ROITHNER LASERTECHNIK GmbH
WIEDNER HAUPTSTRASSE 76 1040 VIENNA AUSTRIA
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S808500MG

- **Infrared Laser Diode**
- **808 nm, 500 mW**
- **Multi-Mode**
- **Monitor Photodiode**
- **TO56 Package, Flat Window**

RoHS COMPLIANT Pb-Free

Description

S808500MG is an infrared **multi-mode** laser diode emitting at typically 808 nm with nominal output power of 500 mW cw, and wide operating temperature range of up to 70 °C. **S808500MG** comes in standard 5.6 mm TO-Can package with integrated monitor photodiode, and flat glass window.

Maximum Ratings*

Parameter	Symbol	Values Min.	Values Max.	Unit
Optical Output Power	P_O		600	mW
LD Reverse Voltage	V_R		2	V
PD Reverse Voltage	V_{RPD}		30	V
Operating Temperature*	T_{OPR}	- 10	+ 70	°C
Storage Temperature*	T_{STG}	- 40	+ 85	°C
Soldering Temperature (t_{max} 3s)	T_{SOL}		+ 260	°C

* operating close to or outside these parameters may damage the device

Electro-Optical Characteristics (T_{CASE} = 25°C)

Parameter		Symbol	Values Min.	Values Typ.	Values Max.	Unit
Peak Wavelength		**λ_P**	**805**	**808**	**811**	**nm**
Optical Output Power		P_O		500		mW
Operating Voltage		V_F		1.9	2.1	V
Threshold Current		I_{th}		70		mA
Operating Current		I_F		520	550	mA
Monitor Current		I_M		0.6	2.5	mA
Slope Efficiency		η	0.95	1.1		W/A
Beam Divergence (FWHM)	parallel	Θ_{II}		8		deg.
	perpendicular	$\Theta_{\perp}$		28		deg.

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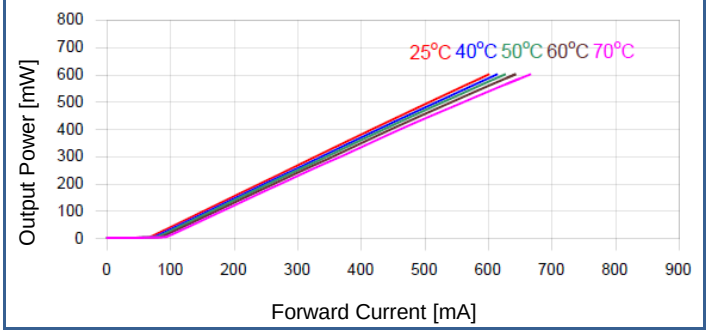
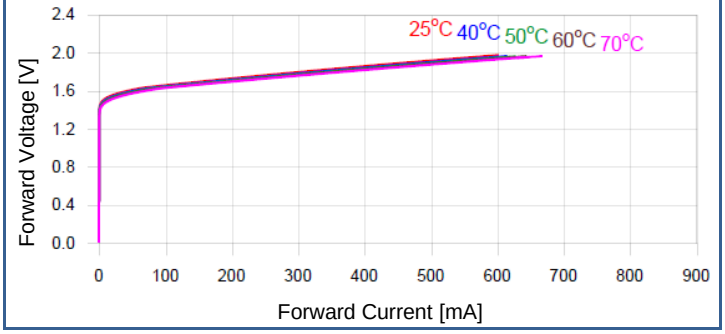
Typical Performance Curves

