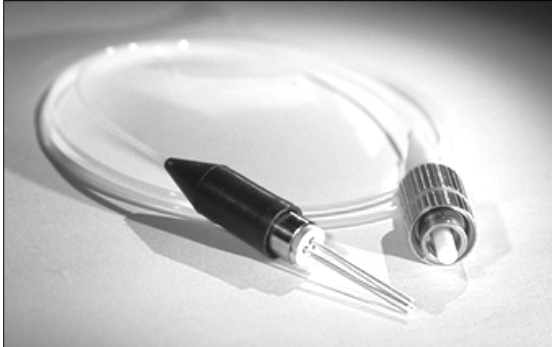


DFB-1xxx-C5-2-3.2-xx-x-x

**Description**

The DFB-1xxx-C5-2-3.2-xx-x-x series of Multi-Quantum Well (MQW) Distributed Feedback (DFB) lasers have been designed specifically to satisfy the requirements of the 10 Gigabit Ethernet LX-4 standard.

The devices emit at all four wavelengths specified in the standard, and feature high output power and wide operating temperature range.

Their uncooled, hermetically sealed, coaxial fiber-pigtailed packages are a cost-effective means of implementing a Wide-Wavelength Division Multiplexed transmitter in the 13130-nm band.

Features

- ❑ Advanced Multiple Quantum Well (MQW) Distributed Feedback (DFB) Laser Design
- ❑ Engineered Specifically for 10 GigE LX-4 WDM Applications
- ❑ Low-Cost Uncooled Laser Technology
- ❑ 1-meter SMF-28 Fiber Pigtail
- ❑ 5.6-mm TO-style package

Applications

- ❑ 10 Gigabit Ethernet
- ❑ Long-distance WDM transmitter

DFB-1xxx-C5-2-3.2-xx-x-x

Absolute Maximum Ratings

Exceeding the conditions specified below may result in permanent damage to the laser module. In normal operation, refer to the operating conditions in Table 1, below. Exceeding the conditions in Table 1, but below the absolute maximum ratings may result in unacceptable performance in some applications. Exposure to conditions above the absolute maximum ratings may negatively impact the reliability of the devices.

Parameter	Symbol	Condition	Min	Max	Unit
Operating Case Temperature	T _c	I=I _{op}	0	85	°C
Storage Temperature	T _{stg}	--	-40	100	°C
Laser Forward Current	--	--	--	120	mA
Laser Reverse Bias	V _r	--	--	2	V
Photodiode Reverse Bias	V _{rpd}	--	--	10	V

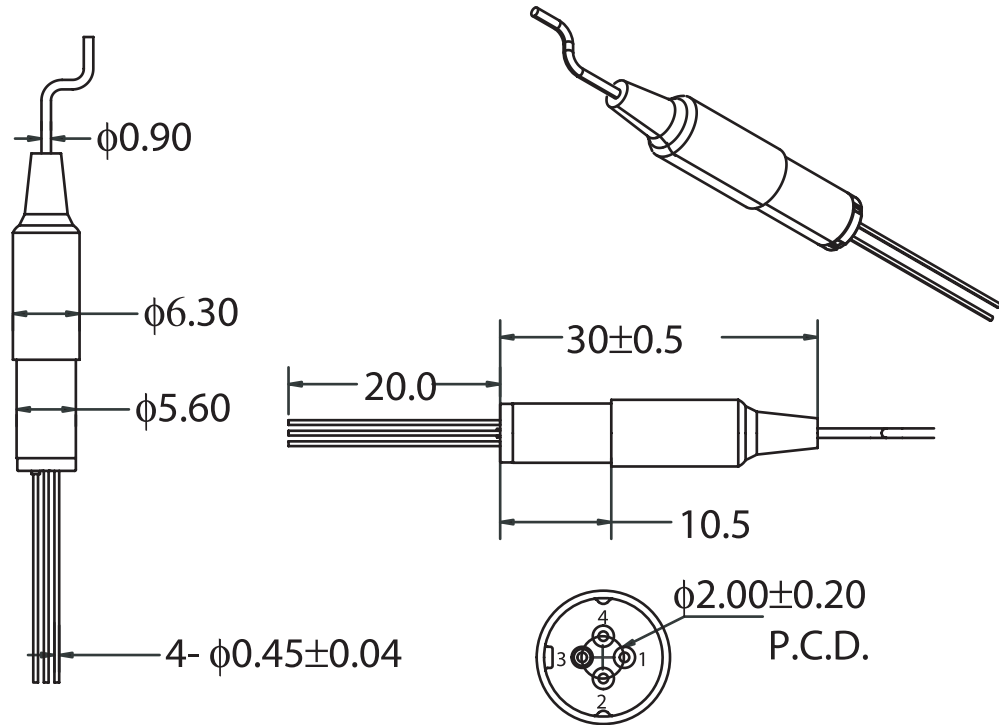
Electrical/Optical Characteristics

Table 1. Electrical and Optical Characteristics

Parameters are over operating temperature range unless otherwise noted.

