



Features

- Compliant with QSFP+ SFF8436
- Support IEEE P802.3ba (Ethernet)
- Support 8GFC & 10GFC (Fiber Channel)
- Support for multi-gigabit data rates : 1.0Gbps ~ 10.3125Gbps (per channel)
- Maximum throughput: 82.5Gbps(Tx and Rx)
- Copper link length up to 10m (active limiting)
- High-Density QSFP 38-PIN Connector
- Low crosstalk
- I2C based two-wire serial interface for easy control and monitoring
- Management interface acc. SFF-8436
- Power consumption: 1.5W
- RoHS Compliant

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Max. | Units | Note |
|---------------------|--------|------|------|-------|------|
| Storage Temperature | T_s | -40 | 80 | °C | |
| Supply Voltage | Vcc3 | 3.14 | 3.47 | V | |

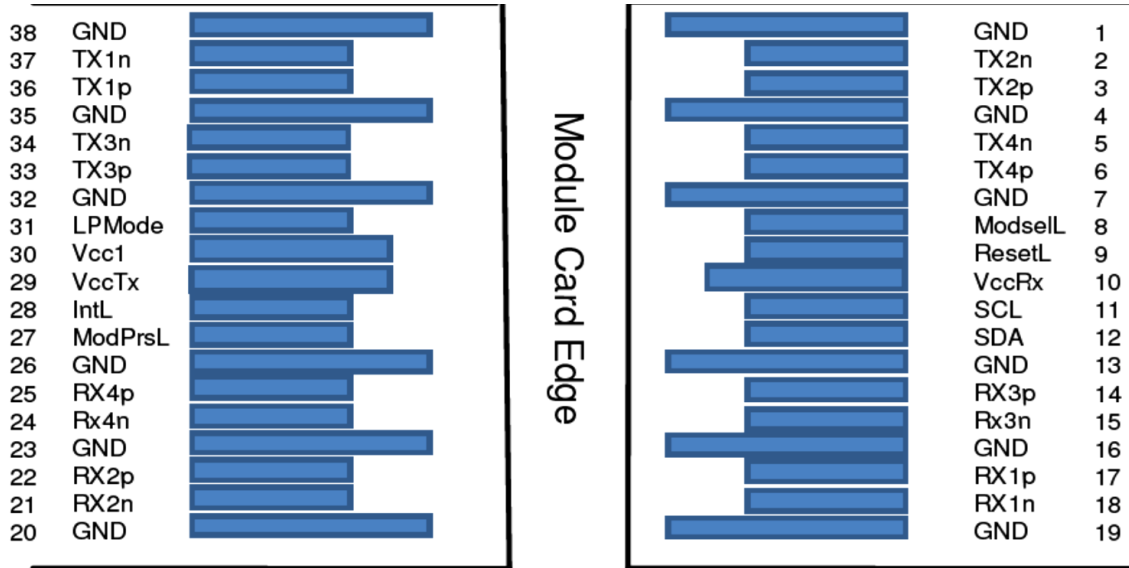
Recommended Operating Conditions

| Parameter | Symbol | Min. | Max. | Units | Note |
|----------------------------|--------|------|------|-------|------|
| Operating Case Temperature | T_c | 0 | 70 | °C | |
| Supply Voltage | Vcc3 | 3.14 | 3.47 | V | |
| Power Dissipation | PD | | 0.5 | W | |

Cable Mechanical Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Units | Note |
|-----------------|--------|-------|------|--------|-------|------|
| Wire Gauge | | 30AWG | - | 24 AWG | | |
| Cable Impedance | Z | 90 | 100 | 110 | Ohm | |

