



Description

The DFB-1310-C5-2-2.5-xx-x-x-x series of Multi-Quantum Well (MQW) Distributed Feedback (DFB) lasers have been designed specifically to satisfy the requirements of ITU-G.959 S16.1 and L16.1. The devices feature high output power and wide operating temperature range. Their uncooled, hermetically sealed, coaxial fiber-pigtailed packages are a cost-effective means of providing a high-speed light source for intermediate-reach and long-reach applications.

Features

- ❑ Advanced Multiple Quantum Well (MQW) Distributed Feedback (DFB) Laser Design
- ❑ High-speed up to 2.5 Gbps
- ❑ Engineered Specifically for SONET S16.1 and L16.1
- ❑ Low-Cost Uncooled Laser Technology
- ❑ 1-meter SMF-28 Fiber Pigtail
- ❑ 5.6-mm TO-style package with SMF pigtail

Applications

- ❑ SONET S16.1 2.5 Gbps transmitter
- ❑ SONET L16.1 2.5 Gbps transmitter
- ❑ Intermediate and long-distance fiber transmitter



DFB-1310-C5-2-2.5-xx-x-x-x

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Max	Unit
Operating Case Temperature	T_c	$I=I_{op}$	-20	85	°C
Storage Temperature	T_{sto}	--	-40	100	°C
Laser Forward Current	I_f	--	--	120	mA
Laser Reverse Bias	V_r	--	--	2	V
Photodiode Reverse Bias	V_{rpd}	--	--	10	V

Electrical/Optical Characteristics

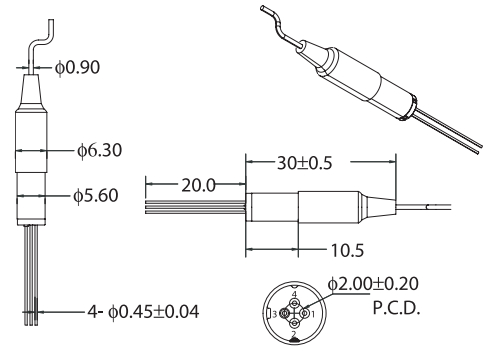
Parameters are over operating temperature range unless otherwise noted.

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Operating Temp.	T	-20	--	85*	°C	
Optical Output Power	P_o	2.0	--	--	mW	CW
Threshold Current	I_{th}	--	12	18	mA	$T=25\text{ }^\circ\text{C}$
		--	35	50		$T=85\text{ }^\circ\text{C}$
Forward Voltage	V_F	--	1.1	1.6	V	$P_o=2.0\text{ mW}$
Operating Current	I_{op}	--	22	35	mA	$P_o=2.0\text{ mW}, T=25\text{ }^\circ\text{C}$
		--	60	75		$P_o=2.0\text{ mW}, T=85\text{ }^\circ\text{C}$
Center Wavelength	λ_c	1270	1310	1350	nm	$P_o=2.0\text{ mW}, \text{CW}$
Spectral Width (-20 dB)	$\Delta\lambda$	--	0.1	1.0	nm	$P_o=2.0\text{ mW}$
Wavelength Temp. Coefficient	$\Delta\lambda / \Delta T$	--	0.09	0.1	nm/°C	
Side-mode Suppression Ratio	SMSR	30	40	--	dB	$P_o=2.0\text{ mW}$
Rise/Fall Times	t_{r}, t_f	--	--	0.1	ns	$P_{peak}=2.0\text{ mW}, 20\% \text{ to } 80\%$
Relaxation Oscillation Frequency	f_R	--	4.5	--	GHz	$P_o=2.0\text{ mW}$
Monitor Current	I_{mon}	25	--	375	$\mu\text{A/mW}$	$V_{rpd}=5\text{ V}$
Monitor Dark Current	I_D	--	--	200	nA	$V_{rpd}=5\text{ V}$
Relative Intensity Noise	RIN	--	-140	-130	dB/Hz	$P_o=2.0\text{ mW}, 30\text{ dB isolation}$
Tracking Error	γ	-1	--	1	dB	$I_{mon}=\text{const}, \gamma=10 \log(P_o/2.0)$ [dB]
Optical Isolation**	ISO	30	--	--	dB	

* See Ordering Options for available temperature ranges

**Optical Isolation is only applicable to devices that include the optical isolator option

Dimensions (in mm)

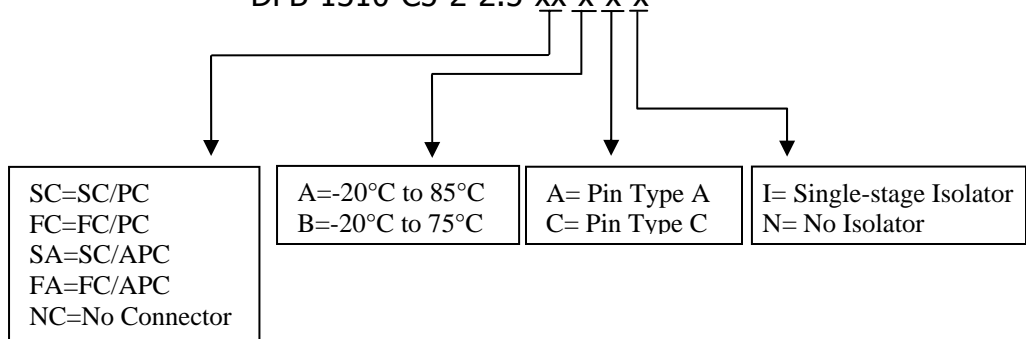


Pin Assignment

	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

DFB-1310-C5-2-2.5-xx-x-x-x



Safety Information

All version of this laser are Class 1M 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 = 75 mW
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