

# L850D-06-50

## Infrared LED Lamp

This series of L850D-06-50 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. These devices are intended to be operated at pulsed current of 2A under 3.5V typ..

### Features

- High Power Infrared LED
- Peak wavelength typ. 850 nm
- Very High radiant Intensity
- Emission angle  $\pm 4^\circ$

### Applications

- Infrared Illumination for CCTV
- IR Data Transmission
- Industrial Sensors



### Safety Advices

Depending on the application, these devices which emit infrared light may exceed over Accessible Emission Limit and cause the damage to the human eye.

Keep the safety precautions given in IEC 60825-1 and IEC 625471 before using.

### 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	$I_{FP}$	2000	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	$^\circ\text{C}$	
Storage Temperature	$T_{STG}$	-40 ~ +100	$^\circ\text{C}$	
Soldering Temperature	$T_{SOL}$	265	$^\circ\text{C}$	

‡Pulse Forward Current condition: Duty=1% and Pulse Width=10us.

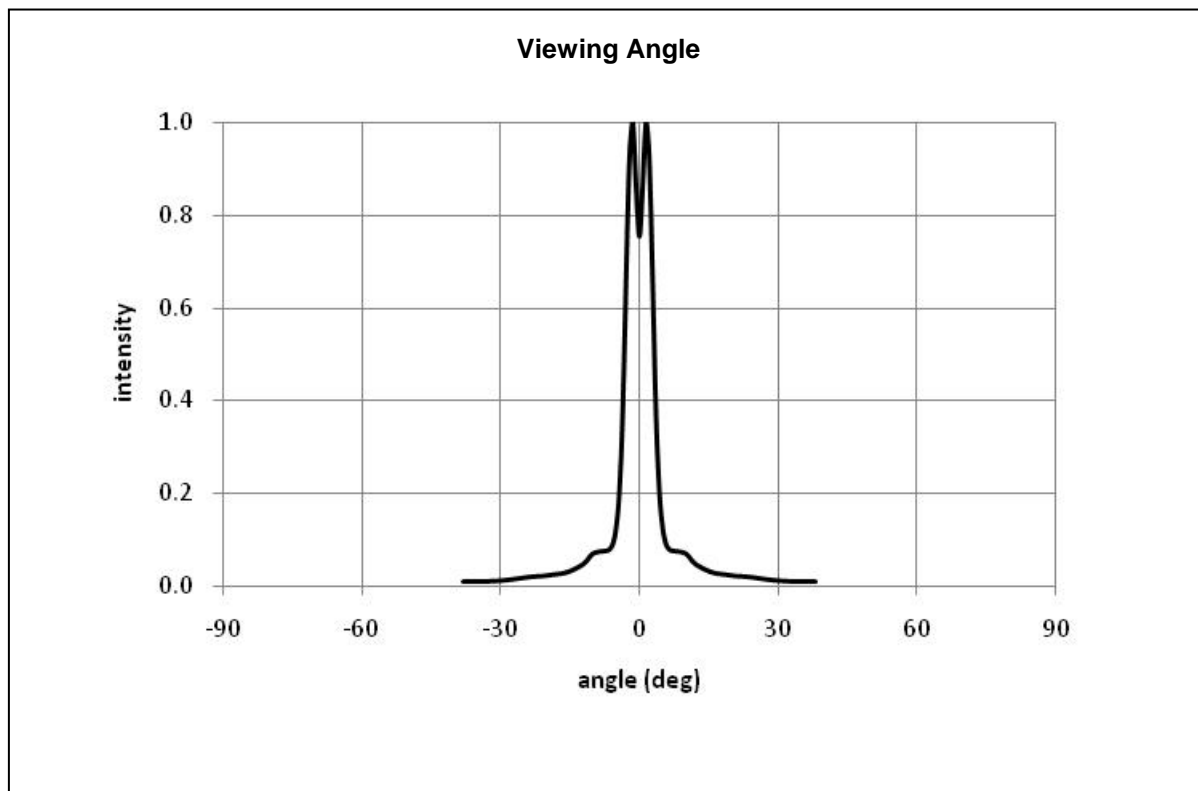
‡Soldering condition: Soldering condition must be completed within 3 seconds at 265 $^\circ\text{C}$

