1550 nm, 2 mW, Pigtailed DFB Laser Diode

LP1550-PAD2

Description

Thorlabs' LP1550-PAD2 Polarization-Maintaining Pigtailed DFB Laser Diode is a standard TO-packaged diode that has been pigtailed to a 1 m long polarization-maintaining fiber (PM1550-XP) with an FC/APC connector. The connector key is aligned to the slow axis of the fiber. This PM fiber pigtailed laser diode features an internal optical isolator to avoid back reflection for stable output power and single longitudinal mode. Each unit is tested before shipment. Please refer to the unit-specific test datasheet for optimal operating parameters.

Specifications

Absolute Maximum Ratings	
LD Reverse Voltage (Max)	2 V
PD Reverse Voltage (Max)	10 V
Absolute Max Current[a]	40 mA
Absolute Max Power[a]	3 mW
Storage Temperature	-10 to 65 °C

a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.

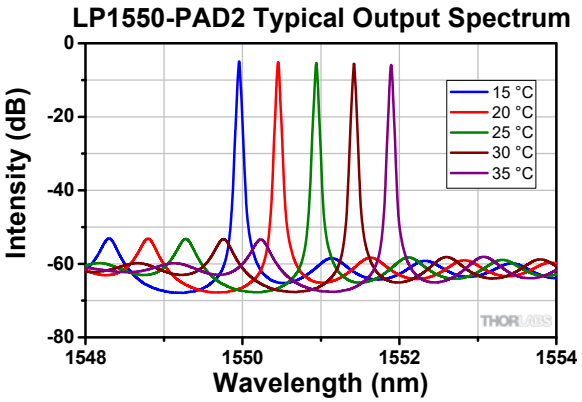
Physical Specifications	
Pin Code	D
Fiber	PM1550-XP
Connector	2.0 mm Narrow Key FC/APC

LP1550-PAD2 Specifications				
	Symbol	**Min**	**Typical**	**Max**
Center Wavelength[a]	λ_C	1547 nm	1550 nm	1553 nm
Output Power[a]	P_{op}	-	2 mW	-
Operating Current @ P_{op} = 2 mW[a]	I_{op}	-	20 mA	40 mA
Temperature Tuning Range	°C	15 °C	-	35 °C
Threshold Current[a]	I_{TH}	-	6 mA	20 mA
Side Mode Suppression Ratio (SMSR)	SMSR	35 dB	40 dB	-
Wavelength Shift over Current	Δλ/ ΔI	-	0.005 nm/mA	-
Wavelength Shift over Temperature	Δλ/ ΔT	-	0.1 nm/°C	-
Operating Voltage @ P_{op} = 2 mW[a]	V_F	-	1.0 V	2.0 V
Monitor Current @ P_{op} = 2 mW[a]	I_{PD}	120 µA	-	1000 µA
Slope Efficiency @ P_{op} = 2 mW[a]	ΔP/ΔI	-	0.2 mW/mA	-
Laser Linewidth	Δv	-	0.1 nm	1.0 nm
Polarization Extinction Ratio (PER)	PER	20 dB	-	-

