



ROITHNER LASERTECHNIK GmbH

WIEDNER HAUPTSTRASSE 76
TEL. +43 1 586 52 43 -O. FAX. -44

1040 VIENNA AUSTRIA
OFFICE@ROITHNER-LASER.COM



S808500G

- IR Laser Diode
- 808 nm, 500 mW
- Multi-Mode
- TO9 with integrated photodiode



Description



S808500G is an IR multi-mode laser diode, typically emitting at 808 nm, with a wide operating temperature range of up to 70°C, low operating current and low divergence angle. **S808500G** comes in 9 mm TO-Can package with integrated monitor photodiode.

Maximum Ratings*

Parameter	Symbol	Values		Unit
		Min.	Max.	
Optical Output Power*	P_{MAX}		600	mW
Reverse Voltage	U_R		2	V
Operating Temperature*1	T_{OPR}	- 10	+ 70	°C
Storage Temperature	T_{STG}	- 10	+ 85	°C
Soldering Temperature (max. 3s)	T_{SOL}		+ 260	°C

* operating close to or beyond maximum ratings may impact the life time of the device

Electro-Optical Characteristics ($T_{CASE} = 25^\circ C$)

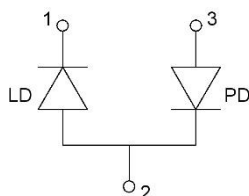
Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Peak Wavelength	λ_P	798	808	818	nm
Optical Output Power	P_O		500		mW
Operating Voltage	U_F		1.9	2.1	V
Threshold Current	I_{th}		70		mA
Operating Current	I_F		500	530	mA
Monitor Current	I_M		0.6	2.5	mA
Slope Efficiency	η	0.95	1.1		W/A
Beam Divergence (FWHM)	parallel	$\Theta_{ }$	10		deg.
	perpendicular	Θ_{\perp}	28		deg.