Pin Assignment



Top Side
Viewed From Top

Bottom Side
Viewed From Bottom

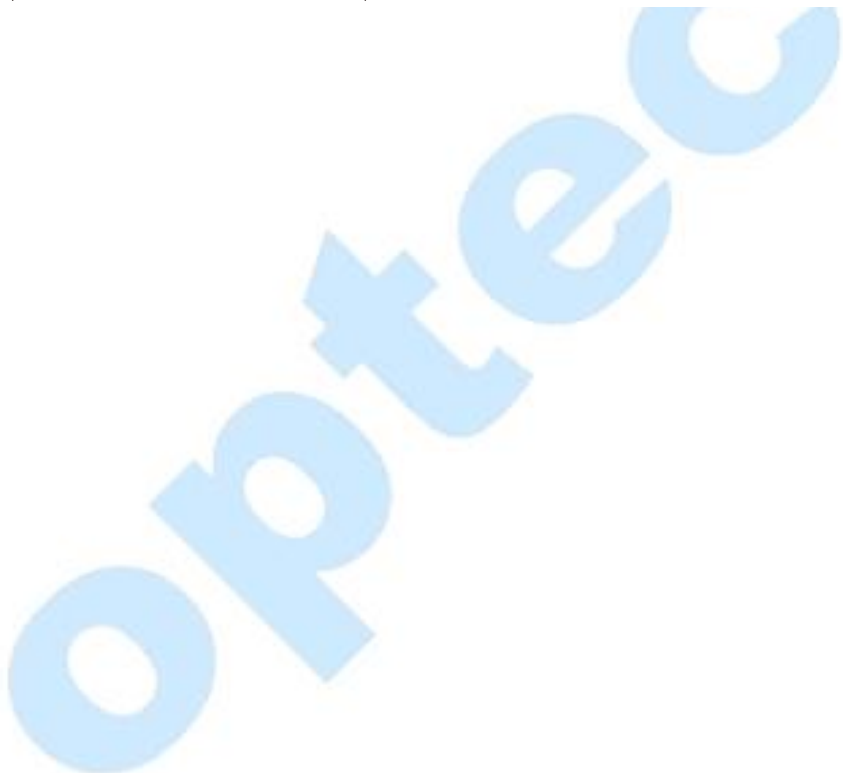
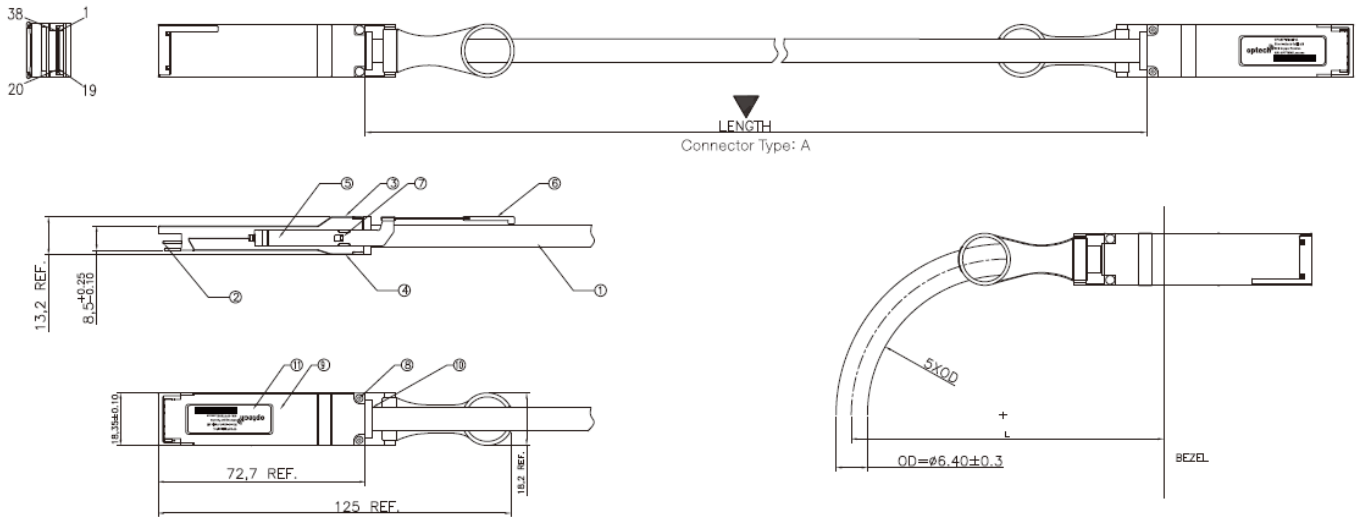


