
Preliminary Product Specification

1310nm DFB Laser Diode LC TOSA

DFB-1310-10LR-LCA

PRODUCT FEATURES

- Supports 9.95 to 10.5Gb/s bit rates
- Extended temperature range -5°C to 85°C
- Uncooled 1310nm DFB Laser
- LC interface



APPLICATIONS

- 10GBASE-LR
- 10G Fiber Channel

The DFB-1310-10LR-LCA is specifically designed for applications based on several optical communications standards, including IEEE 10GBASE-LR, STM64, STM64 FEC, 10GFC, 10G GbE, 10G GbE FEC, & 10GFC FEC. Excellent optical performance is achieved by matching the electrical characteristics of the TOSA and laser to the external circuitry. The TOSA is designed to be paired with the 10G LR ROSA PIN-1310-10LR-x available at <http://www.finisar.com>

PRODUCT SELECTION

Part Number	Description
DFB-1310-10LR-LCA	10Gbps 1310nm DFB TOSA

I. Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to +85°C
Case Operating Temperature	-5°C to +85°C
Lead Solder Temperature	260°C, 10 sec.
Continuous Optical Power	20mW
Laser Diode Reverse Voltage	2V
Laser Diode Continuous Forward current	130mA
Monitor Photodiode Reverse Voltage	10V
Monitor Photodiode Reverse Current	2mA



Notice

Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operations section for extended periods of time may affect reliability.

Notice

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product

II. Electro-Optical Characteristics ($T_{\text{Range}} = -5^{\circ}\text{C}$ to 85°C)

Parameters	Test Condition	Symbol	Min.	Typ.	Max.	Units	Notes
Threshold current	T = 25°C T = T _{Range}	I _{th}		8	26	mA	
Operating current	T = 25°C T = T _{Range}	I _{op}		TBD	TBD	mA	
Modulation Current	T = 25°C T = T _{Range}	I _{mod}				mA	
Output power	CW, I _F = 38mA	P _{OC}		-0.5		dBm	1
Slope efficiency	T = 25°C	SE	0.02			mW/mA	
Peak Wavelength	T = T _{Range}	λ _p	1290		1330	nm	
Spectral Width (-20dB)	T = T _{Range}	SW			1	nm	
Wavelength temperature coefficient		Δλ/ΔT		0.09		nm/°C	
Side Mode Suppression	T = T _{Range}	SMSR	30			dB	
Transmitter Reflectance		RL			-12	dB	
Forward voltage	I=I _{op} , T=T _{range}	V _f		1.6		V	
TOSA Input Resistance	I=I _{op} , T=T _{range}	R _{diff}			9	Ohms	
Monitor PD current	T = 25°C, I=I _{op} V _B =-2.5V	I _{mon}	50		1000	□A	
Power Tracking Error	I _{mon} =Constant	TE	-1.5		1.5	dB	
Monitor Dark Current	T = 25°C, V _B = -5V T = T _{Range} , V _B = -5V	I _d			5 100	nA	
Monitor PD Capacitance	V _B = -5V, f=1MHz, T=25°C	C _{mon}			10	Pf	
Bandwidth	I=I _{op} , T=25°C	S21	7.5			GHz	
Differential Return Loss	0.1<f<7.5GHz 7.5<f<12.5GHz	SDD11	TBD TBD			dB	

Notes:

1. Output power specification is defined into single mode fiber (SMF-28)

III. Environmental Specifications

Parameter	Symbol	Min	Typ	Max	Units	Ref.
Case Operating Temperature	T_{op}	-5		85	°C	
Storage Temperature	T_{sto}	-40		85	°C	

IV. Regulatory Compliance

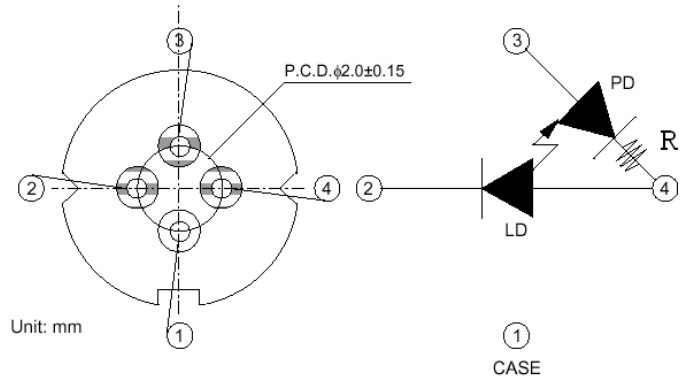
Feature	Agency	Standard	Certificate Number
Laser Eye Safety	FDA/CDRH	CDRH 21 CFR 1040 and Laser Notice 50	0820400

Copies of the referenced certificates are available at Finisar Corporation upon request.

