



ROITHNER LASERTECHNIK GmbH

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

1040 VIENNA AUSTRIA
OFFICE@ROITHNER-LASER.COM



S98500G

- IR Laser Diode
- 980 nm, 500 mW
- Multi mode
- TO9 package, Flat Window



Description

S98500G is an IR laser diode, typically emitting at 980 nm, with an operating temperature range of up to 40°C. **S98500G** comes in 9 mm TO-Can package **with integrated PD**.

Maximum Rating* (T_{CASE} = 25°C)

Parameter	Symbol	Values		Unit
		Min.	Max.	
Optical Output Power*1	P_{MAX}		500	mW
Reverse Voltage	V_R		2	V
Operating Temperature*1	T_{OPR}	- 10	+ 40	°C
Storage Temperature	T_{STG}	- 40	+ 85	°C
Soldering Temperature (max. 3s)	T_{SOL}		+ 260	°C

*1 operating at maximum ratings may influence the life time

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

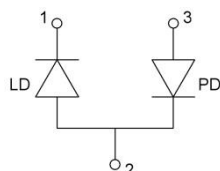
Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Peak Wavelength	λ_P	970	980	990	nm
Optical Output Power	P_O		500		mW
Operating Voltage	V_F		1.6	2.3	V
Threshold Current	I_{th}		120	170	mA
Operating Current	I_F		850	1000	mA
Slope Efficiency	η	0.6	0.7		W/A
PD Current	I_{PD}	0.1	2.2	3.0	mA
Beam Divergence (FWHM)	parallel	$\Theta_{ }$	12		deg.
	perpendicular	Θ_{\perp}	38		deg.



