1550nm 1310nm	C-15/13-F01-PA-SFCL/M/H	**1550nm Emitting, 1310nm Receiving (PIN-TIA) , BIDI Optical Module (Preliminary)**

Features

- Single-fiber bi-directional operation
- Laser diode with multi-quan tum-well structure
- Low threshold current
- InGaAs/InP PIN Photodiode with transimpedance amplifier
- High sensitivity with AGC*
- Differential ended output
- Integrated WDM coupler
- Uncooled operation from -40℃ to +85℃
- Hermetically sealed active component

Packaging

- Single mode fiber pigtailed with optional FC/ST/SC connector

Application

- Design for fiber optic networks

Note:

1. Pin assignment can be customized.
2. Specifications subject to change without notice.

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.

Absolute Maximum Ratings(Tc=25℃)

Parameter	Symbol	Value	Unit
LD Forward Current	V_f	100	mA
LD Reverse Voltage	V_{RLD}	2	V
PIN-TIA Voltage	V_{CC}	6	V
Operating Temperature	T_{opr}	-40~+85	℃
Storage Temperature	T_{stg}	-40~+85	℃

(All optical data refer to a coupled 9/125μm SM fiber)

Optical and Electrical Characteristics(Tc=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Laser Diode						
Optical Output Power	L M H	0.2 0.5 1	0.4 0.75	0.5 1.0 1.6	mW	CW, I_{th}+20mA , kink free
Peak Wavelength	λ	1520	1550	1580	nm	CW, P_f=P_f(Min)
Spectrum Width	Δ λ	-	2	5	nm	CW, P_f=P_f(Min)
Threshold Current	I_{th}		12	15	mA	CW
Forward Voltage	V_F	-	1.2	1.6	V	CW, P_f=P_f(Min)
Rise/Fall Time	T_r/Tt_f	-	-	0.5	ns	I_{bias}=I_{th} ,10~90%
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
Detector						

DC Electrical Characteristics (Tc=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	
Power Supply	V_{cc}	4.5	5	5.5	V	
Differential Output Voltage	V_d	-	1	-	V	
Supply Current (no load)	I_{cc}	-	-	35	mA	

AC/Optical and Electrical Characteristics (Tc=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Detection Range		1100	1310	1650	nm	-
Gain @10Mbps Differential	G	0.17	-	220	V/mW	λ=1310nm
Bandwidth	BW	120	140	-	MHz	
Saturation Power	Psat	-3	0	-	dBm	λ=1310nm
Sensitivity	Sens	-	-38	-36	dBm	BER=10^{-10} @155Mbps
Output Resistance	Rout	-	50	65	ohm	
Module						
Tracking Error	ΔP_f/P_f	-	-	±1.0	dB	APC, -40~+85℃
Optical Crosstalk	CRT	<-47			dB	

