

L850D Series

Infrared LED Lamp

This series of L850D-__ 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 23mW with a peak wavelength at 850nm.

Specifications

1. Chip material	AlGaAs
2. Peak wavelength	850nm
3. Resin Material	Epoxy resin
4. Solder	Lead free



Absolute Maximum Ratings

Item	Symbol	Maximum Rated Value	Unit	Ambient Temperature
Power Dissipation	P_D	180	mW	$T_a=25^{\circ}\text{C}$
Forward Current	I_F	100	mA	$T_a=25^{\circ}\text{C}$
Pulse Forward Current	I_{FP}	1000	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	$I_F=50\text{mA}$	18	23		mW
Peak Wavelength	λ_P	$I_F=50\text{mA}$	835	850	865	nm
Half Width	$\Delta\lambda$	$I_F=50\text{mA}$		30		nm
Rise Time	t_r	$I_F=50\text{mA}$		25		ns
Fall Time	t_f	$I_F=50\text{mA}$		15		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		
L850D-01	±10°		110		Φ 5	1
L850D-02	±4°		290		Φ 5	2
L850D-03	±15°		100		Φ 5	3
L850D-04	±20°		40		Φ 5	4
L850D-05	±40°		10		Φ 5	5
L850D-06	±4°		260		Φ 5	6
L850D-09	±25°(Long) ±15°(Short)		50		Φ 5 Oval	7
L850D-46					Φ 5	8
L850D-41					Φ 4	9
L850D-42					Φ 4	10
L850D-31					Φ 3	11
L850D-33	±18°		50		Φ 3	12
L850D-34	±10°		95		Φ 3	13
L850D-36	±50°		15		Φ 3	14

Brightness is measured by Tektronix J-16
Total Radiant Power is measured by Photodyne #500

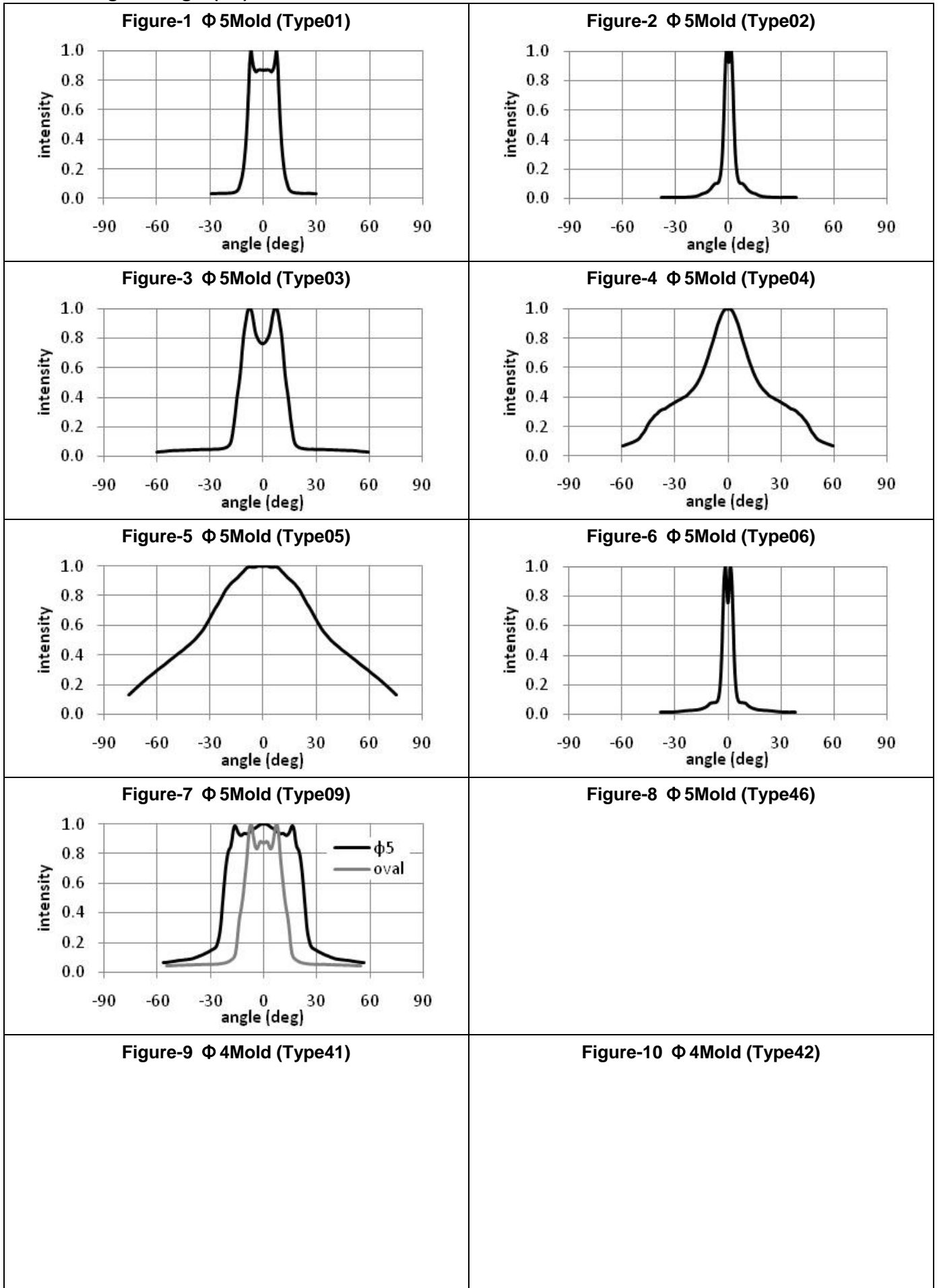
Outer Dimension of LED Lamp (1/2)

