1000BASE-LX/LH GBIC Module SM SC 5km 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.

\*\*GBIC Modules

\*\*TECHNISCHE\_DATEN

Features
• Operating data rate up to 1.25Gbps
• 1310nm LD Transmitter
• Distance up to 5 km
• 3.3V 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

|  |  |  |
| --- | --- | --- |
| 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 |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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 3.45 | V |
| Power Supply Current | Icc |   |   | 300 | mA |
| Surge Current | ISurge |   |   | +30 | mA |
| Baud Rate |   |   | 1.25 |   | GBaud |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 | lo = 400μA; Host Vcc |
| Rx\_LOS Output Voltage - Low |   | 0 |   | 0.8 | V | lo = -4.0mA |
| MOD\_DEF ( 0:2 ) | VoH VoL | 2.5 0 |   | 0.5 | V V | With Serial ID |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | Symbol | Min. | Typ. | Max. | Unit |
| 9μm Core Diameter SMF |   |   | 5 |   | km |
| Data Rate |   |   | 1.25 |   | Gbps |
| Transmitter |   |   |   |   |   |
| Centre Wavelength | λc | 1270 | 1310 | 1350 | nm |
| Spectral Width (RMS) | σ  |   |   | 3 | nm |
| Average Output Power | P 0ut | -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                 - Enable |   | 2.0 0 |   | VCC+0.3 0.8 | V V |
| TX\_Fault - Fault              - Normal |   | 2.0 0 |   | VCC+0.3 0.8 | V V |
| TX\_Disable Assert Time | t\_off |   |   | 10 | us |
| Receiver |   |   |   |   |   |
| Centre Wavelength | λc | 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        - Low |   | 2.0 0 |   | VCC+0.3 0.8 | V V |