**MFS1S00-V001E-C**

Mellanox® MFS1S00-V001E Compatible TAA Compliant 200GBase-AOC QSFP56 Active Optical Cable (850nm, MMF, 1m)

**Features:**

- Low latency DSP-free electronics-based
- Data rate: 53.125 Gbps per lane
- PAM4 modulation
- With FEC
- Single 3.3V Power Supply
- Low power consumption: 3.6 W per cable end with CDR enabled
- SFF-8665 compliant QSFP56 port
- Operating Temperature: 0 to 70 Celsius
- Hot pluggable
- LSZH or LSZH/OFNR-rated cable
- RoHS Compliant and Lead-Free

**Applications:**

- IEEE 802.3cd 200GBASE SR4
- Datacenter: servers, switches, storages and NIC adapters

**Product Description**

This is a Mellanox® MFS1S00-V001E compatible 200GBase-AOC QSFP56 to QSFP56 active optical cable that operates over active fiber with a maximum reach of 1m. At a wavelength of 850nm, it has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This active optical cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. 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.")

TAA COMPLIANT

### Absolute Maximum Ratings

| Parameter | Symbol | Min | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Supply Voltage** | $V_{IN}$ | 0 | | 4.0 | V | |
| **Input Swing** | $V_{IN-MAX}$ | | | 1600 | mVpp | |
| **Storage Temperature** | $T_{STG}$ | -40 | | 85 | °C | Ambient |
| **Relative Humidity** | RH | 5 | | 85 | % | |

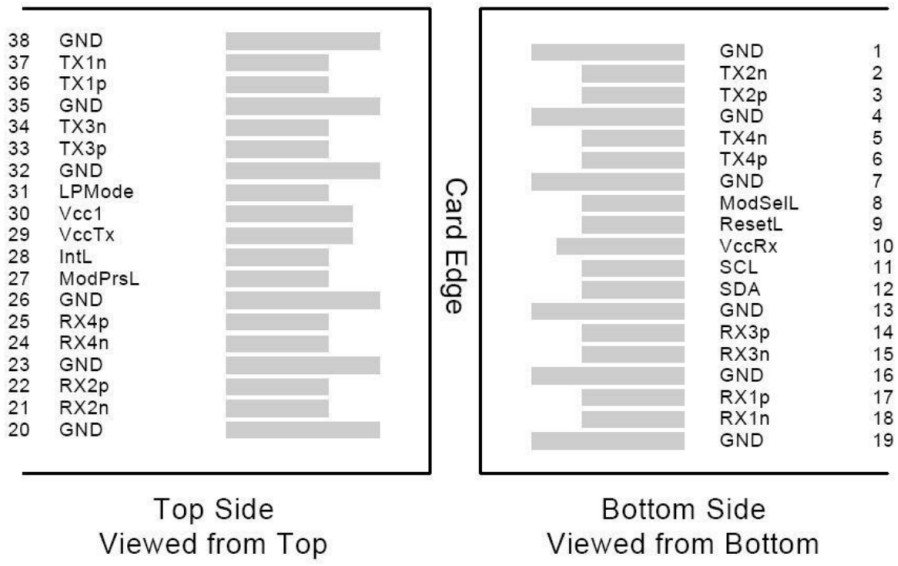
### Operating Specifications

| Parameter | Symbol | Min | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Operating Case Temperature** | Top | 0 | | 70 | degC | |
| **Power Supply Voltage** | Vcc | 3.13 | 3.30 | 3.47 | V | |
| **Power Supply Current** | Icc | | 1091 | | mA | |
| **Power Consumption per Cable End** | | | 3.6 | 100 | ppm | All channel CDRs are enabled |

### Cable Specifications

| Parameter | Value | Unit | Notes |
|---|---|---|---|
| **Cable Diameter** | Ø3.0 ± 0.15 | mm | |
| **Minimum Bend Radius** | 30 | mm | |
| **Length Tolerance** | +300 / -0 | mm | |
| **Cable Jacket** | LSZH or LSZH/OFNR -rated, Aqua | | |

