



Description

The FP-1310-C5-2-A-xx-A-x-x series of Multi-Quantum Well (MQW) Fabry Perot lasers have been designed specifically for analog applications, especially CATV.

The devices feature high output power, wide operating temperature range, and low distortion characteristics.

Their uncooled, hermetically sealed, coaxial fiber-pigtailed packages are a cost-effective means of providing a highly linear light source for short-reach and intermediate-reach analog transmission applications.

Features

- Advanced Multiple Quantum Well (MQW) Fabry Perot (FP) Laser Design
- Low Distortion
 - IMD2 max -45 dBc
 - IMD3 max -55 dBc
- Cost-effective Uncooled Laser Technology
- 5.6-mm TO-style package with SMF pigtail

Applications

- CATV
- Analog transmission



FP-1310-C5-2-A-xx-A-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_{stg}	--	-40	100	°C
Laser Forward Current	I_f	--	--	120	mA
Laser Reverse Bias	V_r	--	--	2	V
Photodiode Reverse Bias	V_{rpd}	--	--	10	V

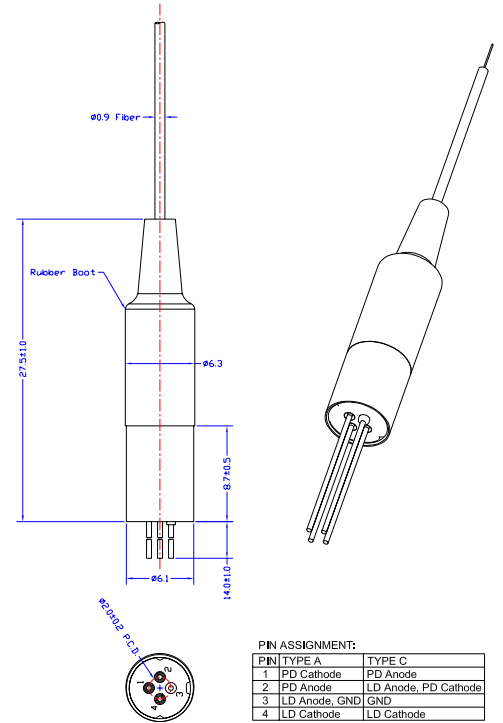
Electrical and Optical Characteristics

Parameters are over operating temperature range unless otherwise noted.

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Operating Temperature	T	-20	--	85	°C	
Optical Output Power	P_o	2.0	--	--	mW	CW
Threshold Current	I_{th}	--	10	14	mA	$T=25\text{ }^\circ\text{C}$ $T=85\text{ }^\circ\text{C}$
Operating Current	I_{op}	--	25	35	mA	CW, $P_o=2.0\text{ mW}$, $T=25\text{ }^\circ\text{C}$ CW, $P_o=2.0\text{ mW}$, $T=85\text{ }^\circ\text{C}$
Forward Voltage	V_F	--	1.1	1.6	V	$P_o=2.0\text{ mW}$
Center Wavelength	λ_c	1270	1310	1350	nm	$P_o=2.0\text{ mW}$, CW
RMS Spectral Width	$\Delta\lambda$	--	1.6	2.5	nm	$P_o=2.0\text{ mW}$
Wavelength temperature coefficient	$\Delta\lambda/\Delta T$	--	0.45	0.5	nm/°C	
Monitor Current	I_{mon}	25	--	375	$\mu\text{A/mW}$	$V_{rpd}=5\text{ V}$
Monitor Dark Current	I_D	--	--	200	nA	$V_{rpd}=5\text{ V}$
Tracking Error	γ	-1	--	1	dB	$I_{mon}=\text{const}$, $\gamma=10\text{ log}(P_o/2.0)$ [dB]
Optical Isolation*	ISO	30	--	--	dB	

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

Dimensions (in mm)

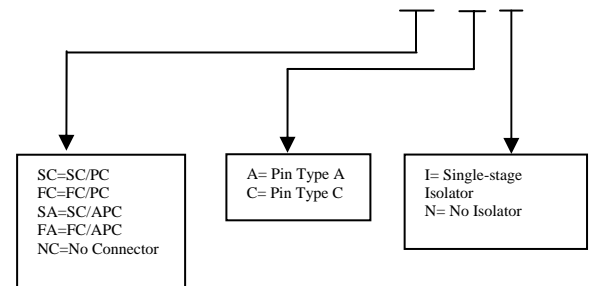


PIN ASSIGNMENT:

PIN	TYPE A	TYPE C
1	PD Cathode	PD Anode
2	PD Anode	LD Anode, PD Cathode
3	LD Anode, GND	GND
4	LD Cathode	LD Cathode

Ordering Options:

FP-1310-C5-2-A-xx-A-x-x



RF Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Second-Order Intermodulation	IMD2	--	--	-45	dBc	$T=25\text{ }^\circ\text{C}$, $P_o=2.0\text{ mW}$, OMI=0.1, Two-tone test, 13 MHz and 19 MHz, Receiver power: -4 dBm
Third-Order Intermodulation	IMD3	--	--	-55	dBc	$T=25\text{ }^\circ\text{C}$, $P_o=2.0\text{ mW}$, OMI=0.1, Two-tone test, 13 MHz and 19 MHz, Receiver power: -4 dBm
Carrier-to Noise ratio	CNR	51	--	--	dB	$T=25\text{ }^\circ\text{C}$, $P_o=2.0\text{ mW}$, OMI=0.1, ref. To one-tone, Receiver power: -4 dBm
RF Bandpass Flatness	BF	--	--	1.0	dB	Peak to valley, 5 MHz to 300 MHz

Safety Information

All versions 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