



S85500MG

- IR Laser Diode
- 850 nm, 500 mW
- Multi Mode
- 5.6mm TO-Can with PD
- Flat window cap



Description

S85500MG is an infrared laser diode emitting at typically 850 nm with rated output power of 500 mW cw, in a standard 5.6 mm TO package with integrated monitor photodiode and flat window cap.

Maximum Ratings (T_{CASE} = 25°C)

Parameter	Symbol	Values		Unit
		Min.	Max.	
Output power	P_o		500	mW
LD Reverse Voltage	V_R		2	V
PD Reverse Voltage	V_{RPD}		30	V
Operating Temperature	T_{CASE}	- 10	+ 50	°C
Storage Temperature	T_{STG}	- 40	+ 85	°C

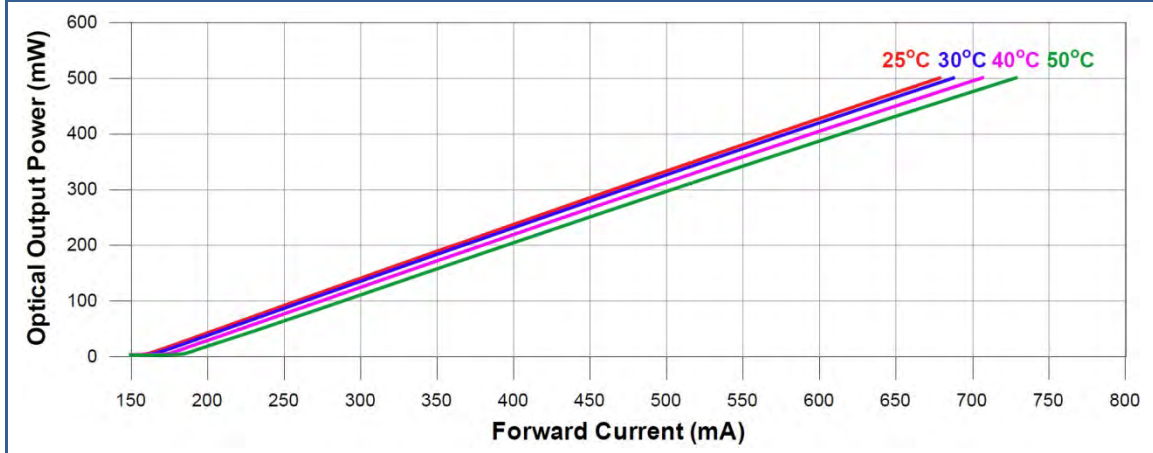
Laser Characteristics (T_{CASE} = 25°C, P_O=500mW)

Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Emission Wavelength	λ_{peak}	840	850	860	nm
Threshold Current	I_{th}		160	180	mA
Operating Current	I_F		680	720	mA
Operating Voltage	V_F		1.9	2.2	V
Beam Divergence (FWHM)	Parallel		13	18	deg
	Perpendicular		18	23	deg.
Slope Efficiency (375mW – 125mW)	η		0.95		mW/mA
PD Monitor Current	I_m	0.6	1.0	-	mA

