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Data Sheet

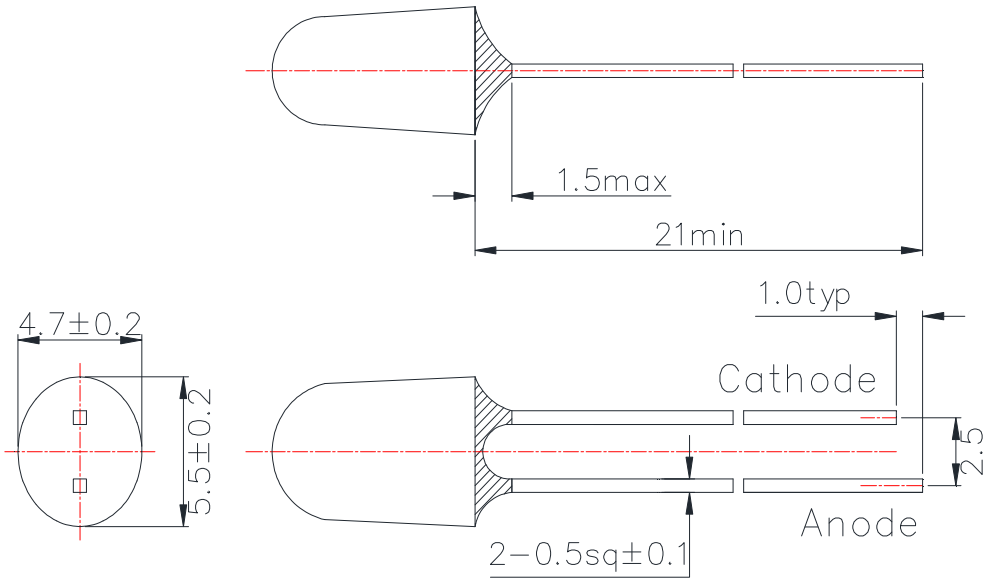
2021.02

PRELIMINARY

L1650D-09

Infrared LED Lamp

Outline and Internal Circuit



(Unit : mm)

Features

· Chip Material : InGaAsP

· Chip Dimension : 350um * 350um

· Number of Chips : 1pce

· Peak Wavelength : 1650nm typ.

· Package Type : ·5mm clear molding

· Lead Frame : Soldered (Lead Free)

· Lens : Epoxy Resin

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L1650D-09

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	3	V
Thermal Resistance	Rthjs	250	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +85	°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)

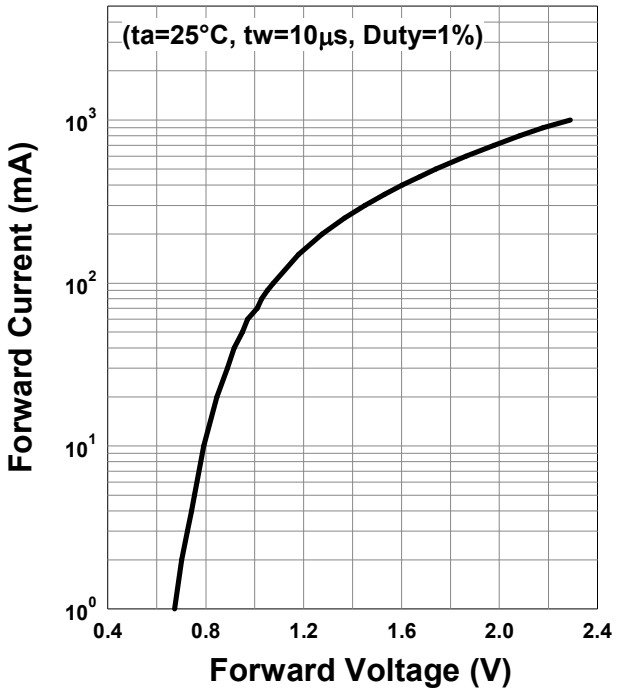
Parameter		Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage		VF		0.95	1.3	V	IF=50mA*
		VFP		2.3			IFP=1A**
Reverse Current		IR			10	uA	VR=3V*
Total Radiated Power		PO	1.5	2.3		mW	IF=50mA*
				10			IFP=1A**
Radiant Intensity		IE		21		mW/sr	IF=50mA**
				100			IFP=1A**
Peak Wavelength		λp	1600		1700	nm	IF=50mA*
Half Width		Δλ		130		nm	IF=50mA**
Viewing Half Angle	Long	θ1/2		±28		deg.	IF=50mA**
	Short			±14			
Rise Time		tr		60		ns	IF=50mA**
Fall Time		tf		30		ns	IF=50mA**

‡ Radiated Power is measured by G8370-85.