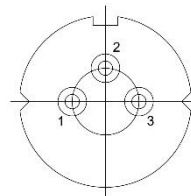
Electrical Connection

Pin Configuration

Pin #	Function
Pin 1	LD Cathode
Pin 2	LD Anode, PD Cathode
Pin 3	PD Anode



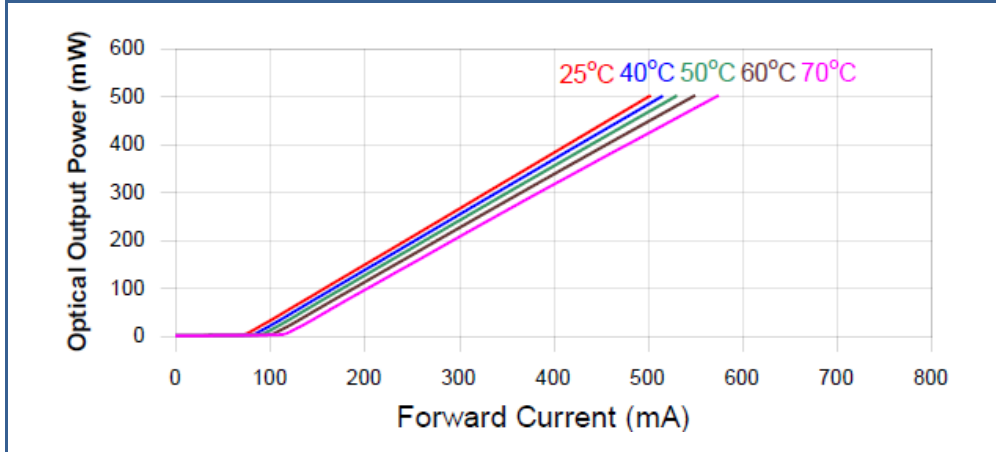
Bottom View



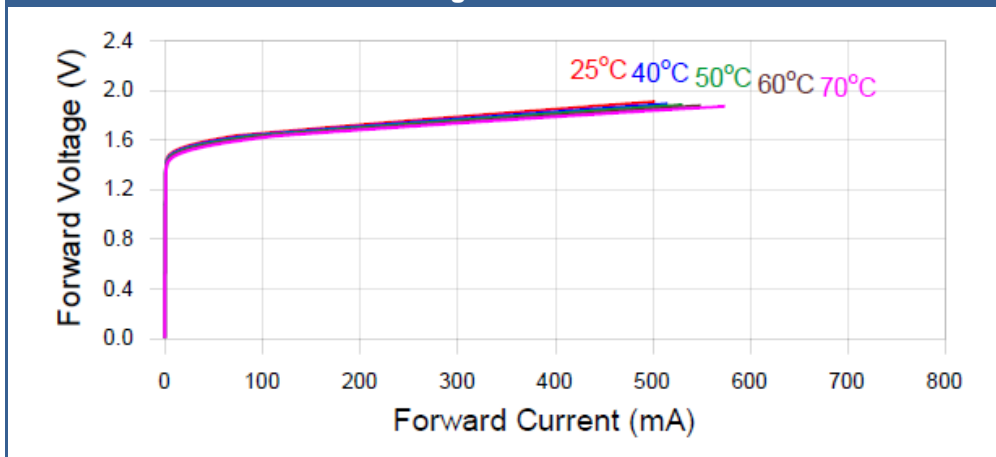


Performance Characteristics

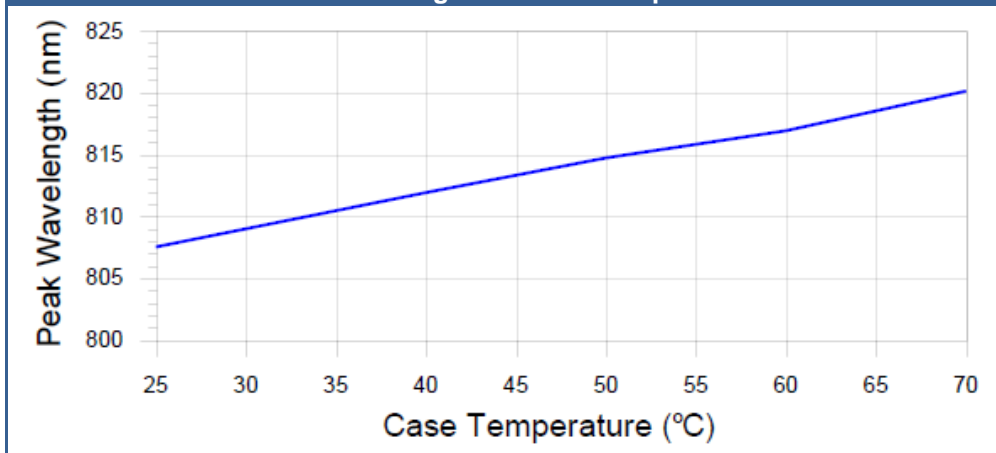
Optical Output Power vs. Forward Current