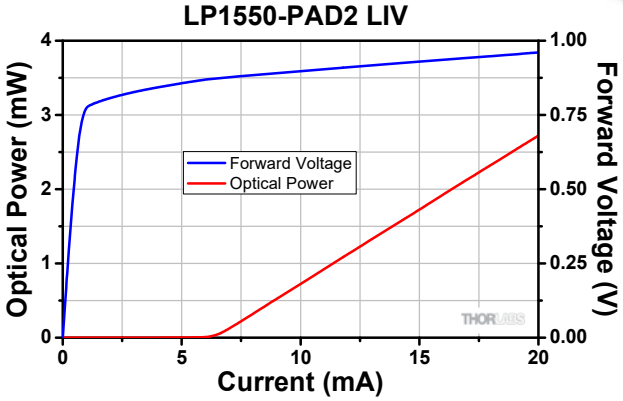
a. T_{CASE} = 25° C; T_{CHIP} = 25° C

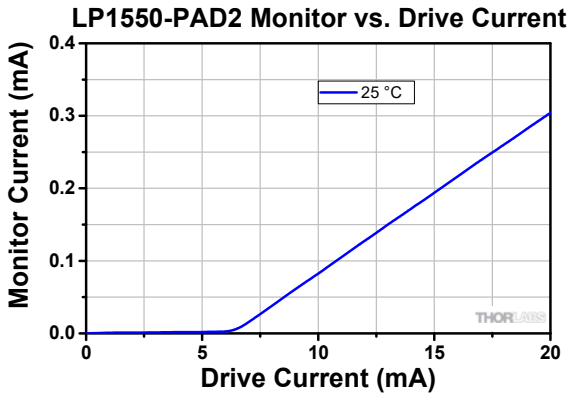
Performance Plots

The plots below are typical; performance will vary between individual lasers. Each laser includes a serial-number-specific datasheet detailing performance.

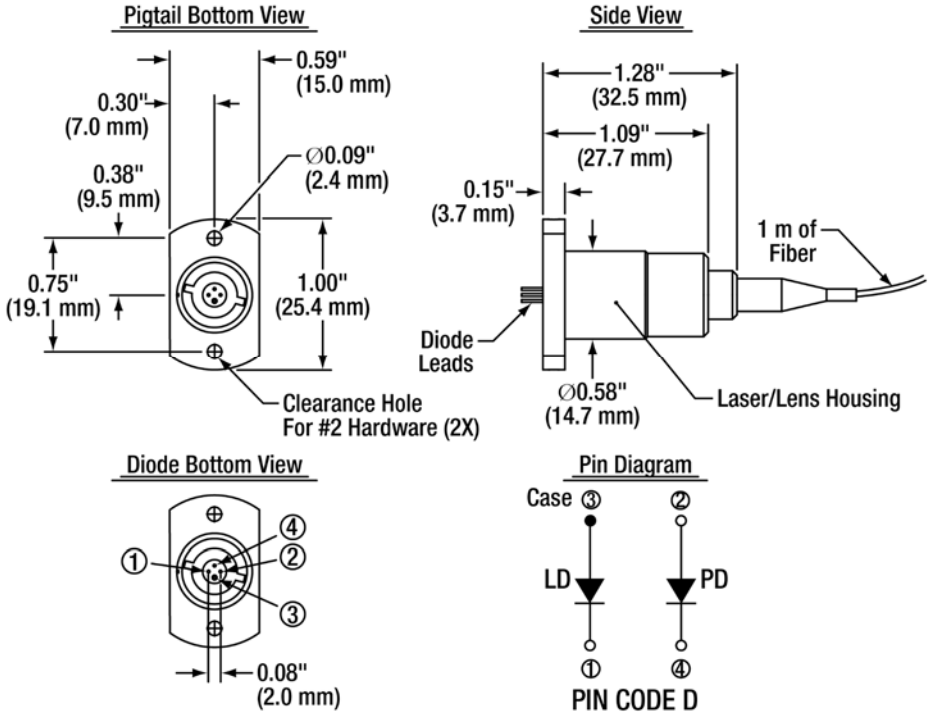


Measured using an optical spectrum analyzer with 0.02 nm spectral resolution.





Drawing


Pigtail Bottom View
0.59"
(15.0 mm)
0.30"
(7.0 mm)
Ø0.09"
(2.4 mm)
0.38"
(9.5 mm)
0.75"
(19.1 mm)
1.00"
(25.4 mm)
Clearance Hole
For #2 Hardware (2X)
Side View
1.28"
(32.5 mm)
1.09"
(27.7 mm)
0.15"
(3.7 mm)
1 m of
Fiber
Diode
Leads
Ø0.58"
(14.7 mm)
Laser/Lens Housing
Diode Bottom View
④
①
②
③
0.08"
(2.0 mm)
Pin Diagram
Case ③
②
LD
PD
①
④
PIN CODE D