

Features



- 1310nm InGaAsP MQW-FP laser diode
- 1490nm InGaAs photodiode with TIA
- Uncooled, hermetically sealed TX and RX
- Low threshold current
- Single mode fiber pigtail type with SC connector options.

Applications

- Gigabit Ethernet
- GE-PON

Ordering Information

| Part Number | TX | RX | Connector | Data rate |
|-------------------|---------|---------|-----------|-----------|
| BF1-3149-PXSX-CAX | 1310 nm | 1490 nm | SC/PC | 1.25Gbps |

Specifications

Absolute Maximum Ratings

| Parameter | Symbol | Value | Unit |
|---------------------------------|-------------------|---------|------|
| Storage temperature | T _{stg} | -40~+85 | °C |
| Operating case temperature | T _{op} | 0~+70 | °C |
| Peak optical output power | P _f | 3 | mW |
| Reverse voltage (LD) | V _{RL} | 2 | V |
| Forward current (PD) | I _{FP} | 2 | mA |
| Reverse voltage (PD) | V _{RP} | 20 | V |
| Soldering temperature (10 sec.) | S _{temp} | 260 | °C |



TX-1310/RX-1490 1.25Gbps Bi-direction Pigtail Type Module

Transmitter Electro-optical Characteristics (T=25°C, unless otherwise specified)

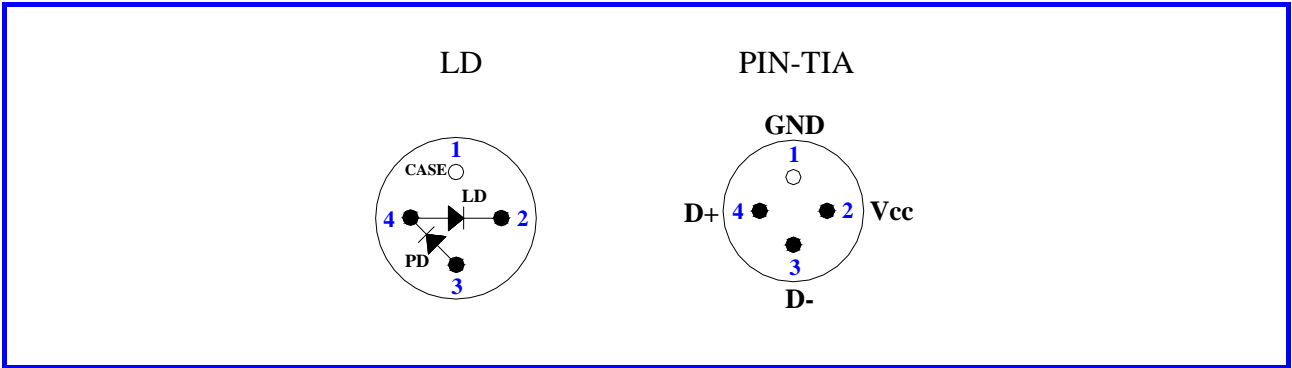
| Parameter | Symbol | Condition | MIN. | TYP. | MAX. | Unit |
|----------------------|--------------------|--|------|-----------|------|---------------|
| Threshold current | I_{th} | CW | 3 | 5 | 10 | mA |
| Center Wavelength | λ_c | $P_f = 1.25 \text{ mW}$ | 1283 | - | 1316 | nm |
| Fiber output power | P_f | CW, $I_{th} + 25\text{mA}$ | 1.25 | - | - | mW |
| Slope efficiency | Se | CW | 0.05 | - | - | mW/mA |
| Operating voltage | V_{op} | $P_f = 1.25 \text{ mW}$ | - | - | 1.5 | V |
| Spectral width | $\Delta \lambda$ | CW, RMS | - | 1.0 | 2.5 | nm |
| Rise time | T_r | $I_b = I_{th}$, 20%~80% | - | - | 0.6 | nsec |
| Fall time | T_f | $I_b = I_{th}$, 80%~20% | - | - | 0.6 | nsec |
| Tracking error | $\Delta P_f / P_f$ | APC, 0°C ~ +70°C | - | ± 1.0 | - | dB |
| Monitor current | I_m | $P_f = 1.25 \text{ mW}$, $V_{RP} = 1\text{V}$ | 25 | - | - | μA |
| Monitor dark current | I_d | $V_{RP} = 10\text{V}$ | - | - | 0.1 | μA |
| Monitor capacitance | C | $V_{RP} = 10\text{V}$, $f = 1\text{MHz}$ | - | - | 20 | pF |

Receiver Electro-optical Characteristics (T=25°C, unless otherwise specified)

| Parameter | Symbol | Condition | MIN. | TYP. | MAX. | Unit |
|--------------------------------------|-----------|-----------|------|------|------|------|
| Power Supply | V_{cc} | | 3.0 | 3.3 | 3.6 | V |
| Supply Current | I_{cc} | No load | - | 28 | 50 | mA |
| Bandwidth | BW | | 750 | - | 1100 | MHz |
| Operating Wavelength | λ | | 1480 | - | 1500 | nm |
| Optical isolation (1260 ~ 1360nm) | ISO | | - | - | -45 | dB |
| Optical isolation (1550 ~ 1560nm) | ISO | | - | - | -25 | dB |
| Sensitivity | S | Note 1 | - | - | -26 | dBm |
| Saturation Power | P_{sat} | Note 1 | 0 | - | - | dBm |
| Output Resistance | R_o | | 25 | 40 | 60 | ohm |

Note 1: $\lambda = 1490\text{nm}$, Extinction Ratio=9dB, 1.25Gbps, PRBS 2^7-1 , BER= 1×10^{-12}

Pin Assignment



Package Outline Drawing