<p>Figure-1 Φ 5Mold (Type01)</p> <p>cup position 4.7 1.5max</p> <p>$\phi 5.8 \pm 0.2$ $\phi 5 \pm 0.2$</p> <p>9\pm0.2 21 min. Cathode 1 typ.</p> <p>1.0\pm0.2 Anode 2-0.5sq\pm0.1</p>	<p>Figure-2 Φ 5Mold (Type02)</p> <p>cup position 5.32 1.5max</p> <p>$\phi 5.8 \pm 0.2$ $\phi 5.2 \pm 0.2$</p> <p>8.5\pm0.2 21 min. Cathode 1 typ.</p> <p>1.0\pm0.2 Anode 2-0.5sq\pm0.1</p>
<p>Figure-3 Φ 5Mold (Type03)</p> <p>cup position 4.55 1.5max</p> <p>$\phi 5.8 \pm 0.2$ $\phi 5 \pm 0.2$</p> <p>8.25\pm0.2 21 min. Cathode 1 typ.</p> <p>1.0\pm0.2 Anode 2-0.5sq\pm0.1</p>	<p>Figure-4 Φ 5Mold (Type04)</p> <p>cup position 3.55 1.5max</p> <p>$\phi 5.8 \pm 0.2$ $\phi 5 \pm 0.2$</p> <p>7.7\pm0.2 21 min. Cathode 1 typ.</p> <p>1.0\pm0.2 Anode 2-0.5sq\pm0.1</p>
<p>Figure-5 Φ 5Mold (Type05)</p> <p>cup position 0.55 1.5max</p> <p>$\phi 5.4 \pm 0.2$ $\phi 4.8 \pm 0.2$</p> <p>30.35 21 min. Cathode 1 typ.</p> <p>$\phi 4.45 \pm 0.2$ 1.0\pm0.2 Anode 2-0.5sq\pm0.1</p>	<p>Figure-6 Φ 5Mold (Type06)</p> <p>cup position 5.6 1.5max</p> <p>$\phi 5.5 \pm 0.2$</p> <p>8.7\pm0.2 21 min. Cathode 1 typ.</p> <p>Anode 2-0.5sq\pm0.1</p>
<p>Figure-7 Φ 5Mold (Type09)</p> <p>cup position 4.1 1.5max</p> <p>4.7\pm0.2 7.7\pm0.2 21 min. Cathode 1 typ.</p> <p>5.5\pm0.2 Anode 2-0.5sq\pm0.1</p>	<p>Figure-8 Φ 5Mold (Type46)</p> <p>1.5max</p> <p>$\phi 5.8 \pm 0.2$ $\phi 4.8 \pm 0.2$</p> <p>4.4\pm0.2 21 min. Cathode 1 typ.</p> <p>0.6 Anode 2-0.5sq\pm0.1</p>
<p>Figure-9 Φ 4Mold (Type41)</p> <p>cup position 3.05 1max</p> <p>$\phi 4.7 \pm 0.2$ $\phi 3.9 \pm 0.2$</p> <p>6.45\pm0.2 21 min. Cathode 1 typ.</p> <p>1.5\pm0.2 Anode 2-0.5sq\pm0.1</p>	<p>Figure-10 Φ 4Mold (Type42)</p> <p>cup position 3.05 1max</p> <p>$\phi 4.7 \pm 0.2$ $\phi 3.9 \pm 0.2$</p> <p>6.45\pm0.2 21 min. Cathode 1 typ.</p> <p>1.5\pm0.2 Anode 2-0.5sq\pm0.1</p>

