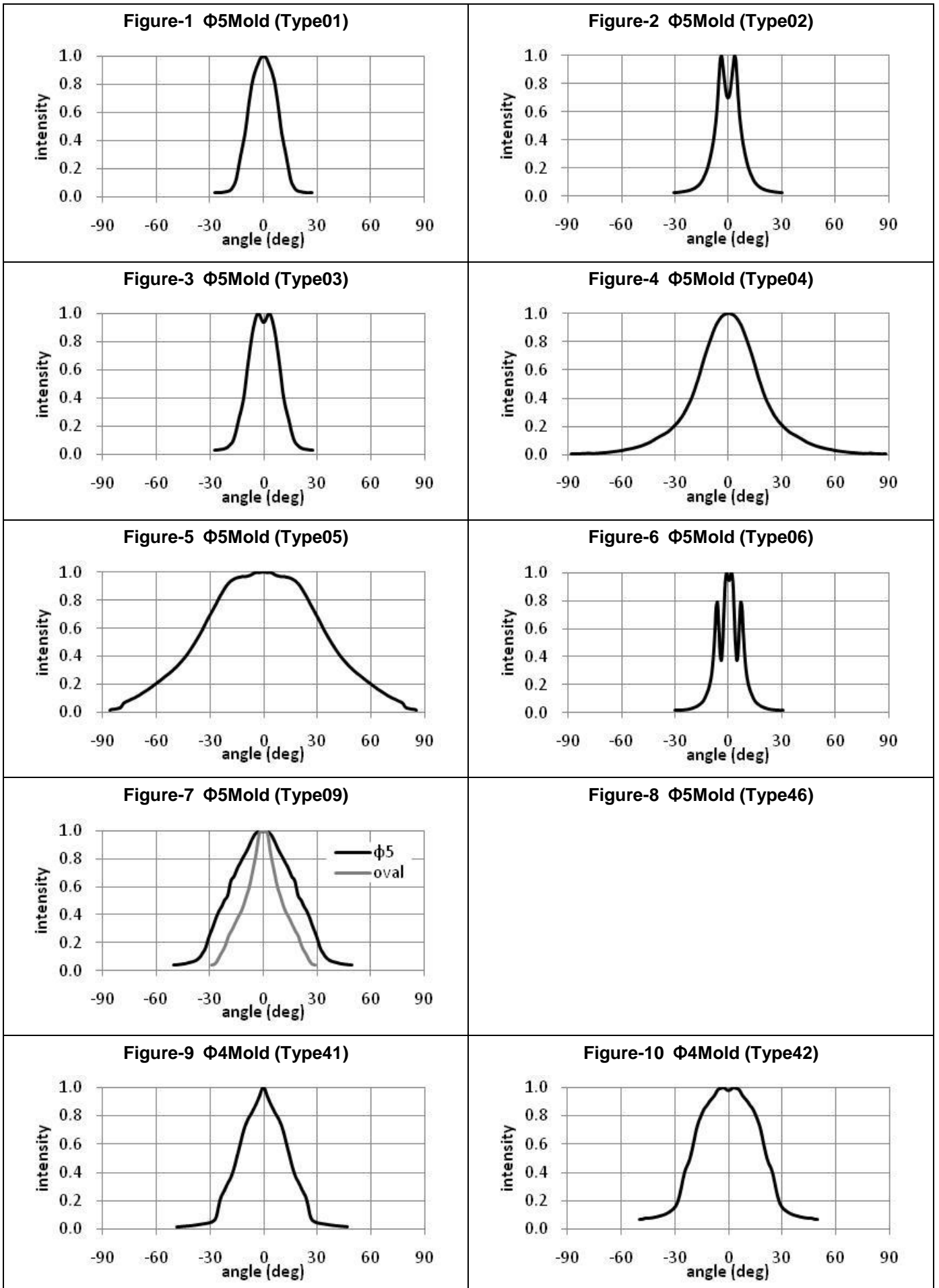
Outer Dimension of LED Lamp



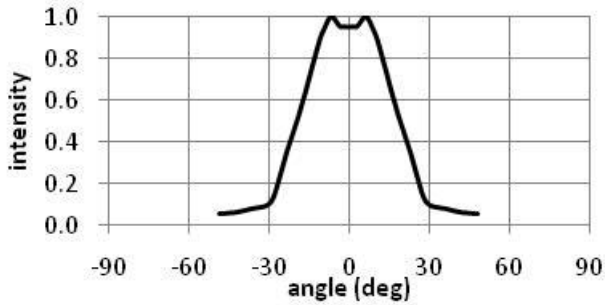
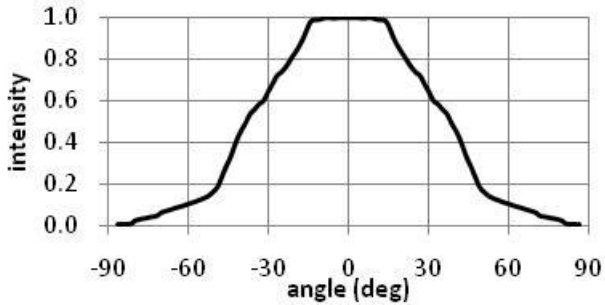
Outer Dimension of LED Lamp

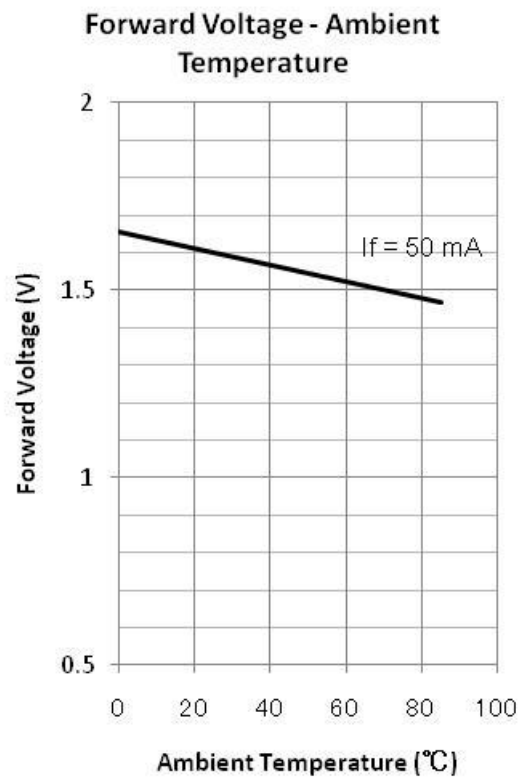
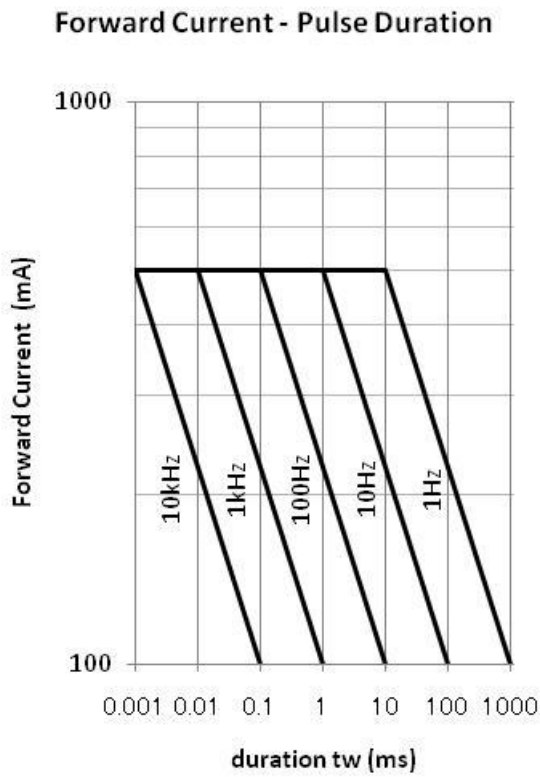
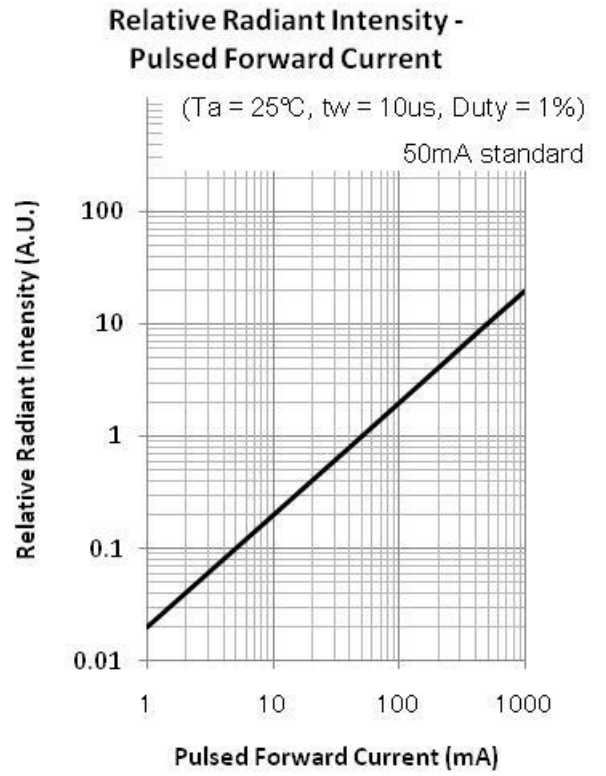
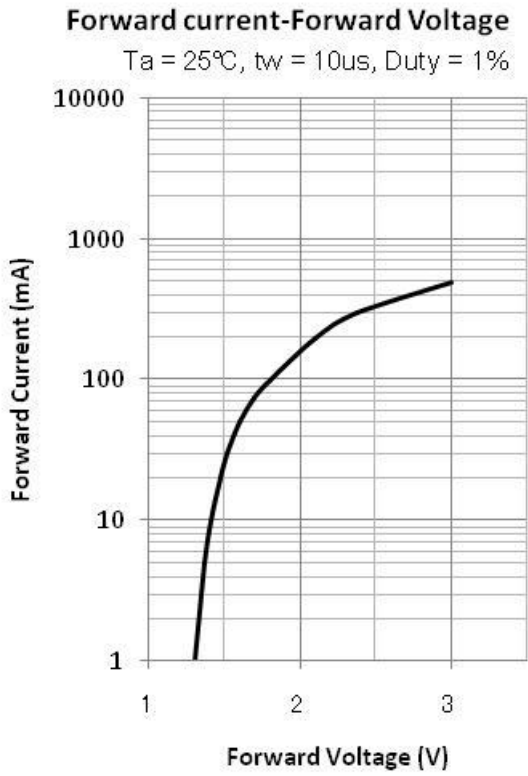
| | |
