

GLC-EX55-SMD-C

Cisco® Compatible TAA 1000Base-EX SFP Transceiver (SMF, 1550nm, 40km, LC, DOM)

Features:

- INF-8074 and SFF-8472 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



Applications:

- 1000Base Ethernet
- Access and Enterprise

Product Description

This Cisco® compatible SFP transceiver provides 1000Base-EX throughput up to 40km over single-mode fiber (SMF) using a wavelength of 1550nm via an LC connector. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Cisco®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs' transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S.-made or designated country end products."



Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-3
- EMI/EMC compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS 2.0 directive 2015/863/EU

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ | Max. | Unit |
|------------------------------|--------|------|-------|------|------|
| Maximum Supply Voltage | Vcc | -0.5 | | 4.0 | V |
| Storage Temperature | TS | -40 | | 85 | °C |
| Operating Case Temperature | Tc | 0 | | 70 | °C |
| Operating Humidity | RH | 5 | | 95 | % |
| Data Rate (Gigabit Ethernet) | | | 2.48 | | Gbps |
| Data rate (Fibre Channel) | | | 1.063 | | Gbps |
| 50/125µm MMF | Lmax1 | | | 40 | km |

Electrical Characteristics (TOP=25°C, Vcc=3.3Volts)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--------------------------------|----------|---------|------|---------|------|-------|
| Power Supply Voltage | Vcc | 3.13 | 3.30 | 3.47 | V | |
| Power Supply Current | Icc | | | 250 | mA | |
| Transmitter | | | | | | |
| Input differential impedance | Rin | | 100 | | Ω | 1 |
| Single ended data input swing | Vin, pp | 250 | | 1200 | mV | |
| TX Disable | High | | | Vcc | V | |
| | Low | | | Vee+0.8 | V | |
| TX Fault | High | | | Vcc | V | |
| | Low | | | Vee+0.5 | V | |
| Receiver | | | | | | |
| Single ended data output swing | Vout, pp | 300 | 400 | 800 | mV | 2 |
| Data output rise time | tr | | | 175 | ps | 3 |
| Data output fall time | tf | | | 175 | ps | 3 |
| LOS-High | | Vcc-0.5 | | Vcc | V | |
| LOS-Low | | Vee | | Vee+0.5 | V | |

Notes:

1. AC coupled.
2. Into 100 ohm differential termination.
3. 20%-80%

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---------------------------|----------------|------|------|------|------|-------|
| Transmitter | | | | | | |
| Output Optical Power | P _o | -5 | | 0 | dBm | 1 |
| Optical Wavelength | λ | 1530 | 1550 | 1570 | nm | |
| Spectral Width | σ | | | 0.85 | nm | |
| Optical Rise/Fall Time | tr/tf | | | 260 | ps | 2 |
| Total Jitter | TJ | | | 200 | ps | |
| Optical Extinction Ratio | ER | 10 | | | dB | |
| Receiver | | | | | | |
| RX Sensitivity @1.25 Gbs | RXSENS | | | -25 | dBm | 3,4 |
| Maximum Receiver Power | RXMAX | 0 | | | dBm | |
| Optical Center Wavelength | λ _C | 1270 | | 1600 | nm | |
| LOS De-Assert | LOSD | | | -26 | dBm | |
| LOS Assert | LOSA | -40 | | | dBm | |
| LOS Hysteresis | | 0.5 | | 5 | dB | |

Notes:

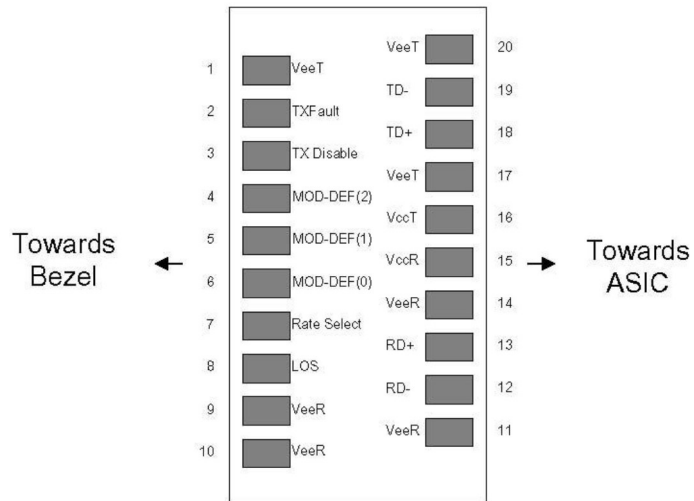
1. Class 1 Laser Safety.
2. Unfiltered, 20%-80%. Complies with OC-3 eye masks when filtered.
3. Measured with conformance signals defined in FC-PI-2 Rev. 10.0 specifications.
4. Measured with PRBS 2⁷-1 at 10⁻¹⁰ BER.