Outer Dimension of LED Lamp (2/2)

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



The Viewing half angle (2/2)

Figure-11 Φ 3Mold (Type31)

Figure-12 Φ 3Mold (Type33)

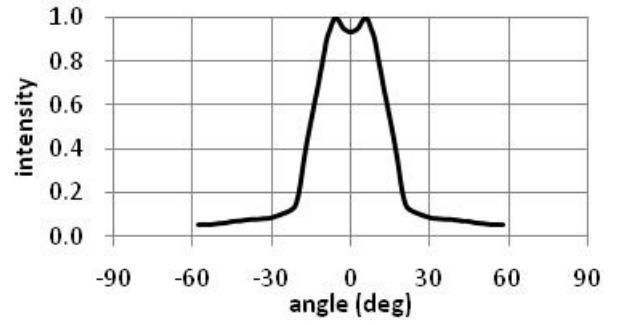


Figure-13 Φ 3Mold (Type34)

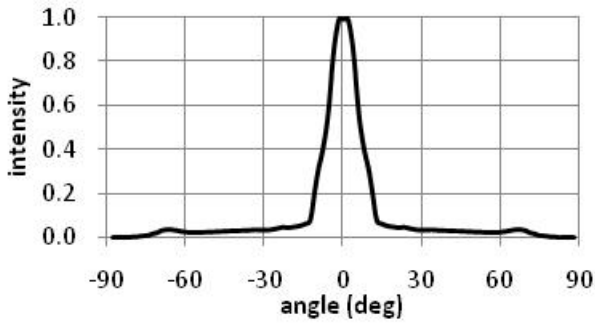


Figure-14 Φ 3Mold (Type36)