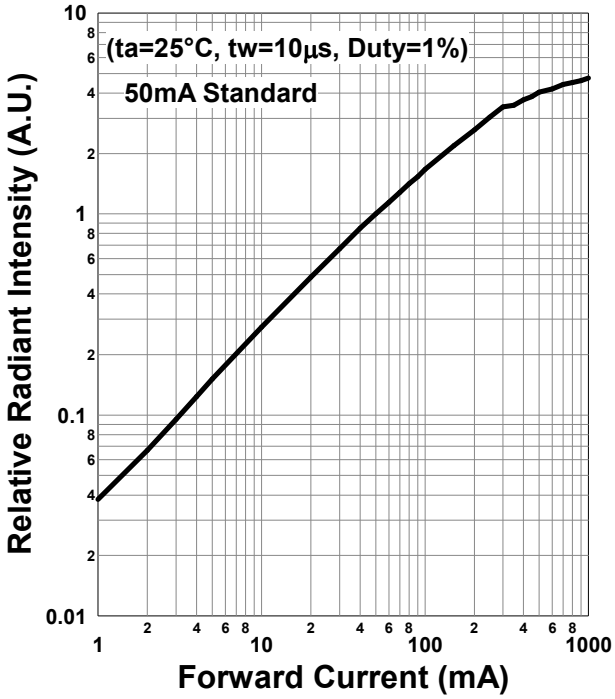
‡ Radiant Intensity is measured by Ando Optical Multi Meter AQ2140 & AQ2742.

Typical Characteristic Curves

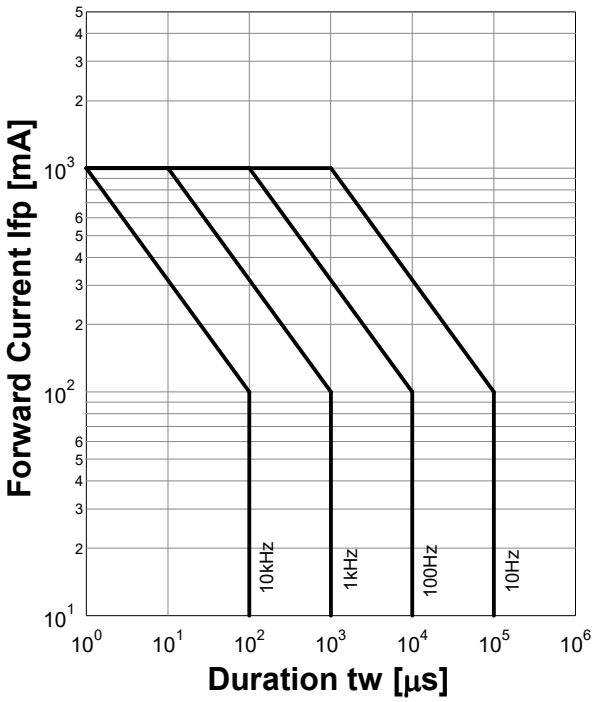
Forward Current - Forward Voltage



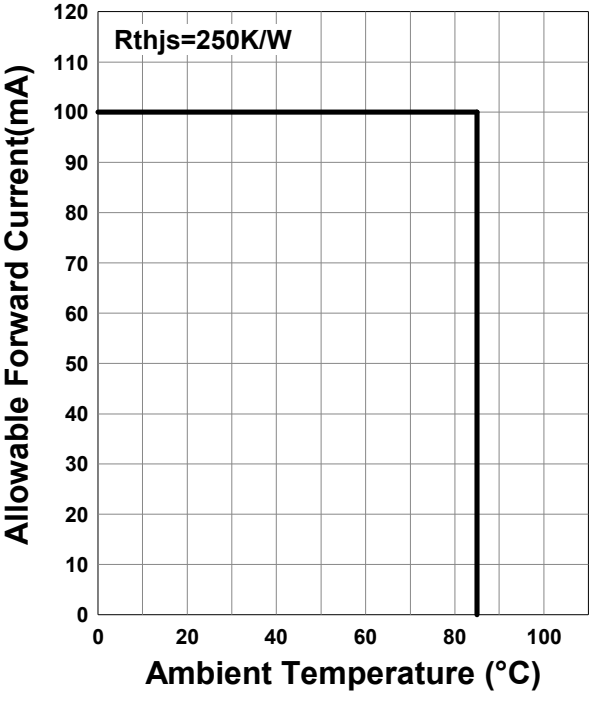
Relative Radiant Intensity - Forward Current



