HAMAMATSU

Preliminary Data

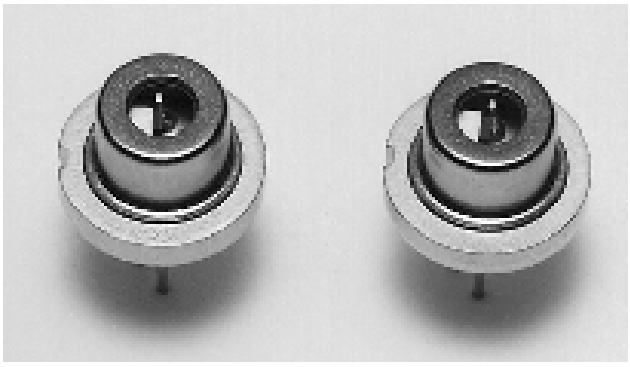
# 808nm 0.5W CW Laser Diode

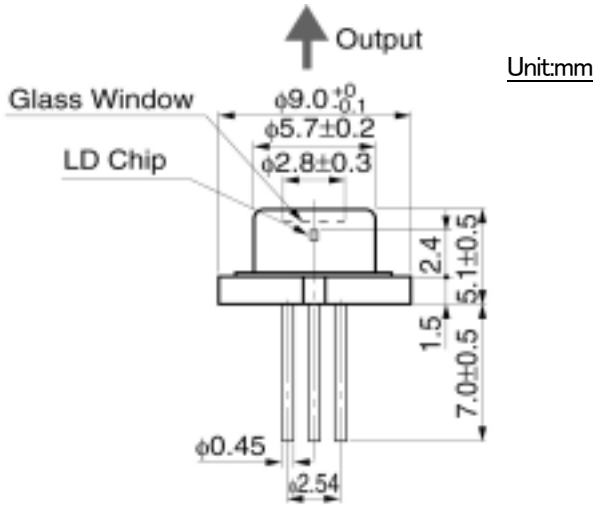
# L8933-41

## ■ FEATURES:

High output power & high brightness
- 0.5W CW Output Power
- 50 μm x 1 μm Emitting Area

Peak Emission Wavelength 808nm +/− 5nm
Multimode
High Stability
Long Life
Compact





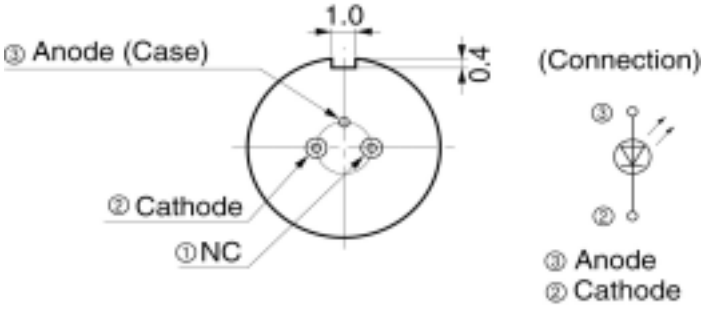

## ■ APPLICATIONS:

Pumping source for Solid State Laser
Printing
Medical Instrument
Measuring Instrument

## ■ ABSOLUTE MAXIMUM RATINGS

(Top(c)=25°C)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Radiant Output Power | $Ø_e$ | 0.6 | 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 | $I_F$ | $Ø_e$=0.5W | − | 0.65 | 0.75 | A |
| Peak Emission Wavelength | $\lambda_p$ | $Ø_e$=0.5W | 803 | 808 | 813 | nm |
| Spectral Radiation Half Bandwidth | $\Delta\lambda$ | $Ø_e$=0.5W | − | 2 | 3 | nm |
| Forward Voltage | $V_F$ | $Ø_e$=0.5W | − | 2 | 2.4 | V |
| Beam Spread Angle : Parallel | $\theta_{//}$ | $Ø_e$=0.5W | 4 | 8 | 12 | degree |
| : Vertical | $\theta_{\perp}$ | FWHM | 27 | 32 | 37 | degree |
| Lasing Threshold Current | Ith | − | − | 0.15 | 0.25 | A |