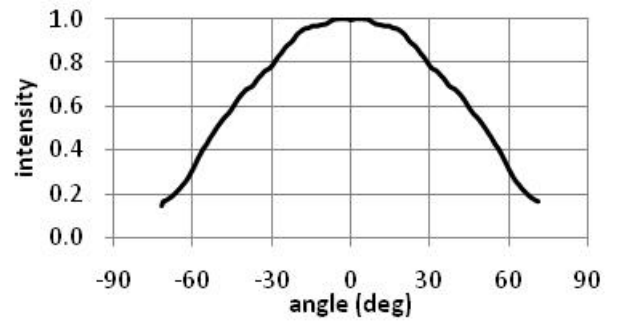


Figure-15

Figure-16

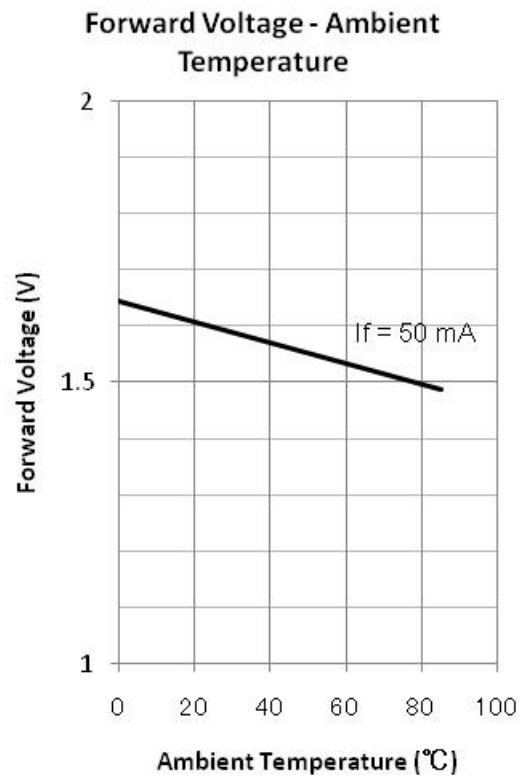
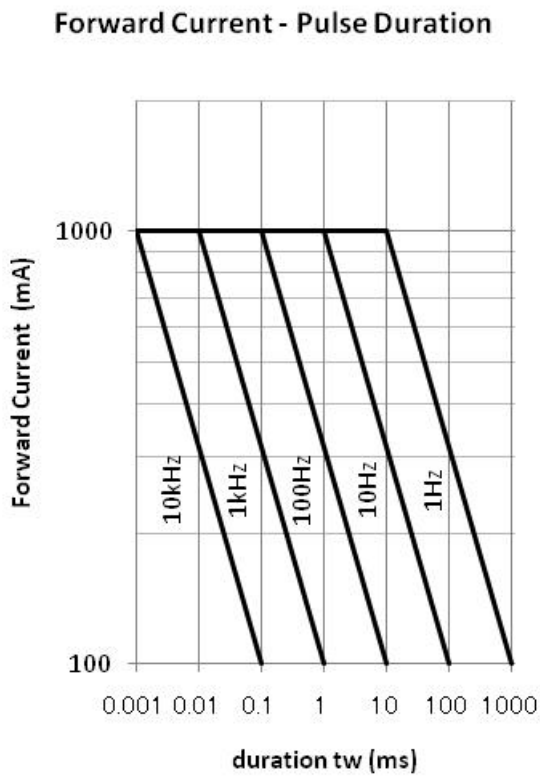
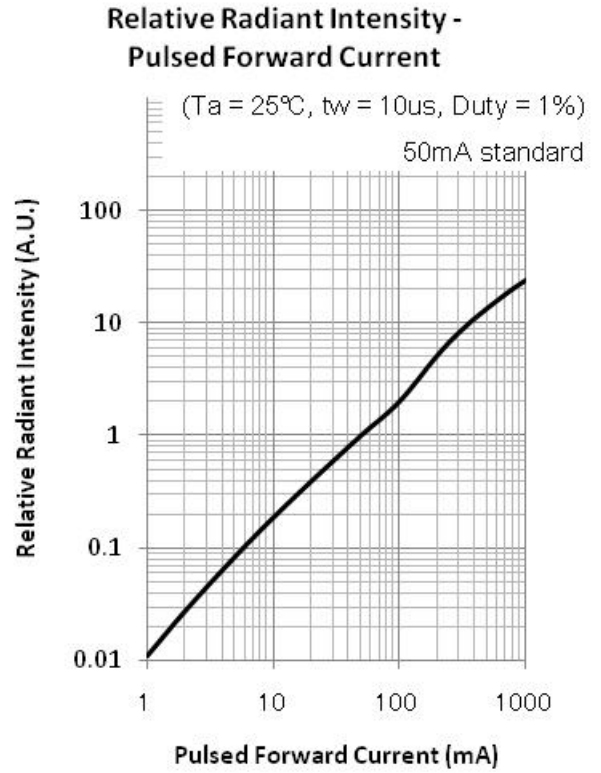
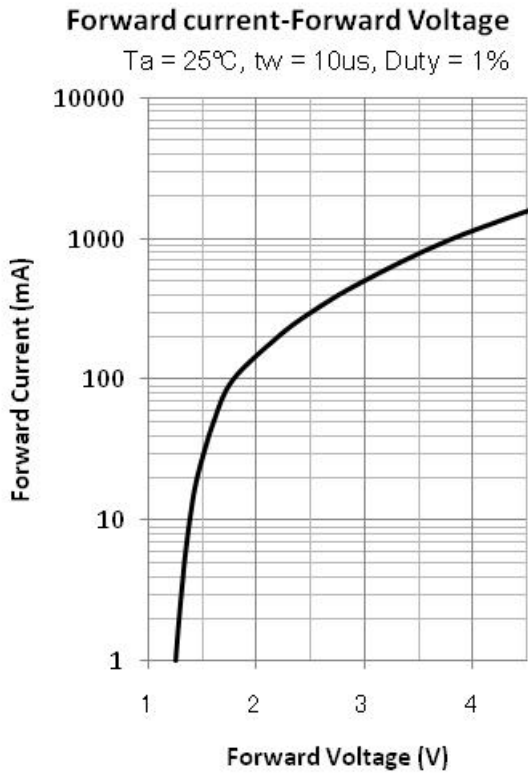
Figure-17