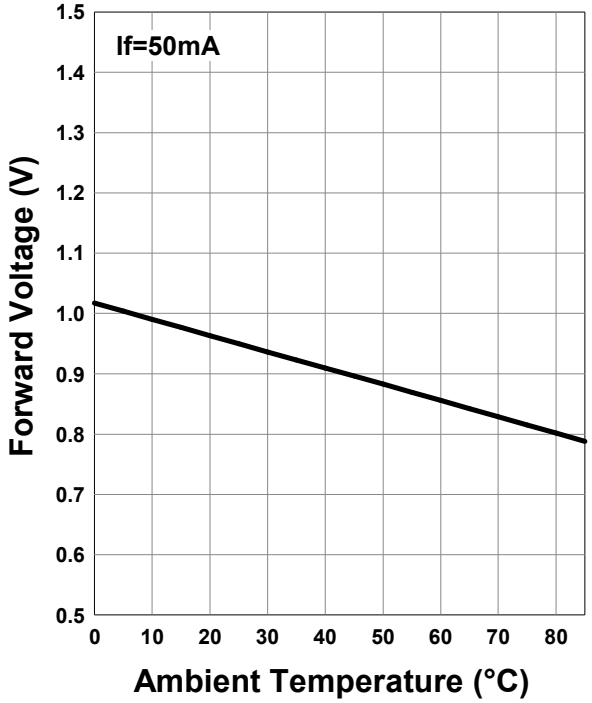
Forward Current - Pulse Duration



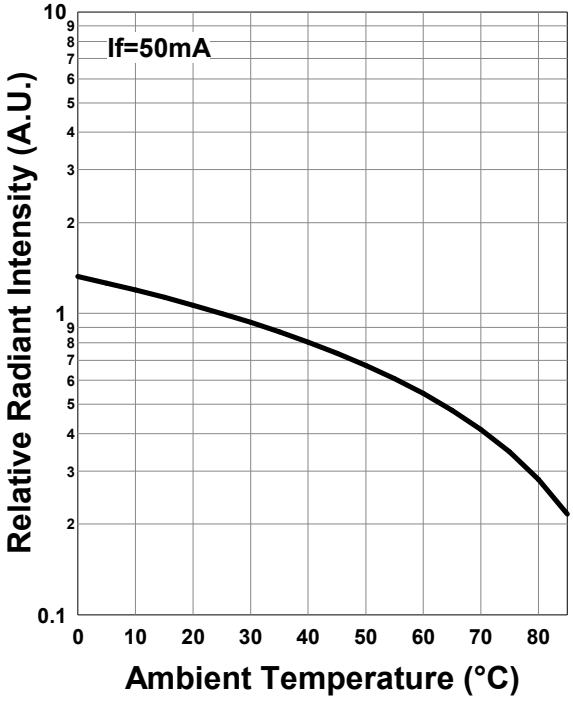
Allowable Forward Current - Ambient Temperature



