

### **SFP-GE-LH100-SM1550-C**

Huawei® SFP-GE-LH100-SM1550 Compatible TAA 1000Base-ZX SFP Transceiver (SMF, 1550nm, 100km, 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-ZX Ethernet
- 1x Fibre Channel
- Access and Enterprise

#### **Product Description**

This Huawei® SFP-GE-LH100-SM1550 compatible SFP transceiver provides 1000Base-ZX throughput up to 100km 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 Huawei®. 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.")



## Absolute Maximum Ratings

| Parameter             | Symbol | Min. | Typ.          | Max.              | Unit | Notes |
|-----------------------|--------|------|---------------|-------------------|------|-------|
| Operating Temperature | Tc     | 0    |               | 70                | °C   |       |
| Storage Temperature   | Tstg   | -40  |               | 85                | °C   |       |
| Supply Current        | Icc    |      | 200           | 300               | mA   | 1     |
| Maximum Voltage       | Vmax   | -0.5 |               | 4                 | V    | 1     |
| Bit Error Rate        | BER    |      |               | 10 <sup>-12</sup> |      |       |
| Data Rate             |        |      | 1.25<br>1.062 |                   | Gbps | 2     |

## Notes:

1. For the electrical power interface.
2. IEEE 802.3. FC-PI-2 Rev. 5.

## Electrical Characteristics

| Parameter                           | Symbol  | Min.      | Typ. | Max.      | Unit | Notes |
|-------------------------------------|---------|-----------|------|-----------|------|-------|
| Supply Voltage                      | Vcc     | 3.14      | 3.3  | 3.46      | V    |       |
| Transmitter                         |         |           |      |           |      |       |
| Input Differential Impedance        | RIN     |           | 100  |           | Ω    |       |
| Single-Ended Data Input Swing       | VIN,pp  | 250       |      | 1200      | mV   |       |
| Transmit Disable Voltage            | VD      | Vcc - 1.3 |      | Vcc       | V    |       |
| Transmit Enable Voltage             | VEN     | Vee       |      | Vee + 0.8 | V    |       |
| Transmit Disable Assert Time        |         |           |      | 10        | μs   |       |
| Receiver                            |         |           |      |           |      |       |
| Single-Ended Data Output Swing      | VOUT,pp | 300       | 400  | 800       | mV   |       |
| Data Output Rise/Fall Time (20-80%) | Tr/Tf   |           |      | 300       | ps   |       |
| LOS Fault                           | VLOS_A  | Vcc - 0.5 |      | Host_Vcc  | V    |       |
| LOS Normal                          | VLOS_D  | Vee       |      | Vee + 0.5 | V    |       |

## Optical Characteristics

| Parameter                                      | Symbol                         | Min. | Typ. | Max. | Unit  | Notes |
|------------------------------------------------|--------------------------------|------|------|------|-------|-------|
| Transmitter                                    |                                |      |      |      |       |       |
| Output Optical Power                           | Ptx                            | 0    |      | 5    | dBm   | 1     |
| Optical Center Wavelength                      | $\lambda_C$                    | 1530 |      | 1570 | nm    |       |
| Extinction Ratio                               | ER                             | 9    |      |      | dB    |       |
| Side-Mode Suppression Ratio                    | SMSR                           | 30   |      |      | dB    |       |
| Spectral Width (-20dB)                         | $\Delta\lambda$                |      |      | 1    | nm    |       |
| Optical Rise/Fall Time (20-80%)                | T <sub>r</sub> /T <sub>f</sub> |      |      | 180  | ps    |       |
| Relative Intensity Noise                       | RIN                            |      |      | -120 | dB/Hz |       |
| Deterministic Jitter Contribution              | DJ                             |      |      | 60   | ps    |       |
| Total Jitter Contribution                      | TJ                             |      |      | 130  | ps    |       |
| Receiver                                       |                                |      |      |      |       |       |
| Receiver Overload                              | POL                            | 0    |      | dBm  |       |       |
| Optical Center Wavelength                      | $\lambda_C$                    | 1260 |      | 1600 | nm    |       |
| Receiver Sensitivity                           | R <sub>x_Sen</sub>             |      |      | -27  | dBm   |       |
| Optical Return Loss                            | ORL                            | 12   |      |      | dB    |       |
| Receiver Electrical 3dB Upper Cutoff Frequency |                                |      |      | 1500 | MHz   |       |
| LOS Assert                                     | LOSA                           | -35  |      |      | dBm   |       |
| LOS De-Assert                                  | LOSD                           |      |      | -27  | dBm   |       |
| LOS Hysteresis                                 | LOSH                           | 0.5  |      |      | dB    |       |

