

1000BASE-LX GBIC Module SM SC 10km data range (1310nm) Cisco compatible



GBIC-, SFP-, XFP-, XENPAK-Transceiver

The tde Small Form Pluggable Optical Transceiver are easy installed for enterprise and telecom applications. The tde SFP modular line provides a fully compatible, highly reliable and volume accessible supply of quality transceiver products with excellent performance for design-in manufacturing and end-user enterprise applications.



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Technical Data

Features

- Operating data rate up to 1.25Gbps
- 1310nm LD Transmitter
- Distance Up to 10Km
- 3.3/5V Power supply and TTL Logic Interface
- Duplex SC Connector Interface
- Hot Pluggable
- Operating Case Temperature Industrial: -40°C~+85°C
- Compliant with GBIC Specification Rev. 5.5

Applications

- WDM GBE Links
- SONET/SDH Equipment Interconnect
- Fiber Channel Links

Regulatory Compliance

| Feature | Standard | Performance |
|--|---|---|
| Electrostatic Discharge (ESD) to the Electrical Pins | MIL-STD-883E Method 3015.7 | Class 1(>500 V) Isolation with the case |
| Electromagnetic Interference (EMI) | FCC Part 15 Class B | Compatible with standards |
| Laser Eye Safety | FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2 | Compatible with Class I laser product. Compatible with T üV standards |
| Component Recognition | UL and CUL | UL file E317337 |
| Green Products | RoHS | RoHS6 |

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Max. | Unit |
|---------------------|--------|------|------|------|
| Storage Temperature | Ts | -40 | +85 | °C |
| Supply Voltage | Vcc | 0 | 6 | V |

Recommended Operating Conditions

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|----------------------------|--------|--------------|----------|--------------|-------|
| Operating Case Temperature | TA | -40 | | +85 | °C |
| Power Supply Voltage | Vcc | 4.75 3.15 | 5 3.3 | 5.25 4.45 | V |
| Power Supply Current | Icc | | | 300 | mA |
| Surge Current | ISurge | | | +30 | mA |
| Baud Rate | | | 1.25 | | GBaud |

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Performance Specifications - Electrical

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---------------------------------|------------|----------|------|---------|--------|----------------------|
| Transmitter | | | | | | |
| LVPECL Inputs (Differential) | Vin | 400 | | 2500 | mVp | AC coupled inputs |
| Input Impedance (Differential) | Zin | 85 | 100 | 115 | ohms | Rin > 100 kohms @ DC |
| Tx_DISABLE Input Voltage - High | | 2 | | Vcc+0.3 | V | |
| Tx_DISABLE Input Voltage - Low | | 0 | | 0.8 | V | |
| Tx_FAULT Output Voltage - High | | Vcc-0.5 | | Vcc+0.3 | V | Io = 400µA; Host Vcc |
| Tx_FAULT Output Voltage - Low | | 0 | | 0.5 | V | Io = -4.0mA |
| Receiver | | | | | | |
| LVPECL Outputs (Differential) | Vout | 400 | 800 | 1200 | mVpp | AC coupled outputs |
| Output Impedance (Differential) | Zout | 85 | 100 | 115 | ohms | |
| Rx_LOS Output Voltage - High | | Vcc-0.5 | | Vcc+0.3 | V | Io = 400µA; Host Vcc |
| Rx_LOS Output Voltage - Low | | 0 | | 0.8 | V | Io = -4.0mA |
| MOD_DEF (0:2) | VoH VoL | 2.5 0 | | 0.5 | V V | With Serial ID |

Optical and Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|-------------------------------|-----------------------|------|------|---------|------|
| 9µm Core Diameter SMF | | | 10 | | km |
| Data Rate | | | 1.25 | | Gbps |
| Transmitter | | | | | |
| Centre Wavelength | λc | 1270 | 1310 | 1350 | nm |
| Spectral Width (RMS) | σ | | | 3 | nm |
| Average Output Power | P Out | -9 | | -3 | dBm |
| Extinction Ratio | EX | 9 | | | dB |
| Rise/Fall Time (20% – 80%) | tr/tf | | | 260 | ns |
| Output Optical Eye | ITU-T G.957 Compliant | | | | |
| Data Input Swing Differential | V IN | 500 | | 2000 | mV |
| Input Differential Impedance | ZIN | 90 | 100 | 110 | Ω |
| Tx Disable - Disable | | 2.0 | | VCC+0.3 | V |
| - Enable | | 0 | | 0.8 | V |
| Tx_Fault - Fault | | 2.0 | | VCC+0.3 | V |
| - Normal | | 0 | | 0.8 | V |
| Tx_Disable Assert Time | t_off | | | 10 | us |

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Receiver

| | | | | | |
|--------------------------------|-------------|------|-----|---------|----------|
| Centre Wavelength | λ_c | 1100 | | 1600 | nm |
| Receiver Sensitivity | PIN | | | -20 | dBm |
| Output Differential Impedance | P IN | 90 | 100 | 110 | Ω |
| Data Output Swing Differential | VOUT | 370 | | 2000 | mV |
| Rise/Fall Time | Tr/tf | | | 2.2 | ns |
| LOS De-Assert | LOSD | | | -25 | dBm |
| LOS Assert | LOSA | -40 | | | dBm |
| LOS - High | | 2.0 | | VCC+0.3 | V |
| - Low | | 0 | | 0.8 | V |

Product variants & accessories

| Art.-No. | Description |
|------------------|---|
| TDE-ONS-GC-GE-LX | 1000BASE-LX GBIC Module SM SC 10km data range (1310nm) Cisco compatible |