Pin Descriptions

| Pin | Symbol | Name/Descriptions | Ref. |
|-----|-------------|--|------|
| 1 | VeeT | Transmitter Ground (Common with Receiver Ground) | 1 |
| 2 | TX Fault | Transmitter Fault. | |
| 3 | TX Disable | Transmitter Disable. Laser output disabled on high or open. | 2 |
| 4 | MOD_DEF (2) | Module Definition 2. Data line for Serial ID. | 3 |
| 5 | MOD_DEF (1) | Module Definition 1. Clock line for Serial ID. | 3 |
| 6 | MOD_DEF (0) | Module Definition 0. Grounded within the module. | 3 |
| 7 | Rate Select | No connection required. | |
| 8 | LOS | Loss of Signal indication. Logic 0 indicates normal operation. | 4 |
| 9 | VeeR | Receiver Ground (Common with Transmitter Ground) | 1 |
| 10 | VeeR | Receiver Ground (Common with Transmitter Ground) | 1 |
| 11 | VeeR | Receiver Ground (Common with Transmitter Ground) | 1 |
| 12 | RD- | Receiver Inverted DATA out. AC Coupled. | |
| 13 | RD+ | Receiver Non-inverted DATA out. AC Coupled. | |
| 14 | VeeR | Receiver Ground (Common with Transmitter Ground) | 1 |
| 15 | VccR | Receiver Power Supply. | |
| 16 | VccT | Transmitter Power Supply. | |
| 17 | VeeT | Transmitter Ground (Common with Receiver Ground) | 1 |
| 18 | TD+ | Transmitter Non-Inverted DATA in. AC Coupled. | |
| 19 | TD- | Transmitter Inverted DATA in. AC Coupled. | |
| 20 | VeeT | Transmitter Ground (Common with Receiver Ground) | 1 |

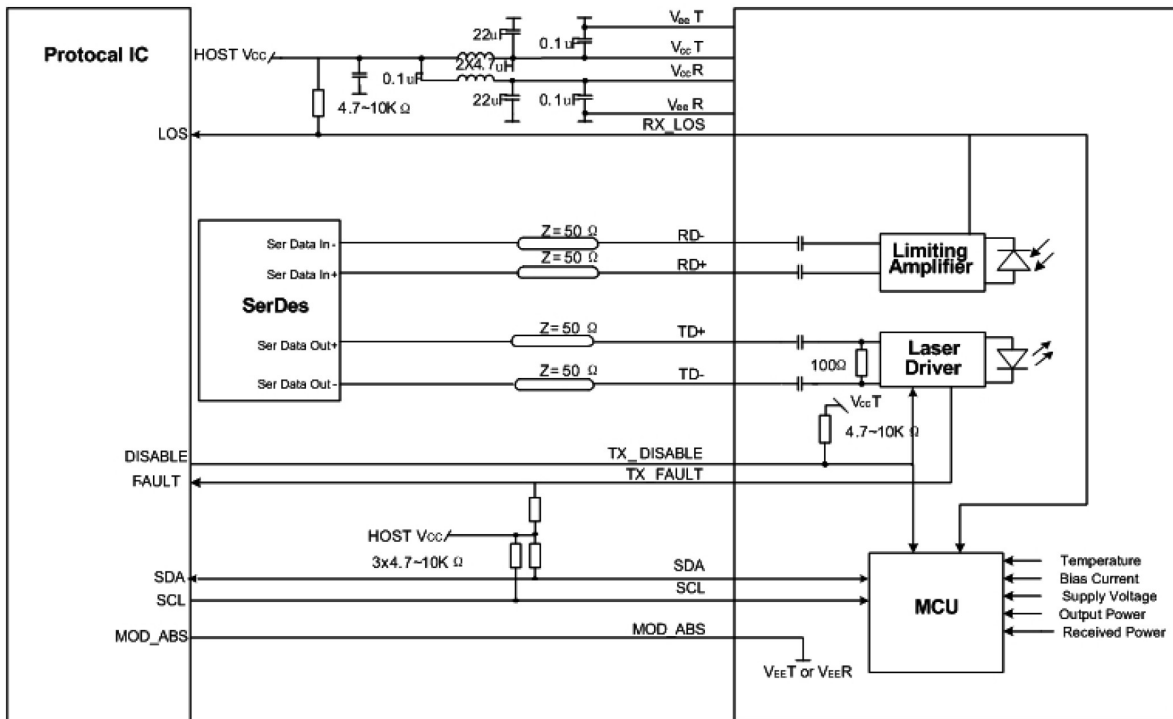
Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TX Disable >2.0V or open, enabled on TX Disable <0.8V.
3. Should be pulled up with 4.7k-10kohms on host board to a voltage between 2.0 V and 3.6V MOD_DEF(0) pulls line low to indicate module is plugged in.
4. LOS is open collector output. Should be pulled up with 4.7k-10kohms on a host board to a voltage between 2.0V and 3.6V. Logic 0 indicated normal operation; Logic 1 indicates loss if signal.



