

# L740-\_\_ \_AU

## Infrared LED Lamp

This series of L740-\_\_ \_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 740nm.

### Specifications

- |                    |             |
|--------------------|-------------|
| 1. Chip material   | AlGaAs      |
| 2. Peak wavelength | 740nm       |
| 3. Resin Material  | Epoxy resin |
| 4. Solder          | Lead free   |



### Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	$P_D$	140	mW	$T_a=25^{\circ}\text{C}$
Forward Current	$I_F$	75	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	$V_F$	$I_F=50\text{mA}$		1.8	2.2	V
Reverse Current	$I_R$	$V_R=5\text{V}$			10	$\mu\text{A}$
Total Radiated Power	$P_O$	$I_F=50\text{mA}$	14.0	18.0		mW
Peak Wavelength	$\lambda_P$	$I_F=50\text{mA}$		740		nm
Half Width	$\Delta\lambda$	$I_F=50\text{mA}$		30		nm
Rise Time	$t_r$	$I_F=50\text{mA}$		50		ns
Fall Time	$t_f$	$I_F=50\text{mA}$		25		ns

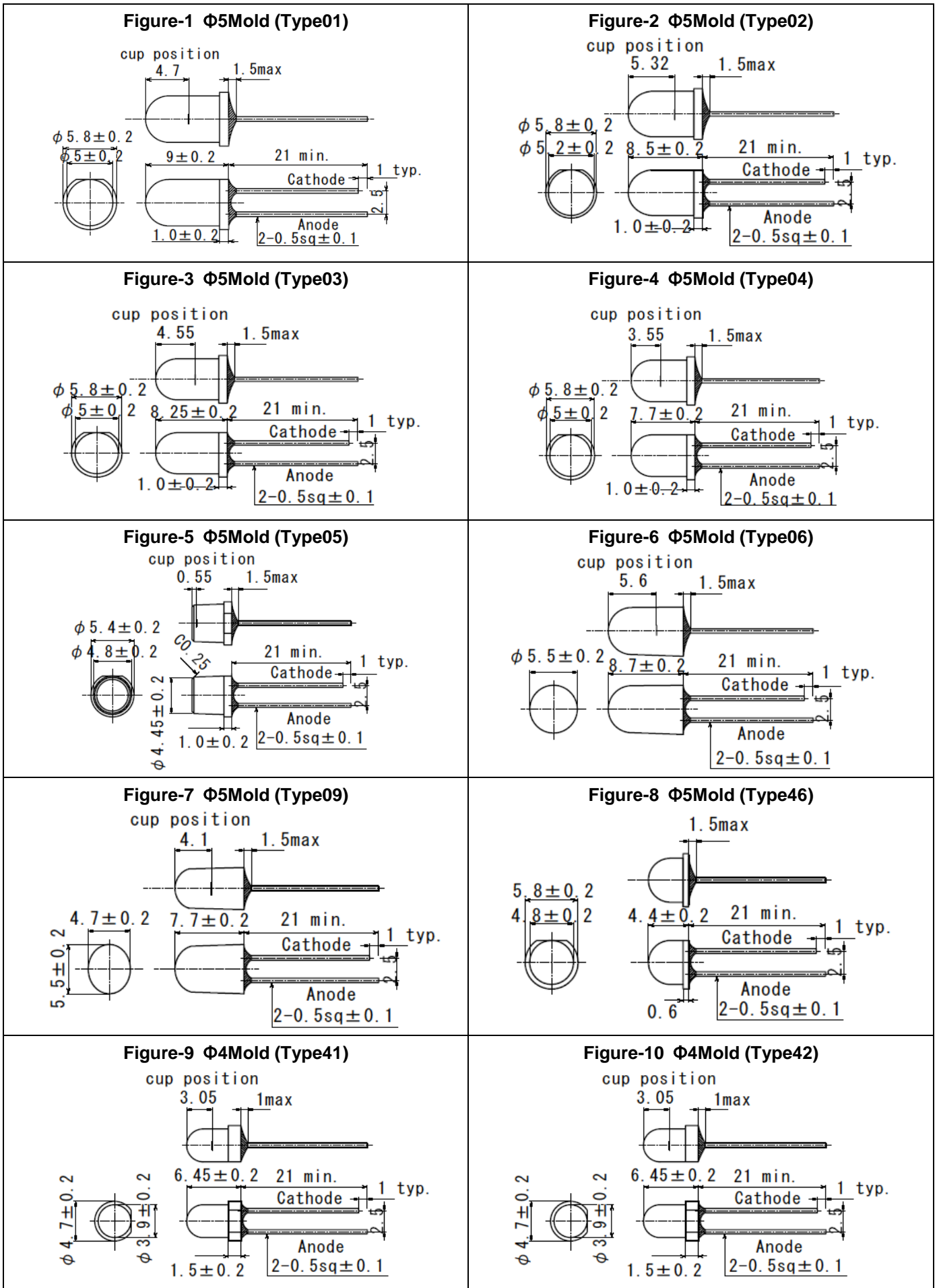
**Characteristics of Radiant Intensity (Ta=25°C)**

