

# L970D-33

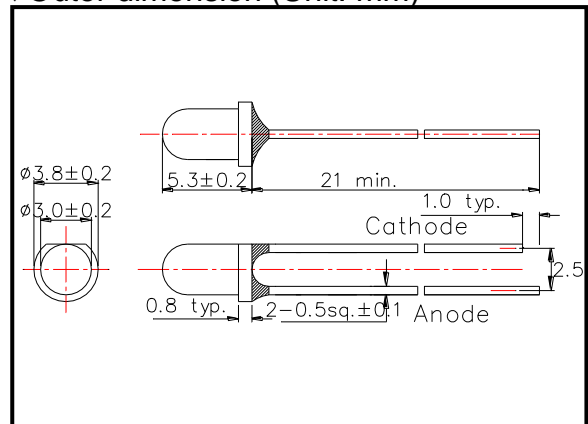
## Infrared LED Lamp

L970D-33 is an AlGaAs LED mounted on a lead frame with a clear epoxy lens. On forward bias it emits a spectral band of radiation, which peaks at 970nm.

### ◆ Specifications

1) Product Name	Infrared LED Lamp
2) Type No.	L970D-33
3) Chip	
(1) Chip Material	AlGaAs
(2) Peak Wavelength	970nm typ.
4) Package	
(1) Type	Φ3mm clear molding
(2) Resin Material	Epoxy Resin
(3) Lead Frame	Soldered (Lead Free)

### ◆ Outer dimension (Unit: mm)



### ◆ Absolute Maximum Ratings [Ta=25°C]

Item	Symbol	Maximum Rated Value	Unit
Power Dissipation	PD	180	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	1000	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	200	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	TOPR	-40 ~ +100	°C
Storage Temperature	TSTG	-40 ~ +100	°C
Soldering Temperature	TSOL	250	°C

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

‡Soldering condition: Soldering condition must be completed within 5 seconds at 250°C

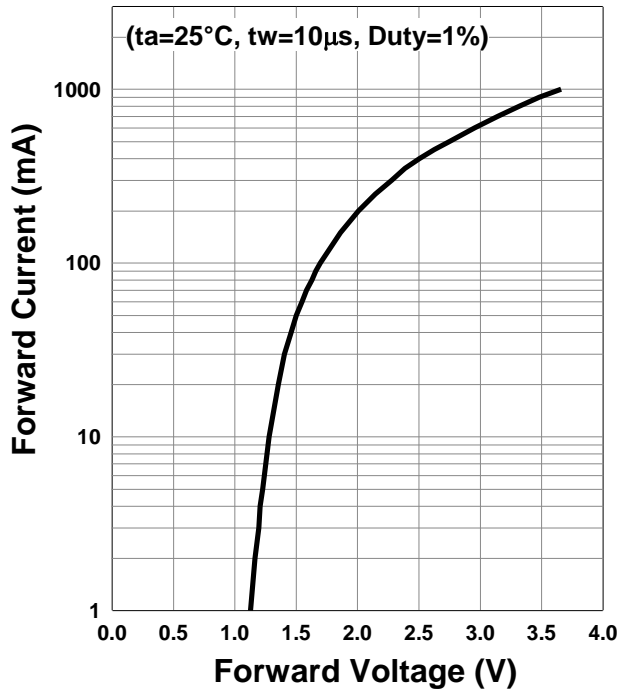
## ♦ Electro-Optical Characteristics [Ta=25°C typ.]

