

XD2710B/XD2910B/XD3110B/XD3310B CWDM DFB Laser in TO-56 package for use in uncooled applications up to 10 Gb/s

Description

The XD2710B/XD2910B/XD3110B/XD3310B Series Products are directly modulated 10Gbps DFB edge emitting laser diode chips with 1270nm, 1290nm, 1310nm and 1330nm wavelength options in coaxial TO-56 packages. The center wavelength tolerance of these diodes is $\pm 10\text{nm}$ and their operating temperature range is from -40°C to $+85^{\circ}\text{C}$. Integrated within the coaxial package is an InGaAs monitor photodiode and a lensed cap.

Key Features

- 7.5 mm focal length aspherical lens in TO-56 package
- Integral InGaAs monitor photodiode
- Multi Quantum Well Distributed Feedback Laser
- Reliable Buried Heterostructure Design
- 1270nm/1290nm/1310nm/1330nm $\pm 10\text{nm}$ tolerance
- Direct modulation up to 10Gbps over operating temperature
- Uncooled operation from -40°C to $+85^{\circ}\text{C}$



Applications

- QSFP, Optical Ethernet, Fiber Channel, Data Center

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operations sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

PARAMETER	UNIT	MIN	MAX
Forward Current	mA		150
Front Power	mW		40
Reverse Voltage	V		2
Operational Temperature	$^{\circ}\text{C}$	-20	85
Storage Temperature	$^{\circ}\text{C}$	-40	100

SAFETY INFORMATION ON THIS PRODUCT



SEMICONDUCTOR LASER



AVOID EXPOSURE- InV isible
Laser Radiation is emitted from
this aperture

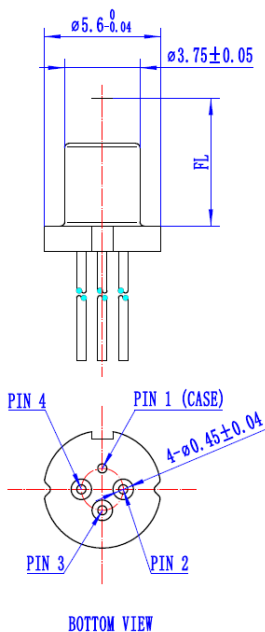
Electro-Optical Characteristics

Parameters at 25°C unless otherwise specified

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYPICAL	MAX	UNIT
Operating Temperature	T		-20		85	°C
Threshold Current	I_{TH}	CW		6	12	mA
		T=85°C CW		25	40	
Slope Efficiency	η	$I_{TH}+20mA$	0.3	0.4		W/A
		T=85°C $I_{TH}+20mA$	0.13	0.18		
Optical Output Power	P	$I_F = I_{TH}+20mA$	7	9		mW
		T=85°C $I_{TH}+20mA$	2.5	3.5		
Forward Voltage	V_F	$I_F = I_{TH}+20mA$		1.2	1.5	V
Series Resistance	R	P = 3mW		7	11	Ohm
Wavelength	λ	P = 5mW	$\lambda_c - 10$	λ_c	$\lambda_c + 10$	nm
Wavelength Temperature Coefficient	$d\lambda/dT$	T = -25°C ~+85°C		0.1		nm/°C
Side Mode suppression Ratio	SMSR	P = 5mW	30	40		dB
Rise Time	τ_R	unfiltered, 20~80% ER=6dB		50	60	ps
Fall Time	τ_F	unfiltered, 20~80% ER=6dB		50	60	ps
Distance between Reference Plane to Fiber	FL	CW, PC fiber coupling	7.3	7.5	7.7	mm
Photodiode Current	I_M	$I_F = I_{TH}+20mA$	0.1		1.0	mA
Photodiode Dark current	I_D	$V_R=2.0V$			100	nA
Photodiode Capacitance	C	$V_R=5V @ 1MHz$			10	pF

I_F = forward current

V_F = forward voltage λ_c = center wavelength. See ordering information



Pinout

PIN Number	Function
1	GND/Photodiode Anode
2	Laser Diode Cathode
3	Photodiode Cathode
4	Laser Diode Anode

Ordering Information

XD NN 10 B - C - 4309 - X

Wavelength (nm)

27=1270, 29=1290, 31=1310, 33=1330

For additional information, please contact our Lasercom Account manager

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