Type	Viewing Half Angle	Radiant Intensity I <sub>F</sub> =50mA Unit : mW/sr			Outer Dimension	Dimension Figure
		Minimum	Typical	Maximum		
L740-01AU	±10°		90		Φ5	1
L740-02AU	±7°		120		Φ5	2
L740-03AU	±10°		90		Φ5	3
L740-04AU	±20°		4		Φ5	4
L740-05AU	±40°		010		Φ5	5
L740-06AU	±7°		90		Φ5	6
L740-09AU	±25°(Long) ±15°(Short)		70		Φ5 Oval	7
L740-46AU					Φ5	8
L740-41AU	±16°		70		Φ4	9
L740-42AU	±23°		55		Φ4	10
L740-31AU					Φ3	11
L740-33AU	±18°		40		Φ3	12
L740-34AU					Φ3	13
L740-36AU	±33°		20		Φ3	14

Total Radiant Power is measured by Photodyne #500

Brightness is measured by Tektronix J-16

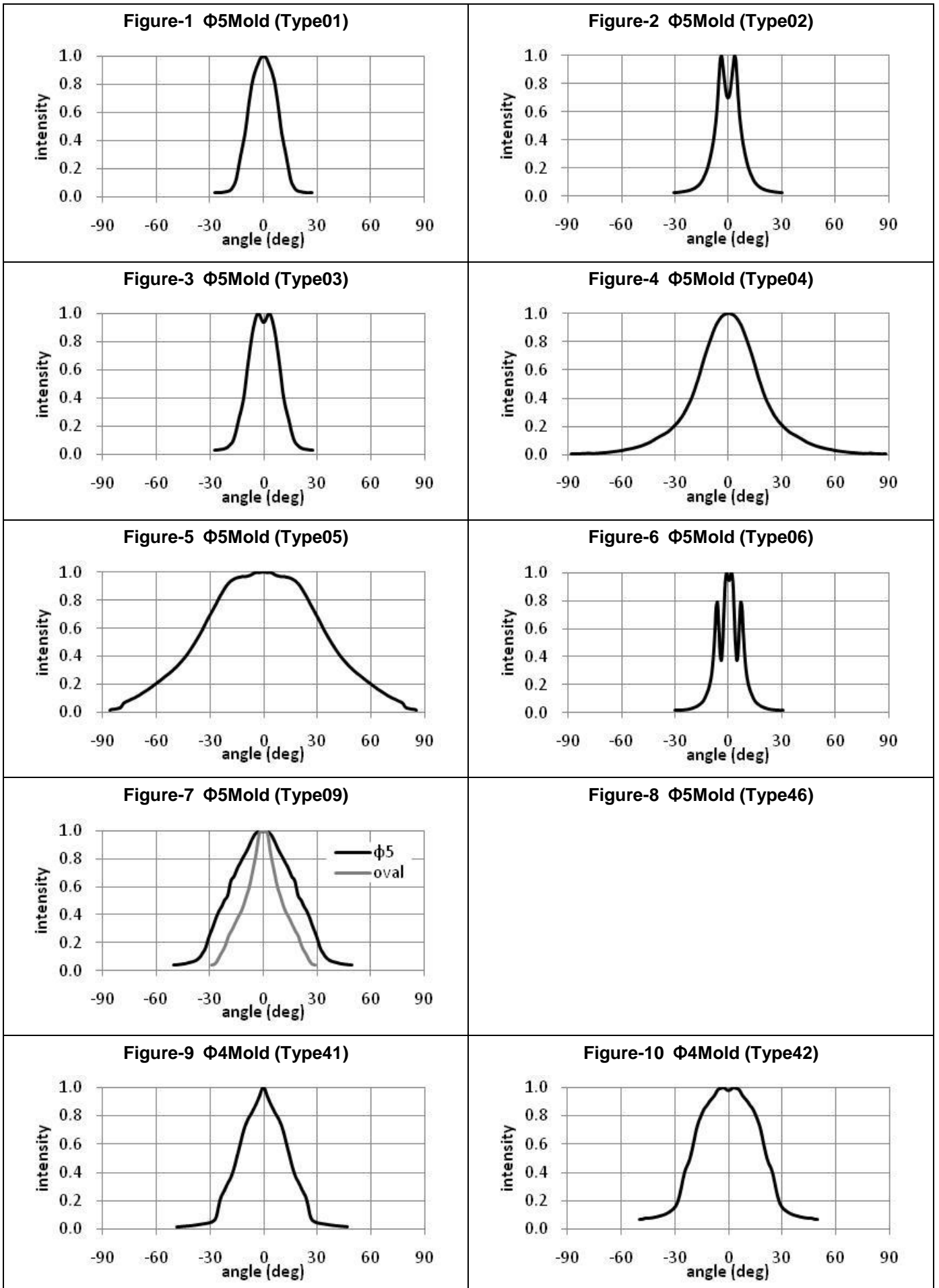
Outer Dimension of LED Lamp



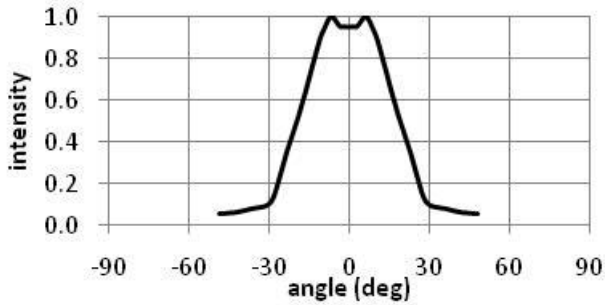
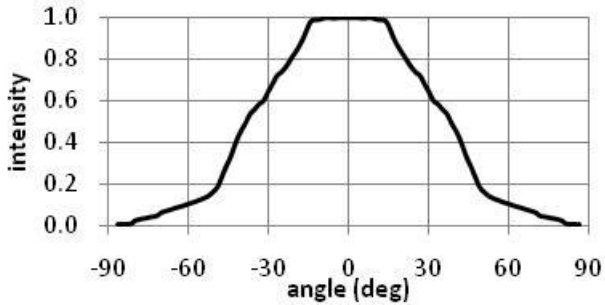
**Outer Dimension of LED Lamp**

