

ASDL-4772

High Performance Side look AlGaAs/GaAs Infrared (940nm) Lamp



Data Sheet

Description

ASDL-4772 is a high performance Infrared emitter that is optimized for high efficiency at emission wavelength of 940nm. It is designed for applications that require small outline dimensions with high radiant intensity and low forward voltage at wide viewing angle. The emitter is encapsulated in Side Look package and is matched to ASDL-6771 for maximum sensitivity.

Features

- Side Look Package
- 940nm wavelength
- Narrow Viewing Angle
- Good Mechanical and Spectral matching to ASDL-6771 Infrared Phototransistor Detector
- Lead Free and ROHS Compliant
- Available in Tape & Reel

Applications

- Industrial Infrared Monitoring Applications
- Consumer Electronics (Optical Mouse)
- Infrared Source for Optical Counters and Card Readers
- Photo-Interrupters
- On-Off Switch / Beam Interruption
- Positioning Sensing

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Min.	Max	Unit	Reference
Peak Forward Current	I_{FPK}		1	A	300pps
Continuous Forward Current	I_{FDC}		50	mA	
Power Dissipation	P_{DISS}		75	mW	
Reverse Voltage	V_R		5	V	
Operating Temperature	T_O	-40	85	°C	
Storage Temperature	T_S	-55	100	°C	
LED Junction Temperature	T_J		110	°C	
Lead Soldering Temperature			260 °C for 5 sec		

Electrical Characteristics at 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage	V_F		1.2	1.6	V	$I_{FDC}=20mA$
Reverse Voltage	V_R	5			V	$I_R=100uA$
Thermal Resistance, Junction to Ambient	$R\theta_{JA}$		350		°C/W	

Optical Characteristics at 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Intensity	I_E	1.203		2.707	mW/Sr	$I_{FDC}=20mA$
Viewing Angle	$2\theta_{1/2}$		30		deg	
Peak wavelength	λ_{PK}		940		nm	$I_{FDC}=20mA$
Spectral Width	$\Delta\lambda$		50		nm	$I_{FDC}=20mA$
Optical Rise Time	t_r		1		us	$I_{FPK}=100mA$ Duty Factor=50% Pulse Width=10us
Optical Fall Time	t_f		1		us	$I_{FPK}=100mA$ Duty Factor=50% Pulse Width=10us

Typical Electrical/Optical Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise indicated)

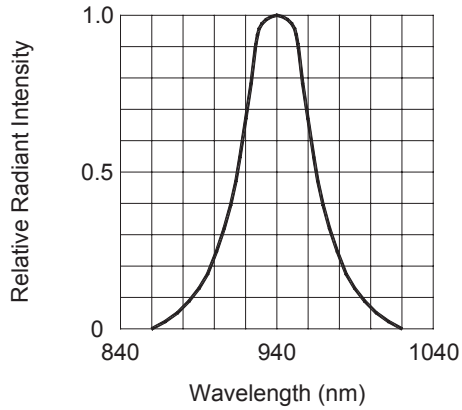


Figure 1. SPECTRAL DISTRIBUTION

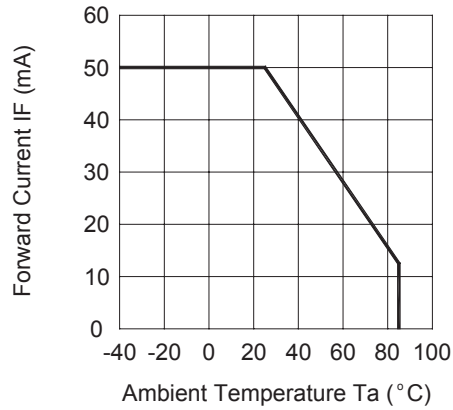


Figure 2. FORWARD CURRENT VS. AMBIENT TEMPERATURE

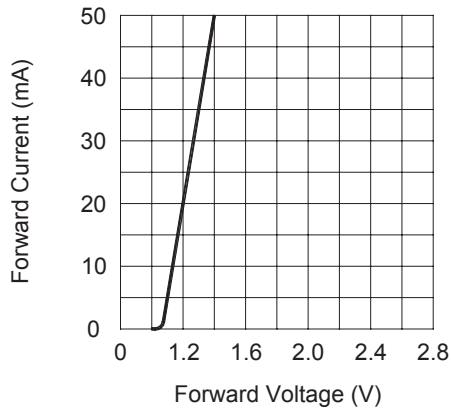


Figure 3. FORWARD CURRENT VS. FORWARD VOLTAGE

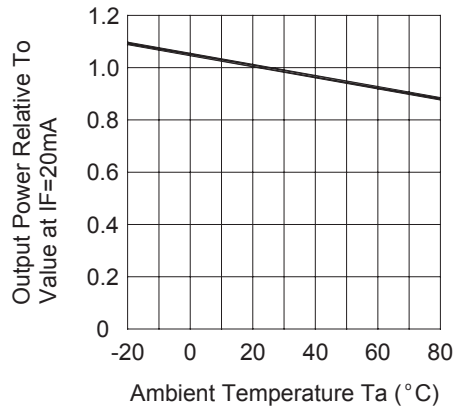


Figure 4. RELATIVE RADIANT INTENSITY VS. AMBIENT TEMPERATURE

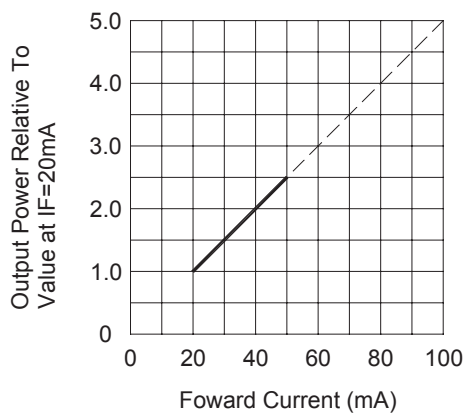


Figure 5. RELATIVE RADIANT INTENSITY VS. FORWARD CURRENT

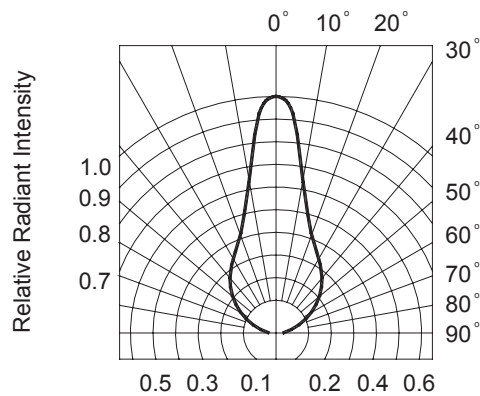


Figure 6. RADIATION DIAGRAM

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