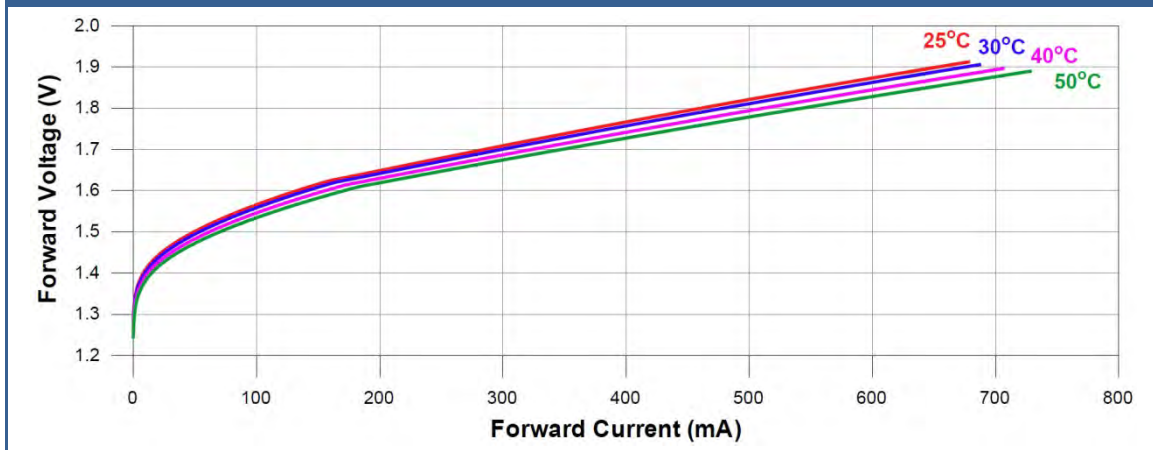


Performance Characteristics

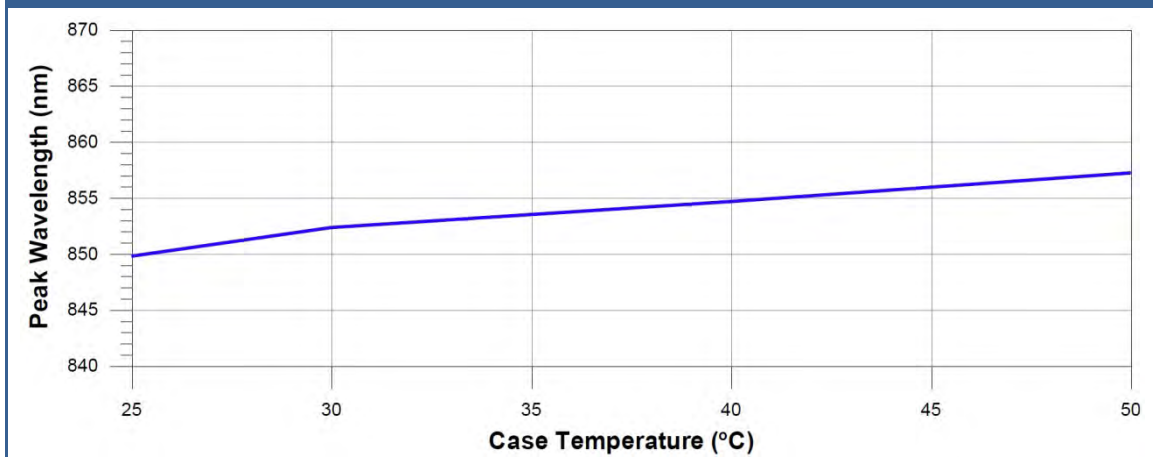
Optical Output Power vs Forward Current

