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Data Sheet

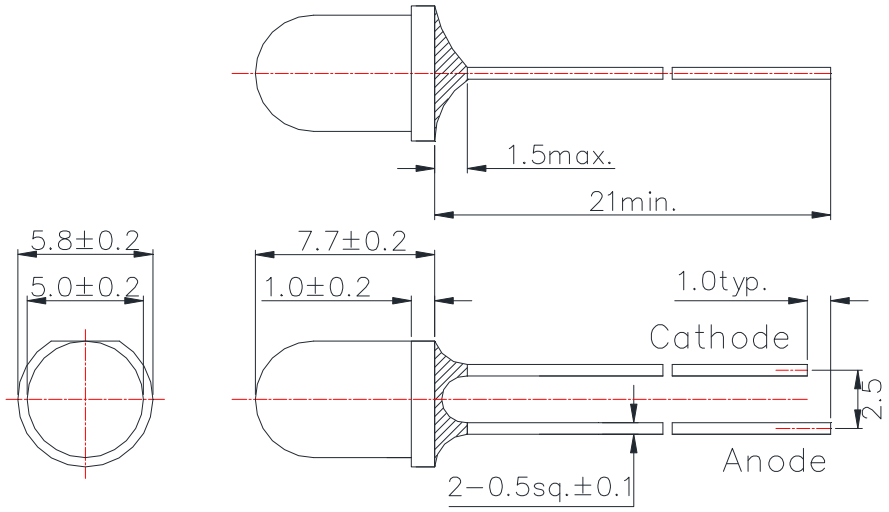
2021.01

PRELIMINARY

L1450D-04

Infrared LED Lamp

Outline and Internal Circuit



(Unit : mm)

Features

· Chip Material : InGaAsP

· Chip Dimension : 350um * 350um

· Number of Chips : 1pce

· Peak Wavelength : 1450nm typ.

· Package Type : ·5mm clear molding

· Lead Frame : Soldered (Lead Free)

· Lens : Epoxy Resin

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L1450D-04

Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	130	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	1000	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthjs	250	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)

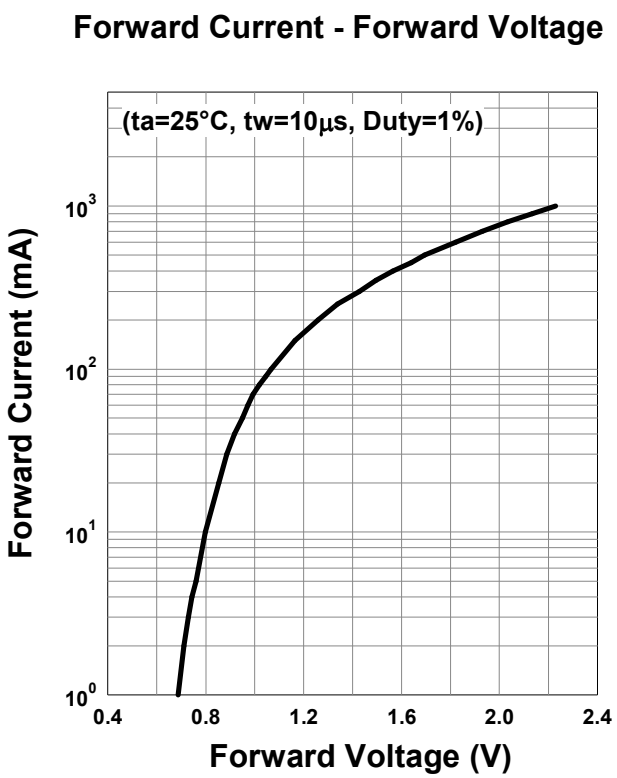
(*: 100% testing, **: reference value)