### Electro-Optical Characteristics (Ta=25°C)

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	$V_F/V_{FP}$	$I_F=50mA$		1.5	1.7	V
		$I_F=100mA, tp=20ms$		1.6	1.8	
		$I_{FP}=2A$		3.6	4.2	
Reverse Current	$I_R$	$V_R=5V$			10	$\mu A$
Total Radiated Power	$P_O$	$I_F=50mA$	18	23		mW
		$I_F=100mA, tp=20ms$	36	46		
Radiant Intensity	$I_E$	$I_F=50mA$		260		mW/sr
		$I_F=100mA, tp=20ms$		520		
		$I_{FP}=2A$		10000		
Peak Wavelength	$\lambda_P$	$I_F=50mA$	835	850	865	nm
Half Width	$\Delta\lambda$	$I_F=50mA$		40		nm
Viewing Half Angle	$\theta_{1/2}$	$I_F=50mA$		$\pm 4$		deg.
Rise Time	$t_r$	$I_F=50mA$		25		ns
Fall Time	$t_r$	$I_F=50mA$		15		ns

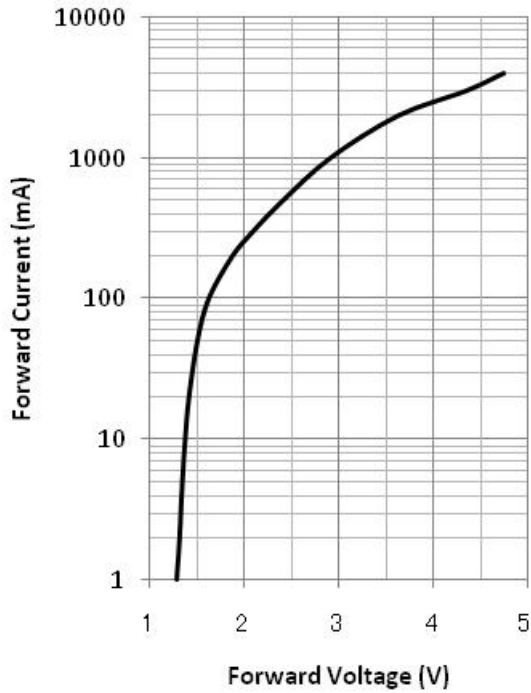
‡Total Radiated Power is measured by Photodyne #500.

‡Radiant Intensity is measured by Tektronix J-6512.



### Forward current-Forward Voltage

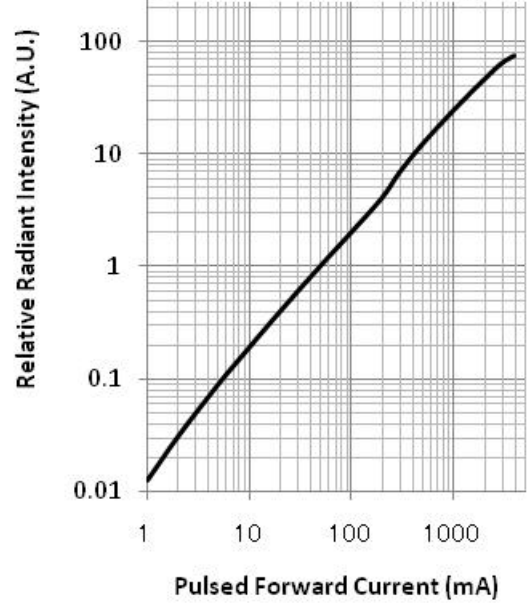
$T_a = 25^\circ\text{C}$ ,  $t_w = 10\mu\text{s}$ , Duty = 1%



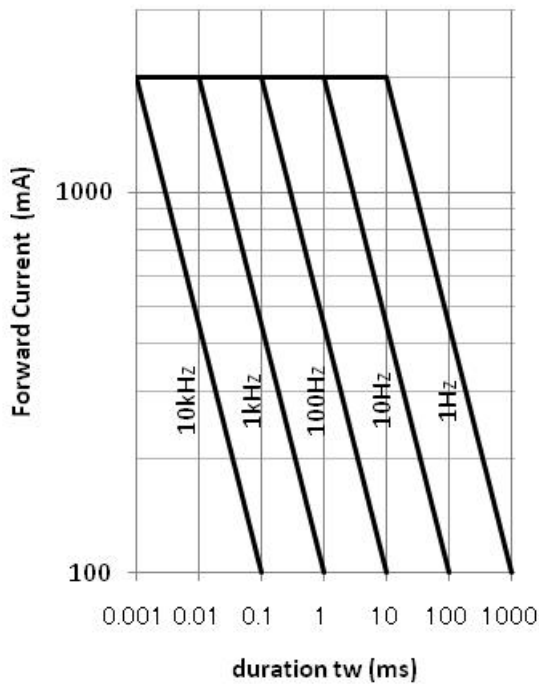
### Relative Radiant Intensity - Pulsed Forward Current