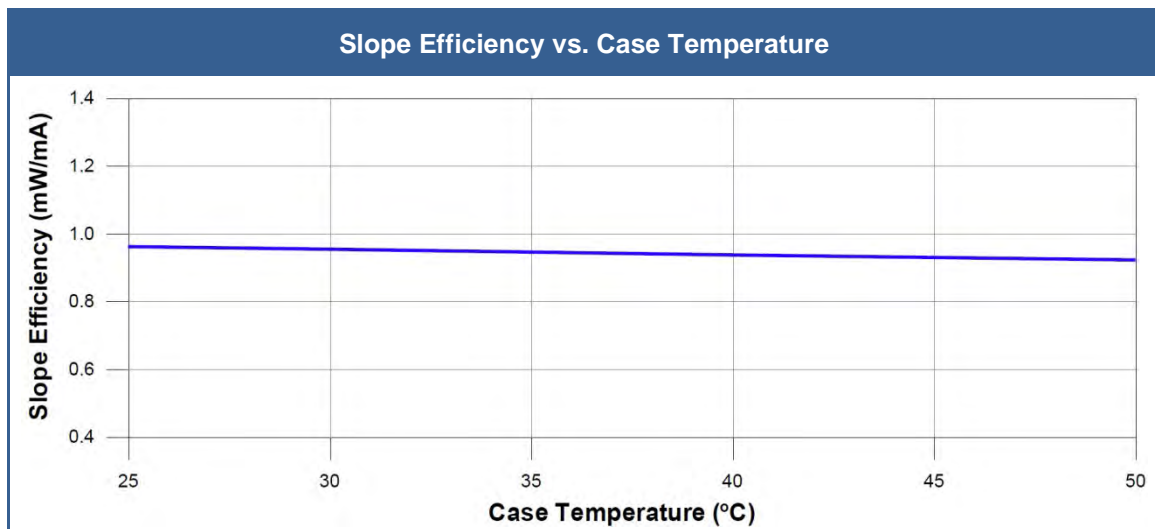
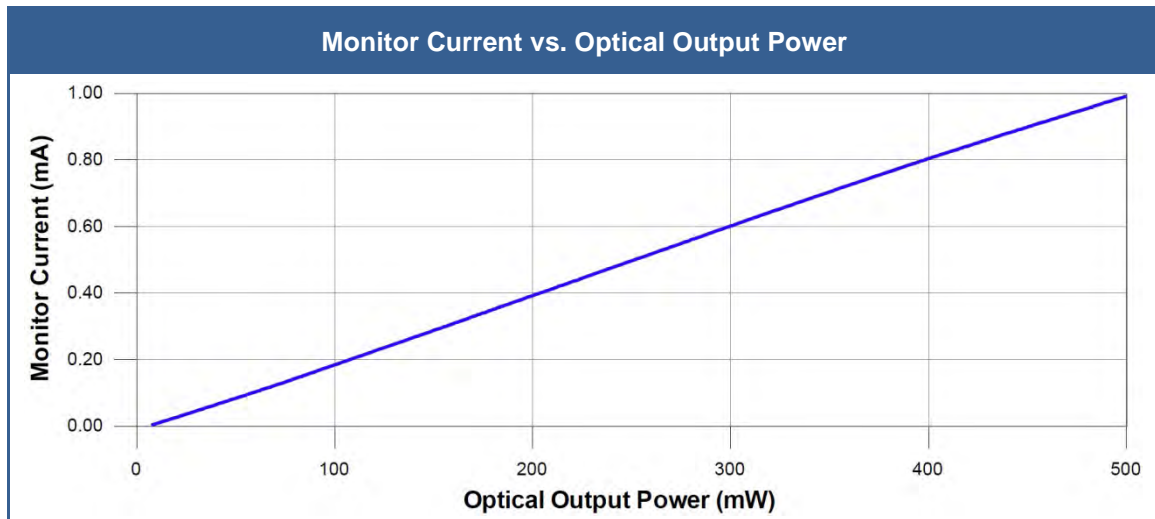
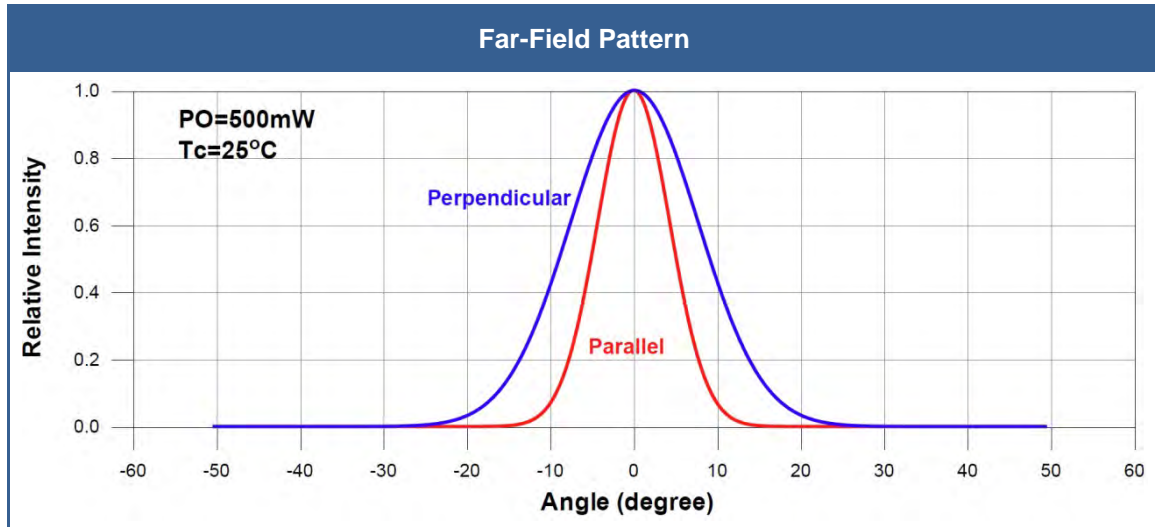