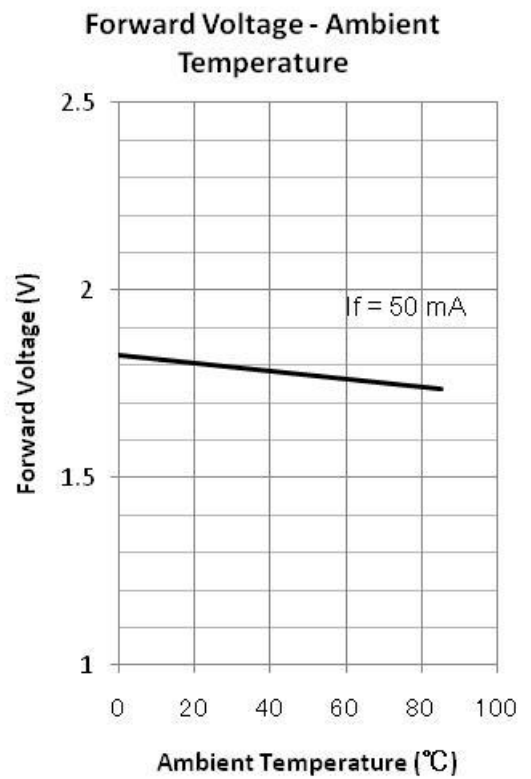
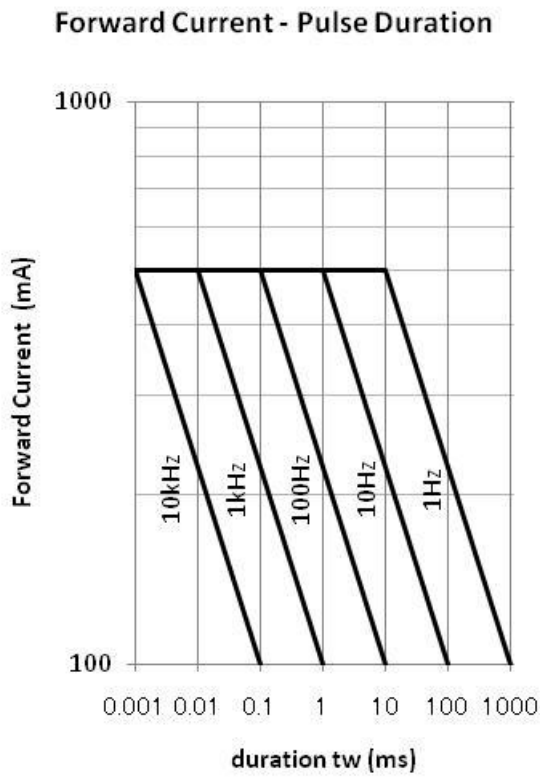
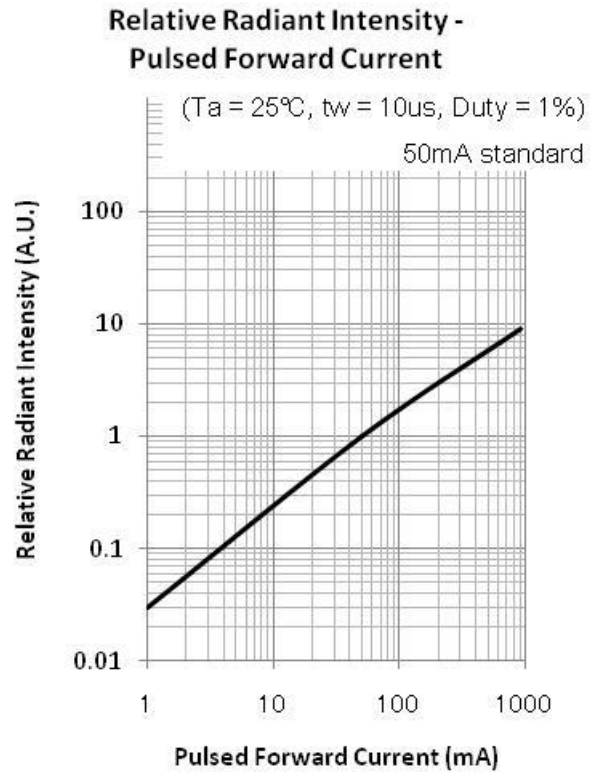
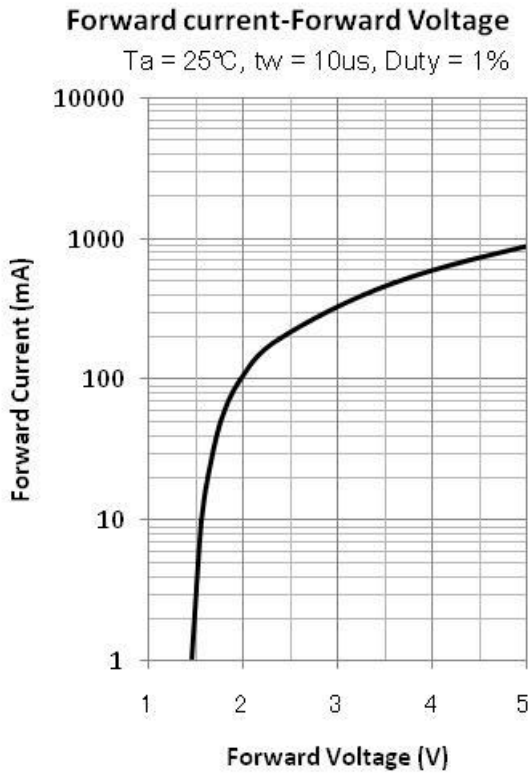
<p><b>Figure-11 <math>\Phi 3</math>Mold (Type31)</b> cup position</p> <p>0.37 1max  <math>\phi 3.6 \pm 0.2</math>  <math>\phi 3 \pm 0.2</math>  <math>3.5 \pm 0.2</math> 21 min. 1 typ.          Cathode          Anode  <math>2-0.5sq \pm 0.1</math>          1.5 typ.</p>	<p><b>Figure-12 <math>\Phi 3</math>Mold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