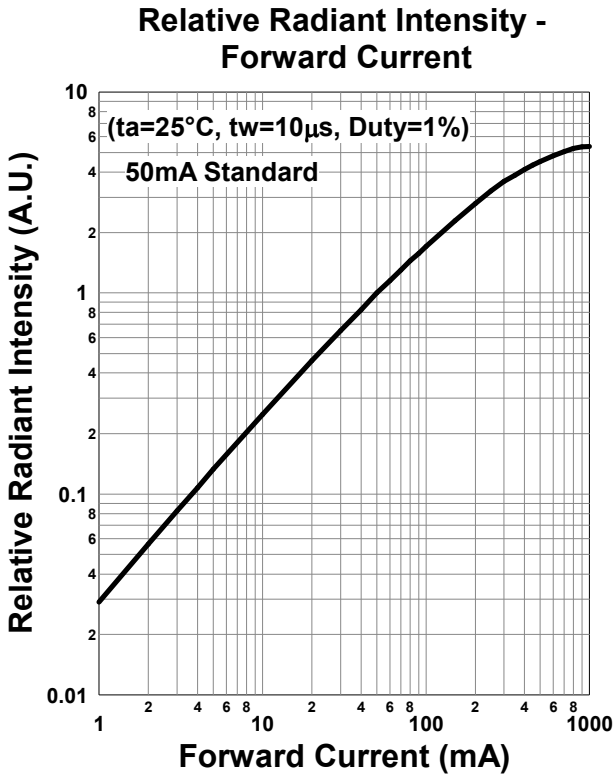
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		0.95	1.3	V	IF=50mA*
	VFP		2.2			IFP=1A**
Reverse Current	IR			10	uA	VR=5V*
Total Radiated Power	PO	4.1	6.2		mW	IF=50mA*
			33			IFP=1A**
Radiant Intensity	IE		22		mW/sr	IF=50mA**
			110			IFP=1A**
Peak Wavelength	λp	1420		1480	nm	IF=50mA*
Half Width	Δλ		110		nm	IF=50mA**
Viewing Half Angle	θ1/2		±10		deg.	IF=50mA**
Rise Time	tr		60		ns	IF=50mA**
Fall Time	tf		30		ns	IF=50mA**

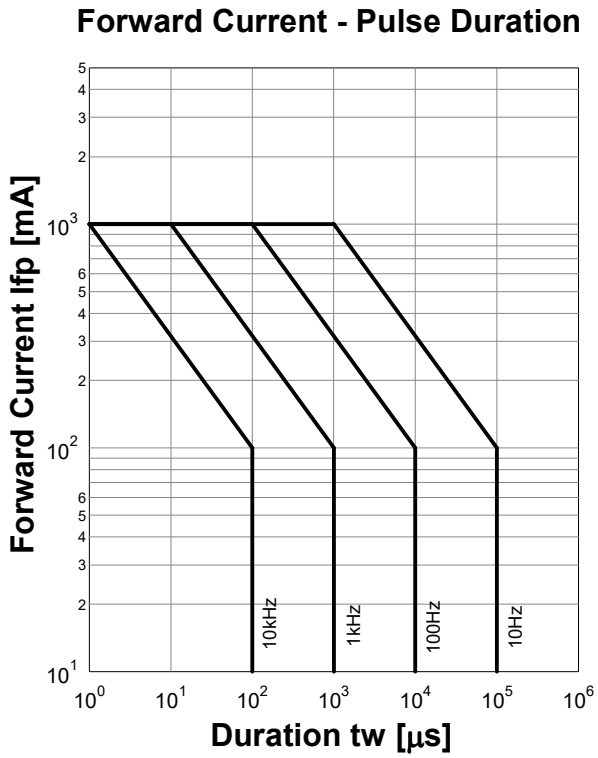
‡ Radiated Power is measured by G8370-85.