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Operating Temp.	T	0		85	°C	
Optical Output Power	P _o	2	2.2	--	mW	CW
Threshold Current	I _{th}	--	12	18	mA	T=25 °C T=85 °C
Forward Voltage	V _F	--	1.1	1.6	V	P _o =2.0 mW
Operating Current	I _{op}	--	22	35	mA	P _o =2.0 mW, T=25 °C P _o =2.0 mW, T=85 °C
Center Wavelength	λ ₁	1270	1275	1282	nm	P _o =2.0 mW, CW
	λ ₂	1294	1300	1306		
	λ ₃	1319	1325	1331		
	λ ₄	1343	1349	1355		
RMS Spectral Width	Δλ	--	0.1	0.62	nm	P _o =2.0 mW
Wavelength temp. coefficient	Δλ / ΔT		0.09	0.1	nm/°C	
Side-mode Suppression Ratio	SMSR			0	dB	P _o =2 mW
Rise/Fall Times	t _R , t _F	--	--	0.1	ns	P _{peak} =2.0 mW, 20% to 80%
Relaxation Oscillation Frequency	f _R		4.5		GHz	P _o =2.0 mW
Monitor Current	I _{mon}	100	--	1000	μA	V _R =5 V
Monitor Dark Current	I _D	10	--	200	nA	V _R =5 V
Relative Intensity Noise	RIN		-130	-120	dB/Hz	P _o =2.0 mW, 30 db isolation
Tracking Error	γ	-1	--	1	dB	I _{mon} =const, γ=10 log (P _f /2.0) [dB]

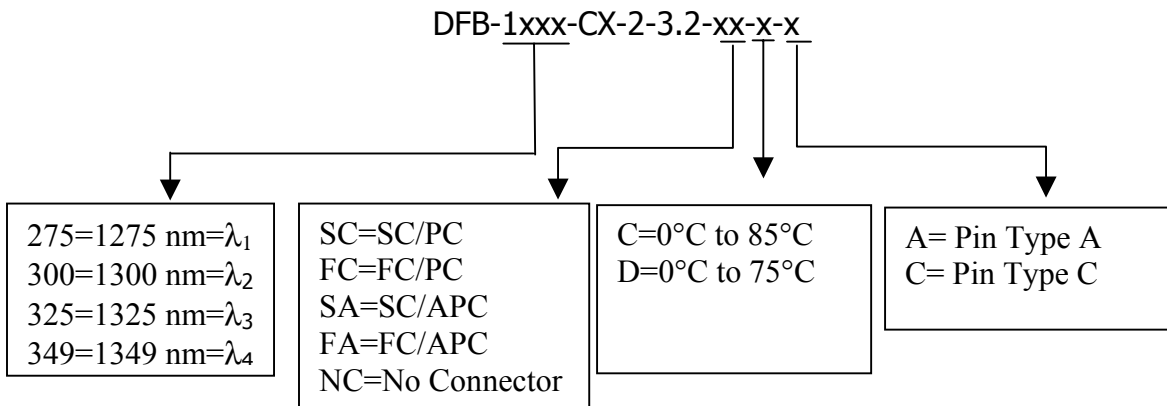
DIMENSIONS



Pin Assignment

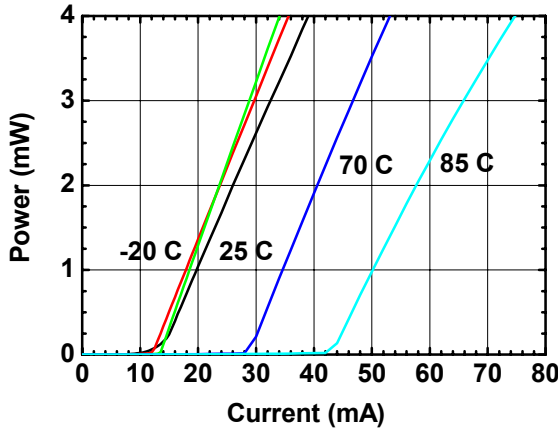
	Type A	Type C
1	PD Cathode	PD Anode
2	PD Anode	LD Anode, PD Cathode
3	LD Anode, GRD	GRD
4	LD cathode	LD cathode

ORDERING OPTIONS:

