

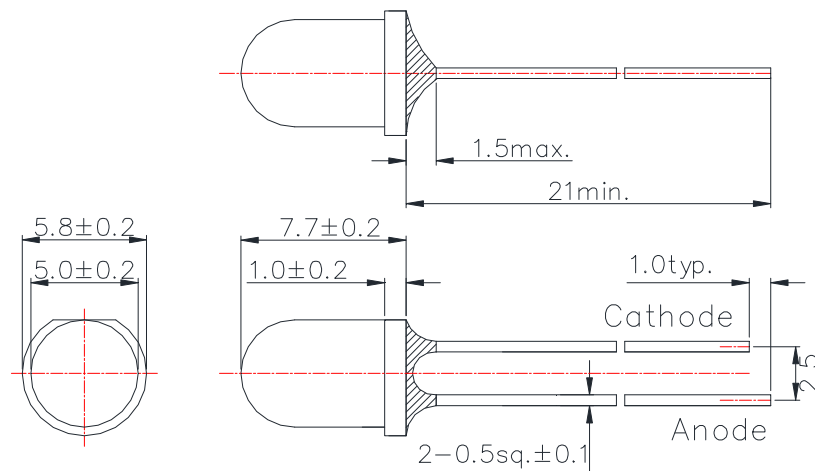
# Data Sheet

## L940D-04

Infrared LED Lamp

USHIO

### Outline and Internal Circuit



(Unit : mm)

### Features

- Chip Material : AlGaAs
- Chip Dimension :  $350 \mu\text{m} * 350 \mu\text{m}$
- Number of Chips : 1pce
- Peak Wavelength :  $940 \text{nm}$  typ.
- Package Type :  $\phi 5 \text{mm}$  clear molding
- Lead Frame : Soldered (Lead Free)
- Lens : Epoxy Resin

### Application

## Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	170	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	1000	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	170	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Soldering Temperature	TSOL	265	°C

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

‡Soldering condition : Soldering condition must be completed with 3 seconds at 265°C.

## Optical and Electrical Characteristics (Tc=25°C)

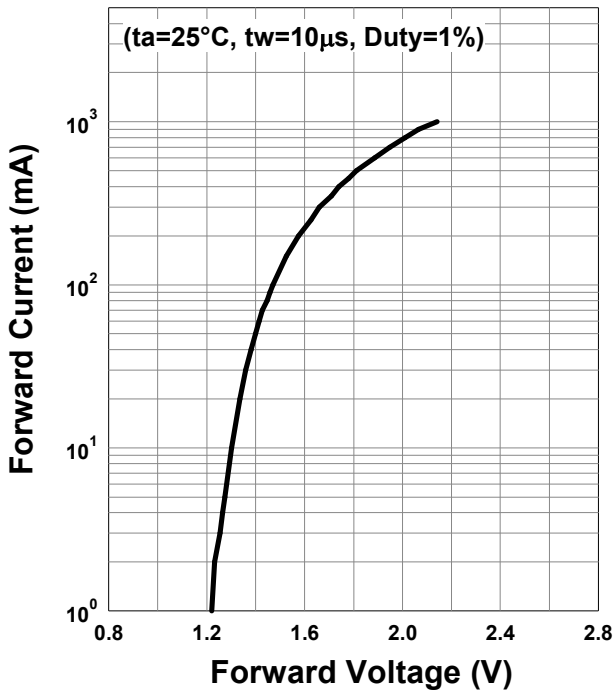
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		1.4	1.7	V	IF=50mA
	VFP		2.1			IFP=1A
Total Radiated Power	PO		30		mW	IF=50mA
			480			IFP=1A
Radiant Intensity	IE		53		mW/sr	IF=50mA
			860			IFP=1A
Peak Wavelength	$\lambda_p$	930		955	nm	IF=50mA
Half Width	$\Delta\lambda$		40		nm	IF=50mA
Viewing Half Angle	$\theta_{1/2}$		$\pm 10$		deg.	IF=50mA
Rise Time	tr		10		ns	IF=50mA
Fall Time	tf		15		ns	IF=50mA

‡ Radiated Power is measured by S3584-08.