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Forward Voltage	VF	IF=50mA		1.5	(1.8)	V
		IF=100mA t=20ms		1.7		
	VFP	I <sub>FP</sub> =1A		3.7		
Radiated Power	PO	IF=50mA		29		mW
		IF=100mA t=20ms		57		
		I <sub>FP</sub> =1A		320		
Radiant Intensity	IE	IF=50mA		100		mW/sr
		IF=100mA t=20ms		195		
		I <sub>FP</sub> =1A		1100		
Peak Wavelength	λ <sub>P</sub>	IF=50mA	960	970	980	nm
Half Width	Δλ	IF=50mA		55		nm
Viewing Half Angle	θ 1/2	IF=50mA		±17		deg.
Rise Time	tr	IF=50mA		25		ns
Fall Time	tf	IF=50mA		25		ns

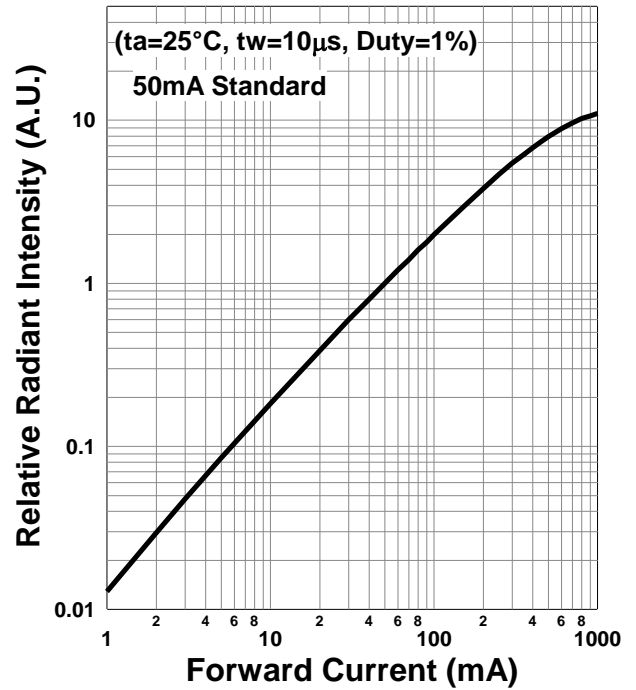
‡Radiated Power is measured by S3584-08.

‡Radiant Intensity is measured by CIE127-2007 Condition B.

