

### **SFP-28G-AOC1M-AO**

MSA Compliant 25GBase-AOC SFP28 Active Optical Cable (850nm, MMF, 1m)

#### **Features:**

- Hot-pluggable SFP28 form factor
- 850nm VCSEL laser and PIN photo-detector
- Supports 25Gbps data rate
- Single 3.3V power supply
- Power dissipation < 1W
- Internal CDR on both Transmitter and receiver channel
- Operating Temperature: 0 to 70 Celsius
- Digital diagnostics functions are available via the I2C interface
- RoHS Compliant and Lead-Free



#### **Applications:**

- 25Gbase Ethernet

#### **Product Description**

This is an MSA compliant 25GBase-AOC SFP28 to SFP28 active optical cable that operates over multi-mode fiber with a maximum reach of 1.0m (3.3ft). 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 built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

## General Specifications

| Parameter                  | Symbol           | Min  | Typ. | Max. | Unit |
|----------------------------|------------------|------|------|------|------|
| Storage Temperature        |                  | -40  |      | 85   | °C   |
| Operating Case Temperature | T <sub>c</sub>   | 0    |      | 70   | °C   |
| Power Supply Voltage       | V <sub>cc</sub>  | 3.13 | 3.3  | 3.47 | V    |
| Supply Voltage             | V <sub>cc</sub>  | 0    |      | 3.6  | V    |
| Storage Temperature        | T <sub>stg</sub> | -40  |      | 85   | °C   |
| Operating Humidity         |                  | 5    |      | 85   | %    |

## Optical Characteristics

| Parameter                      |         | Symbol              | Min. | Typ.  | Max.            | Unit | Notes |
|--------------------------------|---------|---------------------|------|-------|-----------------|------|-------|
| Transmitter                    |         |                     |      |       |                 |      |       |
| Data Rate                      |         | BR                  |      | 25.78 |                 | Gbps |       |
| Centre Wavelength              |         | λ <sub>c</sub>      | 840  | 850   | 860             | nm   |       |
| Spectral Width (-20dB)         |         | σ                   |      |       | 0.6             | nm   |       |
| Average Output Power           |         | P <sub>avg</sub>    | -8.4 |       | 2.4             | dBm  |       |
| Optical Power OMA              |         | P <sub>OMA</sub>    | -6.4 |       | 3               | dBm  |       |
| Extinction Ratio               |         | ER                  | 2    |       |                 | dB   |       |
| Differential data input swing  |         | V <sub>IN,PP</sub>  | 40   |       | 1000            | mV   |       |
| Input Differential Impedance   |         | Z <sub>IN</sub>     | 90   | 100   | 110             | Ω    |       |
| TX Disable                     | Disable |                     | 2.0  |       | V <sub>cc</sub> | V    |       |
|                                | Enable  |                     | 0    |       | 0.8             | V    |       |
| TX Fault                       | Fault   |                     | 2.0  |       | V <sub>cc</sub> | V    |       |
|                                | Normal  |                     | 0    |       | 0.8             | V    |       |
| Receiver                       |         |                     |      |       |                 |      |       |
| Data Rate                      |         | BR                  |      | 25.78 |                 | Gbps |       |
| Centre Wavelength              |         | λ <sub>c</sub>      | 840  | 850   | 860             | nm   |       |
| Receiver Sensitivity (OMA)     |         | P <sub>sens</sub>   |      |       | -10             | dBm  |       |
| Stressed Sensitivity (OMA)     |         |                     |      |       | -5.2            | dBm  |       |
| Receiver Power (OMA)           |         |                     |      |       | 3               | dBm  |       |
| LOS De-Assert                  |         | LOS <sub>D</sub>    |      |       | -13             | dBm  |       |
| LOS Assert                     |         | LOS <sub>A</sub>    | -30  |       |                 | dBm  |       |
| LOS Hysteresis                 |         |                     | 0.5  |       |                 | dB   |       |
| Differential data output swing |         | V <sub>out,PP</sub> | 500  |       | 1130            | mV   |       |
| LOS                            | High    |                     | 2.0  |       | V <sub>cc</sub> | V    |       |
|                                | Low     |                     |      |       | 0.8             | V    |       |

