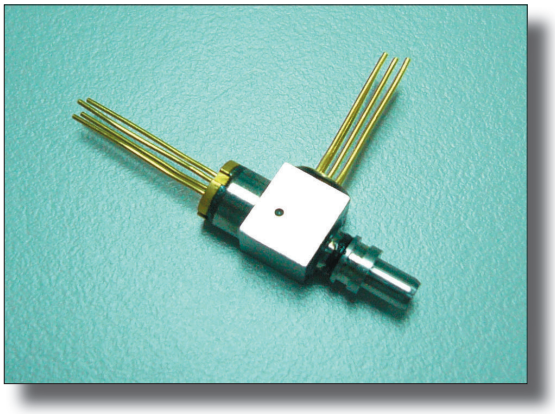
1550nm Emitting,1310nm Receiving (PIN-TIA, 3.3V), Bi-directional Diplexer Optical Module

C-15/13-F02-BD-NLCM



Features

- Single fiber bi-directional operation
- Laser diode with multi-quantum- well structure
- Low threshold current
- InGaAs/InP PIN Photodiode with trans-impedance amplifier
- High sensitivity with AGC*
- Differential ended output
- Single +3.3V Power Supply
- Integrated WDM coupler
- Un-cooled operation from -40°C to +85°C
- Hermetically sealed active component
- LC BOSA
- Design for fiber optic networks application

Absolute Maximum Rating (Tc=25°C)

Parameter	Symbol	Value	Unit
Fiber Output Power M	P_f	1(M)	mW
LD Reverse Voltage	V_{RLD}	2	V
PIN-TIA Voltage	V_{CC}	4.5	V
Operating Temperature	T_{opr}	-40 to +85	°C
Storage Temperature	T_{stg}	-40 to +85	°C

(All optical data refer to a coupled 62.5/125μm Multimode fiber)

Optical and Electrical Characteristics(Tc=25°C)

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Laser Diode						
Optical Output Power	M	0.5	-	1	mW	CW, I_{th}+ 25mA , kink free
Peak Wavelength	λ	1530	1550	1570	nm	CW, P_f=P_f(Min)
Spectrum Width (RMS)	Δλ	-	2	5	nm	CW, P_f=P_f(Min)
Threshold Current	I_{th}	-	10	15	mA	CW
Forward Voltage	V_F	-	1.2	1.5	V	CW, P_f=P_f(Min)
Rise/Fall Time	t_r/ t_f	-	-	0.5	ns	$I_{bias=Ith}$,10% to 90%
Monitor Diode						
Monitor Current	I_m	100	-	-	μA	CW, P_f=P_f(Min),V_{RPD}=2V
Dark Current	I_{DARK}	-	-	0.1	μA	V_{RPD}=5V
Capacitance	C_t	-	6	15	pF	V_{RPD}=5V, f=1MHz
Module						
Tracking Error	$\Delta P_f/P_f$	-1.5	-	1.5	dB	APC, -40 to +85°C
Optical Crosstalk	CRT		< -45		dB	

Note:

1.Pin assignment can be customized.

2.Specifications subject to change without notice.

20550 Nordhoff St. • Chatsworth, CA 91311 • tel: 818.773.9044 • fax: 818.576.9486
9F, No 81, Shui Lee Rd. • Hsinchu, Taiwan, R.O.C. • tel: 886.3.5169222 • fax: 886.3.5169213

Detector λ=1100-1360nm

DC Electrical Characteristics(Tc=25°C)

Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Power Supply	V_{CC}	3.0	3.3	3.6	V	
Differential Output Voltage	Vd	-	-	1	V	
Supply Current (no load)	F02	-	-	35	mA	

AC/Optical and Electrical Characteristics(Tc=25°C)

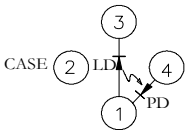
Parameter	Symbol	Min	Typical	Max	Unit	Test Condition
Detection Range		1100	1310	1360	nm	
Gain @ 10 Mbps Differential	G	52	-	70	V/mW	Measure differentially, AC coupled, RL=50Ω
Bandwidth	BW	120	140	-	MHz	
Saturation Power	Psat	-3	0	-	dBm	BER<10^{-10} @155Mbps PRBS 2^{23}-1,Er=10dB
Sensitivity	Sens.	-	-37	-35	dBm	BER<10^{-10} @155Mbps PRBS 2^{23}-1,Er=10dB
Output Resistance	Rout	-	50	-	ohm	