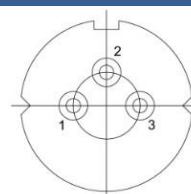
Electrical Connection

Pin Configuration

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



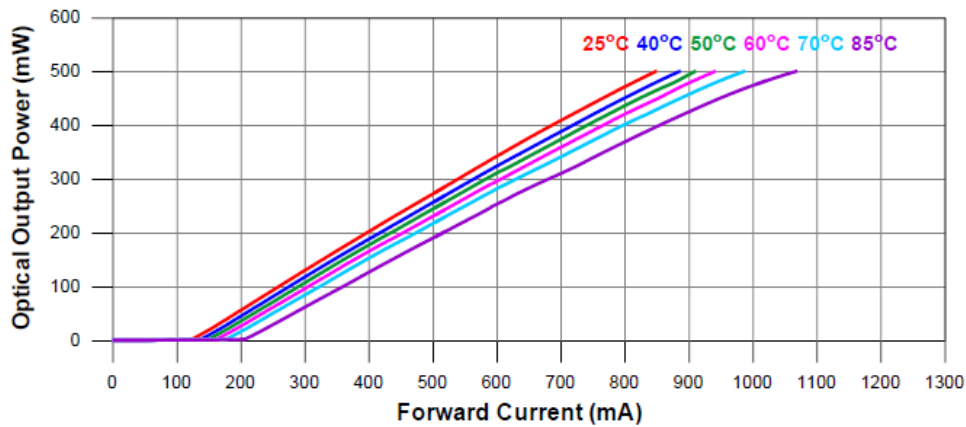
Bottom View



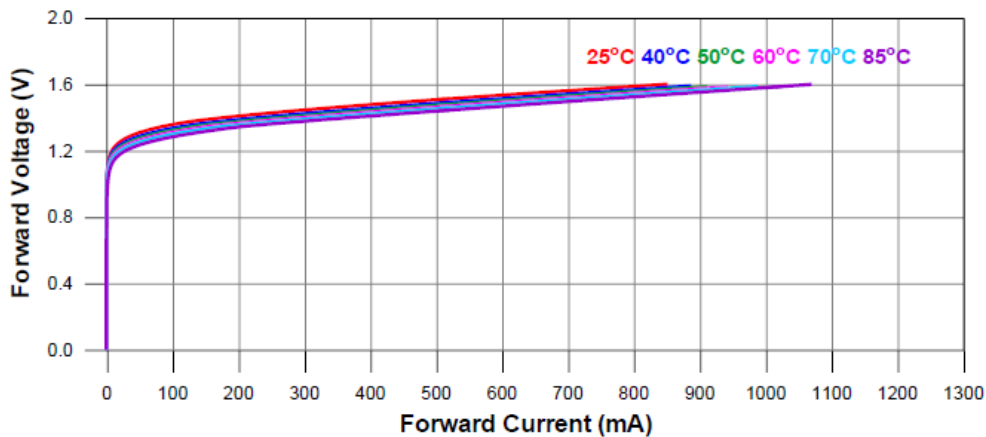


Performance Characteristics

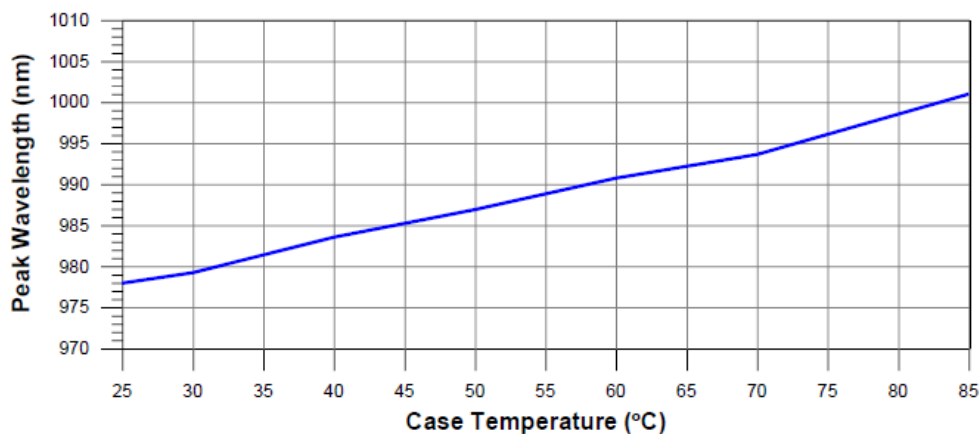
Optical Output Power vs. Forward Current