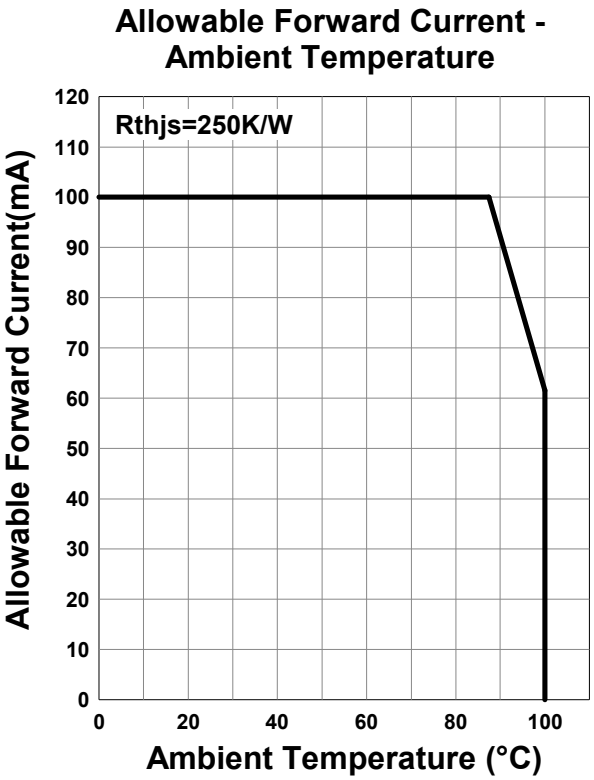
‡ Radiant Intensity is measured by Ando Optical Multi Meter AQ2140 & AQ2742.