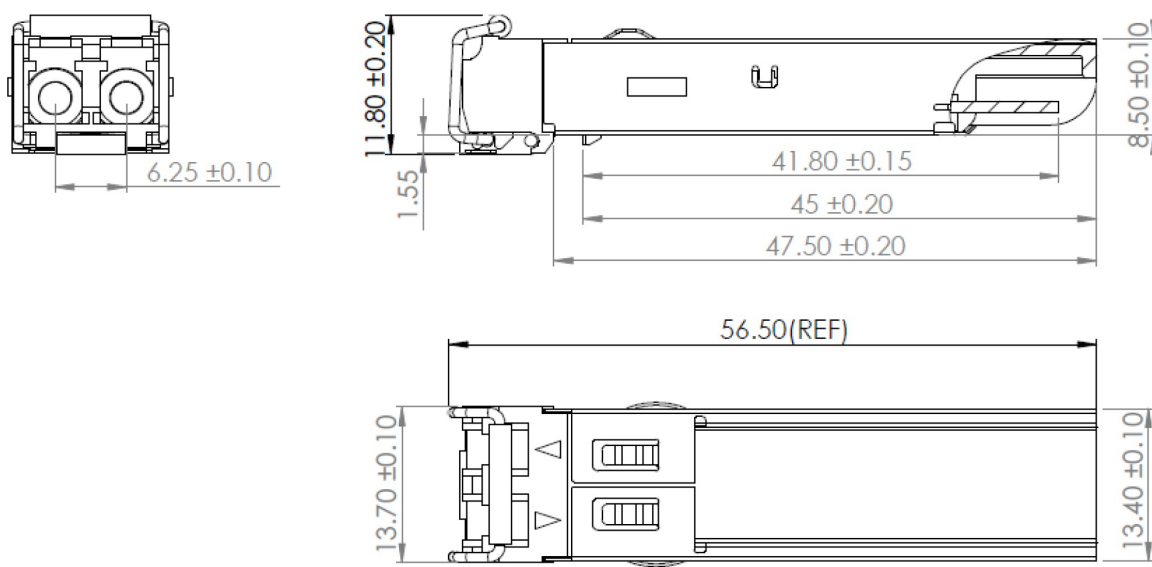
Pin-out of connector Block on Host board

Recommended Circuit Schematic



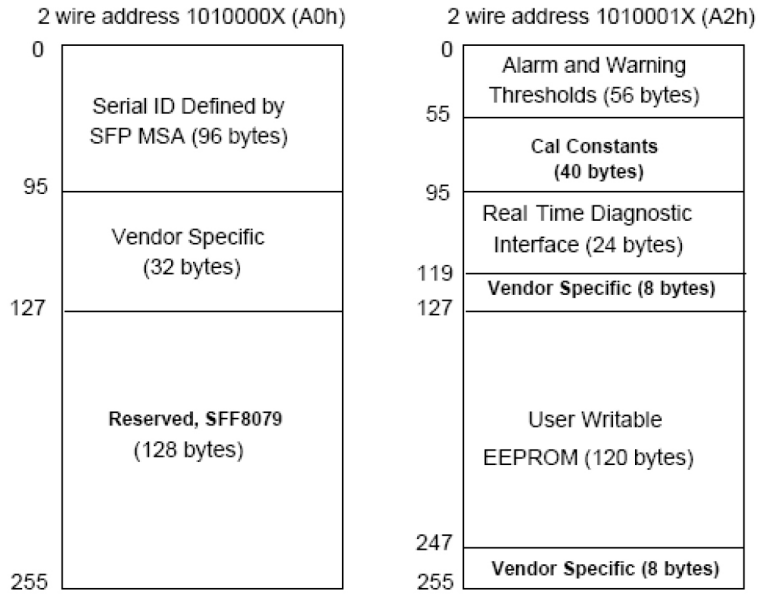
Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map specific data field description is as below:



Digital Diagnostic Monitoring Interface

| Parameter | Range | Accuracy | Calibration |
|--------------|------------------|----------|-------------|
| Temperature | 0°C to 70°C (C) | ±3°C | Internal |
| Voltage | 2.97V to 3.63V | ±3% | Internal |
| Bias Current | 0mA to 100mA | ±10% | Internal |
| TX Power | -5dBm to 0dBm | ±3dB | Internal |
| RX Power | -34.5dBm to 0dBm | ±3dB | Internal |

About ProLabs

Our extensive experience comes as standard. For over 20 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with more than 100 optical switching and transport platforms.

A Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 1.6T while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

The Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure compatible products, and immediate answers to your questions. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.



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