785 nm Fabry-Perot Laser Diode, 250 mW, Single Mode Fiber

FPL785S-250

Description

The FPL785S-250 is a 785 nm Fabry-Perot laser diode based on quantum well epitaxial layer growth and a highly reliable ridge waveguide structure. This diode features high optical output power and slope efficiency. The laser diode is housed in a butterfly package with an integrated monitor photodiode, TEC, and a thermistor that allows the laser to be temperature controlled. The output is coupled to 1.0 m of FC/APC-terminated 780HP single mode fiber

Specifications

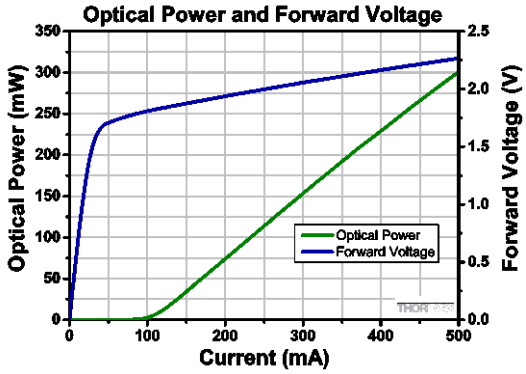
Absolute Maximum Ratings	
LD Reverse Voltage (Max)	2 V
PD Reverse Voltage (Max)	20 V
Absolute Max Current	550 mA[a]
Absolute Max Power	300 mW
Operating Case Temperature	0 to 70 °C
Storage Temperature	-10 to 70°C
Pin Code	14 pin, Type 1

Characteristics (CW; T_{CHIP} = 25 °C, T_{CASE} = 0 - 70 °C)				
	Symbol	**Min**	**Typical**	**Max**
Center Wavelength	λ_C	775 nm	785 nm	795 nm
Spectral Bandwidth (RMS)	$\Delta\lambda$	-	0.5 nm	2 nm
Output Power CW @ I_{CW}	P_{CW}	250 mW	-	300 mW
Operating Current CW	I_{CW}	-	500 mA	550 mA[a]
Threshold Current	I_{TH}	-	110 mA	150 mA
Forward Voltage	V_F	-	2.0 V	2.8 V
Slope Efficiency	$\Delta P/\Delta I$		0.7 mW/mA	-
TEC Operation (Typical/Max @T_{CASE} = 25°C/70°C)				
-TEC Current	I_{TEC}	-	0.35 A	2.5 A
-TEC Voltage	V_{TEC}	-	0.35 V	3.2 V
-Thermistor Resistance	R_{TH}	-	10 kΩ	-

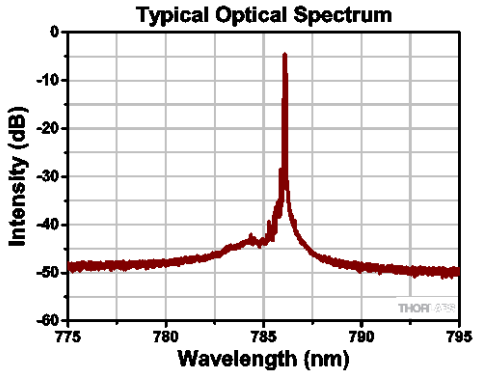
a. Due to variations between each lot of laser diodes, some devices will produce an output power higher than the 300 mW max when driven with a 550 mA current. Do not drive the laser diode with a current that will cause the output power to exceed the specified maximum power rating. Operating in this regime can cause damage to the device.

Fiber Specifications	
Fiber Type	780HP
Numerical Aperture	0.13
Core Diameter	4.4 µm
Fiber Length	1.0 m
Connector	FC/APC, 2.0 mm Narrow Key

Typical Performance Plots

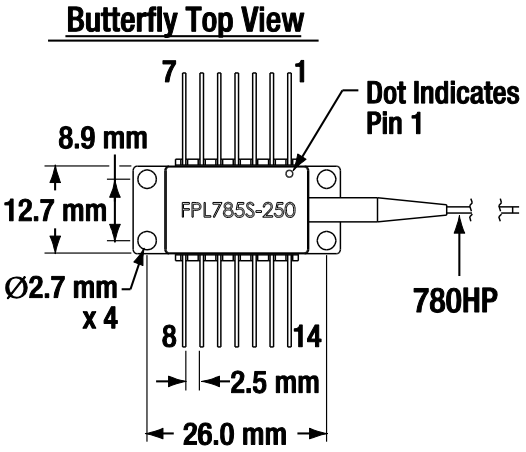


The device was held at 25 °C.



While the laser diode was held at 25 °C, it was driven at the current required to reach an output power of 250 mW.

Drawings



PIN IDENTIFICATION

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