Pin Descriptions

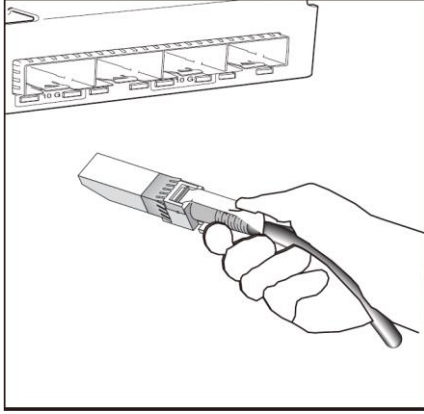
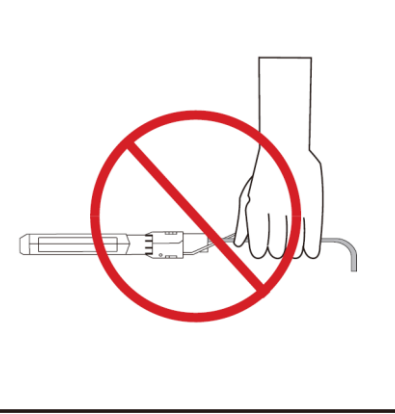
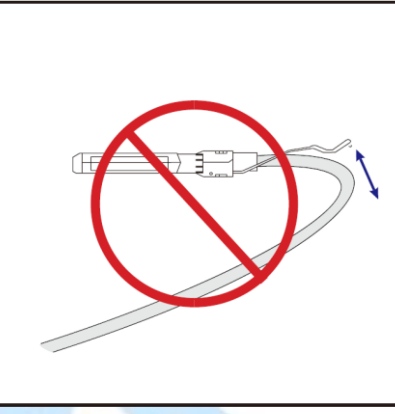
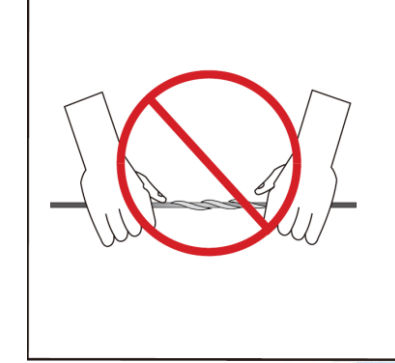

