HAMAMATSU

Preliminary Data

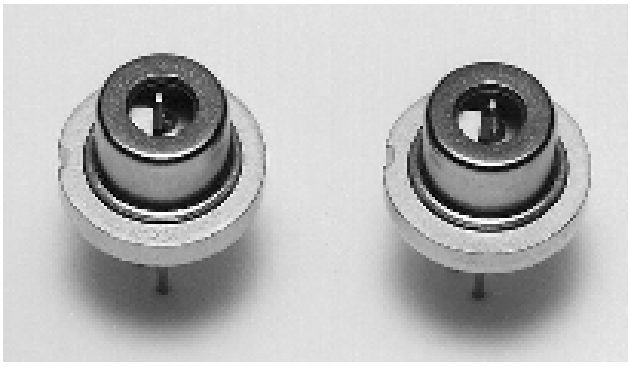
830nm 1W CW Laser Diode

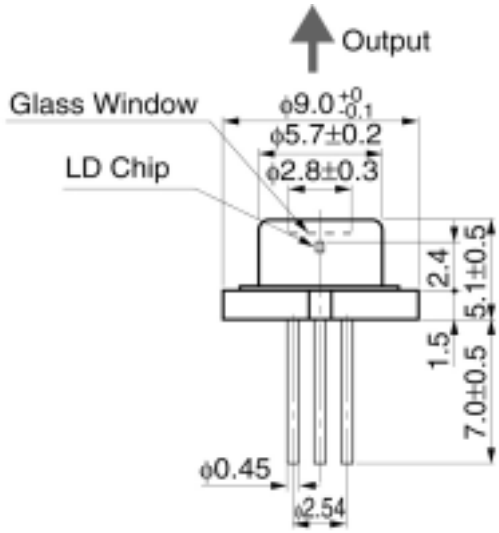
L9277-42

■ FEATURES:

High output power & high brightness
- 1W CW Output Power
- 50 μm x 1 μm Emitting Area

Peak Emission Wavelength 830nm +/− 10nm
Multimode
High Stability
Long Life
Compact





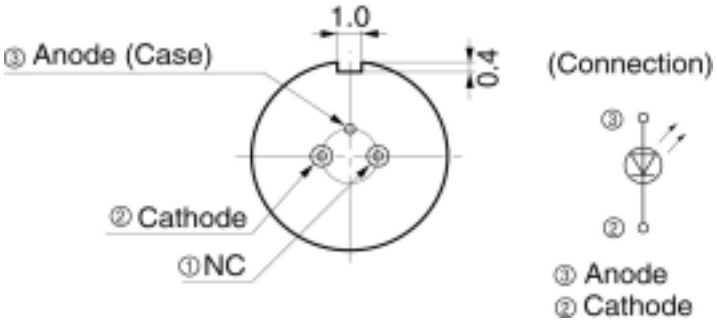
■ APPLICATIONS:

Printing
Medical Instrument
Measuring Instrument

■ ABSOLUTE MAXIMUM RATINGS

(Top(c)=25°C)

Parameter	Symbol	Value	Unit
Radiant Output Power	$Ø_e$	1.2	W
Reverse Voltage	V_R	2	V
Operating Temperature	$Top_{(c)}$	0 to +30	°C
Storage Temperature	Tstg	−30 to +80	°C



■ ELECTRICAL AND OPTICAL CHARACTERISTICS

(Top(c)=25°C)

Parameter	Symbol	Condition	Value			Unit
			Min.	Typ.	Max.	
Forward Current	I_F	$Ø_e$=1W	−	1.2	1.4	A
Peak Emission Wavelength	λ_p	$Ø_e$=1W	820	830	840	nm
Spectral Radiation Half Bandwidth	Δλ	$Ø_e$=1W	−	2	3	nm
Forward Voltage	V_F	$Ø_e$=1W	−	2	2.4	V
Beam Spread Angle : Parallel	$\theta_{//}$	$Ø_e$=1W	4	8	12	degree
: Vertical	$\theta_{\perp}$	FWHM	27	32	37	degree
Lasing Threshold Current	Ith	−	−	0.35	0.5	A