|---|--|
| <p>Figure-11 $\Phi 3$Mold (Type31) cup position</p> <p>0.37 1max $\phi 3.6 \pm 0.2$ $\phi 3 \pm 0.2$ 3.5 ± 0.2 21 min. 1 typ. Cathode Anode $2-0.5sq \pm 0.1$ 1.5 typ.</p> | <p>Figure-12 $\Phi 3$Mold (Type33) cup position</p> <p>2.65 1max $\phi 3.8 \pm 0.2$ $\phi 3 \pm 0.2$ 5.3 21 min. 1 typ. Cathode Anode $2-0.5sq \pm 0.1$ 0.8 typ.</p> |
| <p>Figure-13 $\Phi 3$Mold (Type34) cup position</p> <p>3.25 1max $\phi 3.8 \pm 0.2$ $\phi 3 \pm 0.2$ 5.3 ± 0.2 21 min. 1 typ. Cathode Anode $2-0.5sq \pm 0.1$ 1.5 typ.</p> | <p>Figure-14 $\Phi 3$Mold (Type36) cup position</p> <p>2.1 1max $\phi 4 \pm 0.2$ $\phi 3 \pm 0.2$ 5.3 ± 0.2 21 min. 1 typ. Cathode Anode $2-0.5sq \pm 0.1$ 2 ± 0.4</p> |