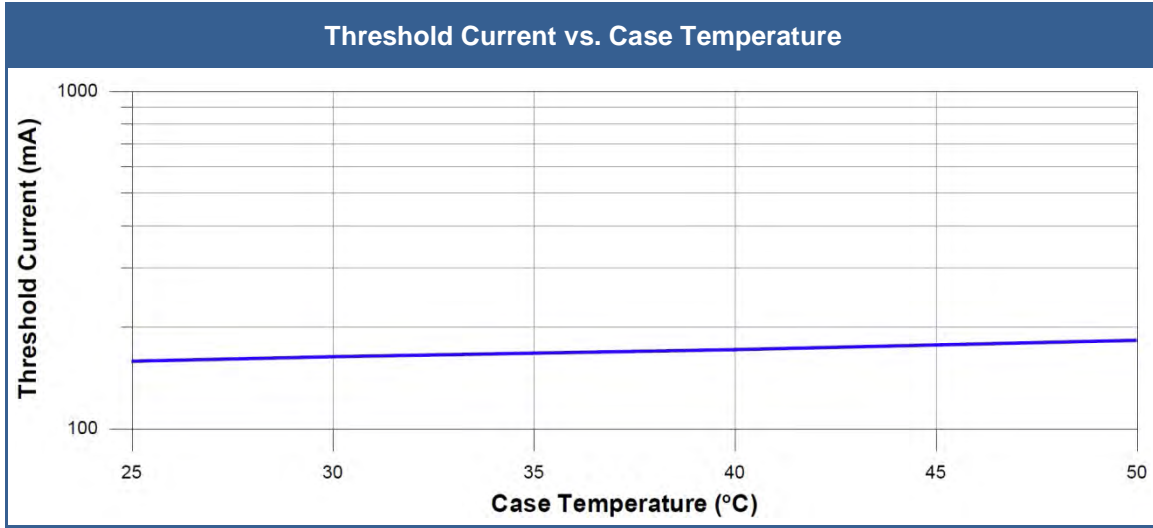
Forward Voltage vs. forward Current



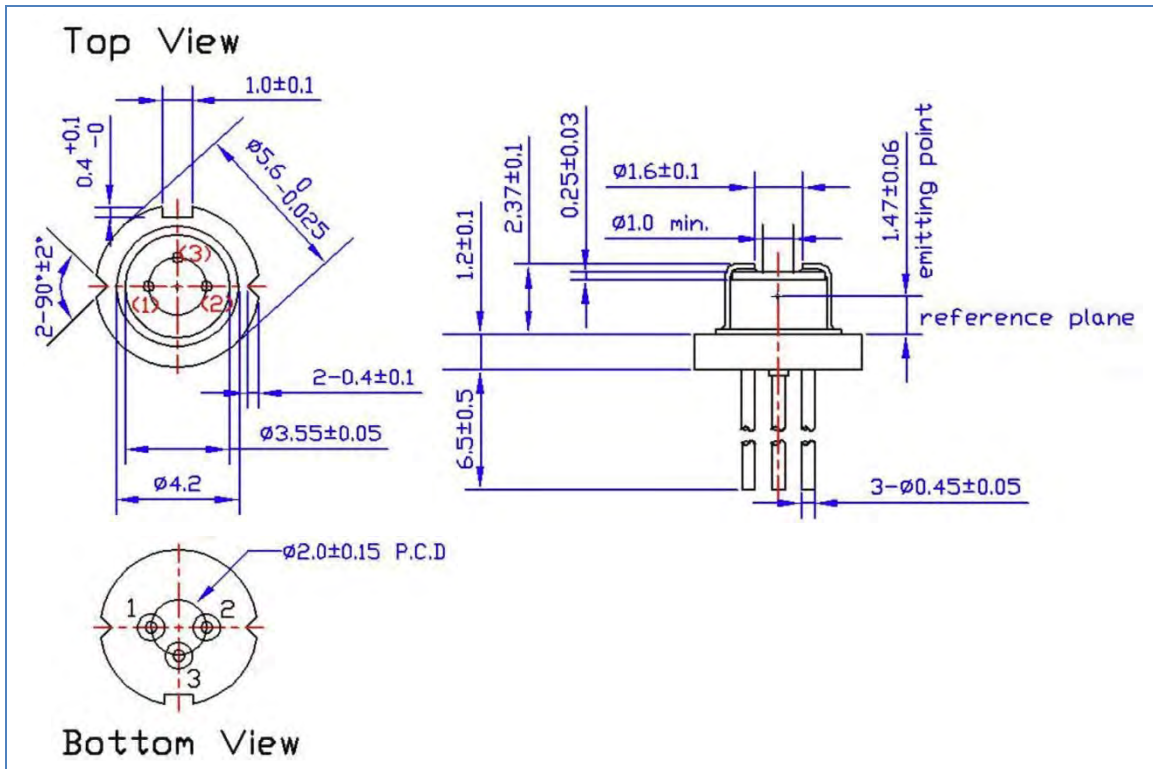
Peak Wavelength vs. Case Temperature







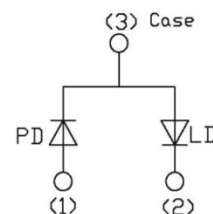
Drawing



All dimensions in mm

Electrical Connection

Lead	Description
Pin 1	PD Anode
Pin 2	LD Cathode
Pin 3	LD Anode, PD Cathode, Ground





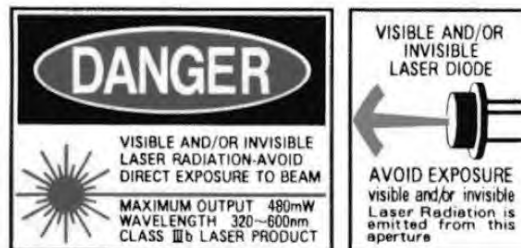
ESD Caution

Always do handle laser diodes with extreme caution to prevent electrostatic discharge, the primary cause of unexpected diode failure. ESD failures can be prevented by always wearing wrist straps, only using a grounding workplace, and following strict anti-static guidelines when handling the laser diode



Safety Advice

This laser diode emits highly concentrated IR light which can be **hazardous to the human eye and skin**. This diode is classified as **CLASS 4 laser product** according to IEC 60825-1 and 21 CFR Part 1040.10 Safety Standards.



This product is comply with 21 CFR Part 1040.10

Operating Considerations

Operating the laser diode outside of its maximum ratings may cause failure or a safety hazard. The diode may be damaged by excessive drive currents or switching transients. If the diode is operated using a power supply, it is strongly recommended to connect the diode with the output voltage set to zero. The voltage should then be increased slowly and with great caution, while at the same time carefully monitoring the laser diodes output power and drive current. The laser diode will show accelerated degradation with increased temperature, and it is advised to keep the case temperature low therefor, by means of heat sinking the device.