$(T_a = 25^\circ\text{C}, t_w = 10\mu\text{s}, \text{Duty} = 1\%)$

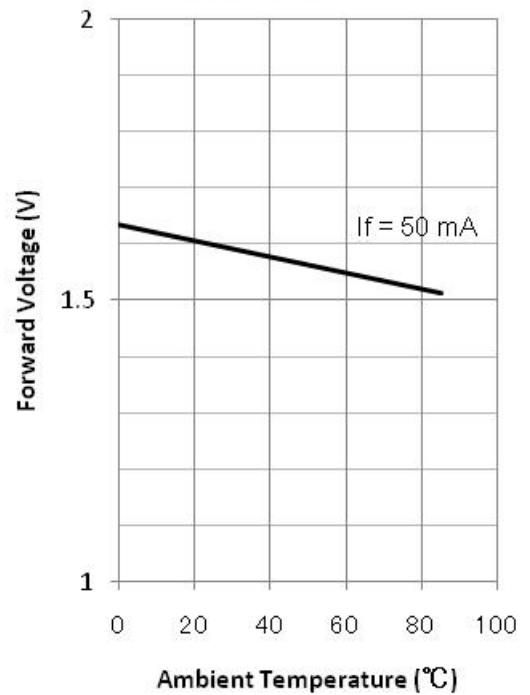
50mA standard

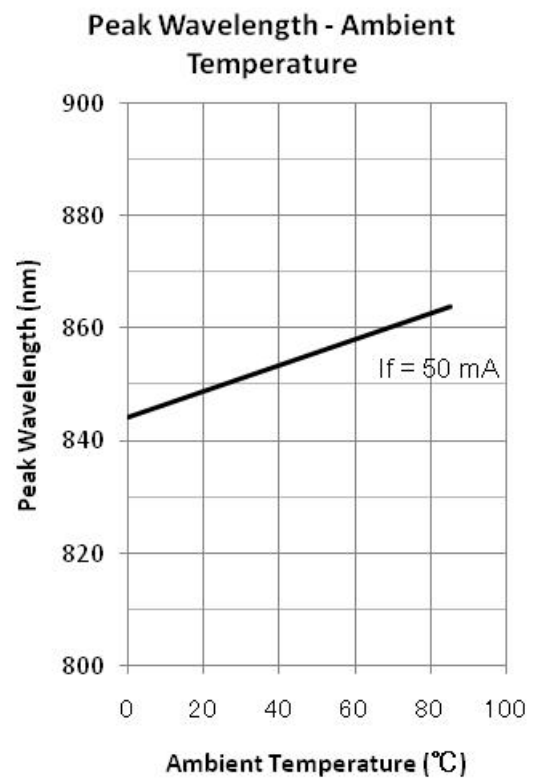
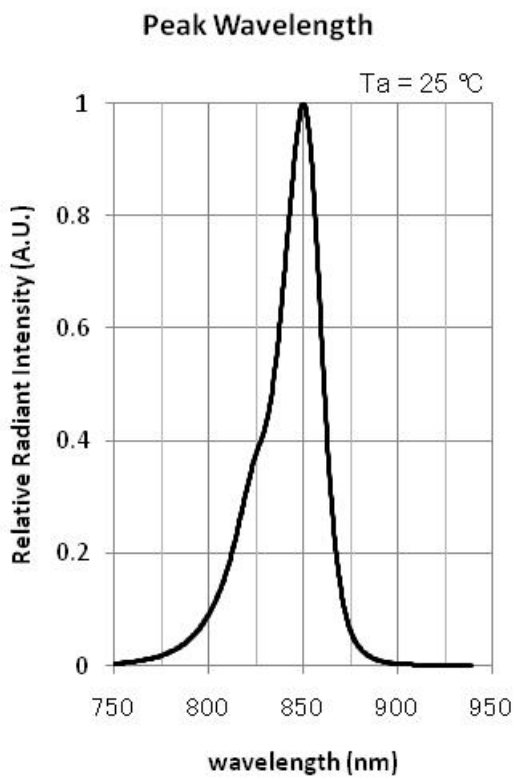
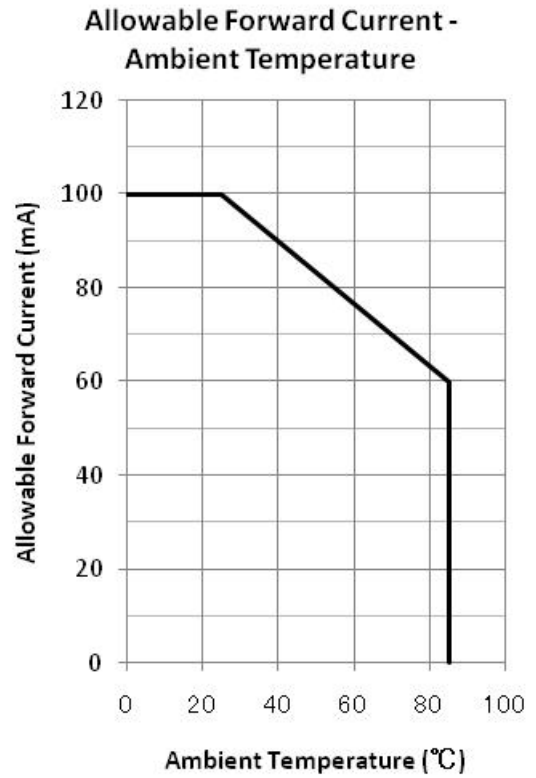
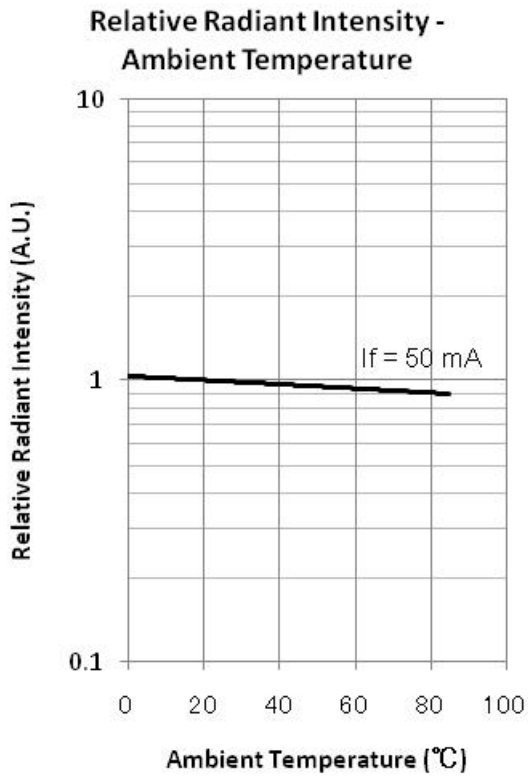