### Notes:

1. Class 1 product.

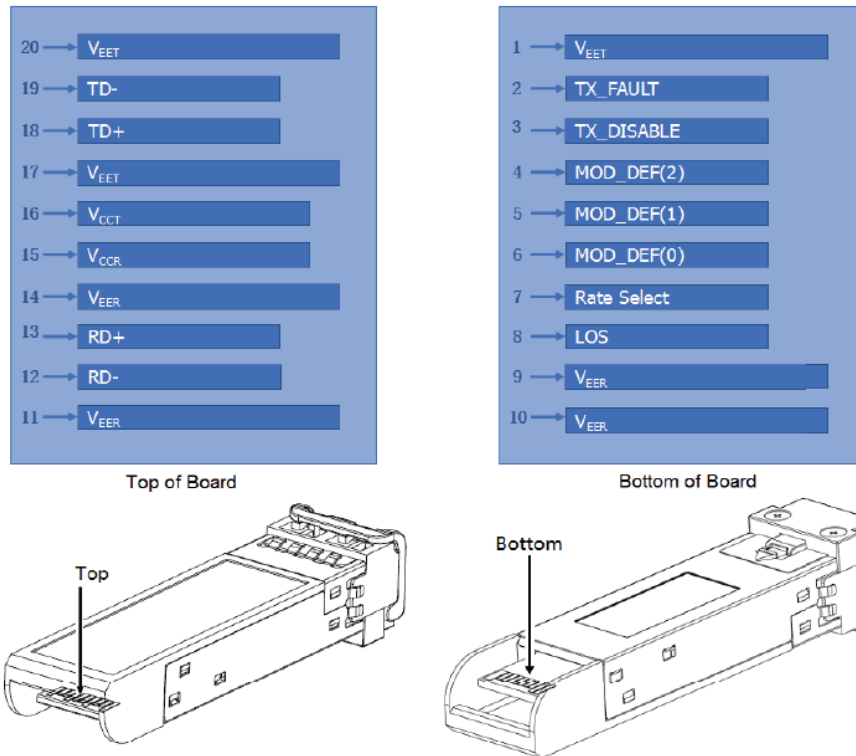
## Pin Descriptions

| Pin | Symbol     | Name/Description                                                 | Notes |
|-----|------------|------------------------------------------------------------------|-------|
| 1   | VeeT       | Transmitter Ground (Common with Receiver Ground).                | 1     |
| 2   | Tx_Fault   | Transmitter Fault. Not Supported.                                |       |
| 3   | Tx_Disable | Transmitter Disable. Laser output disabled on “high” or “open.”  | 2     |
| 4   | SDA        | Module Definition 2. Data Line for Serial ID.                    | 3     |
| 5   | SCL        | Module Definition 1. Clock Line for Serial ID.                   | 3     |
| 6   | MOD_ABS    | Module Definition 0. Grounded within the module.                 | 3     |
| 7   | RS0        | No Connection Required.                                          |       |
| 8   | LOS        | Loss of Signal Indication. “Logic 0” indicates normal operation. | 4     |
| 9   | RS1        | 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     |

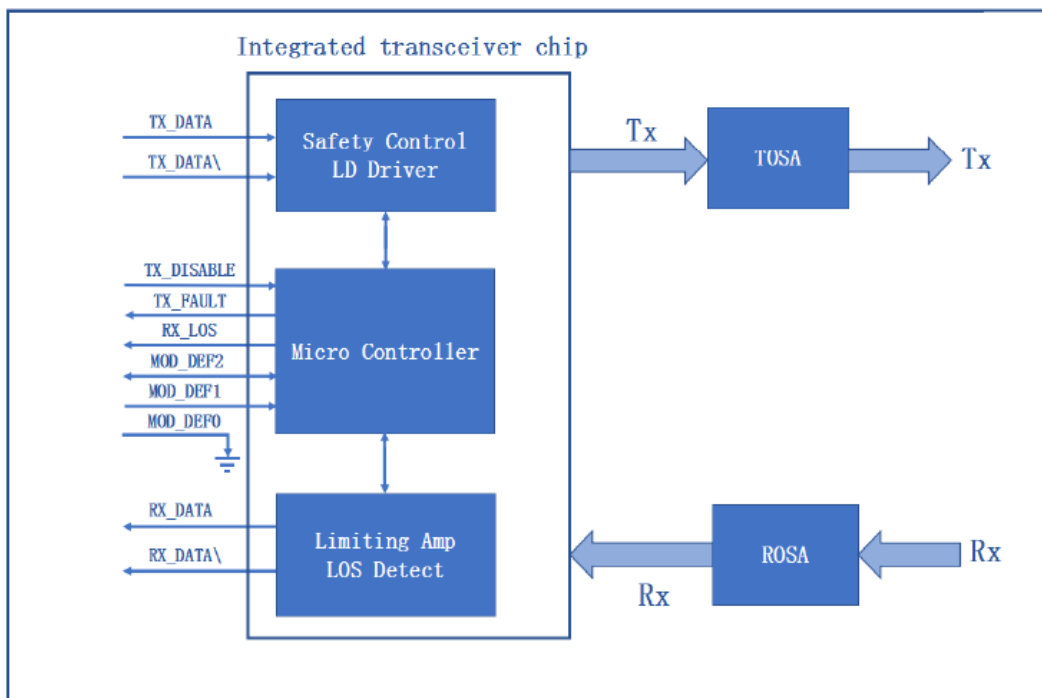
## Notes:

1. The circuit ground is isolated from the chassis ground.
2. Disabled: Tdis>2V or open, enabled Tdis<0.8V.
3. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 2V and 3.46V.
4. LOS is an open collector output.

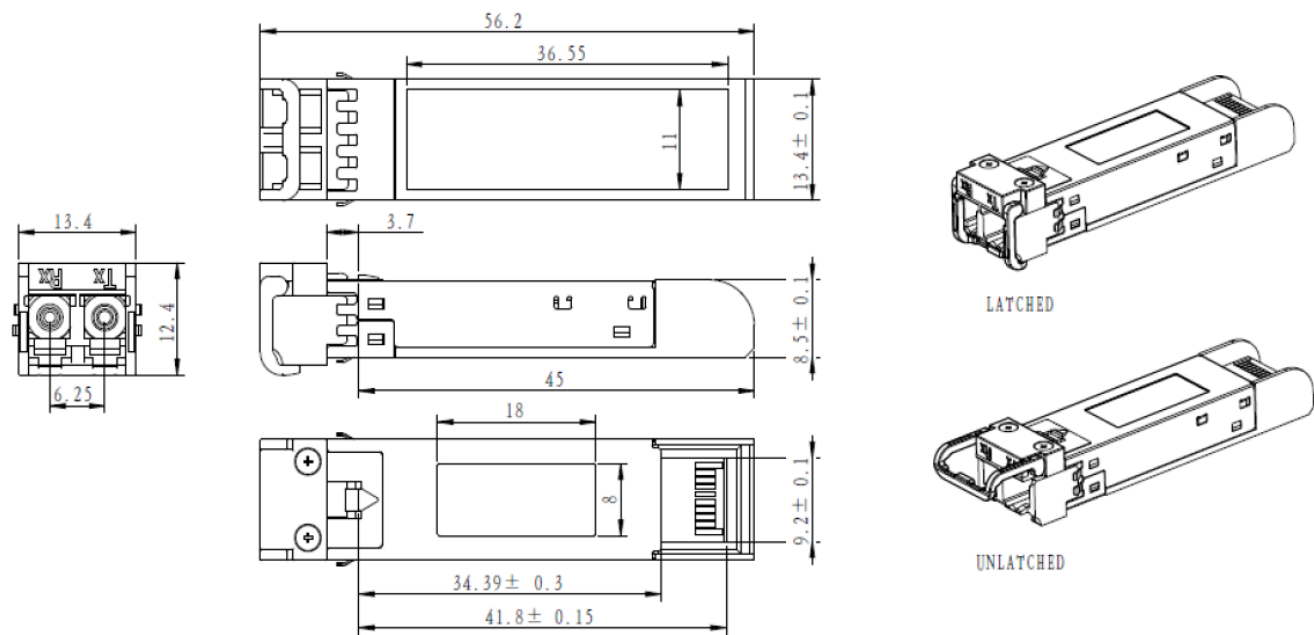
## Electrical Pad Layout



## Transceiver Block Diagram



Mechanical Specifications



All dimensions are ±0.2mm unless otherwise specified.  
Unit: mm

## About ProLabs

Our experience comes as standard; for over 15 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 over 90 optical switching and transport platforms.

## 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 400G 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.

## Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. 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.



## Contact Information

ProLabs US

Email: [sales@prolabs.com](mailto:sales@prolabs.com)

Telephone: 952-852-0252

ProLabs UK

Email: [salesupport@prolabs.com](mailto:salesupport@prolabs.com)

Telephone: +44 1285 719 600