Forward Voltage vs. Forward Current



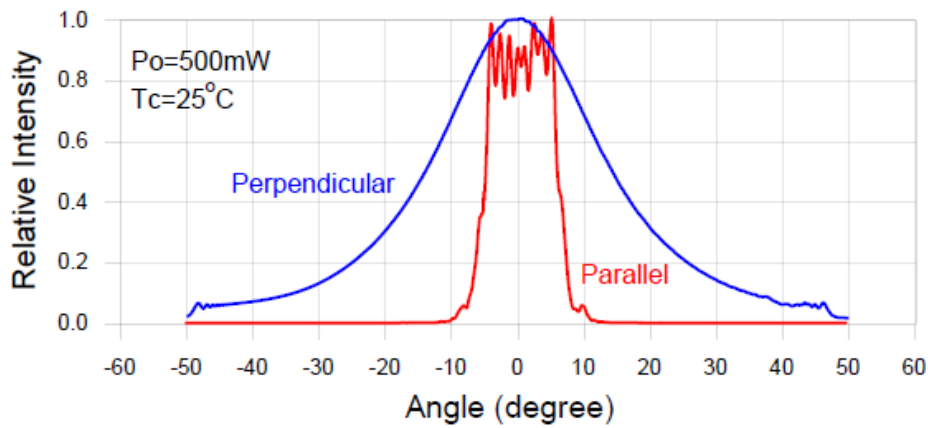
Peak Wavelength vs. Case Temperature



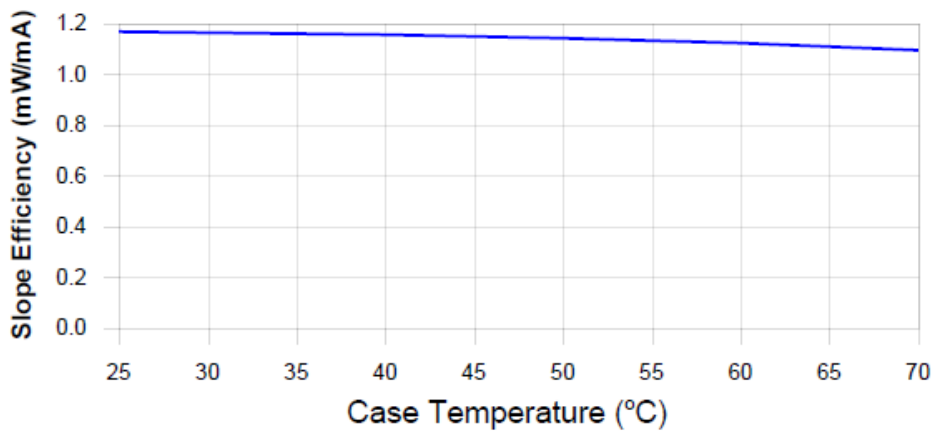


Performance Characteristics

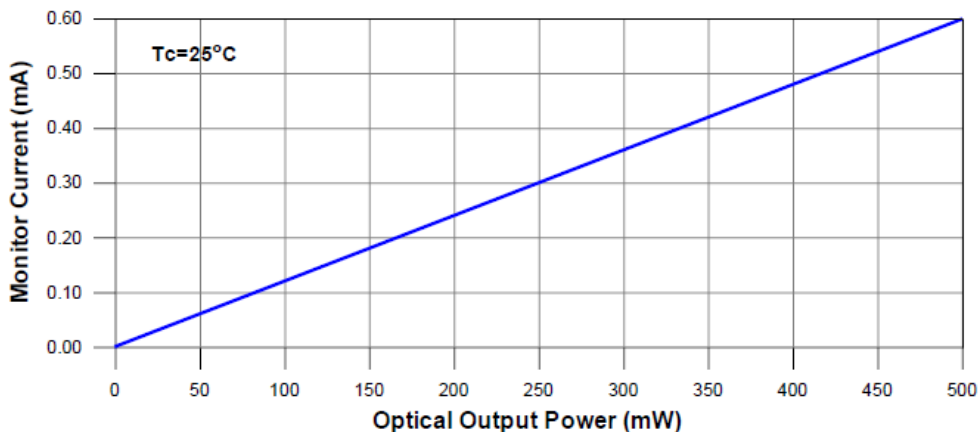
Far-Field Pattern



Slope Efficiency vs. Case Temperature

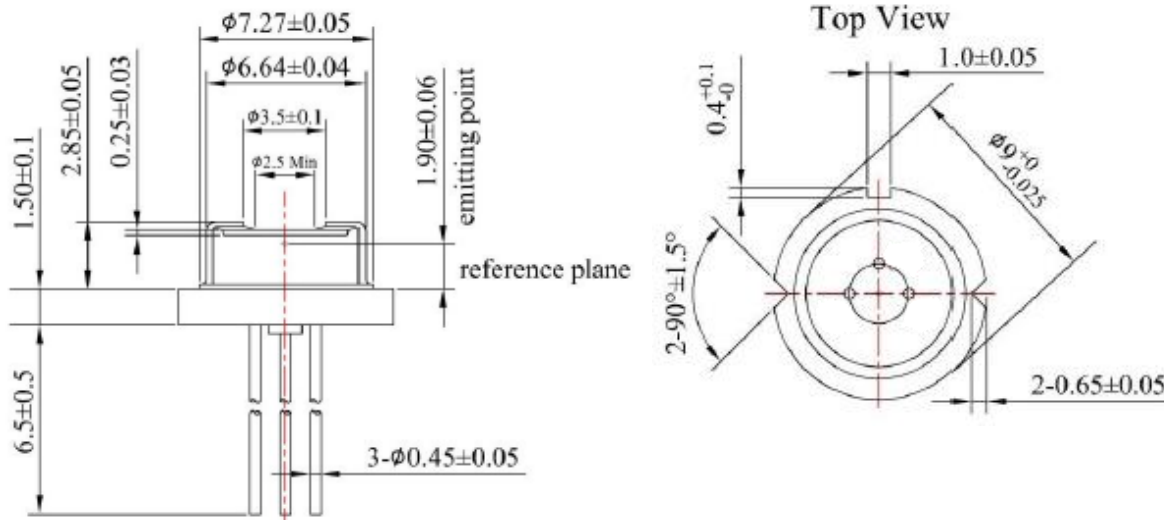


Monitor Current vs. Optical Output Power





Outline Dimensions



All dimensions in mm

Precautions

Safety

Caution: Laser light emitted from any laser diode may be **harmful to the human eye**. Avoid looking directly into the laser diode's aperture when the diode is in operation.

Note: The use of optical lenses with this laser diode will increase eye hazard

ESD caution

Always do handle laser diodes with extreme care to **prevent electrostatic discharge**, the primary cause of unexpected diode failure. To prevent ESD related failures, it is strongly advised to always **wearing wrist straps**, and **grounding all applicable work surfaces**, when handling laser diodes

Operating Considerations

It is strongly advised to only operate this laser diode with a current source. The current of a laser diode is an exponential function of the voltage across it. **Usage of current regulated drive circuits is mandatory.** Laser diodes may be damaged by excessive drive currents or switching transients

It is advised, to operate the laser diode at the lowest temperature possible, and to never exceed maximum specifications as outlined in the datasheet. Device degradation will accelerate with increased temperature.

Proper heat sinking will greatly enhance stability and life time of the laser diode

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The above specifications are for reference purpose only and subjected to change without prior notice.