### Electrical Pin-out Details



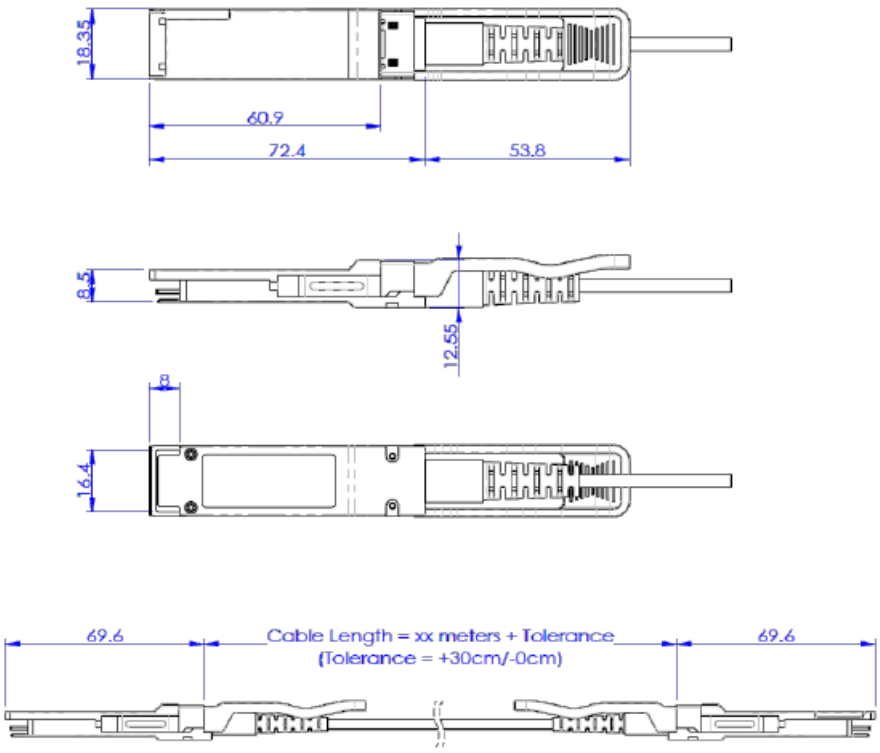
**Pin Descriptions**

| Pin | Logic | Symbol | Name/Descriptions | Ref. |
|---|---|---|---|---|
| **1** | | GND | Module Ground | 1 |
| **2** | CML-I | Tx2- | Transmitter inverted data input | |
| **3** | CML-I | Tx2+ | Transmitter non-inverted data input | |
| **4** | | GND | Module Ground | 1 |
| **5** | CML-I | Tx4- | Transmitter inverted data input | |
| **6** | CML-I | Tx4+ | Transmitter non-inverted data input | |
| **7** | | GND | Module Ground | 1 |
| **8** | LVTTL-I | MODSEIL | Module Select | 2 |
| **9** | LVTTL-I | ResetL | Module Reset | 2 |
| **10** | | VCCRx | +3.3v Receiver Power Supply | |
| **11** | LVCMOS-I | SCL | 2-wire Serial interface clock | 2 |
| **12** | LVCMOS-I/O | SDA | 2-wire Serial interface data | 2 |
| **13** | | GND | Module Ground | 1 |
| **14** | CML-O | RX3+ | Receiver non-inverted data output | |
| **15** | CML-O | RX3- | Receiver inverted data output | |
| **16** | | GND | Module Ground | 1 |
| **17** | CML-O | RX1+ | Receiver non-inverted data output | |
| **18** | CML-O | RX1- | Receiver inverted data output | |
| **19** | | GND | Module Ground | 1 |
| **20** | | GND | Module Ground | 1 |
| **21** | CML-O | RX2- | Receiver inverted data output | |
| **22** | CML-O | RX2+ | Receiver non-inverted data output | |
| **23** | | GND | Module Ground | 1 |
| **24** | CML-O | RX4- | Receiver inverted data output | |
| **25** | CML-O | RX4+ | Receiver non-inverted data output | |
| **26** | | GND | Module Ground | 1 |
| **27** | LVTTL-O | ModPrsL | Module Present, internal pulled down to GND | |
| **28** | LVTTL-O | IntL | Interrupt output should be pulled up on host board | 2 |
| **29** | | VCCTx | +3.3v Transmitter Power Supply | |
| **30** | | VCC1 | +3.3v Power Supply | |
| **31** | LVTTL-I | LPMode | Low Power Mode | 2 |
| **32** | | GND | Module Ground | 1 |
| **33** | CML-I | Tx3+ | Transmitter non-inverted data input | |
| **34** | CML-I | Tx3- | Transmitter inverted data input | |
| **35** | | GND | Module Ground | 1 |
| **36** | CML-I | Tx1+ | Transmitter non-inverted data input | |
| **37** | CML-I | Tx1- | Transmitter inverted data input | |
| **38** | | GND | Module Ground | 1 |

**Notes:**

1. Module circuit ground is isolated from module chassis ground with in the module.
2. Open collector; should be pulled up with 4.7k-10k ohms on host board to a voltage between 3.15V and 3.6V.

**Mechanical Specifications**



**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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