Pin Assignment

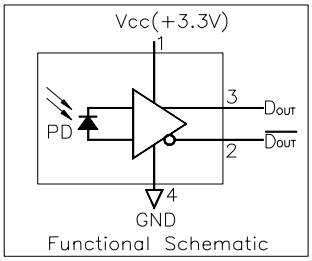
LD Pin Assignment

D Type

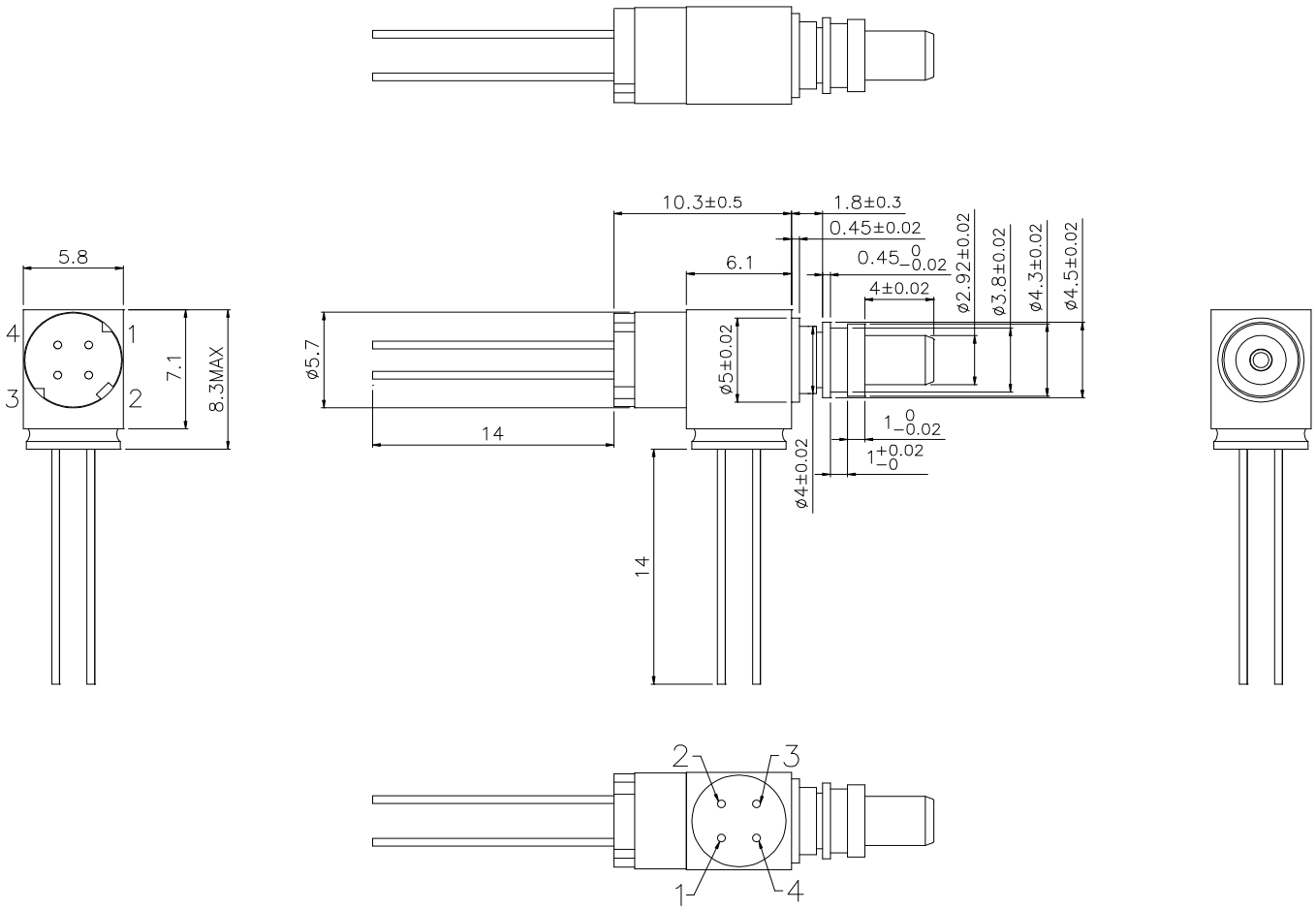
Pin 1 : Laser Anode and Monitor Diode Cathode
Pin 2 : Case Gnd
Pin 3 : Laser Diode Cathode
Pin 4 : Monitor Diode Anode



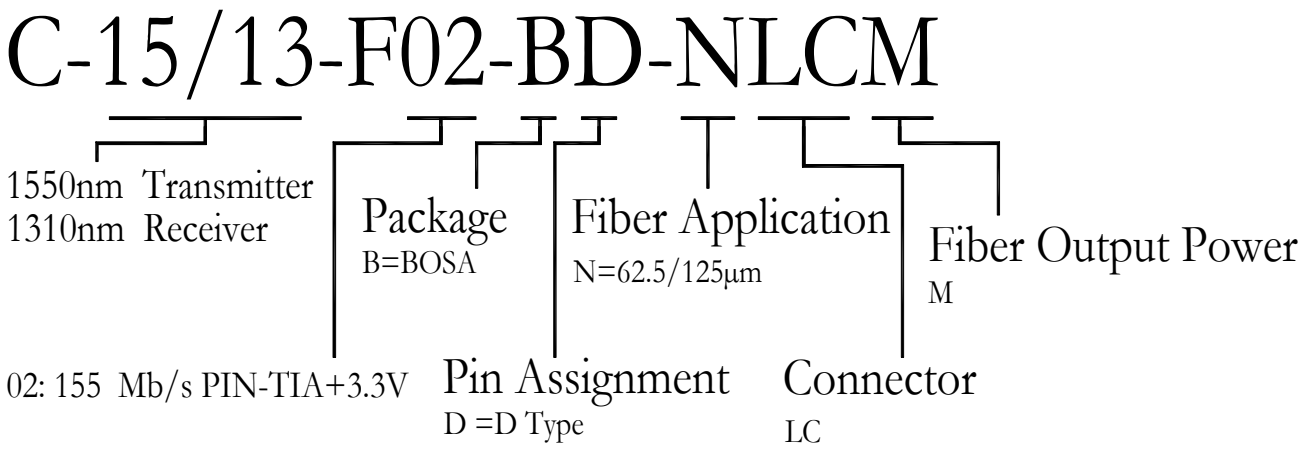
PIN–TIA Pin Assignment



Outline Demensions Units in mm.



Ordering Information



Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.
Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

Legal Notice