Forward Voltage vs. Forward Current



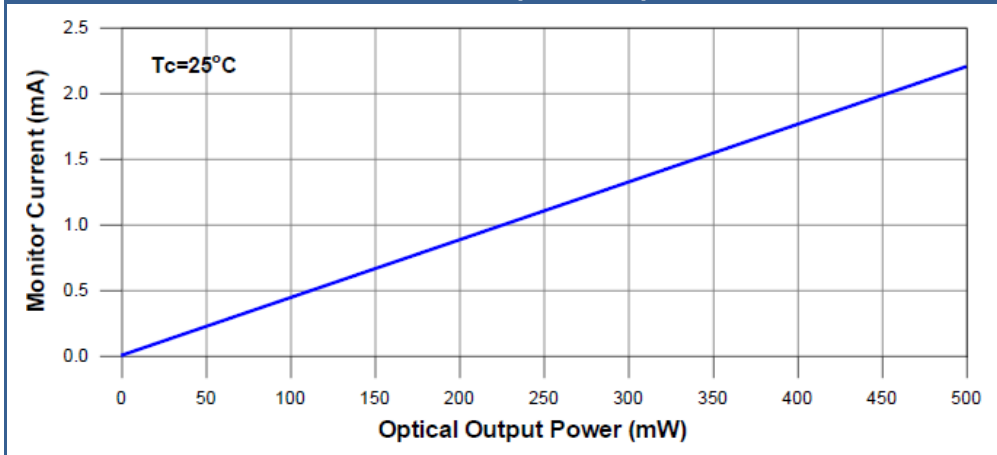
Peak Wavelength vs. Case Temperature



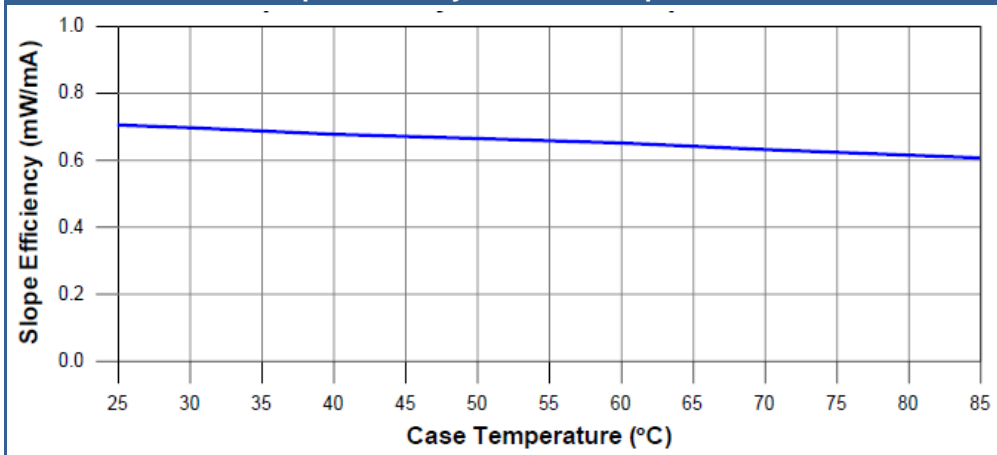


Performance Characteristics

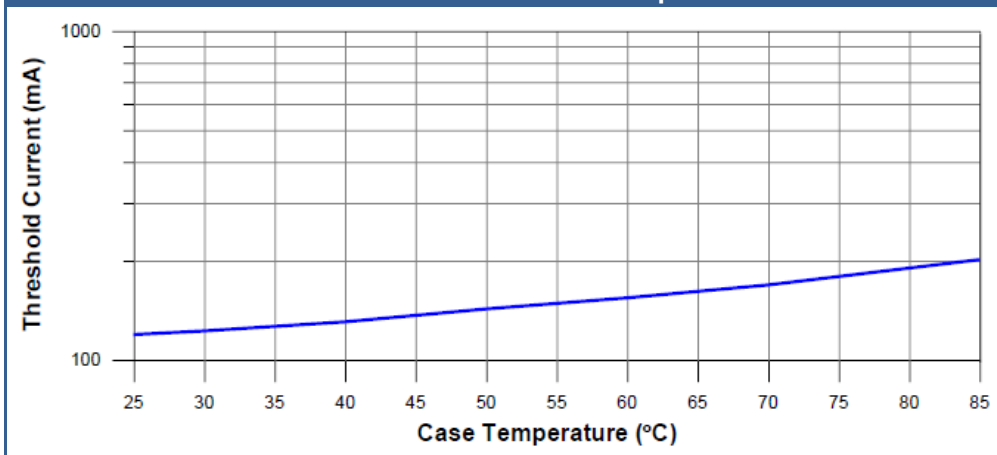
Monitor Current vs. Optical Output Power



Slope Efficiency vs. Case Temperature

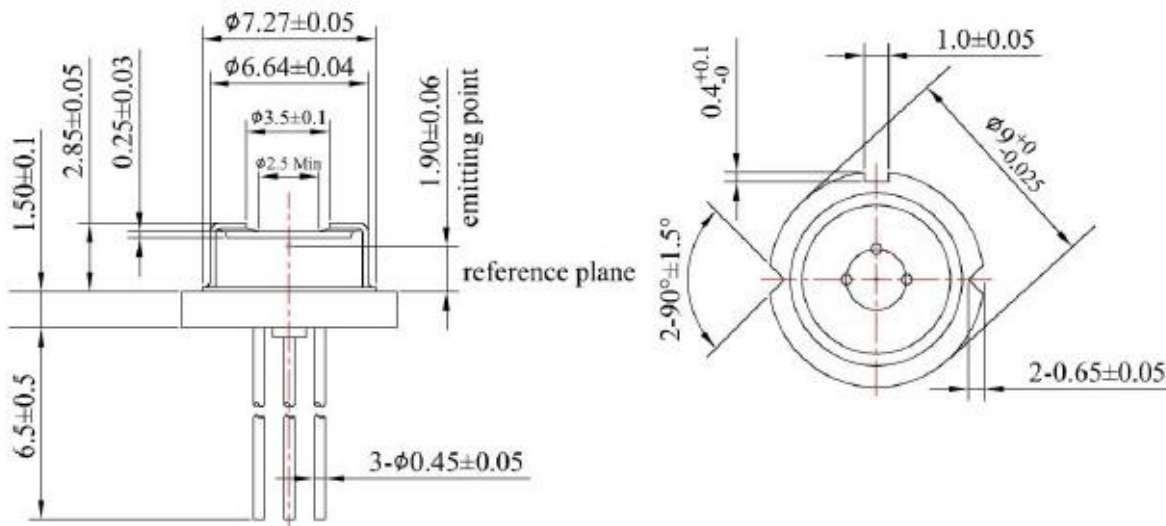


Threshold Current vs. Case Temperature





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**