

SFP-1G-LX

1000BASE, SFP, LX, SMF TRANSCEIVER
1310nm, 10km REACH, DUPLEX LC CONNECTOR

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1000Base SFP LX 1310nm SMF 10km Transceiver

Product Features

- Up to 1.25Gb/s Data Links
- Hot-Pluggable SFP
- Duplex LC connector
- Up to 10km on 9/125µm SMF
- 1310nm FP laser transmitter
- Single +3.3V Power Supply
- Monitoring Interface Compliant with SFF-8472
- RoHS compliant and Lead Free
- Available operating temperature ranges:
 - Commercial: 0°C to 70°C
 - Industrial: -40°C to 85°C



Product Applications

- 1000Base-LX Ethernet
- FC

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

| Parameter | Symbol | Min. | Typ. | Max. | Units |
|----------------------|--------|------|------|------|-------|
| Storage Temperature | TS | -40 | | +85 | °C |
| Power Supply Voltage | Vcc | -0.5 | | 4 | V |
| Relative Humidity | RH | 0 | | 85 | % |

II. Operating / Environment Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Units |
|----------------------------|--------------------|-------|------|---------------------|-------|
| Case Operating Temperature | Commercial | 0 | | +70 | °C |
| | Industrial | -40 | | +85 | °C |
| Supply Voltage | VCC | 3.135 | | 3.465 | V |
| Supply Current | Icc | | | 300 | mA |
| Inrush Current | I _{surge} | | | I _{cc} +30 | mA |
| Maximum Power | P _{max} | | | 1 | W |

III. Optical Characteristics (TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--|---|------|------|-------------------|-------|-------|
| Data Rate | BR | | 1.25 | | Gb/s | |
| Bit Error Rate | BER | | | 10 ⁻¹² | | |
| Max. Supported Link Length on 9/125μm SMF@1.25Gb/s | LMAX | | 20 | | km | |
| Total System Budget | LB | 15 | | | dB | |
| Transmitter | | | | | | |
| Center Wavelength | λ_c | 1270 | 1310 | 1360 | nm | |
| Spectral Width | σ | | | 3 | nm | |
| Optical Output Power | P _{out} | -9 | | -3 | dBm | 1 |
| Extinction Ratio | ER | 8.2 | | | dB | |
| Optical Rise/Fall Time | tr / tf | | | 260 | ps | 2 |
| Relative Intensity Noise | RIN | | | -120 | dB/Hz | |
| Output Eye Mask | Compliant with IEEE802.3 z (class 1 laser safety) | | | | | |
| Receiver | | | | | | |
| Optical Input Wavelength | λ_c | 1260 | | 1360 | nm | |
| Receiver Overload | Pol | -3 | | | dBm | 3 |
| RX Sensitivity | Sen | | | -24 | dBm | 3 |
| RX_LOS Assert | LOS A | -35 | | | dBm | |
| RX_LOS De-assert | LOS D | | | -25 | dBm | |
| RX_LOS Hysteresis | LOS H | 0.5 | | | dB | |

Notes:

1. The optical power is launched into SMF.
2. 20-80%.
3. Measured with PRBS 27-1 at 10-12 BER

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IV. Electrical Characteristics (TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--------------------------------|----------|---------|------|----------|------|-------|
| Transmitter | | | | | | |
| Input differential impedance | RIN | 90 | 100 | 110 | | 1 |
| Single ended data input swing | Vin PP | 250 | | 1200 | mVpp | |
| Transmit Disable Voltage | VD | Vcc-1.3 | | Vcc | V | 2 |
| Transmit Enable Voltage | VEN | Vee | | Vee+0.8 | V | |
| Transmit Disable Assert Time | Tdessert | | | 10 | us | |
| Receiver | | | | | | |
| Single ended data output swing | Vout,pp | 250 | | 800 | mV | 3 |
| LOS Fault | Vlofault | Vcc-0.5 | | VCC_host | V | 5 |
| LOS Normal | Vlosnorm | Vee | | Vee+0.5 | V | 5 |
| Power Supply Rejection | PSR | 100 | | | mVpp | |

Notes:

1. AC Coupled.
2. Or Open Circuit.
3. Into 100 ohm differential termination.
4. 20-80%
5. LOS is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

Warranty

All transceivers feature a limited lifetime warranty.

Disclaimer

External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.