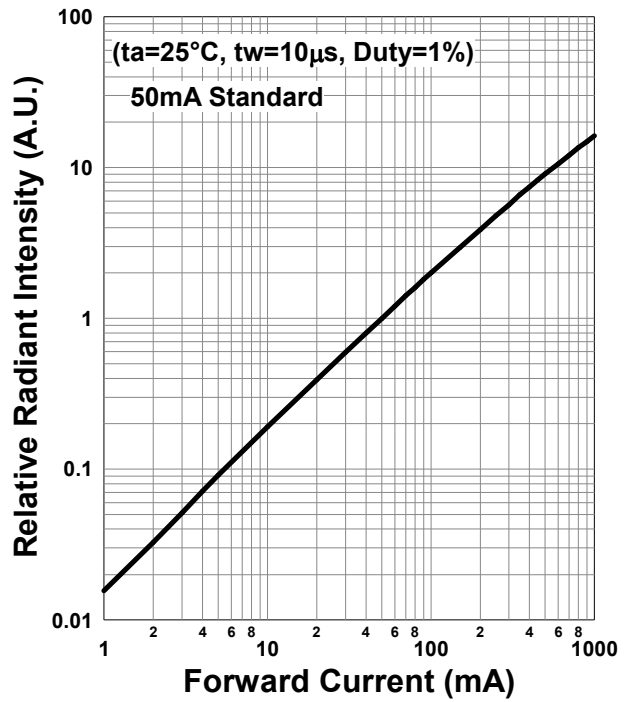
‡ Radiant Intensity is measured by CIE127-2007 Condition B.

## Typical Characteristic Curves

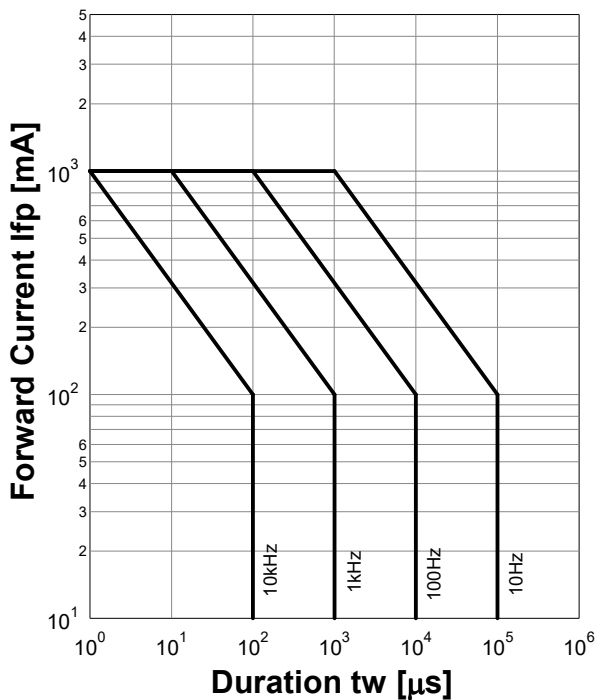
### Forward Current - Forward Voltage



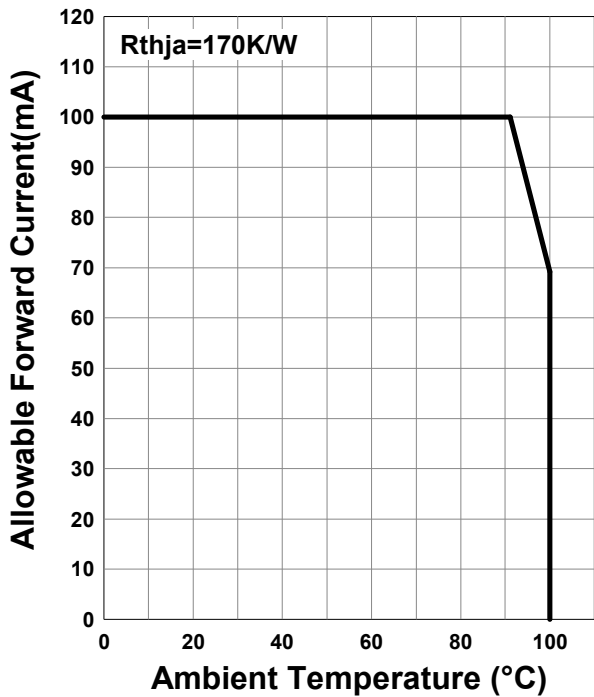
### Relative Radiant Intensity - Forward Current



