Finisar

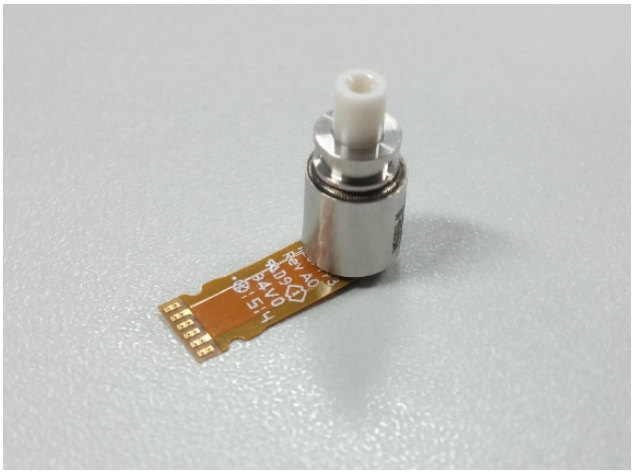
Preliminary Product Specification

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

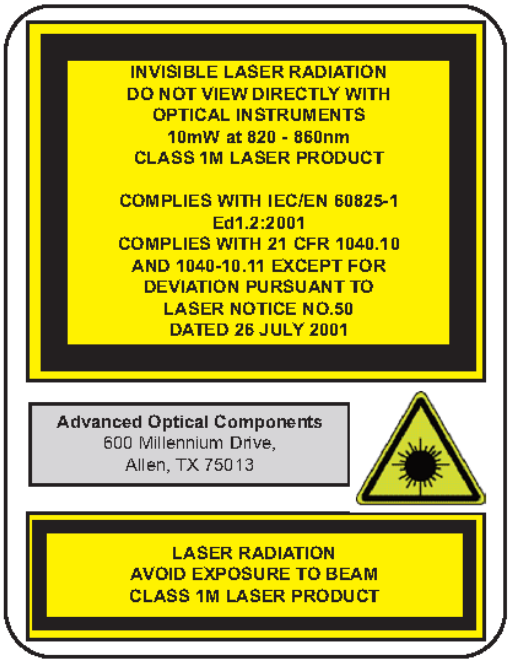
The DFB-1310-10LR-LCA is specifically designed for applications based on several optical communications standards, including IEEE 10GBASE-LR, STM64, STM64 FEC, 10GFC, 10G GbE, 10G GbE FEC, & 10GFC FEC. Excellent optical performance is achieved by matching the electrical characteristics of the TOSA and 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_{Range} = -5°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}	Iop		TBD	 TBD	mA	
Modulation Current	T = 25°C T = T_{Range}	Imod				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}	λp	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=Iop,T=Trange	Vf		1.6		V	
TOSA Input Resistance	I=Iop,T=Trange	R_{diff}			9	Ohms	
Monitor PD current	T = 25°C, I=Iop V_B=-2.5V	Imon	50		1000	□A	
Power Tracking Error	Imon=Constant	TE	-1.5		1.5	dB	
Monitor Dark Current	T = 25°C , V_B= -5V T = T_{Range}, V_B= -5V	Id			5 100	nA	
Monitor PD Capacitance	V_B= -5V, f=1MHz, T=25°C	Cmon			10	Pf	
Bandwidth	I=Iop, 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

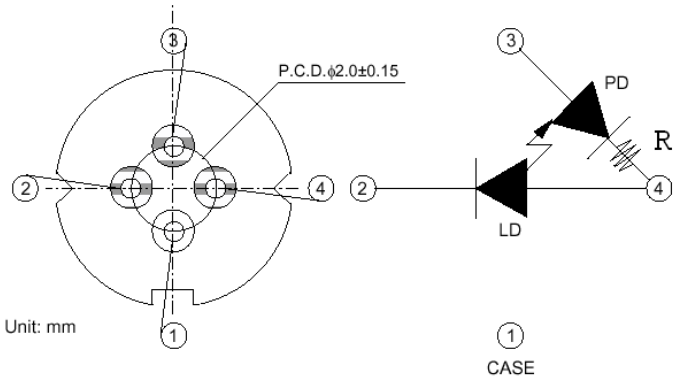
Feature	Agency	Standard	Certificate Number
Laser Eye Safety	FDA/CDRH	CDRH 21 CFR 1040 and Laser Notice 50	0820400

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

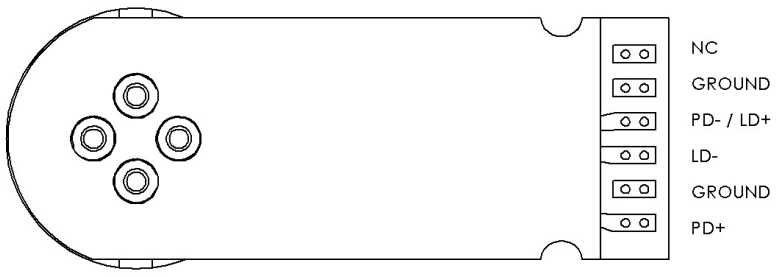
V. Mechanical Specifications

PINOUT: TO

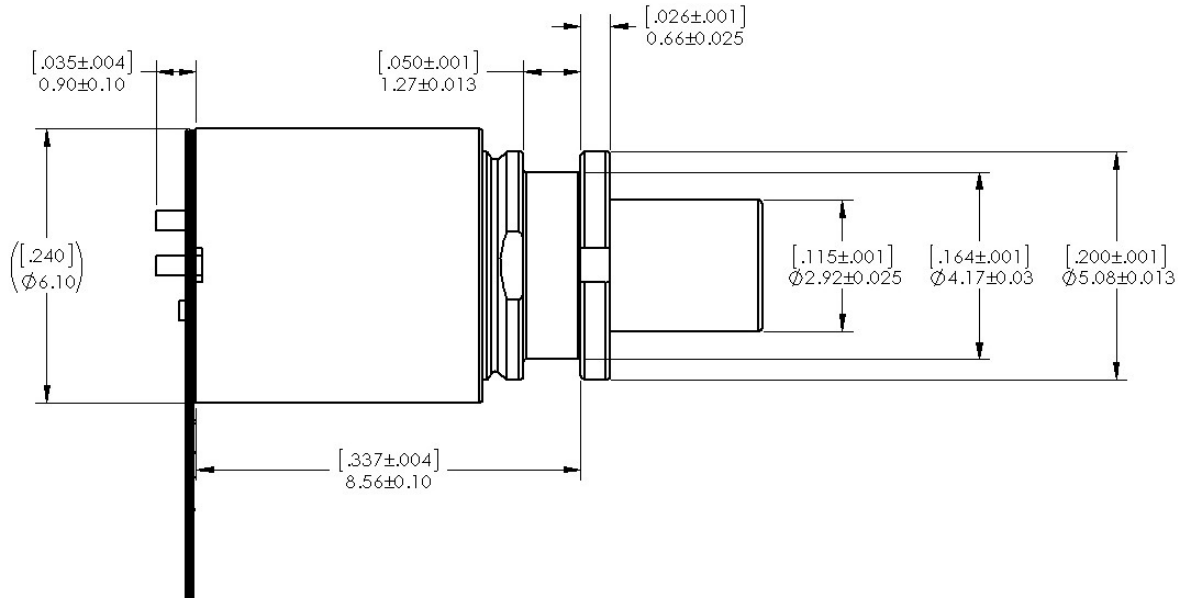
PIN	Description
1	GND
2	LD Cathode
3	MPD Anode
4	LD Anode/MPD Cathode



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

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