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

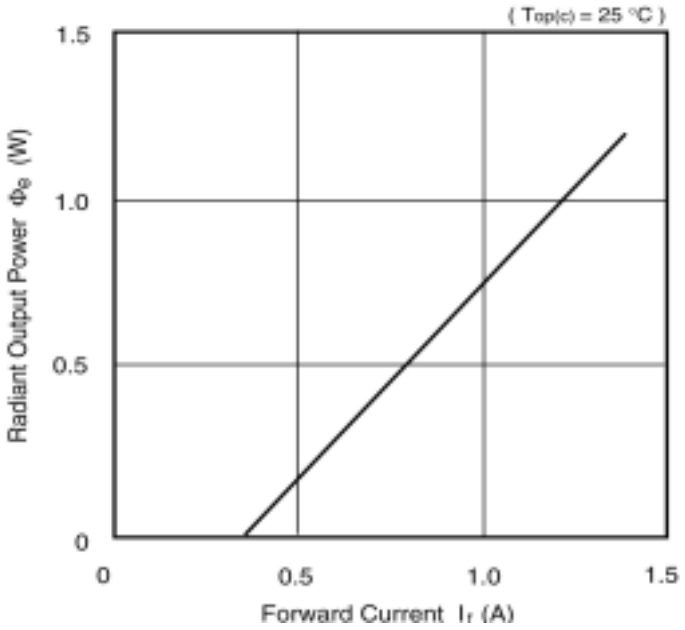


Figure 2: Emission Spectrum (Typ.)

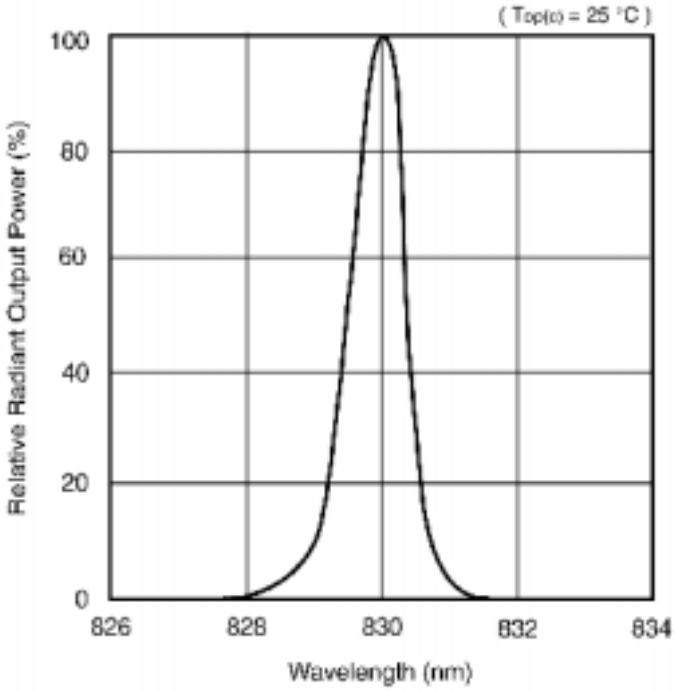
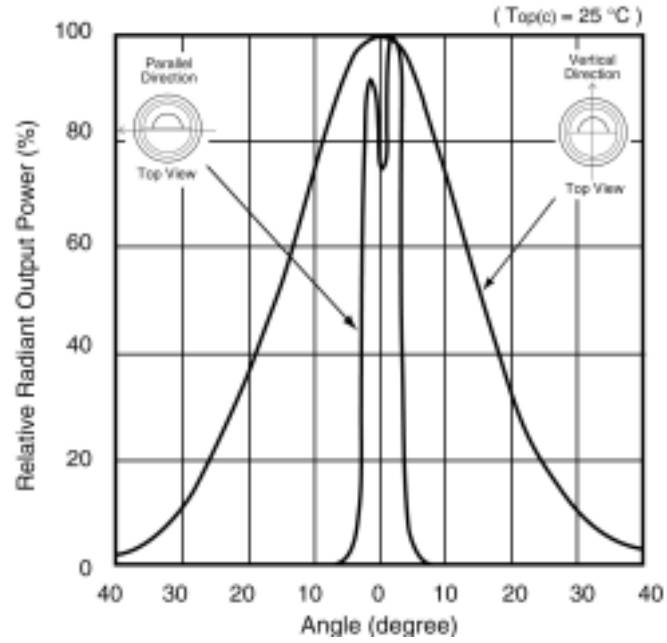


Figure 3: Directivity (Typ.)



■ 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 4 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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