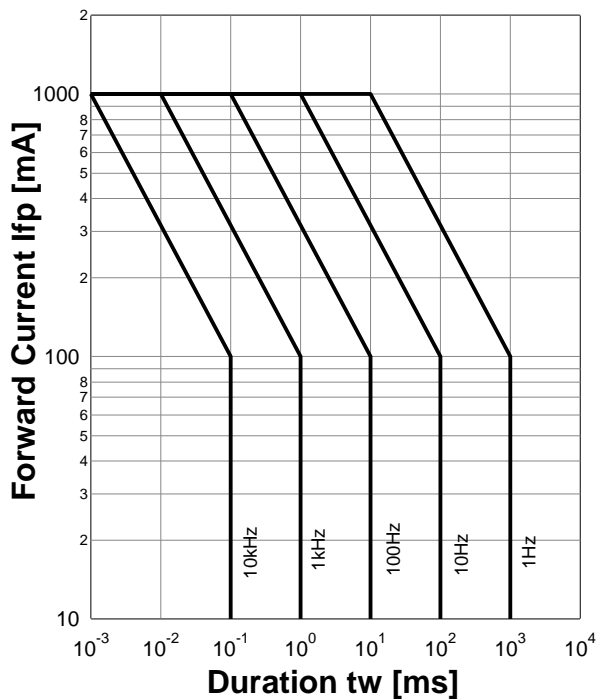
Forward Current - Forward Voltage



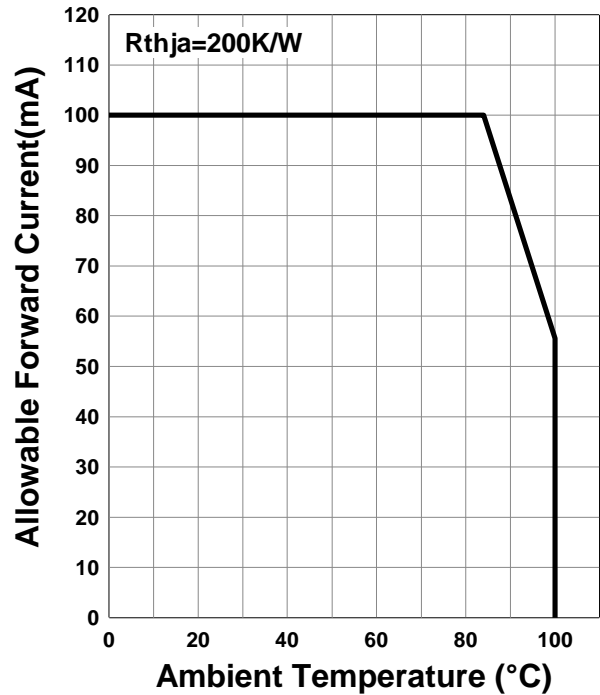
Relative Radiant Intensity - Forward Current



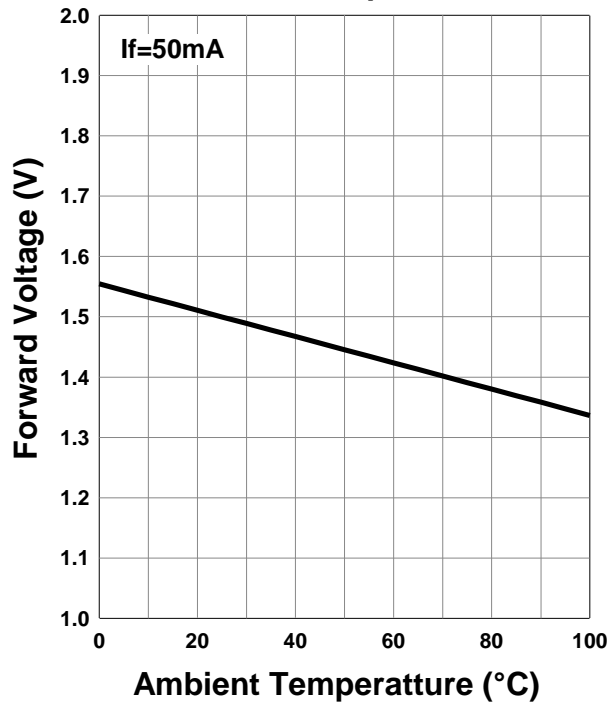
Forward Current - Pulse Duration



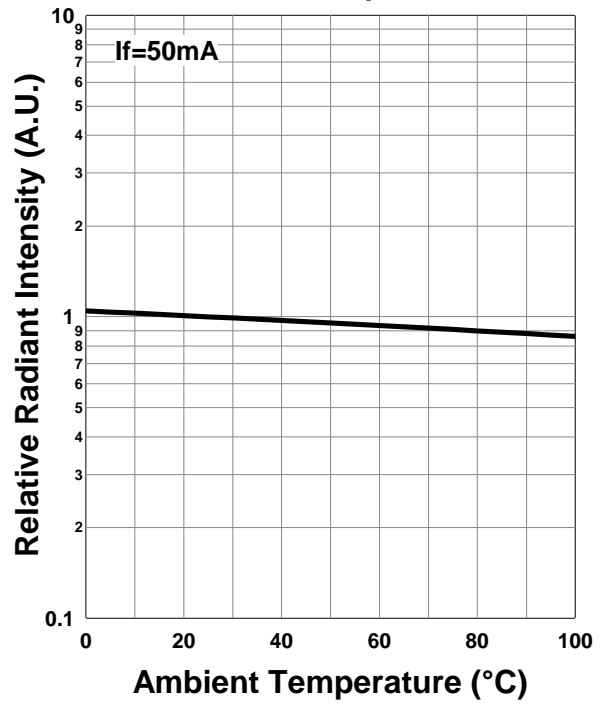
Allowable Forward Current - Ambient Temperature