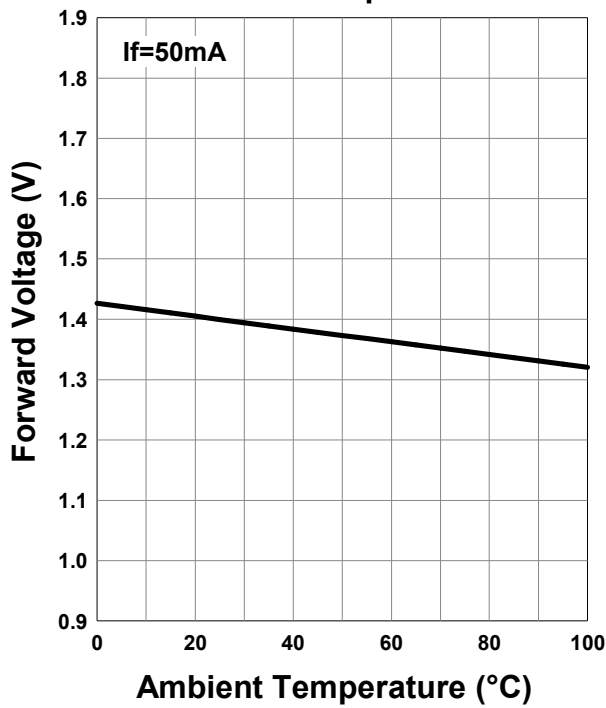
### Forward Current - Pulse Duration



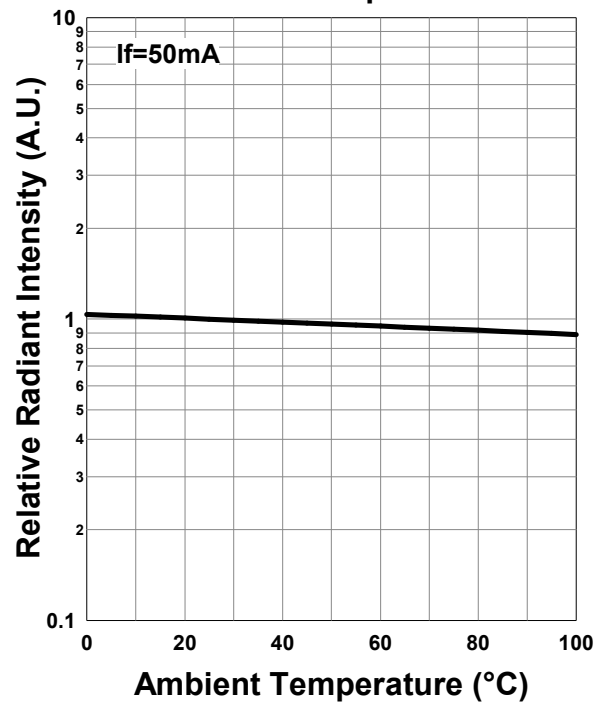
### Allowable Forward Current - Ambient Temperature



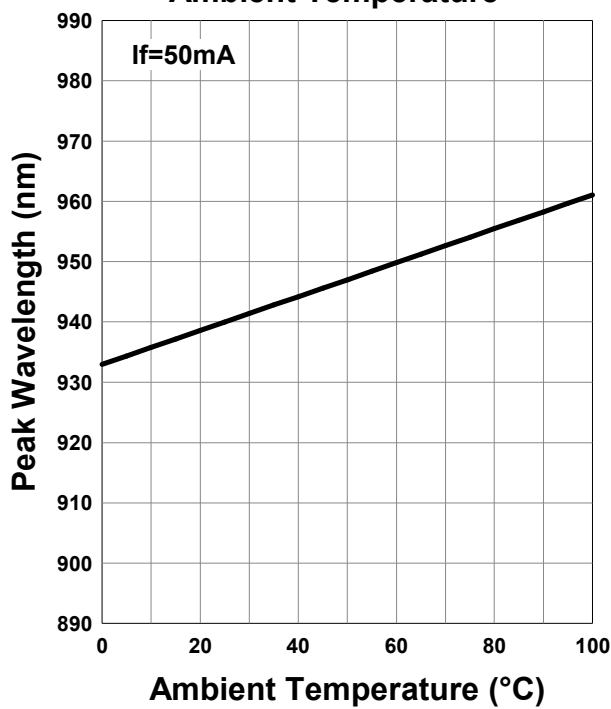
**Forward Voltage - Ambient Temperature**



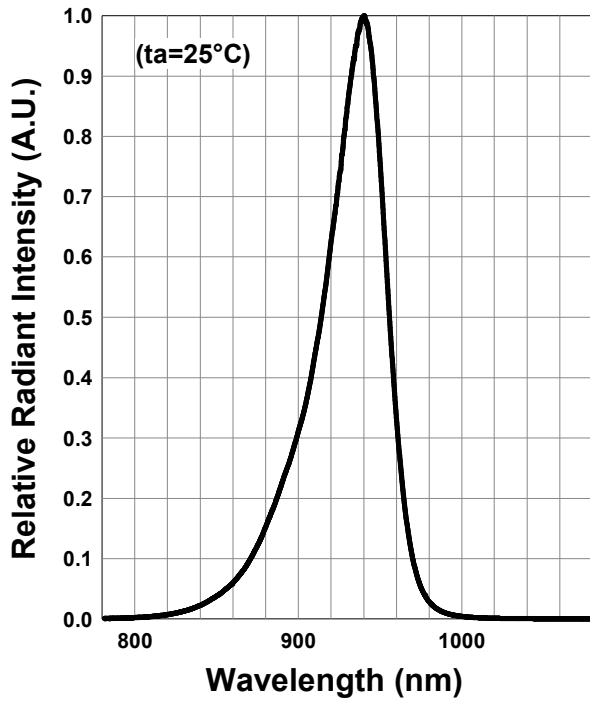
**Relative Radiant Intensity - Ambient Temperature**



