

40G QSFP+ Active Optical Cables

TSQS-8540G-xxxC

Features

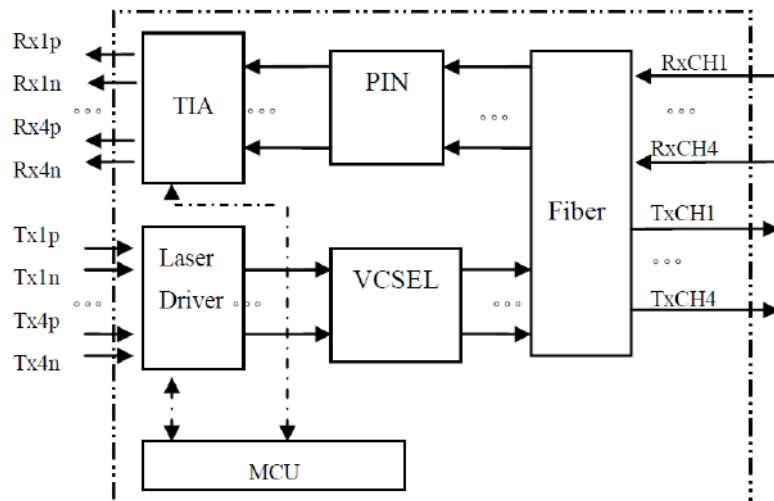
- Four-channel full-duplex active optical cable with QSFP+ plugs
- Electrical interface compliant to SFF-8436
- Support 40GE data rate
- Hot Pluggable
- Built-in digital diagnostic functions
- Low power dissipation: <1.5W
- Operating case temperature 0°C to 70°C
- RoHS compliant



Applications

- 40G Ethernet
- Data Centers
- Infiniband transmission
- High performance computing (HPC) application

Module Block Diagram



Absolute Maximum Ratings

| Parameter | Symbol | Min | Max | Unit |
|----------------------------|--------|------|-----|------|
| Storage Temperature | TS | -20 | 85 | °C |
| Relative Humidity | RH | 0 | 85 | % |
| Case Operating Temperature | TCASE | 0 | 70 | °C |
| Supply Voltage | VCC | -0.5 | 3.6 | V |

Recommended Operating Conditions

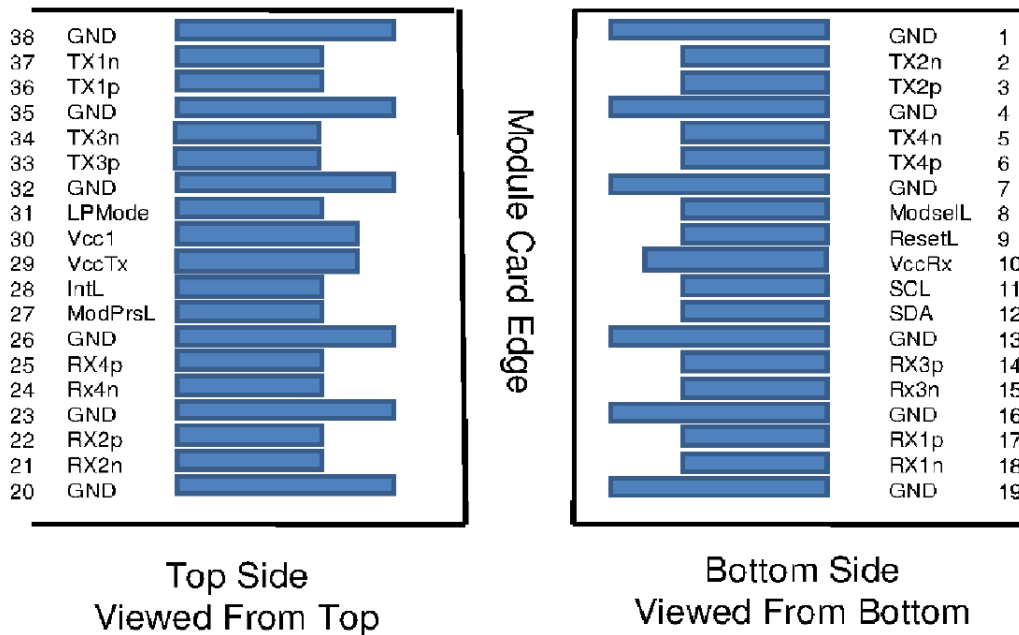
| Parameter | Symbol | Min | Typical | Max | Unit |
|--|--------|------|---------|------|--------|
| Case Operating Temperature | TCASE | 0 | | 70 | °C |
| Supply Voltage | VCC | 3.15 | 3.3 | 3.45 | V |
| Differential Data Input Voltage Per Lane | Vdin | 200 | | 1200 | mVp-p |
| Data Rate Per Lane | DR | 2.5 | 10.3125 | | Gbit/s |

Electrical Characteristics

| Parameter | Symbol | Min | Typical | Max | Unit |
|---|-------------------|------|---------|-------------------|-------|
| Bit Error Ratio | BER | | | 10 ⁻¹² | |
| Differential Data Output Voltage Per Lane | V _{dout} | 320 | 450 | | mVp-p |
| Differential Termination Resistance | Z _{out} | 80 | 100 | 120 | Ohm |
| Module Total Power | P | | | 1.5 | W |
| Transmit Turn-On Time | | 2000 | | | ms |

Note: Test with PRBS31 pattern

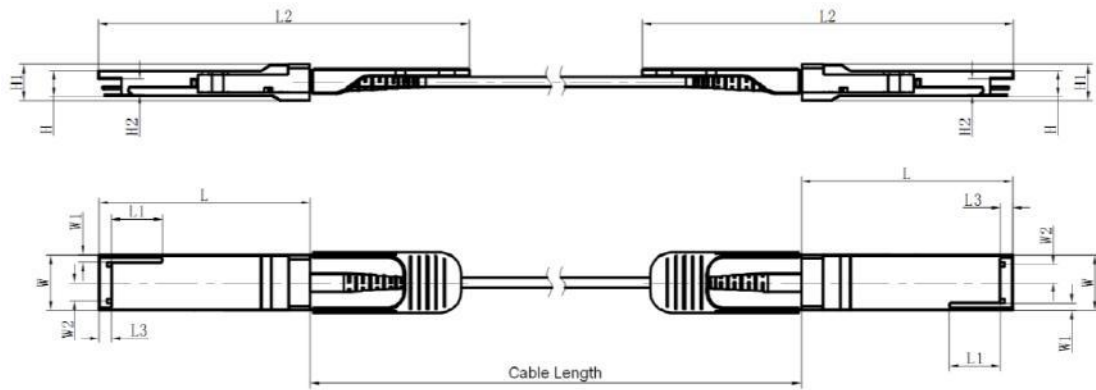
Pin Descriptions



Pin Definitions

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

Mechanical Specifications



Unit: mm

| | L | L1 | L2 | L3 | W | W1 | W2 | H | H1 | H2 |
|---------|------|------|-----|------|-------|-----|-----|-----|------|------|
| MAX | 72.2 | — | 122 | 4.35 | 18.45 | — | 6.2 | 8.6 | 12.0 | 5.35 |
| Typical | 72.0 | — | — | 4.20 | 18.35 | — | — | 8.5 | 11.8 | 5.2 |
| MIN | 68.8 | 16.5 | 118 | 4.05 | 18.25 | 2.2 | 5.8 | 8.4 | 11.6 | 5.05 |

Order Information

Part Number

TSQS-8540G-xxxC

xxx = denotes the AOC length with unit meter. For example, 001 denote 1m, 002 denote 2m ... 099 denote 99m.