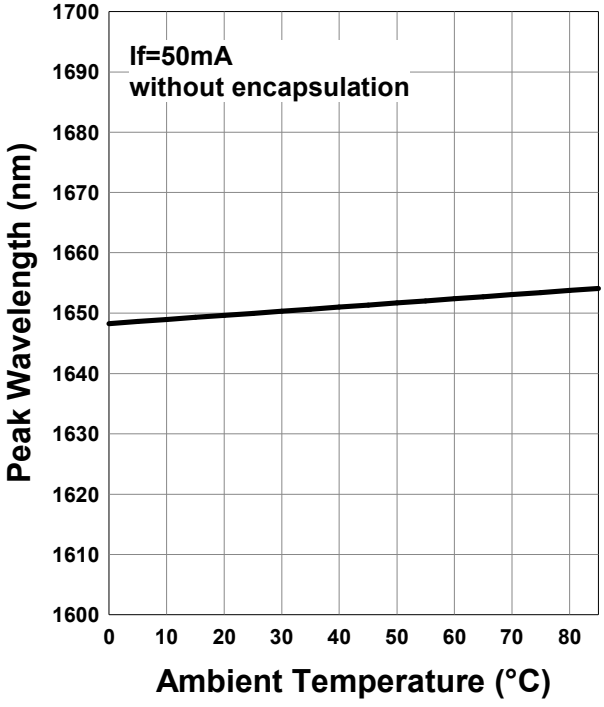
Forward Voltage - Ambient Temperature



Relative Radiant Intensity - Ambient Temperature



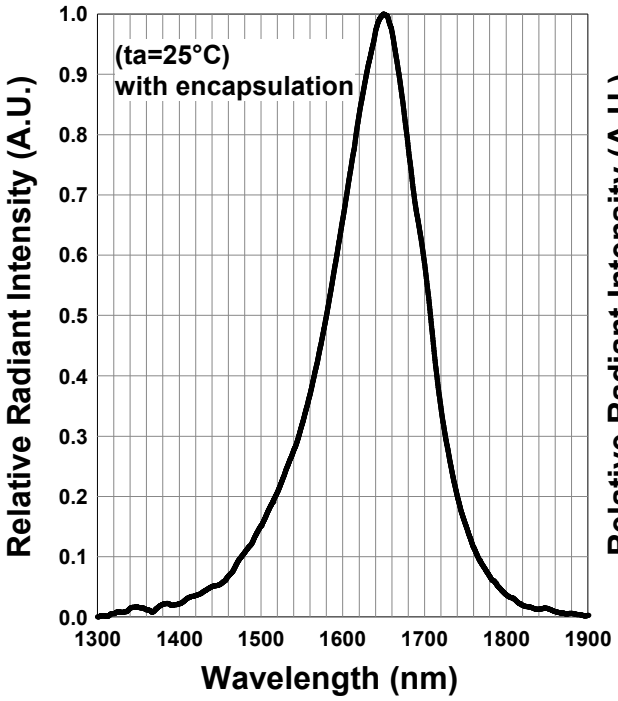
Peak Wavelength - Ambient Temperature



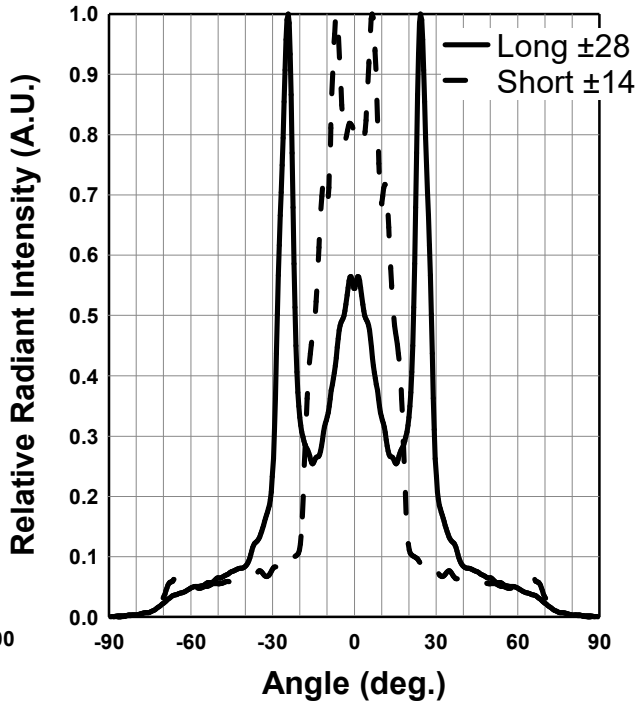
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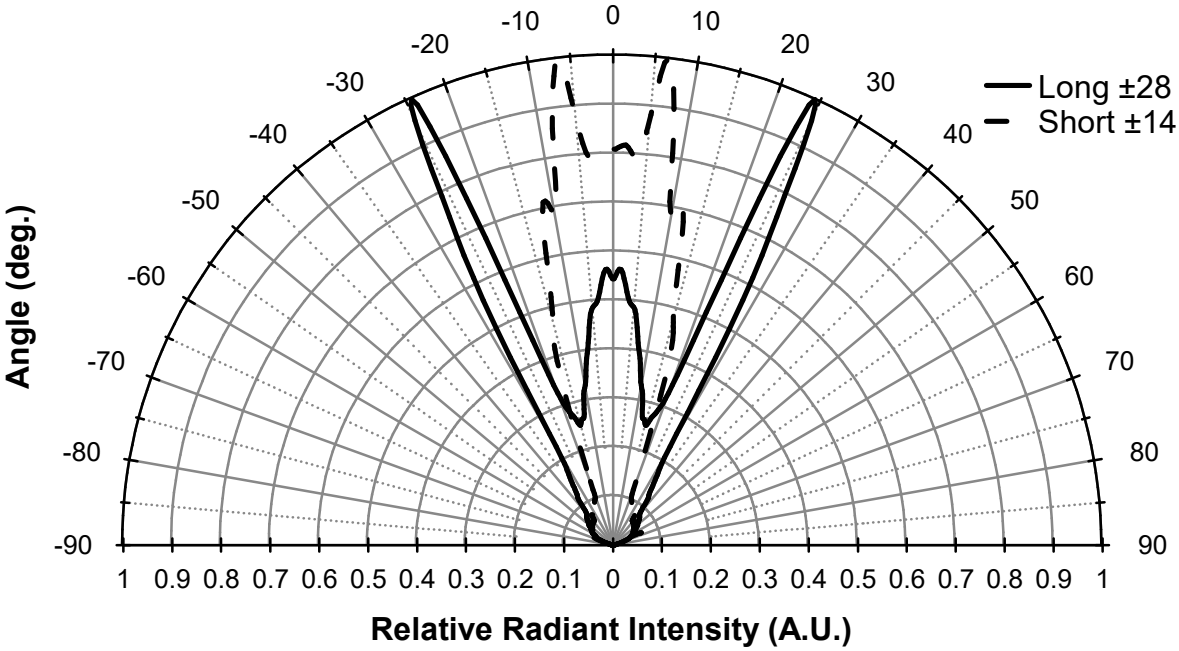
Relative Spectral Emission