Figure-18

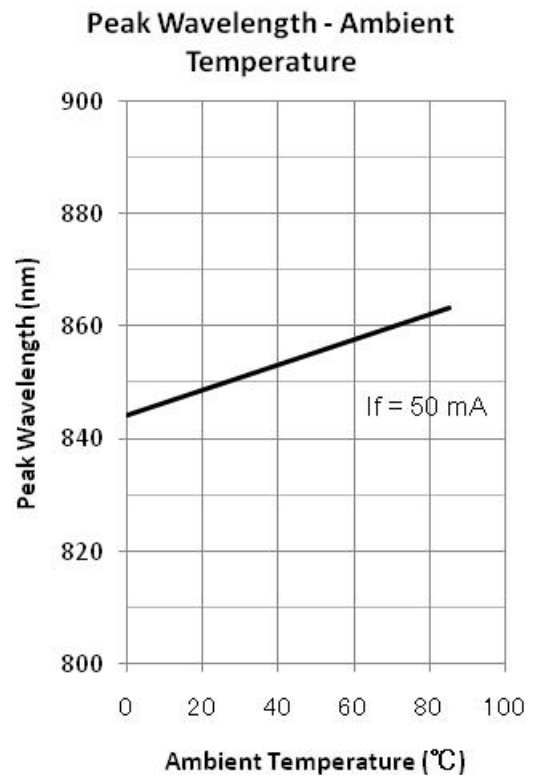
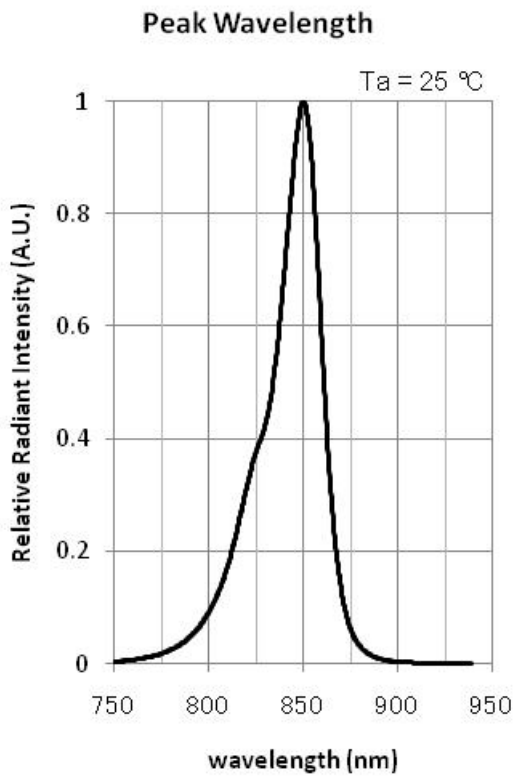
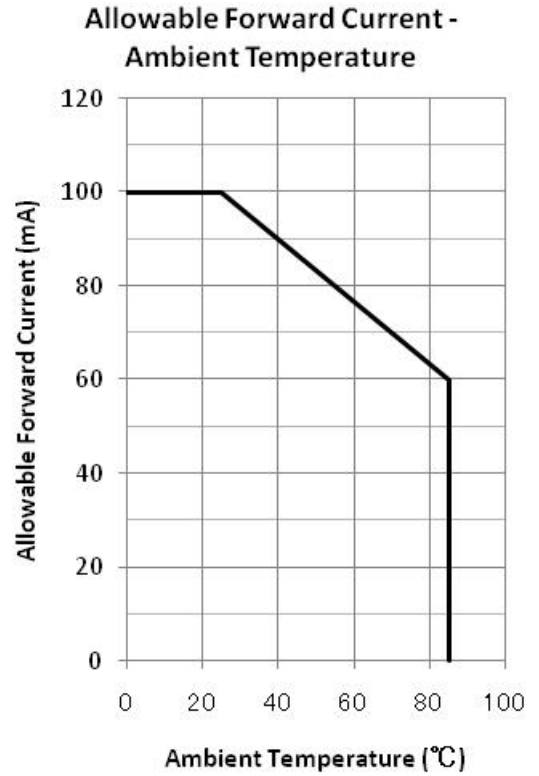
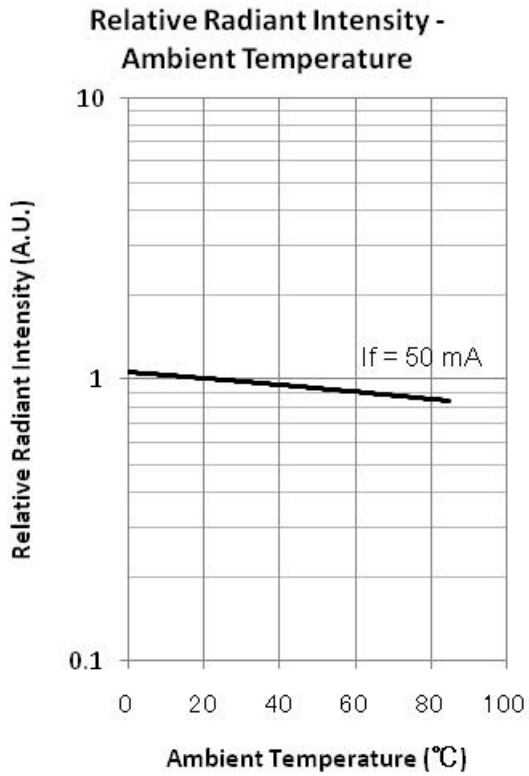
Figure-19