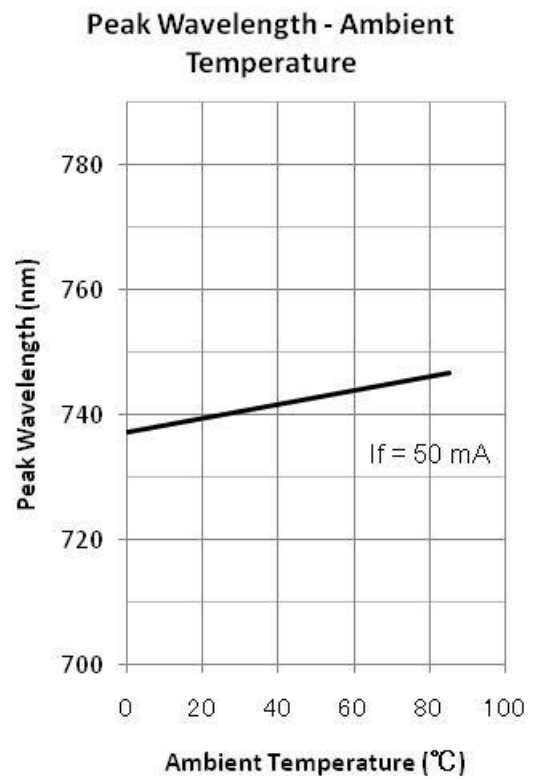
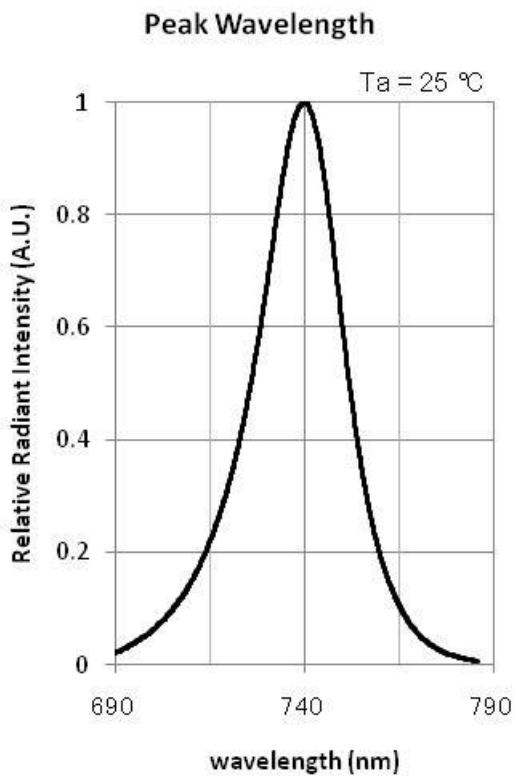
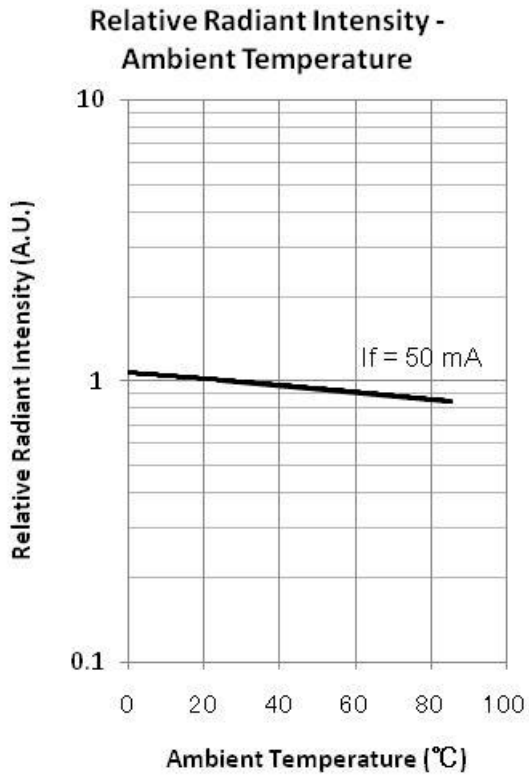
The Viewing half angle



