HAMAMATSU

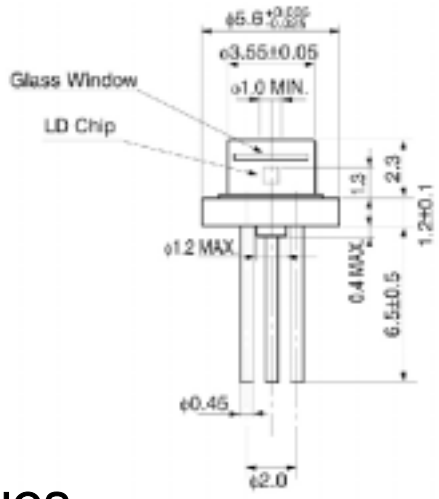
Preliminary Data

850nm 20mW CW Laser Diode

L7650

■ FEATURES:

Output Power 20mW CW
Emitting Area 6 μm x 1 μm
Peak Emission Wavelength 850nm +/− 10nm
Semi-Single Mode
Monitor Photodiode Inside
High Stability
Long Life
Compact



Unit: mm

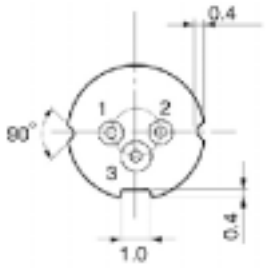
■ APPLICATIONS:

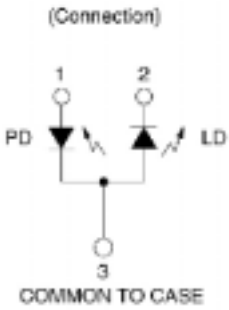
Printing
Measuring Instrument
Optical Spatial Transmission

■ ABSOLUTE MAXIMUM RATINGS

(Top(c)=25°C)

Parameter	Symbol	Value	Unit
Radiant Output Power	$Ø_e$	30	mW
Reverse Voltage	V_R	1.5	V
Operating Temperature	$Top_{(c)}$	−10 to +70	°C
Storage Temperature	Tstg	−20 to +80	°C





■ ELECTRICAL AND OPTICAL CHARACTERISTICS

(Top(c)=25°C)

Parameter	Symbol	Condition	Value			Unit
			Min.	Typ.	Max.	
Forward Operating Current	I_F	$Ø_e$=20mW	−	70	100	mA
Forward Operating Voltage	V_F	$Ø_e$=20mW	−	1.7	2.2	V
Peak Emission Wavelength	λ_p	$Ø_e$=20mW	840	850	860	nm
Monitor Current	Im	$Ø_e$=20mW	0.07	0.4	1	mA
Beam Spread Angle : Parallel	$\theta_{//}$	$Ø_e$=20mW	5	7	12	degree
: Vertical	$\theta_{\perp}$	FWHM	22	27	32	degree
Lasing Threshold Current	Ith	−	−	40	60	mA

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Figure 1: Radiant Power vs. Forward Current (Typ.)

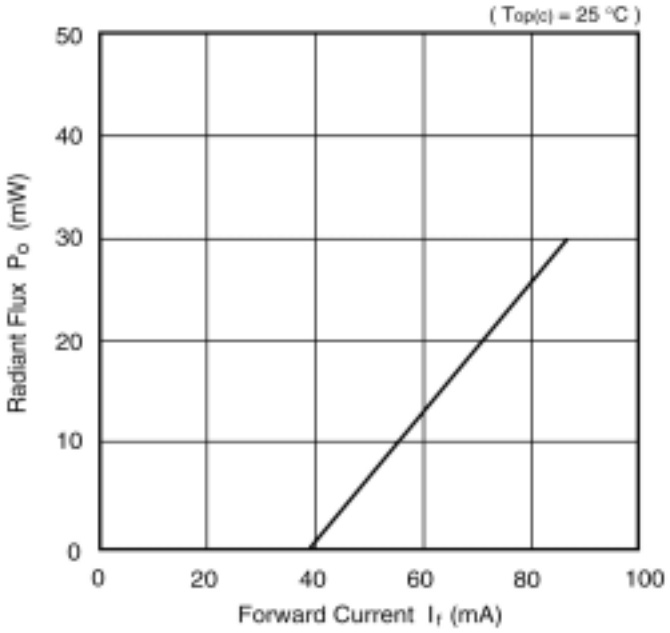


Figure 2: Emission Spectrum (Typ.)

