HAMAMATSU

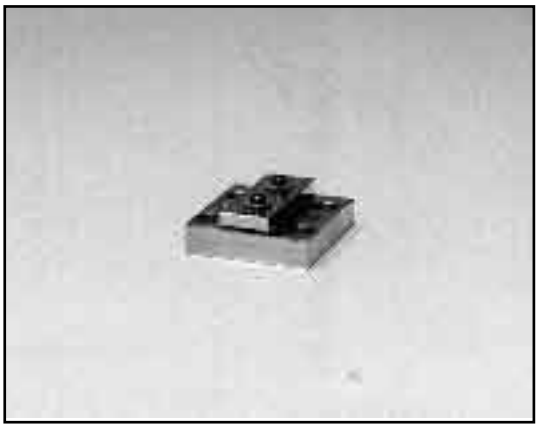
PRELIMINARY DATA

HIGH POWER CW LASER DIODE with PELTIER-COOLING L8413

Compact Peltier-cooling type

■ FEATURES

- High optical power : 20 W/bar
- High stability
- Long life
- High cost performance
- Compact



■ APPLICATIONS

- Pumping source for solid state lasers
- Materials processing
- Welding
- Soldering
- Medical systems

High power laser diodes with a Peltier cooler feature several advantages such as high stability with long life and high cost performance with compact structure. Sinve they are designed to be small, they are easily applied as light source to pump solid state lasers, for material processing like welding or soldering, and for medical systems. The lasing areas consist of small laser emitters arranged in line and are thus called “Bar” structure. By stacking Bars as a module, a high power CW operation can be achieved. Water-cooling and Funryu-cooling (patent pending : Japan 8-139479, WO 00/11717) are also available. And focusing lens is available as an option.

■ ABSOLUTE MAXIMUM RATINGS (Each bar)

Parameter	Symbol	Value	Unit
Radiant Output Power / bar	Φ_e	22	W
Reverse Voltage	V_r	2	V
Operating Temperature	$T_{op(c)}$	+5 to +35	°C
Storage Temperature	T_{stg}	-20 to +40	°C

■ CHARACTERISTICS (Each bar, Top(c) = 20 °C)

Parameter	Symbol	Conditions	Value	Unit
Radiant Output Power / bar	Φ_e	I_f = 25 A	20	W
Peak Emission Wavelength	λ_p	Φ_e = 15 W	808	nm
Spectral Radiation Half Bandwidth	$\Delta\lambda$	Φ_e = 15 W	4.0	nm
Forward Voltage	V_f	Φ_e = 15 W	1.8	V
Beam Spread Angle : Parallel	$\theta_{//}$	FWHM	10	° (degree)
: Vertical	$\theta_{\perp}$		35	° (degree)
Lasing Threshold Current	I_{th}		10	A
Array Length	-		10	mm

*Contact sales stuff for emitting wave-length and radiant output power (Φ_e) other than above.

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

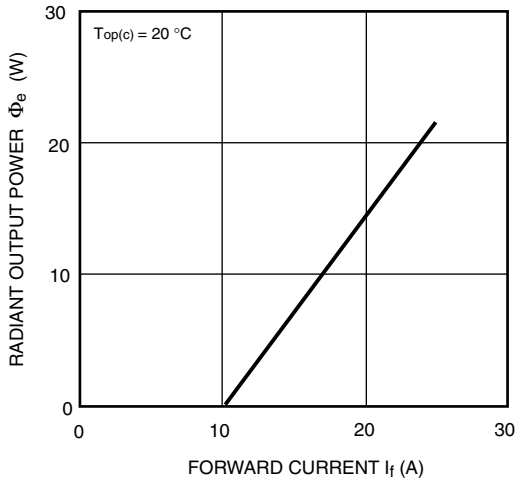


Figure 2: Typical Emission Spectrum

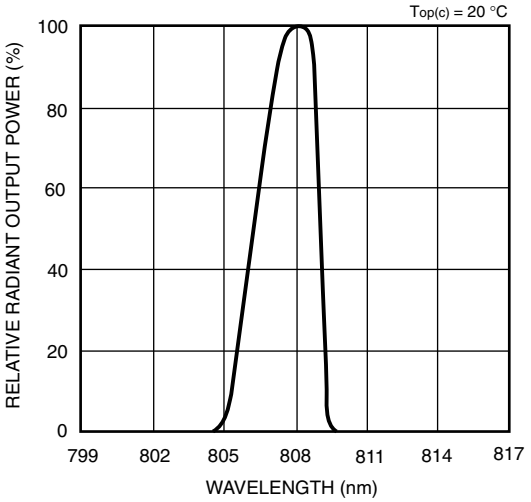
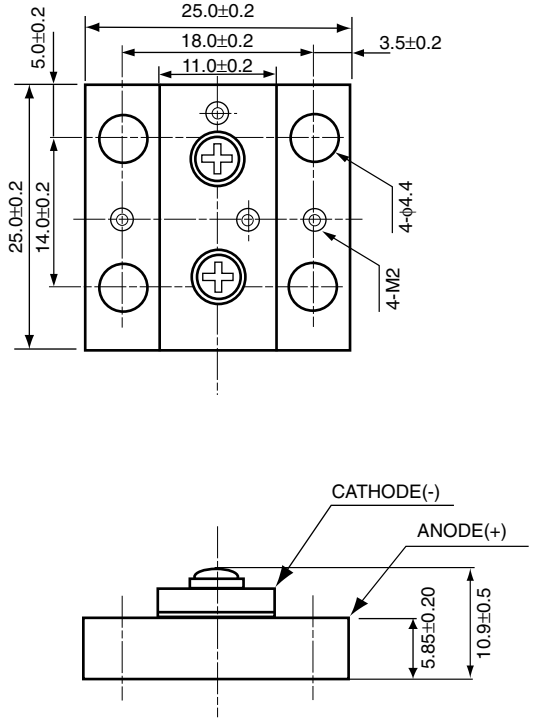


Figure 3: Dimensional Outline (Unit : mm)



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