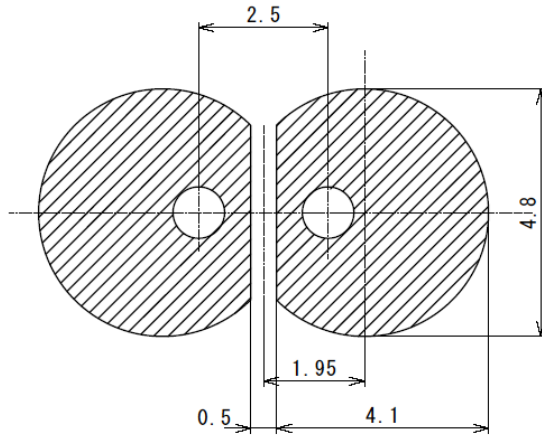
The Viewing half angle

<p>Figure-11 <math>\Phi</math>3Mold (Type31)</p>	<p>Figure-12 <math>\Phi</math>3Mold (Type33)</p> 
<p>Figure-13 <math>\Phi</math>3Mold (Type34)</p>	<p>Figure-14 <math>\Phi</math>3Mold (Type36)</p> 
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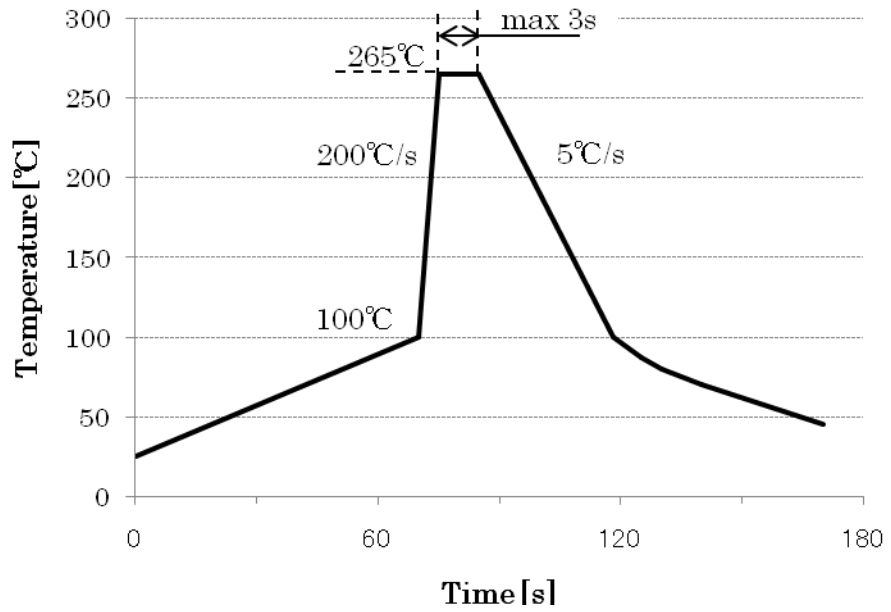




**Recommended Land Layout (unit: mm)**



**Soldering Conditions**



**Marubeni America Corporation**

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