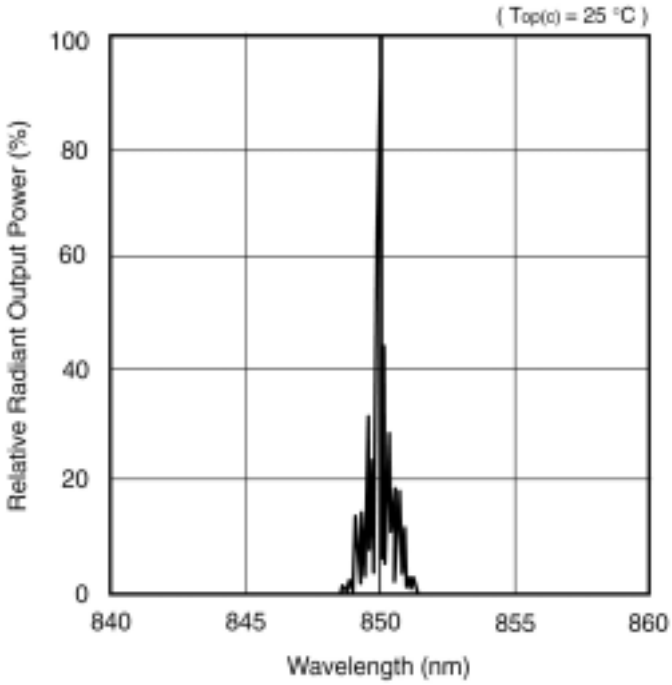
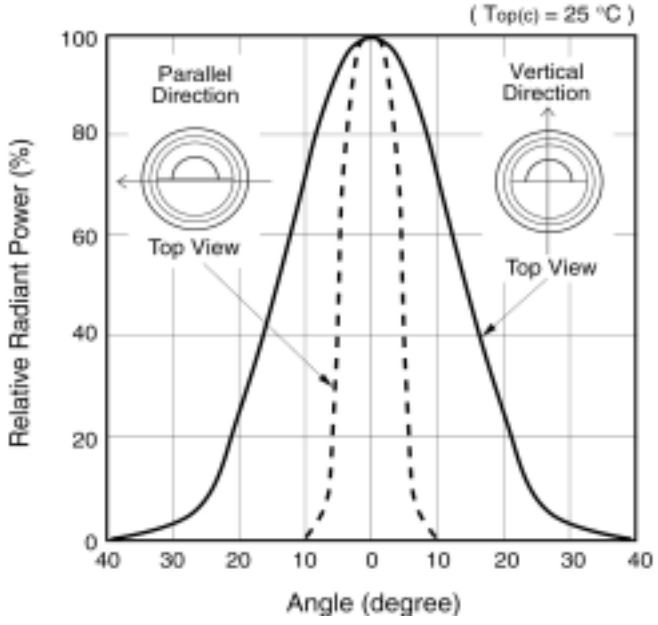


Figure 3: Directivity (Typ.)



■ INSTRUCTIONS FOR SAFETY USE

1. Heat dissipation

Reliability of this LD is deeply correlated with junction temperature. Under higher operating temperature, the reliability deteriorates soon. Heat dissipating device (material: Aluminum, Copper) should be attached to the base of the LD, and cooling devices (air, water, peltier etc.) should be operated with the LD in order to dissipate the heat from the LD, so that the operating temperature is kept within the absolute maximum ratings.

2. Safety for operators and users

This LD emits invisible laser radiation. It's classified into Class 3B according to the laser product standards of the IEC 60825-1 (Safety of laser products Part 1 : Equipment classification, requirements and user's guide) and/or ANSI Z136.1 (American National Standard for Safe Use of Lasers) etc. Direct or reflected laser beam from this LD may damage eyes or skin by being absorbed by cell. The operator must not stare the emitting area of LD, must avoid direct exposure to the laser beam.

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