Figure-20

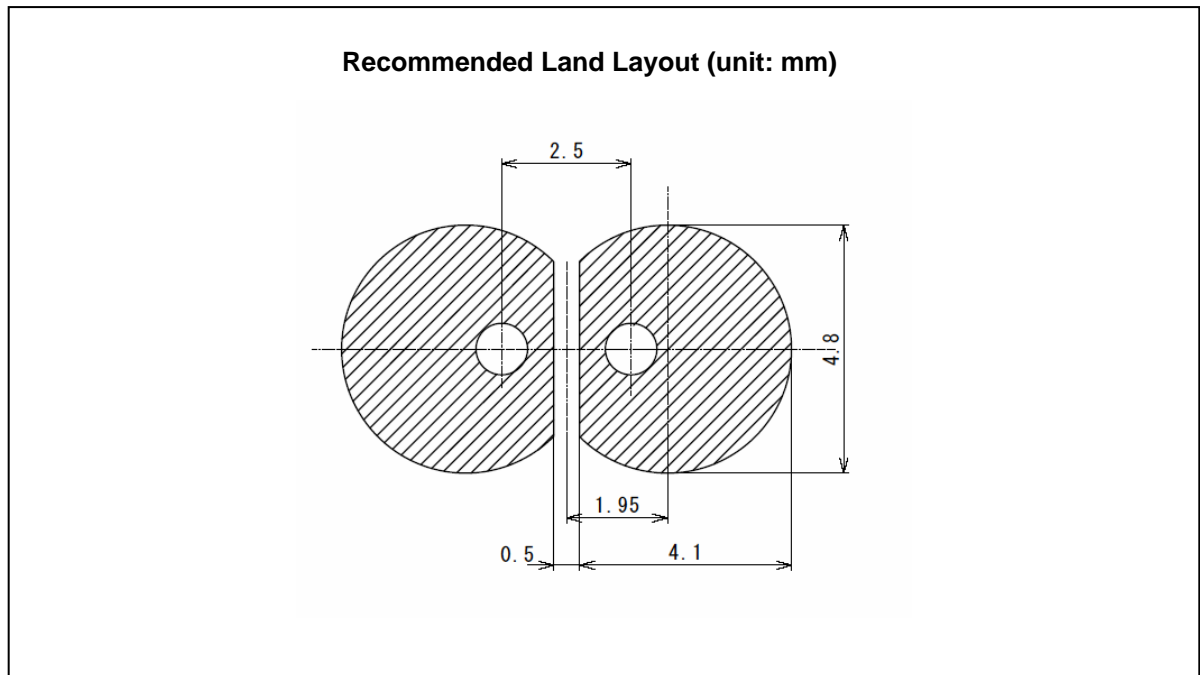
L850D Series Operating Characteristics (1/2)



L850D Series Operating Characteristics (1/2)



Recommended Land Layout



Soldering Conditions