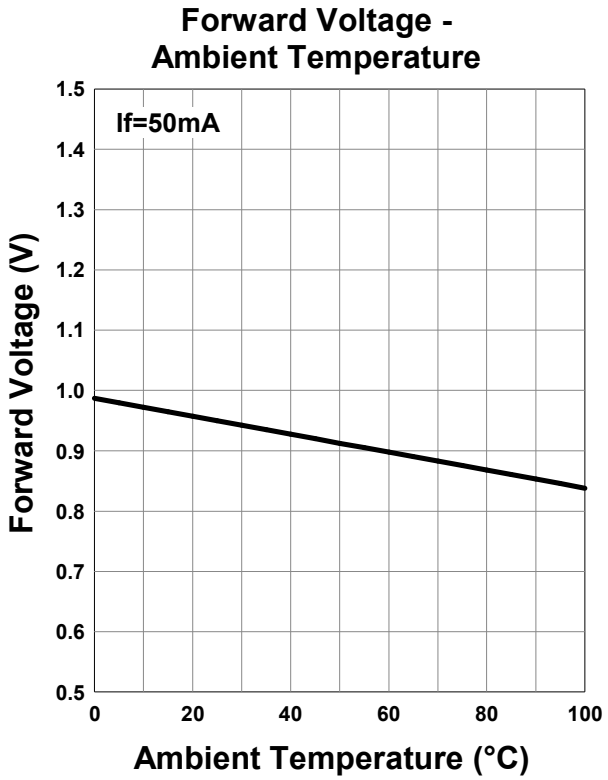
Typical Characteristic Curves

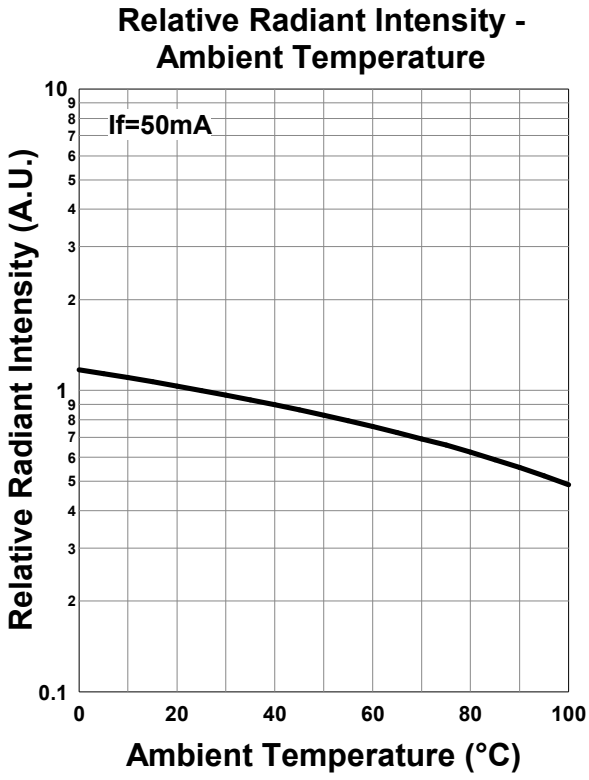


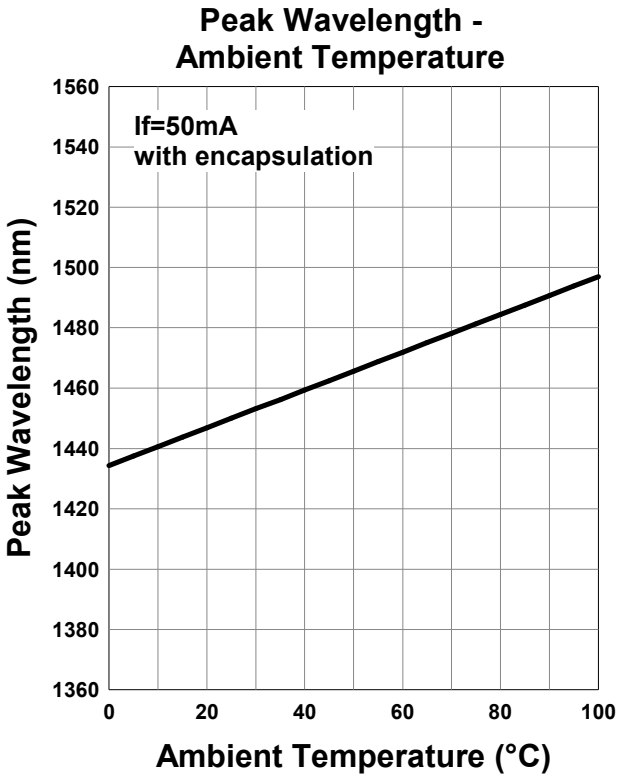







Forward Voltage -
Ambient Temperature
If=50mA
Forward Voltage (V)
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0
20
40
60
80
100
Ambient Temperature (°C)

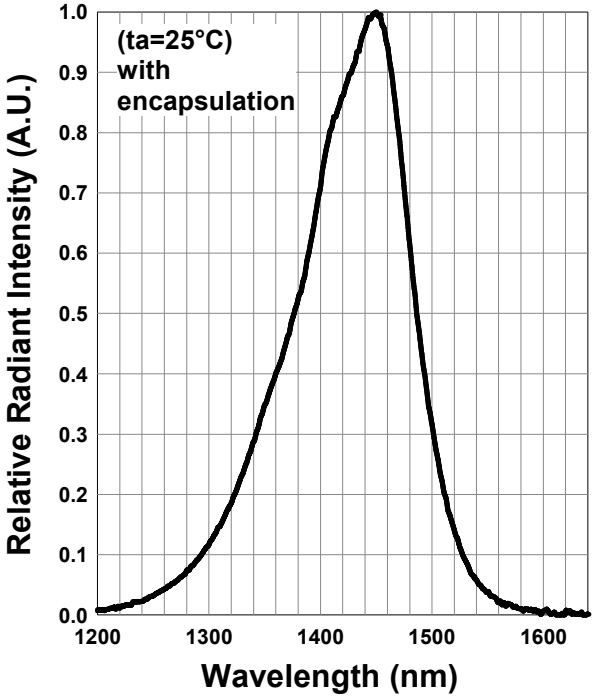

Relative Radiant Intensity -
Ambient Temperature
If=50mA
Relative Radiant Intensity (A.U.)
10
9
8
7
6
5
4
3
2
1
0.1
0
20
40
60
80
100
Ambient Temperature (°C)