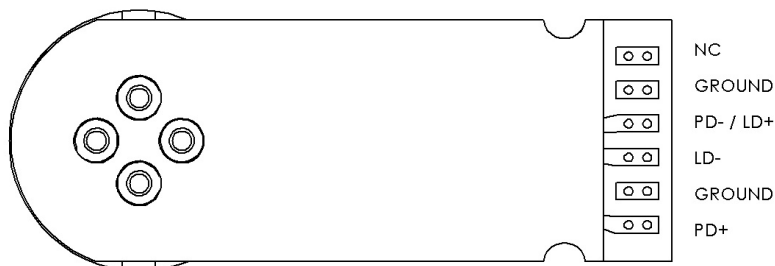
V. Mechanical Specifications

PINOUT: TO

PIN	Description
1	GND
2	LD Cathode
3	MPD Anode
4	LD Anode/MPD Cathode

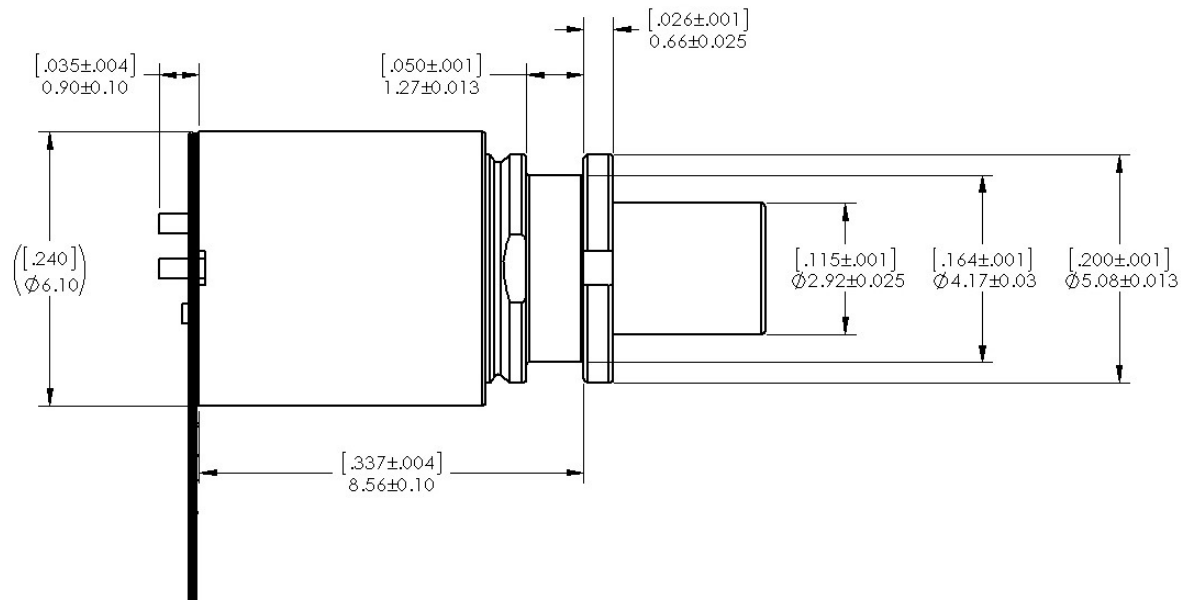


PINOUT: Flex



MOUNTING DIMENSION

(Dimensions in mm/inches)

**VI. Revision History**

Revision	Date	Description
B00	10/14/2014	• Converted to Finisar standard template

VII. For More Information

Finisar Corporation
 1389 Moffett Park Drive
 Sunnyvale, CA 94089-1133
 Tel. 1-408-548-1000
 Fax 1-408-541-6138
sales@finisar.com
www.finisar.com