1570 nm DFB Laser Diode, 5 mW

L1570P5DFB

Description

This 1570 nm, 5 mW, 2.5 Gbps, DFB laser diode is a Telcordia qualified product operable over a broad temperature range with a low temperature-wavelength coefficient. It is well suited for applications such as communications research, interferometry, and optical reflectometry for distance measurement in fiber or free space. Each device undergoes testing and burn-in.

This laser comes packaged in a 5.6 mm TO Can with D pin code. It contains an integrated aspheric focusing lens in the cap, allowing the focus spot and numerical aperture (NA) to be matched to SMF-28e+ fiber.

Specifications

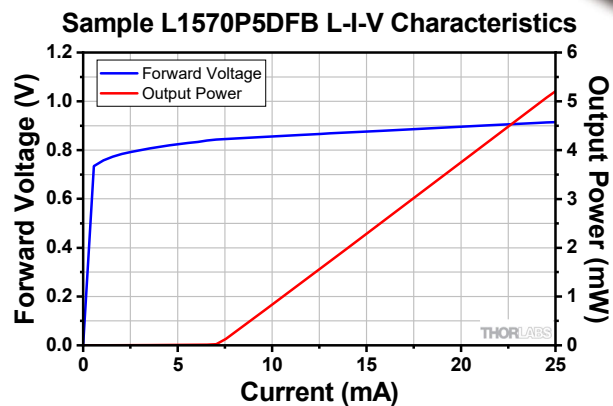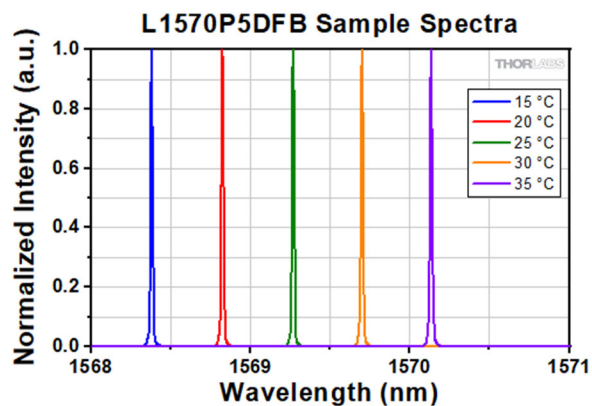| Absolute Maximum Ratings[a]		
Specification	Symbol	Maximum
Maximum Power	P_{Max}	10 mW
Forward Current	I_{FWD}	120 mA
Operating Case Temperature	T_{Case}	-20 to +85 °C
Storage Temperature	T_{Stor}	-40 to +100 °C
Laser Reverse Bias	V_R	2 V
Photodiode Reverse Bias	V_{RPD}	10 V

a. Absolute Maximum Rating specifications should never be exceeded. Operating at or beyond these conditions can permanently damage the laser.

L1570P5DFB Specifications[b]		Symbol	Min	Typ.	Max
Output Power, CW		P_{op}	-	5 mW	-
Threshold Current	@ 25 °C	I_{TH}	-	8 mA	13 mA
	@ 85 °C		-	30 mA	45 mA
Operating Current, CW @ P_{op}		I_{op}	-	25 mA	40 mA
Operating Voltage @ P_{op}		V_{op}	-	1.0 V	1.6 V
Slope Efficiency		η	-	0.30 W/A	-
Center Wavelength @ P_{op}		λ_o	1567 nm	1570 nm	1573 nm
Spectral Width (@-20 dB)		$\Delta\lambda$	-	0.1 nm	-
Wavelength-Temperature Coefficient		$\Delta\lambda/\Delta T$	-	0.09 nm/°C	-
Side-Mode Suppression Ratio		SMSR	35 dB	40 dB	-
Beam Divergence (FWHM)	Parallel @ P_{op}	$\Theta_{||}$	-	7°	-
	Perpendicular @ P_{op}	$\theta_{\perp}$	-	9°	-
Rise/Fall Time (5 mW, 20% to 80%)		t_R, t_F	-	-	0.1 ns
Monitor Current @ P_{op}		I_{PD}	100 µA	-	1000 µA
Focal Position (See Drawing)			7.0 mm	7.5 mm	8.0 mm
Focus Spot Size (1/e² Diameter)		Φ_F	-	11.5 µm	-

b. T_{CASE} = 25 °C if not specified.

Performance Plots

L1570P5DFB Sample Spectra

Sample L1570P5DFB L-I-V Characteristics

Drawing

Side View

Focal Point

Ø4.6 mm (0.18")
Ø3.75 mm (0.15")
7.5 mm (0.29")
3.7 mm (0.15")
1.2 mm (0.05")
14.0 mm (0.55")

Pin Code D

LD
PD

Top View

Ø5.6 mm (0.22")
Ø2.3 mm (0.09")
90°
0.4 mm (0.02")
1.0 mm (0.04")

Bottom View

Ø1.0 mm (0.04")
Ø2.0 mm (0.08")