Peak Wavelength -
Ambient Temperature
If=50mA
with encapsulation
Peak Wavelength (nm)
1560
1540
1520
1500
1480
1460
1440
1420
1400
1380
1360
0
20
40
60
80
100
Ambient Temperature (°C)

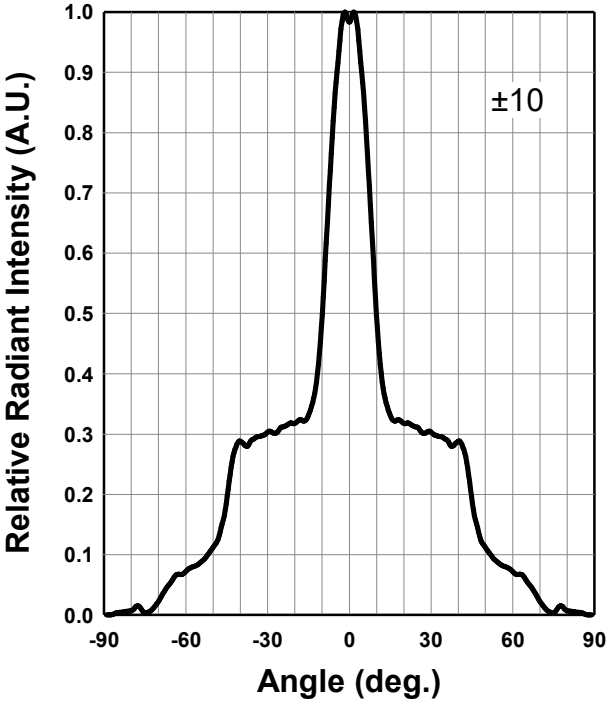
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L1450D-04