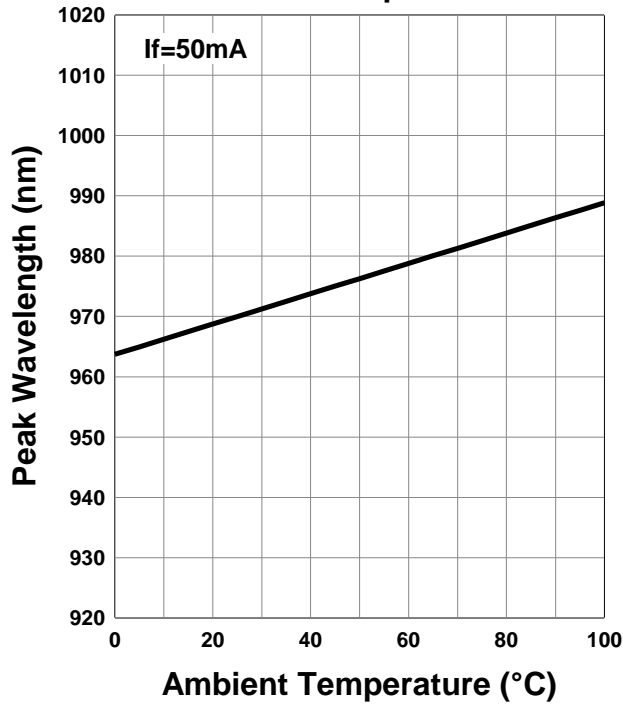
**Forward Voltage - Ambient Temperature**



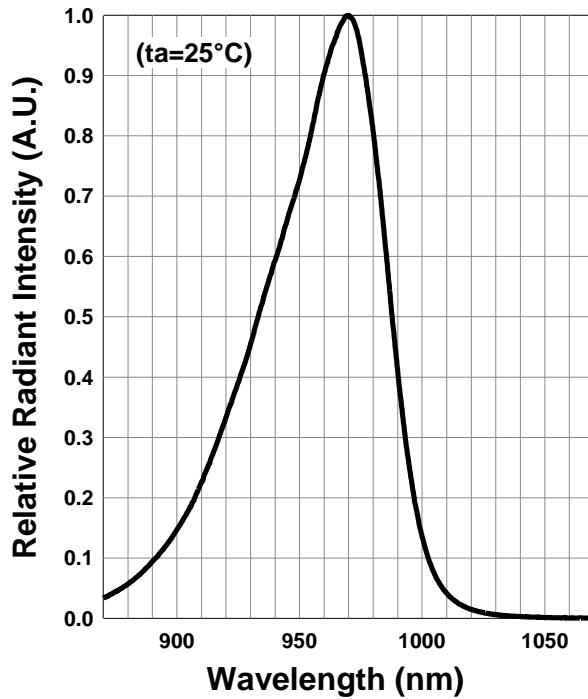
**Relative Radiant Intensity - Ambient Temperature**



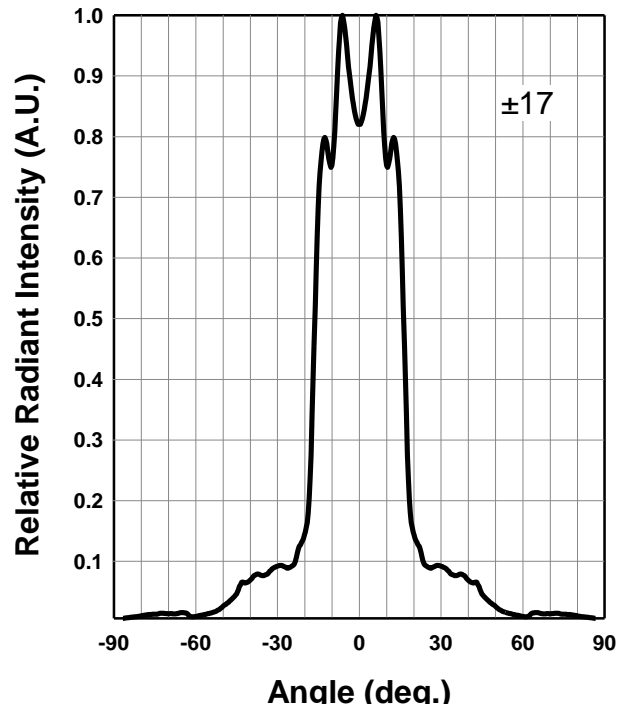
**Peak Wavelength - Ambient Temperature**