| <p>Figure-15</p> | <p>Figure-16</p> |
| <p>Figure-17</p> | <p>Figure-18</p> |
| <p>Figure-19</p> | <p>Figure-20</p> |

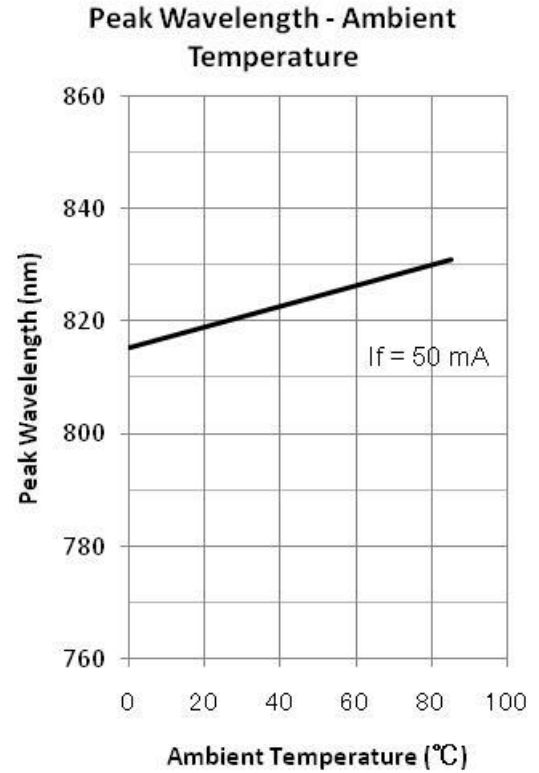
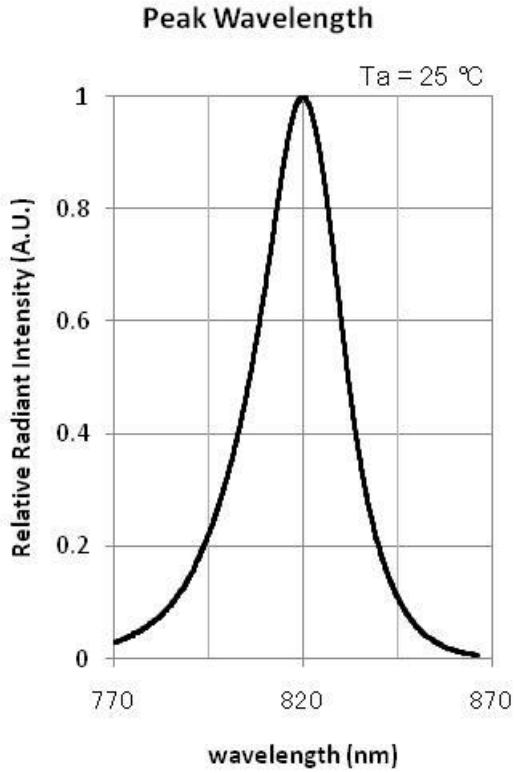
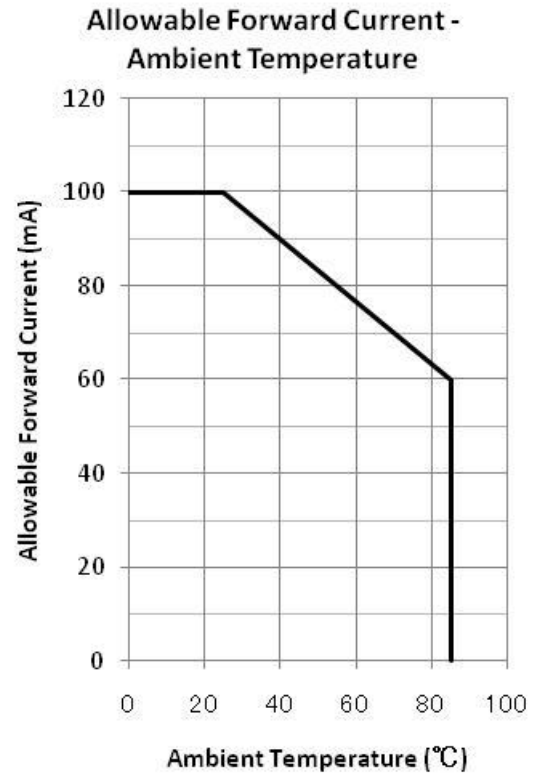
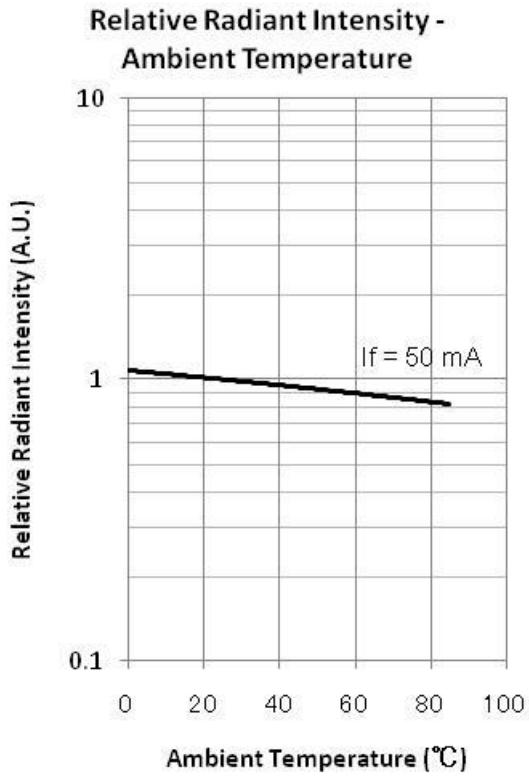
The Viewing half angle



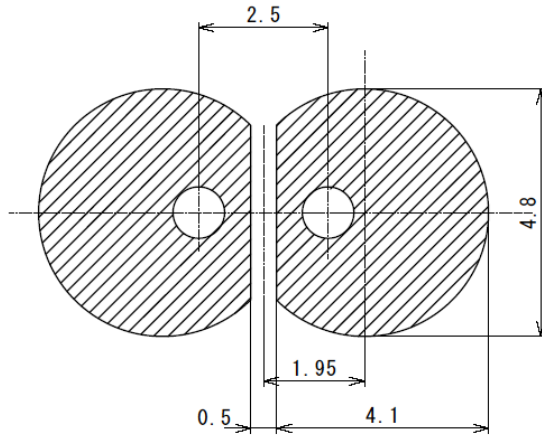
The Viewing half angle

| | |
|--|---|
| <p>Figure-11 Φ3Mold (Type31)</p> | <p>Figure-12 Φ3Mold (Type33)</p>  |
| <p>Figure-13 Φ3Mold (Type34)</p> | <p>Figure-14 Φ3Mold (Type36)</p>  |
| <p>Figure-15</p> | <p>Figure-16</p> |
| <p>Figure-17</p> | <p>Figure-18</p> |
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Recommended Land Layout (unit: mm)



Soldering Conditions