### Forward Current - Pulse Duration

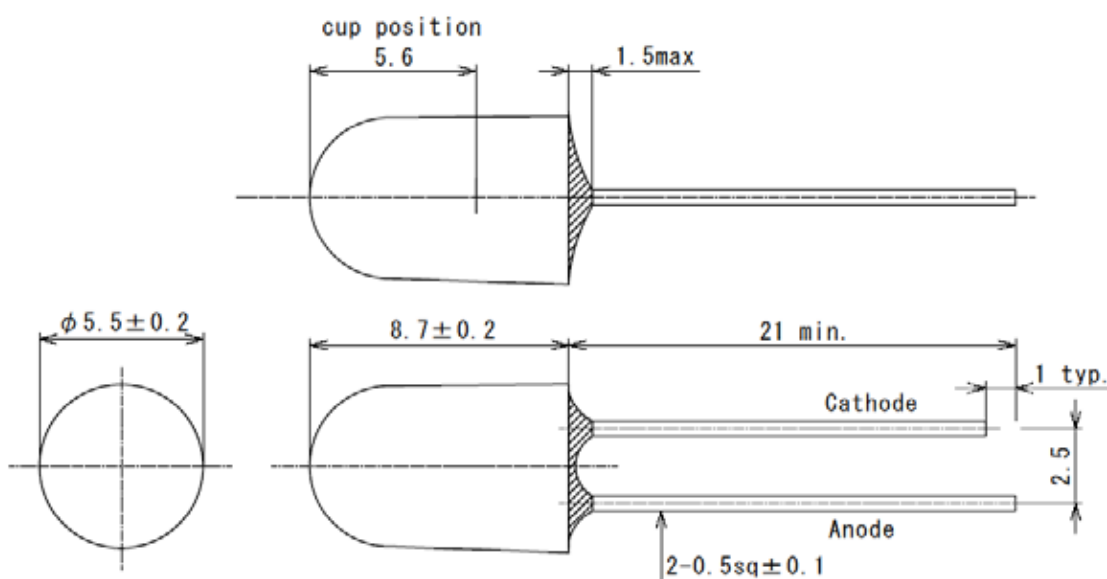


### Forward Voltage - Ambient Temperature





Outer Dimension (Unit: mm)



Recommended Land Layout (unit: mm)