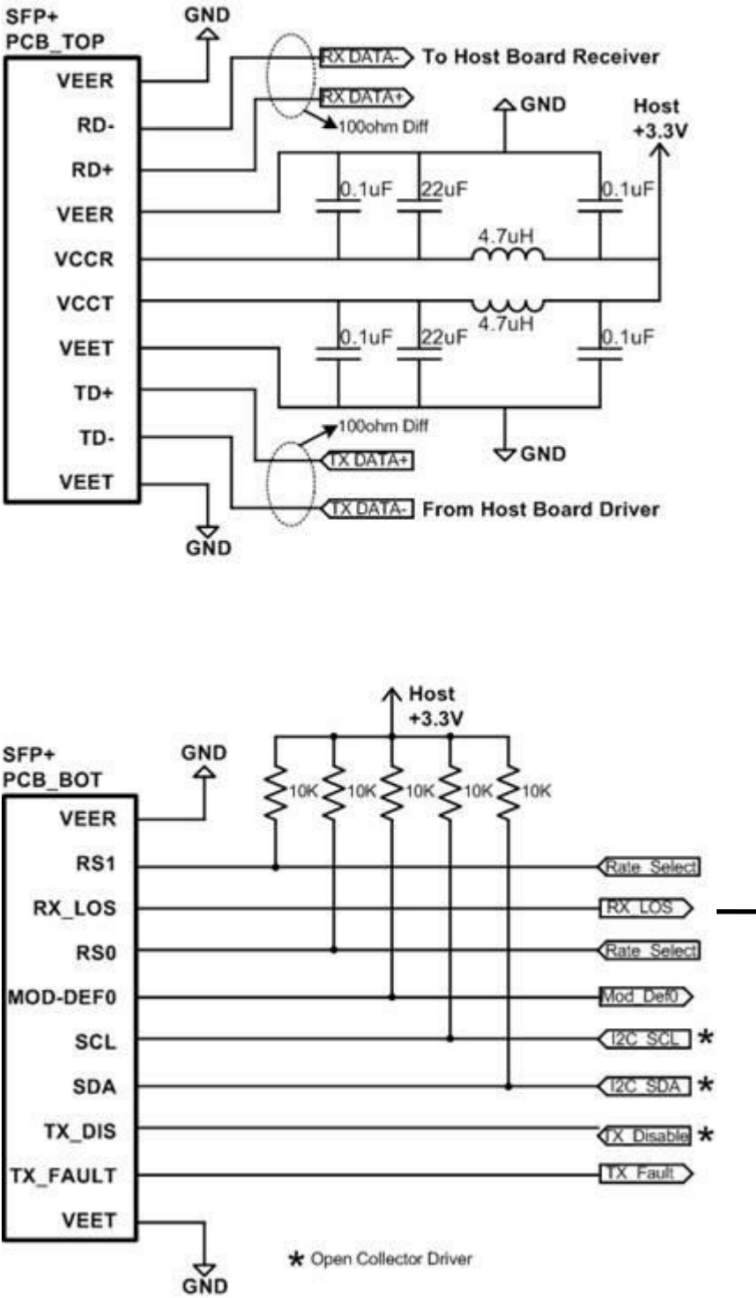
## Pin Descriptions

| Pin | Logic      | Symbol   | Name/Description                 | Notes |
|-----|------------|----------|----------------------------------|-------|
| 1   |            | VeeT     | Transmitter Ground.              |       |
| 2   | LV-TTL-O   | TX_Fault | N/A                              | 1     |
| 3   | LV-TTL-I   | TX_DIS   | Transmitter Disable.             |       |
| 4   | LV-TTL-I/O | SDA      | 2-Wire Serial Data.              |       |
| 5   | LV-TTL-I   | SCL      | 2-Wire Serial Clock.             |       |
| 6   |            | MOD_DEF0 | Module present, connect to VeeT. |       |
| 7   | LV-TTL-I   | RS0      | N/A                              | 1     |
| 8   | LV-TTL-O   | LOS      | LOS of Signal.                   |       |
| 9   | LV-TTL-I   | RS1      | N/A                              | 1     |
| 10  |            | VeeR     | Receiver Ground.                 |       |
| 11  |            | VeeR     | Receiver Ground.                 |       |
| 12  | CML-O      | RD-      | Receiver Data Inverted.          |       |
| 13  | CML-O      | RD+      | Receiver Data Non-inverted.      |       |
| 14  |            | VeeR     | Receiver Ground.                 |       |
| 15  |            | VccR     | Receiver Supply +3.3V.           |       |
| 16  |            | VccT     | Transmitter Supply +3.3V.        |       |
| 17  |            | VeeT     | Transmitter Ground.              |       |
| 18  | CML-I      | TD+      | Transmitter Data Non-Inverted.   |       |
| 19  | CML_I      | TD-      | Transmitter Data Inverted.       |       |
| 20  |            | VeeT     | Transmitter Ground.              |       |

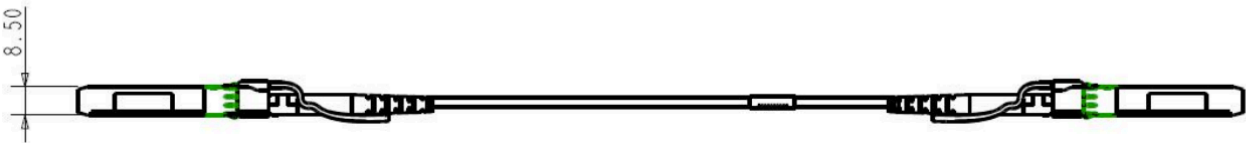
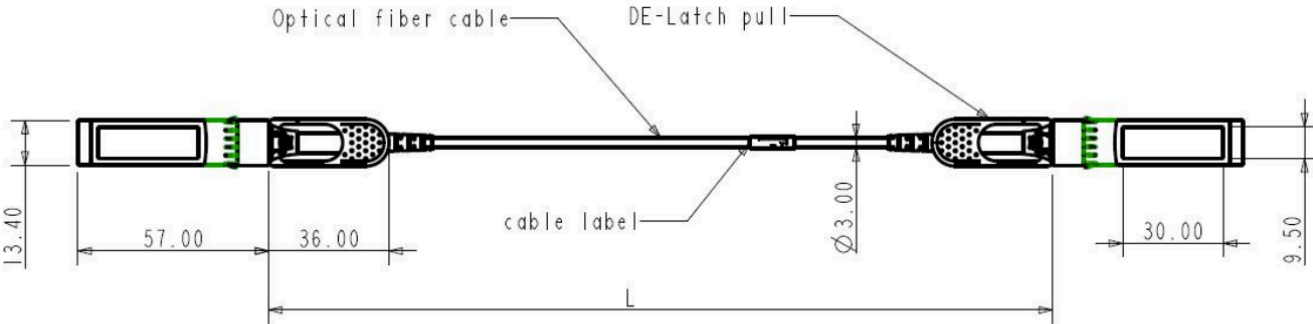
### Note:

1. Signals not supported in SFP28 Copper pulled-down to VeeT with 30kΩ resistor.

Host Board



Mechanical Specification



## About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is ingrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications ranging from NEBS Level 3 to ISO 9001:2015 with every new development while maintaining the signature reliability of its products.



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