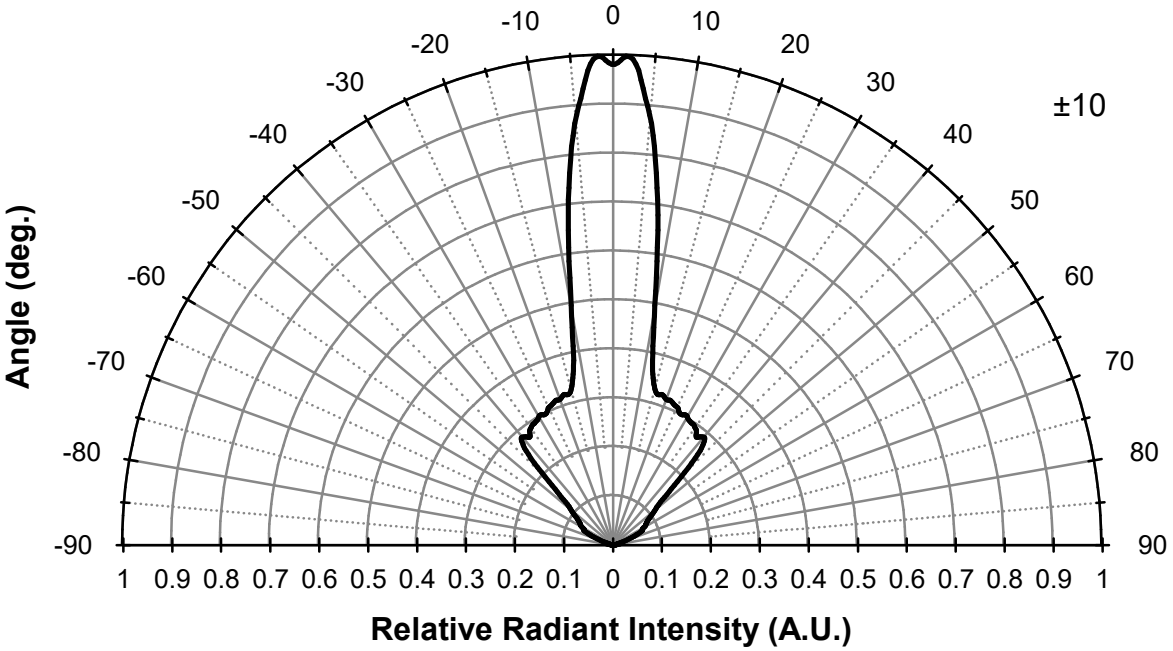
Relative Spectral Emission



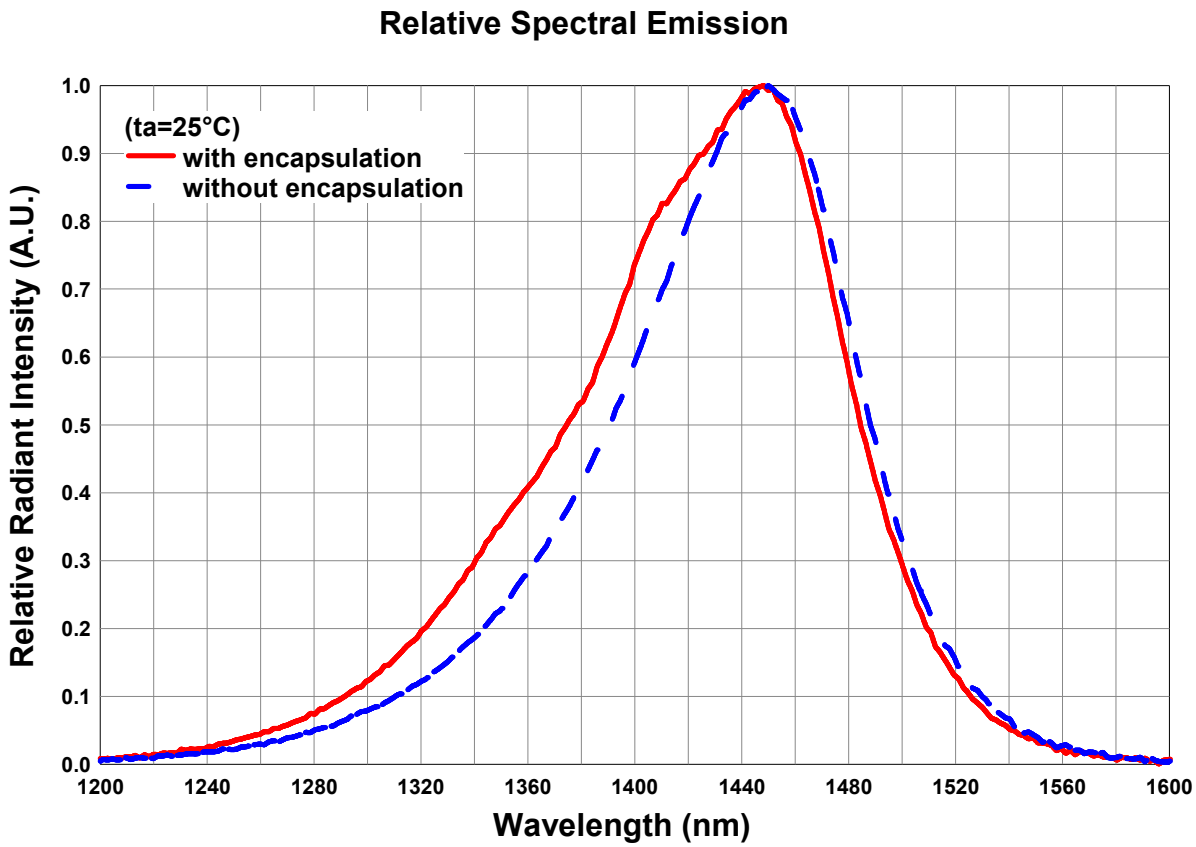
Radiation Characteristics



Radiation Characteristics



*The absorption of lens resin changes spectral emission.



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.

Technical Support Information

The product is manufactured by USHIO Inc. and the spec information is also from USHIO Inc.