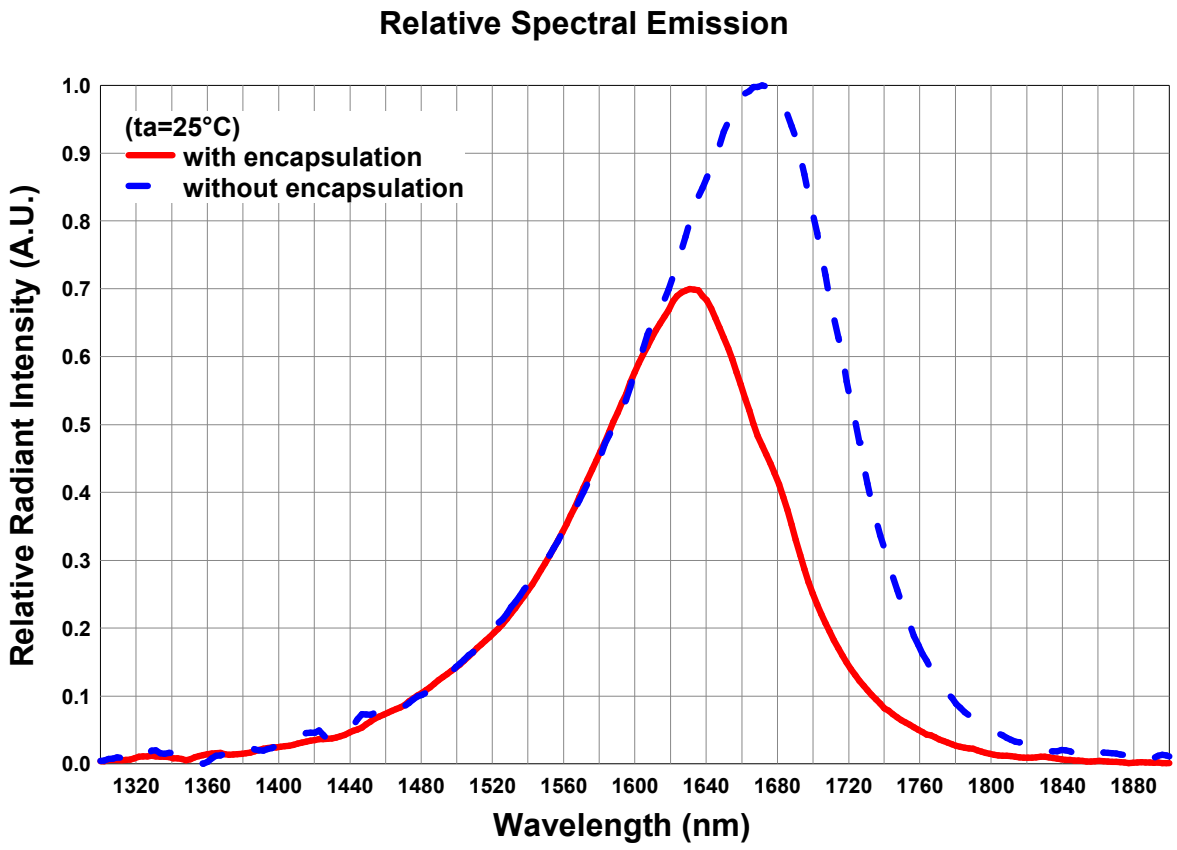
Radiation Characteristics



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.