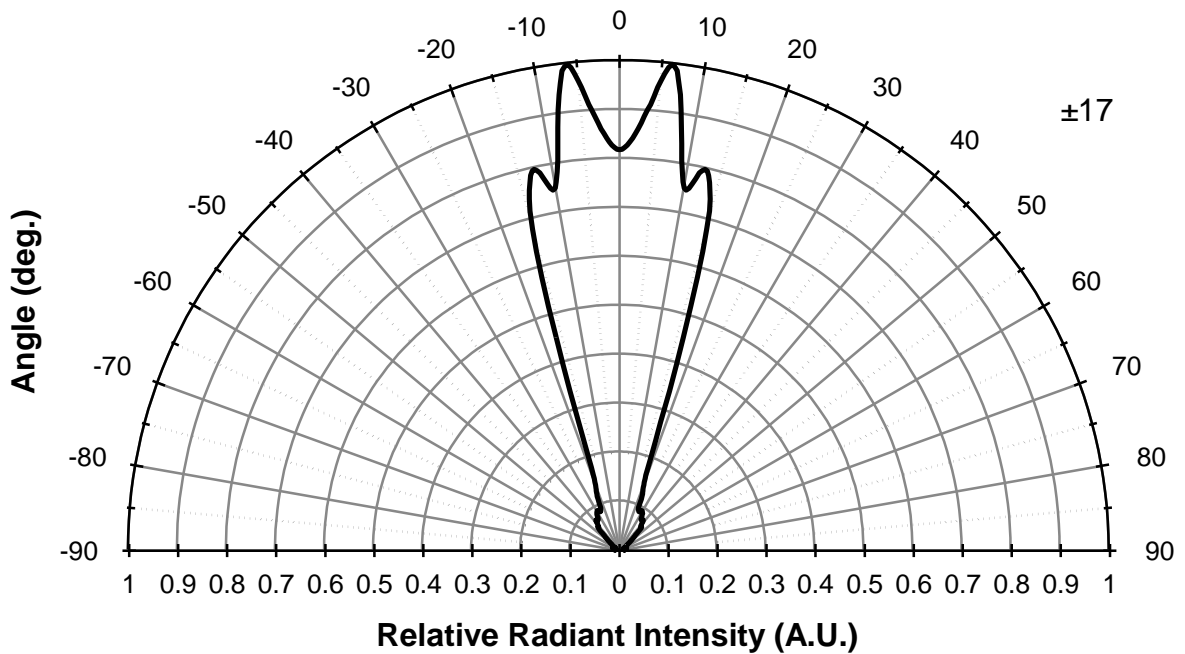
Relative Spectral Emission



Radiation Characteristics



Radiation Characteristics



**Disclaimer**

Product specifications and data shown in this product catalog are subject to change without notice for the purposes of improving product performance, reliability, design, or otherwise.

Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements. Product data and parameters may vary by user application and over time.

Products shown in this catalog are intended to be used for general electronic equipment. Products are not guaranteed for applications where product malfunction or failure may cause personal injury or death, including but not limited to life-supporting / saving devices, medical devices, safety devices, airplanes, aerospace equipment, automobiles, traffic control systems, and nuclear reactor control systems.