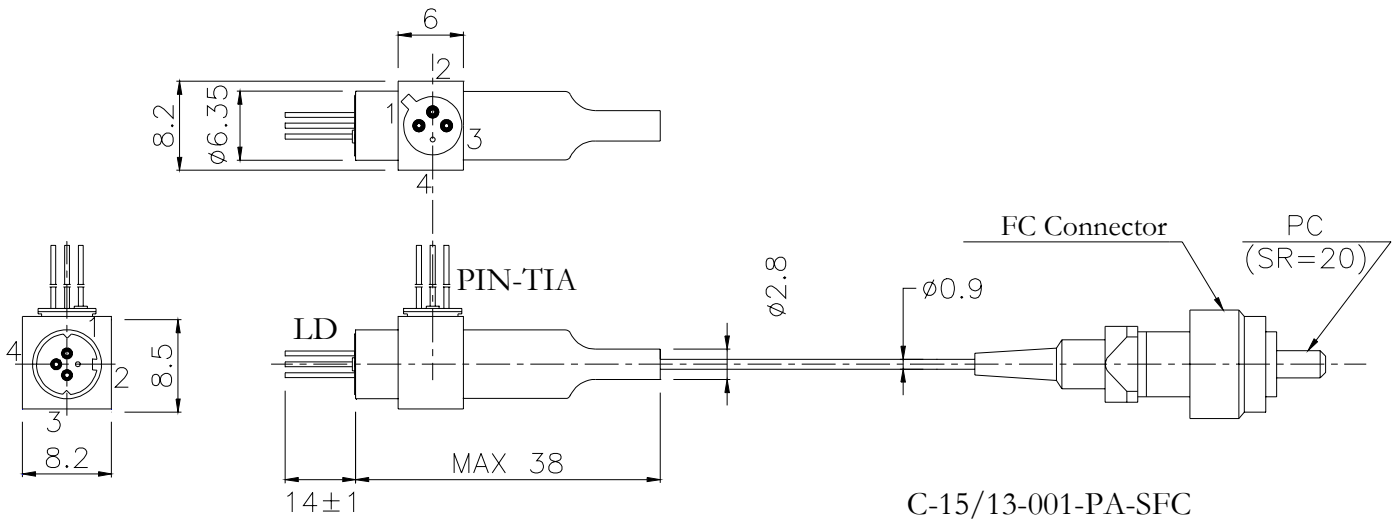
1550nm 1310nm	C-15/13-001-PA-SFCL/M/H	**1550nm Emitting, 1310nm Receiving(PIN-TIA), BIDI Optical Module (Preliminary)**

Option

C--15/13--F01--XX--SXXX/XXX

- 1550nm Transmitter / 1310nm Receiver
- Package: P=Pigtail, R=Receptacle
  - 01: 155 Mb/s PIN-TIA + 5 V
  - 02: 155 Mb/s PIN-TIA + 3.3V
  - 03: 622 Mb/s PIN-TIA + 5 V
  - 04: 622 Mb/s PIN-TIA + 3.3V
  - 05: 1200 Mb/s PIN-TIA + 5 V
  - 06: 1200 Mb/s PIN-TIA + 3.3V
- Pin Assignment: A=A Type, D=D Type
- Fiber Output Power: L/M/H
- Connector: FC/ST/SC/No
- -: PC Fiber, APC: APC Fiber

Top view

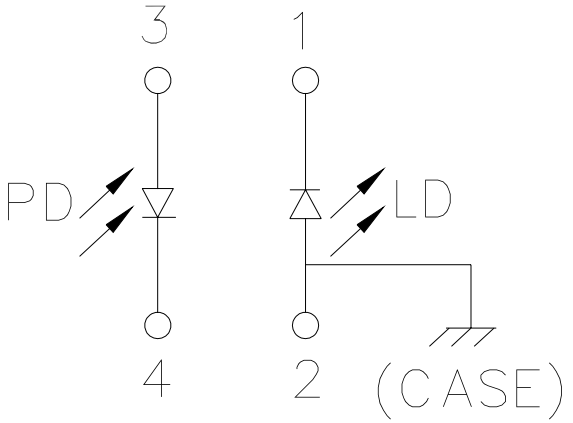


Left side view

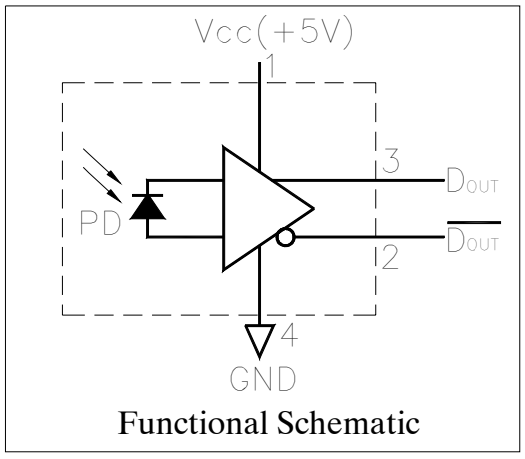
Front view

C-15/13-001-PA-SFC

LD Pin Assignment (A type)



PIN-TIA Pin Assignment



Functional Schematic