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

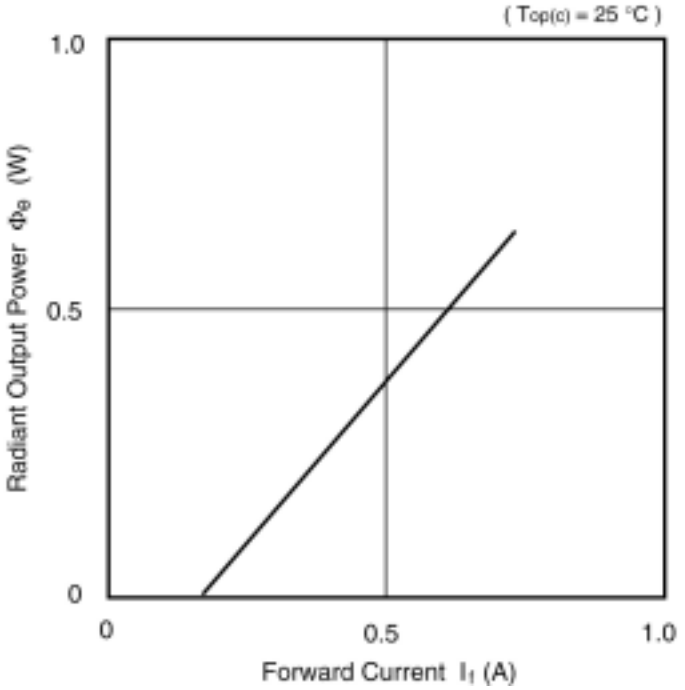



Figure 2: Emission Spectrum (Typ.)

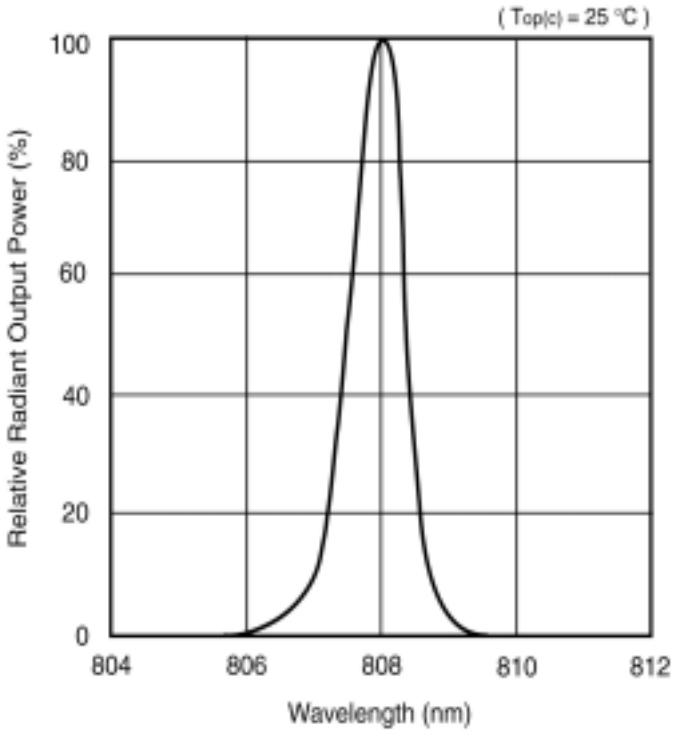
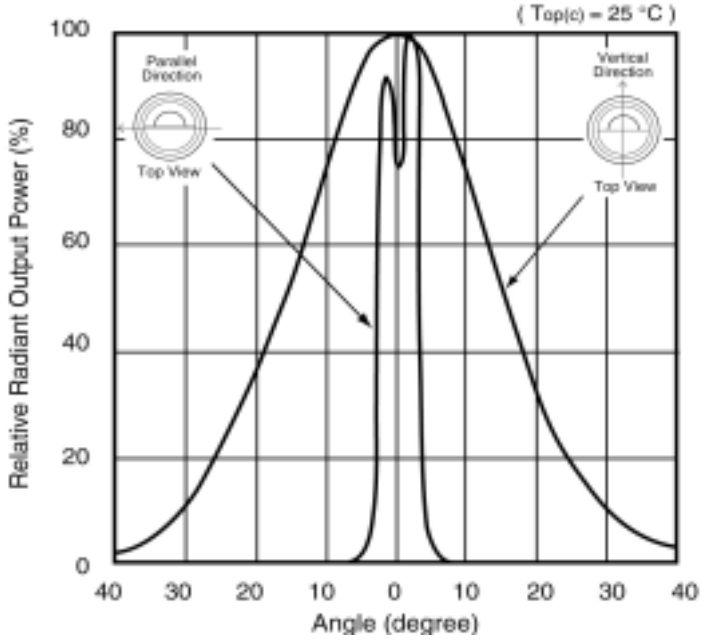



Figure 3: Directivity (Typ.)




## ■ 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 (Safery 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.


HAMAMATSU http://www.hamamatsu.com Jan 2003

**HAMAMATSU PHOTONICS K.K. Laser Group, Sales Dept.**

5000, Hirakuchi, Hamakita City, Shizuoka, Japan

Telephone: (81)53-584-0227, Fax: (81)53-584-0228, e-mail: laser-g@lsr.hpk.co.jp