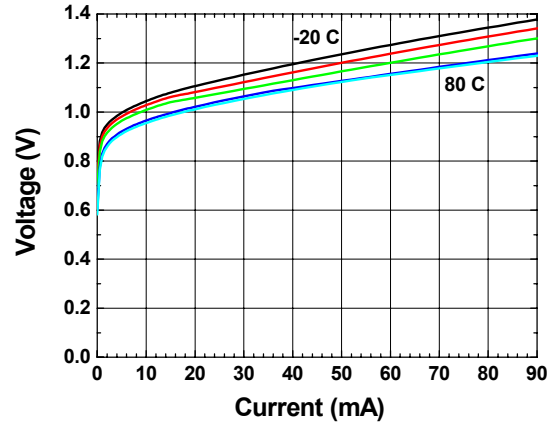


TYPICAL PERFORMANCE DATA (T=25 °C unless otherwise noted)

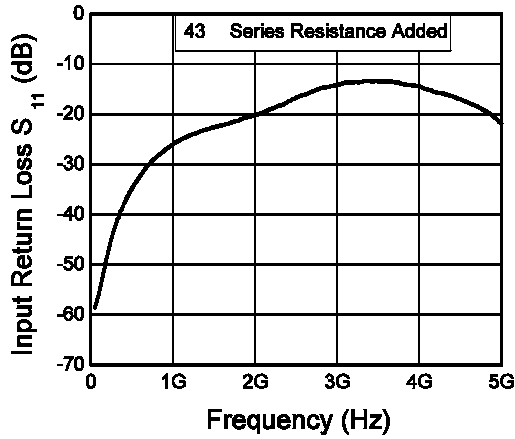
Output Power vs. Current



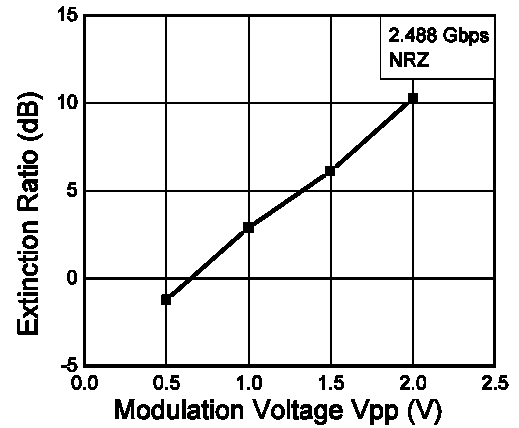
Forward Voltage vs. Current



Return Loss (S11)



Extinction Ratio vs. Modulation Voltage



Part Numbers

DFB-1275-CX-2-3.2-xx λ_1 Channel
 DFB-1300-CX-2-3.2-xx λ_2 Channel
 DFB-1325-CX-2-3.2-xx λ_3 Channel
 DFB-1349-CX-2-3.2-xx λ_4 Channel

Safety Information

All versions of this laser are Class 3R laser products per IEC* 60825-1:2001. Users should observe safety precautions such as those recommended by ANSI** Z136.1-2000, ANSI Z36.2-1997 and IEC 60825-1:2001.

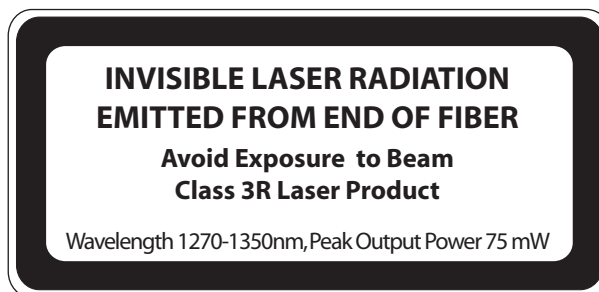
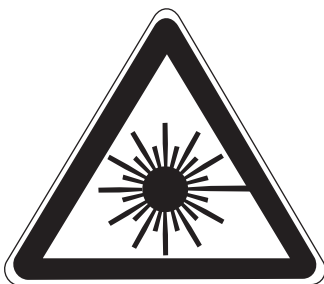
This product does not conform to 21 CFR 1040.10 and 1040.11. Consequently, this laser module is only intended for use as a component by manufacturers of electronic products and equipment.

Wavelength = 1.3 μm
 Maximum Power = 75mW
 Single-mode fiber pigtail
 Fiber Numerical Aperture = 0.14

Labeling is not affixed to the laser module due to size constraints; rather, labeling is placed on the outside of the shipping box.

This product is not shipped with a power supply.

Caution: use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



classified in accordance with IEC 60825-1:2001-08

*IEC is a registered trademark of the International Electrotechnical Commission

**ANSI is a registered trademark of the American National Standards Institute