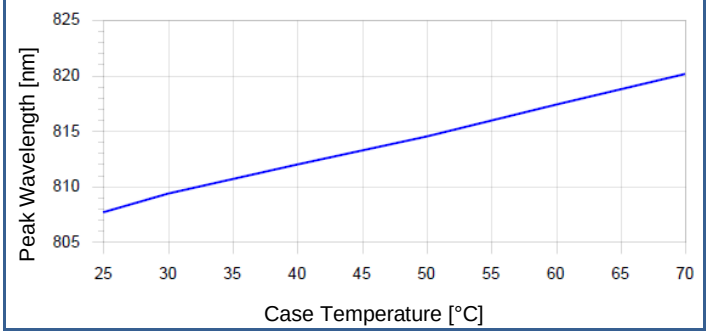
Output Power vs. Forward Current



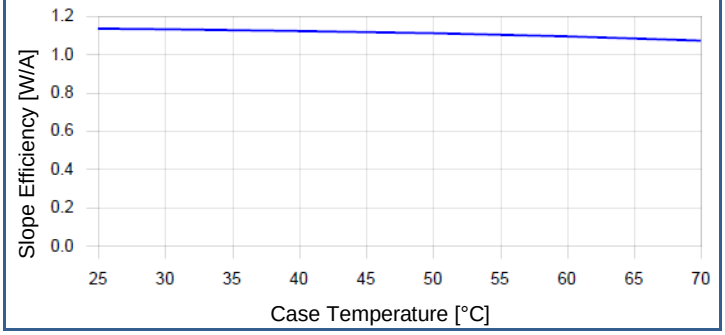
Forward Voltage vs. Forward Current



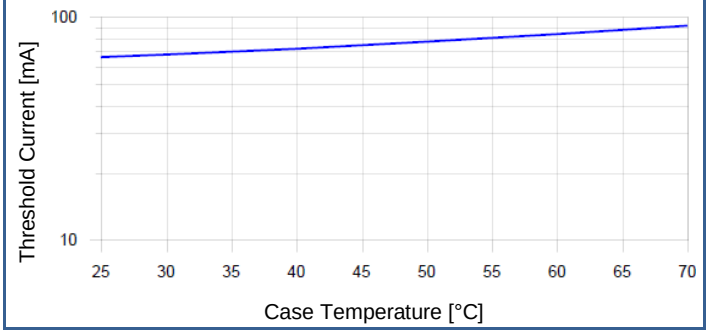
Peak Wavelength vs. Case Temperature



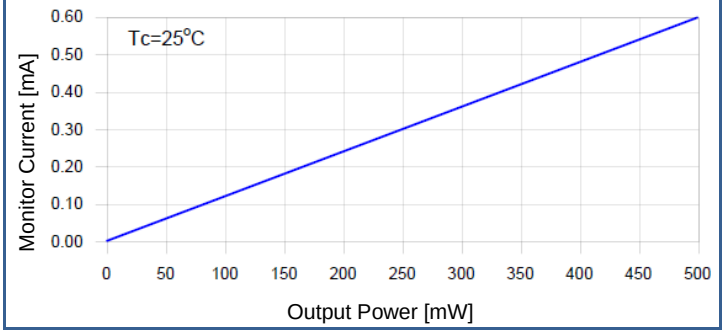
Slope Efficiency vs. Case Temperature



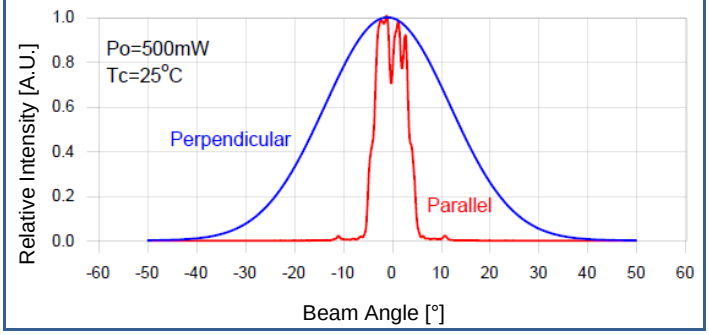
Threshold Current vs. Case Temperature



Monitor Current vs. Output Power



Relative Intensity vs. Beam Angle



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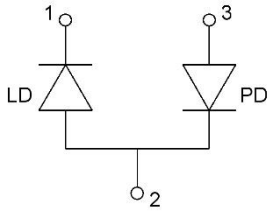
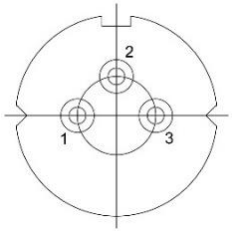
Electrical Connection

Pin Configuration

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

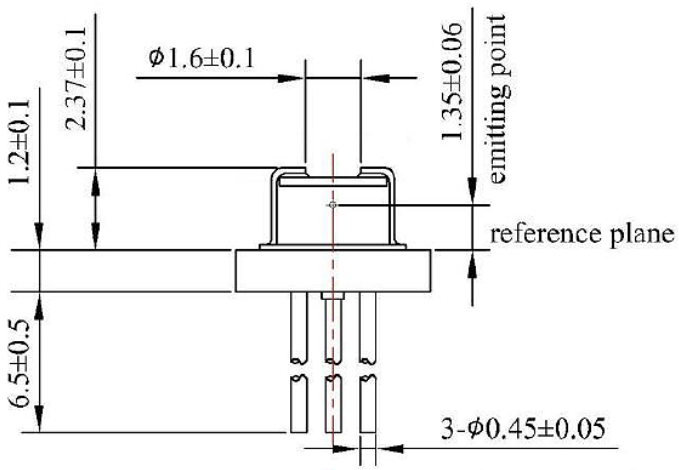


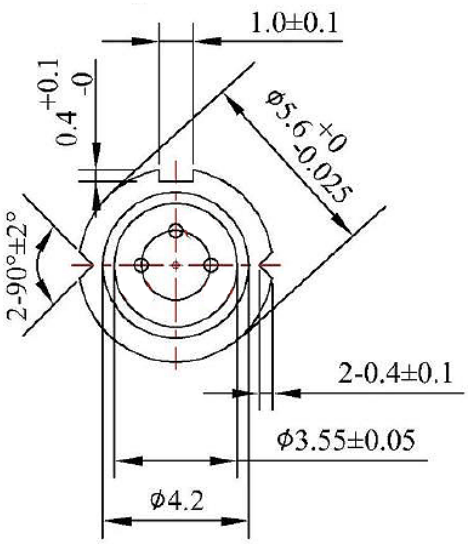
Bottom View



Outline Dimensions

TO-56





All dimensions in mm

Precautions

Safety

Laser light emitted from any laser diode may be harmful to the human eye. **Avoid looking directly into the laser diode's aperture.** The use of optical lenses will increase eye hazard

ESD Caution

Always do handle laser diodes with care to **prevent electrostatic discharge**. We advise to **wearing wrist straps, and grounding all applicable work surfaces**, when handling laser diodes

Operating Considerations

Usage of current regulated drive circuits is mandatory We advise to operate this laser diode with a current source and heat sink, and to never exceed the maximum specifications as outlined in this datasheet.