Superluminescent Diode, 1450 nm, Butterfly Package

SLD1450S

Description

The SLD1450S is a 1450 nm broadband superluminescent diode (SLD). This SLD is housed in a butterfly package with a TEC and integrated thermistor that allow for temperature control, thus stabilizing the power and spectrum. The output is coupled to 1.5 m of single mode SMF-28e fiber terminated with an FC/APC connector.

Specifications

Absolute Maximum Ratings[a]	
Absolute Max Current	600 mA
Operating Case Temperature	0 to 70 °C
Storage Temperature	-10 to 70 °C
Pin Code	14 Pin, Type 1

a. Please note that exceeding the absolute maximum ratings above may cause device failure.

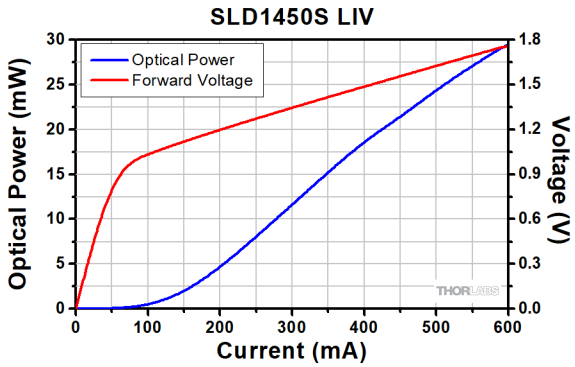
CW; T_{CHIP} = 15 - 30 °C, T_{CASE} = 0 - 70 °C

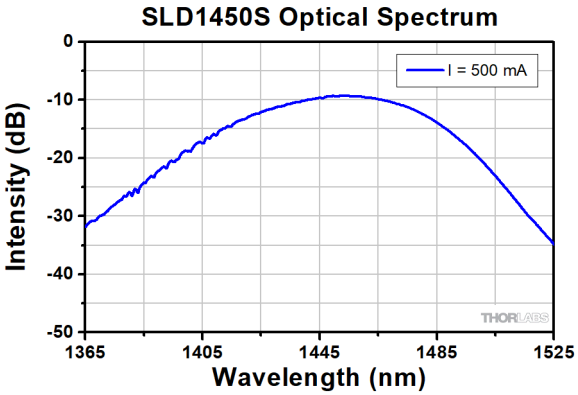
Operating Specifications[a]				
	Symbol	**Min**	**Typical**	**Max**
Center Wavelength[b]	λ_C	1435 nm	1450 nm	1465 nm
Operating Current	I_{OP}	-	500 mA	600 mA
ASE Power[c]	P_{ASE}	23 mW	25 mW	-
Optical 3 dB Bandwidth[c,d]	BW	50 nm	54 nm	-
Gain Ripple (RMS)[c]	δG	-	0.06 dB	0.35 dB
Forward Voltage[c]	V_F	-	1.7 V	2.0 V
TEC Operation (Typical / Max @ T_{CASE} = 25 °C / 70 °C)				
TEC Current	I_{TEC}	-	0.3 A	1.5 A
TEC Voltage	V_{TEC}	-	0.4 V	4.0 V
Thermistor Resistance	R_{TH}	-	10 kΩ	-

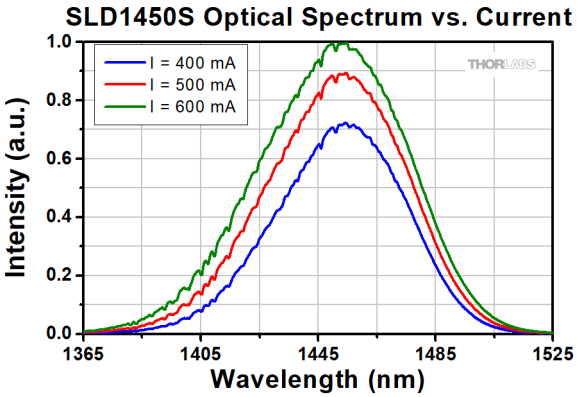
a. These operating specifications are a consistent set of values which will yield the specified performance.
b. The center wavelength for an SLD with a near-Gaussian spectral shape is defined by an average weighted by relative amplitude and may not correspond to the peak power or FWHM center wavelength.
c. At Operating Current
d. At the minimum ASE power, we guarantee the minimum 3 dB bandwidth.

Fiber Specifications	
Fiber Type	SMF-28e
Mode Field Diameter	9.2 ± 0.4 µm at 1310 nm 10.4 ± 0.5 µm at 1550 nm
Numerical Aperture	0.14
Fiber Length	1.5 m ± 0.05 m
Connector	FC/APC, 2.0 mm Narrow Key

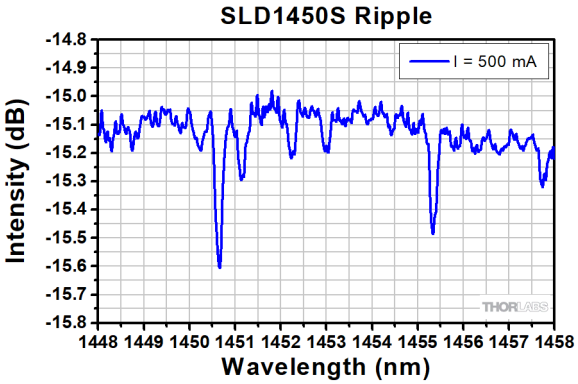
Typical Performance Plots





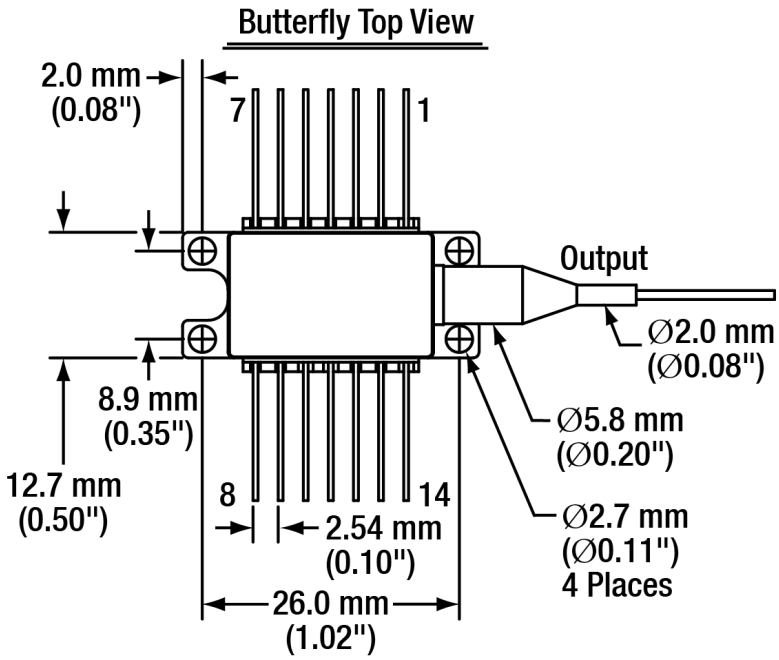


Note: As the current decreases, the bandwidth will decrease as well.



Note: The sharp dips in the spectrum are mostly caused by water absorption in the measurement setup. The resolution of the measurement was 0.1 nm.

Drawing



PIN IDENTIFICATION	
1. TEC +	14. TEC -
2. Thermistor	13. Case Ground
3. NC	12. NC
4. NC	11. SLD Cathode
5. Thermistor	10. SLD Anode
6. NC	9. NC
7. NC	8. NC