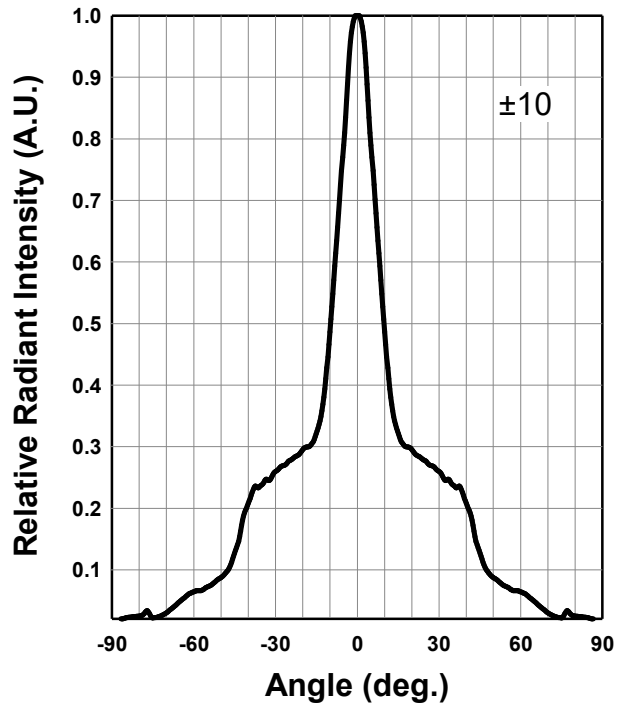
**Peak Wavelength - Ambient Temperature**



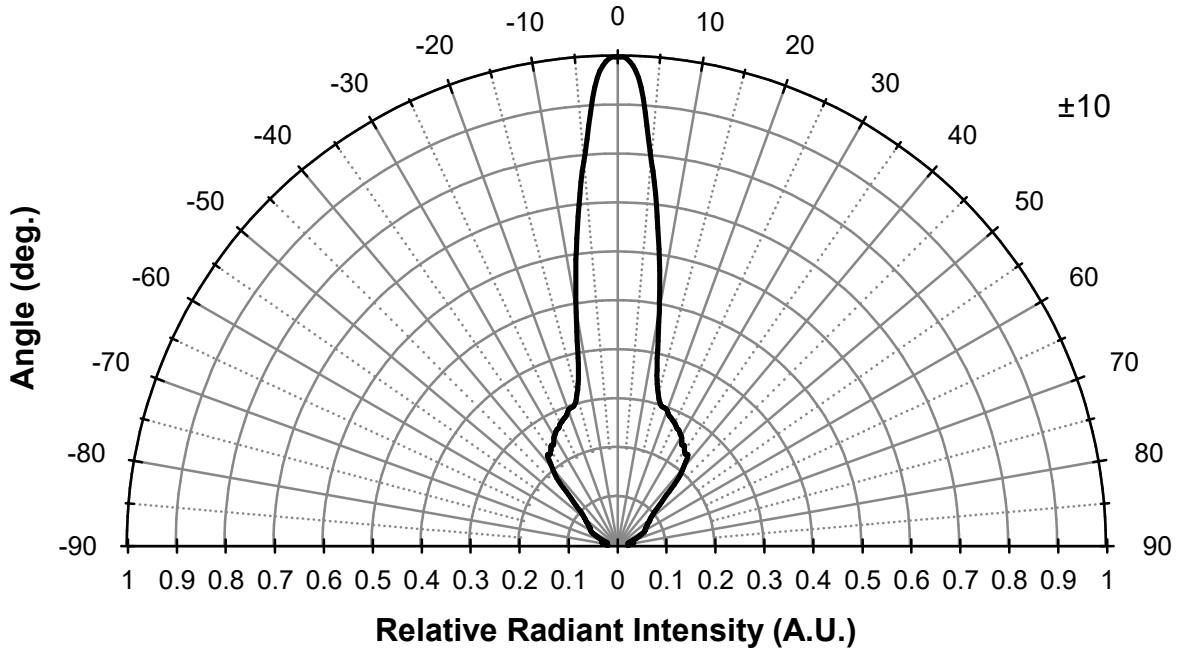
### Relative Spectral Emission



### Radiation Characteristics



### Radiation Characteristics



## Disclaimer

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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.

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\*Effective July 2016, Ushio Epitex Inc. is now USHIO OPTO SEMICONDUCTORS, INC.