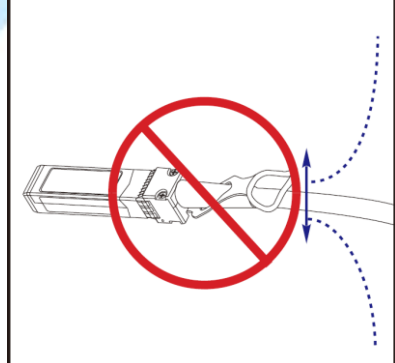
| Pin | Logic | Symbol | Name/Description | Notes |
|-----|-----------|---------|-------------------------------------|-------|
| 1 | | GND | Ground | 1 |
| 2 | CML-I | Tx2n | Transmitter Inverted Data Input | |
| 3 | CML-I | Tx2p | Transmitter Non-Inverted Data Input | |
| 4 | | GND | Ground | 1 |
| 5 | CML-I | Tx4n | Transmitter Inverted Data Input | |
| 6 | CML-I | Tx4p | Transmitter Non-Inverted Data Input | |
| 7 | | GND | Ground | 1 |
| 8 | LVTTL-I | ModSelL | Module Select | |
| 9 | LVTTL-I | ResetL | Module Reset | |
| 10 | | Vcc Rx | +3.3V Power Supply Receiver | 2 |
| 11 | LVCMOSI/O | SCL | 2-wire serial interface clock | |
| 12 | LVCMOSI/O | SDA | 2-wire serial interface data | |
| 13 | | GND | Ground | 1 |
| 14 | SML-O | Rx3p | Receiver Non-Inverted Data Output | |
| 15 | CML-O | Rx3n | Receiver Inverted Data Output | |
| 16 | | | Ground | 1 |
| 17 | CML-O | Rx1p | Receiver Non-Inverted Data Output | |
| 18 | CML-O | Rx1n | Receiver Inverted Data Output | |
| 19 | | GND | Ground | 1 |
| 20 | | GND | Ground | 1 |
| 21 | CML-O | Rx2n | Receiver Inverted Data Output | |
| 22 | CML-O | Rx2p | Receiver Non-Inverted Data Output | |
| 23 | | GND | Ground | 1 |
| 24 | CML-O | Rx4n | Receiver Inverted Data Output | |
| 25 | CML-O | Rx4p | Receiver Non-Inverted Data Output | |
| 26 | | GND | Ground | 1 |
| 27 | LVTTL-O | ModPrsL | Module Present | |
| 28 | LVTTL-O | IntL | Interrupt | |
| 29 | | Vcc Tx | +3.3V Power Supply transmitter | 2 |
| 30 | | Vcc1 | +3.3V Power Supply | 2 |
| 31 | LVTTL-I | LPMODE | Low Power Mode | |
| 32 | | GND | Ground | 1 |
| 33 | CML-I | Tx3p | Transmitter Non-Inverted Data Input | |
| 34 | CML-I | Tx3n | Transmitter Inverted Data Input | |
| 35 | | GND | Ground | 1 |
| 36 | CML-I | Tx1p | Transmitter Non-Inverted Data Input | |
| 37 | CML-I | Tx1n | Transmitter Inverted Data Input | |
| 38 | | GND | Ground | 1 |

- GND is the symbol for signal and supply (power) common for the QSFP+ module. All are common within the QSFP+ module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
- Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently. Requirements defined for the host side of the Host Edge Card Connector are listed in Table 6. Recommended host board power supply filtering is shown in Figure 4. Vcc Rx Vcc1 and Vcc Tx may be internally connected within the QSFP+ Module rated for a maximum current of 500mA.

