

Technical Datasheet

AOC-QSFP-56G-25M-AT

Universally Coded MSA Compliant 56Gb/s, QSFP56

Active Optical Cable, 25m

FEATURES

- Hot-pluggable QSFP+ footprint
- Support Infiniband and Fibre Channel application
- Up to 14.025Gbps per Channel
- Support 41.2Gbps aggregate bit rate
- 4x10Gpbs electrical interface
- Available in lengths up to 100m
- Power Dissipation <1.3W per cable end
- Single +3.3V power supply
- Operating Case temperature range 0°C to 70°C
- RoHS-6 compliant
- Compliant QSFP+ MSA

APPLICATIONS

- InfiniBand FDR at 56Gb
- 16G Fibre Channel at 14Gb per lane
- Super Computer
- Other optical links

ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Min. | Typical | Max. | Unit | Note |
|----------------------------|--------|------|---------|------|------|----------------|
| Power Supply Voltage | VCC | 0 | | 3.6 | V | |
| Storage Temperature | Ts | -40 | | +85 | °C | |
| Relative Humidity | RH | 5 | | 85 | % | Non-condensing |
| Case Operating Temperature | Tc | 0 | | +70 | °C | |

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ELECTRICAL CHARACTERISTICS

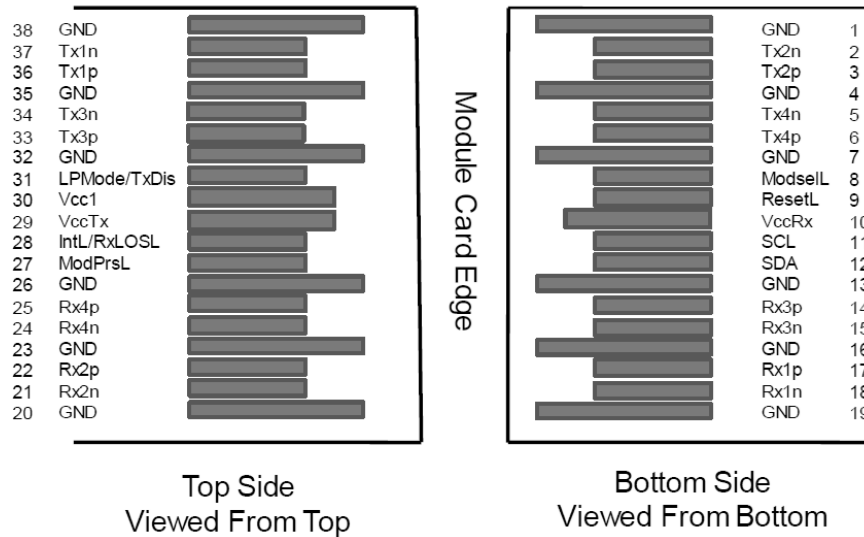
| Parameter | Symbol | Min. | Typical | Max. | Unit | Note |
|--------------------------------|------------------|-------|---------|-------|------|------|
| Power Supply Voltage | V _{CC} | 3.135 | 3.3 | 3.465 | V | |
| Power Dissipation | P _D | | | 1.3 | W | |
| Power Supply Current | I _{CC} | | | 400 | mA | |
| Aggregate Data Rate | | | 41.2 | | Gbps | |
| Signaling rate per lane | | | 10.3125 | | Gbps | |
| Clock Rate-I2C | | | | 400 | kHz | |
| Transmitter | | | | | | |
| Input Differential impedance | Z _{IN} | | 100 | | ohm | |
| Differential data input swing | V _{IN} | 180 | | 900 | mV | |
| Single-ended voltage tolerance | | -0.3 | | 3.3 | V | |
| Receiver | | | | | | |
| Output Differential impedance | Z _{out} | | 100 | | ohm | |
| Differential data Output Swing | V _{out} | 300 | | 850 | mV | |

GENERAL SPECIFICATIONS

| Parameter | Symbol | Min. | Typical | Max. | Unit | Note |
|-----------------------------|-------------------|------|---------|--------|------|--------|
| Aggregate Data Rate | | | 41.2 | 56G | Gbps | |
| Signaling rate per lane | | | 10.3125 | 14.025 | Gbps | |
| Bit Error Ratio (pre-FEC) | BER | | | E-12 | | PRBS31 |
| Maximum Supported Distances | | | | | | |
| Fiber Type | Bandwidth (850nm) | | | | | |
| 50um | 2000MHz*km | | | 150 | m | OM3 |

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PIN ASSIGNMENT



PIN DESCRIPTIONS

| PIN | Symbol | Name / Description | Note |
|-----|---------|-------------------------------------|------|
| 1 | GND | Ground | 1 |
| 2 | Tx2n | Transmitter Inverted Data Input | |
| 3 | Tx2p | Transmitter Non-Inverted Data Input | |
| 4 | GND | Ground | 1 |
| 5 | Tx4n | Transmitter Inverted Data Input | |
| 6 | Tx4p | Transmitter Non-Inverted Data Input | |
| 7 | GND | Ground | 1 |
| 8 | ModSelL | Module Select | 2 |
| 9 | ResetL | Module Reset | |
| 10 | Vcc Rx | 3.3V Power Supply Receiver | |
| 11 | SCL | 2-wire serial interface clock | 3 |
| 12 | SDA | 2-wire serial interface data | 3 |
| 13 | GND | Ground | 1 |
| 14 | Rx3p | Receiver Non-Inverted Data Output | |

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| | | | |
|----|---------|-------------------------------------|---|
| 15 | Rx3n | Receiver Inverted Data Output | |
| 16 | GND | Ground | 1 |
| 17 | Rx1p | Receiver Non-Inverted Data Output | |
| 18 | Rx1n | Receiver Inverted Data Output | |
| 19 | GND | Ground | 1 |
| 20 | GND | Ground | 1 |
| 21 | Rx2n | Receiver Inverted Data Output | |
| 22 | Rx2p | Receiver Non-Inverted Data Output | |
| 23 | GND | Ground | 1 |
| 24 | Rx4n | Receiver Inverted Data Output | |
| 25 | Rx4p | Receiver Non-Inverted Data Output | |
| 26 | GND | Ground | 1 |
| 27 | ModPrsL | Module Present | 3 |
| 28 | IntL | Interrupt | 3 |
| 29 | Vcc Tx | 3.3V power supply transmitter | |
| 30 | Vcc1 | 3.3V power supply | |
| 31 | LPMode | Low Power Mode | |
| 32 | GND | Ground | 1 |
| 33 | Tx3p | Transmitter Non-Inverted Data Input | |
| 34 | Tx3n | Transmitter Inverted Data Input | |
| 35 | GND | Ground | 1 |
| 36 | Tx1p | Transmitter Non-Inverted Data Input | |
| 37 | Tx1n | Transmitter Inverted Data Input | |
| 38 | GND | Ground | 1 |

Note1: Module ground pins GND are isolated from the module case.

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Note2: ModSelL is an input signal. When held low by the host, the module responds to two-wire serial communication commands. The ModSelL signal allows the use of multiple modules on a single two-wire interface. When ModSelL is high, the module shall not respond to or acknowledge any two-wire interface communication from the host.

Note3: Shall be pulled up with 4.7K-10Kohms to a voltage between 3.15V and 3.45V on the host board.

MECHANICAL DIMENSIONS