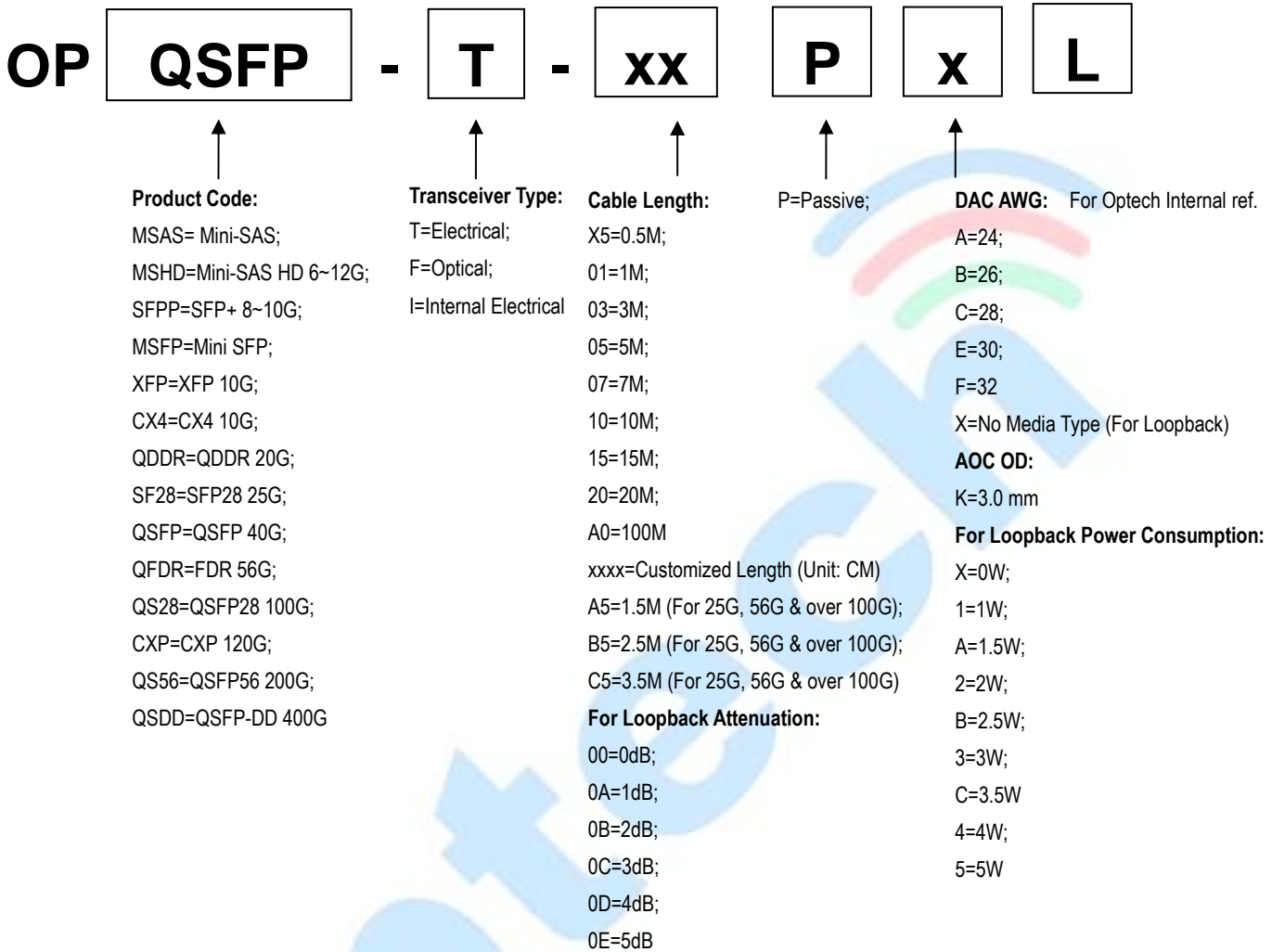
Dimensions



Important Notice

| | | |
|--|---|---|
|  |  |  |
| <p>Holding the SFP+ connector by its sides, insert the connector into the port on the switch</p> | <p>Do not handle by cable</p> | <p>DO NOT Over-bend the cable behind the connector</p> |
|  |  |  |
| <p>DO NOT twist the cable</p> | <p>DO NOT kink the cable</p> | <p>DO NOT bend up and down the cable</p> |

Ordering Information



| Part Number | Model Number | Length (M) | AWG | Voltage | Temperature |
|-----------------|---------------|------------|-----|---------|--------------|
| OPQSFP-T-X5-PEL | Twinax Copper | 0.5 | 30 | 3.3V | 0°C to 70 °C |
| OPQSFP-T-01-PEL | Twinax Copper | 1 | 30 | 3.3V | 0°C to 70 °C |
| OPQSFP-T-02-PEL | Twinax Copper | 2 | 30 | 3.3V | 0°C to 70 °C |
| OPQSFP-T-03-PEL | Twinax Copper | 3 | 30 | 3.3V | 0°C to 70 °C |
| OPQSFP-T-05-PAL | Twinax Copper | 5 | 24 | 3.3V | 0°C to 70 °C |
| OPQSFP-T-07-PAL | Twinax Copper | 7 | 24 | 3.3V | 0°C to 70 °C |

Note: All information contained in this document is subject to change without notice.