

Features:

- ✧ Low power consumption <0.35W per end
- ✧ Electrical interface compliant to SFF-8431
- ✧ On OM3 MMF length up to x (x=0.5~300m)
- ✧ 850nm VCSEL transmitter, PIN photo-detector receiver
- ✧ Operating case temperature 0 °C to +70°C

- ✧ 3.3V power supply
- ✧ RoHS compliant
- ✧ Hot Pluggable SFP+ form factor
- ✧ Good EMI performance

Applications:

- ✧ 10 Gigabit Ethernet
- ✧ 1x Infini Band QDR. DDR, SDR
- ✧ High-performance computing clusters
- ✧ 4G and 8G Fibre Channel Applications
- ✧ Servers, switches, storage, host card adapters and data center

Description:

The FIBERWAN SFP+ Active Optical Cables are direct-attach fiber assemblies with SFP+ connectors. They have very good power consumption performance .They are suitable for very short distances and offer a cost-effective way to connect within racks and across adjacent racks. FIBERWAN SFP+ Active Optical Cables’s length is up to 300 meters on OM3 MMF.

● **Absolute Maximum Ratings**

The operation in excess of any absolute maximum ratings might cause permanent damage to this module.

| Parameter | Symbol | Min | Max | Unit | Note |
|-----------------------------------|--------|------|---------|------|------|
| Storage Temperature | TST | -20 | 85 | °C | |
| Relative Humidity(non-condensing) | RH | 0 | 85 | % | |
| Operating Case Temperature | TOPC | 0 | 70 | °C | |
| Supply Voltage | VCC | -0.3 | 3.6 | V | |
| Input Voltage | Vin | -0.3 | Vcc+0.3 | V | |

● **Recommended Operating Conditions and Supply Requirements**

| Parameter | Symbol | Min | Typical | Max | Unit |
|----------------------------|--------|-----|---------|-----|------|
| Operating Case Temperature | TOPC | 0 | | 70 | °C |

| | | | | | |
|----------------------------|-------------|------|------|------|------|
| Power Supply Voltage | VCC | 3.13 | 3.3 | 3.47 | V |
| Power Consumption(per end) | | - | | 0.35 | W |
| Data Rate | DR | | 10.3 | | Gbps |
| Data Speed Tolerance | Δ DR | -100 | | +100 | ppm |

● Optical Characteristics

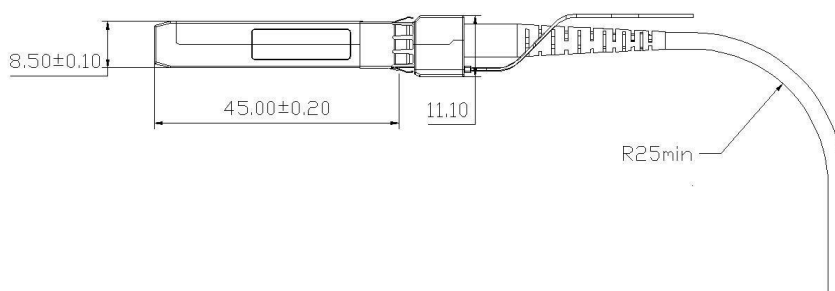
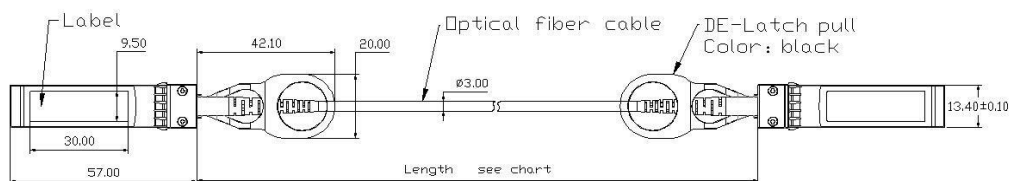
All parameters are specified under the recommended operating conditions with PRBS31 data pattern unless otherwise specified.

| Parameter | Symbol | Min | Typical | Max | Unit | Notes |
|--|-------------|-----|---------|------|-------|-------|
| Transmitter | | | | | | |
| Center Wavelength | λ_c | 840 | 850 | 860 | nm | |
| Average optical Power | PAVG | -6 | | | dBm | |
| Rise/Fall Time | T_r/T_f | | | 50 | ps | |
| Extinction Ratio | ER | 3.5 | | | dB | |
| Relative Intensity Noise | Rin | | | -128 | dB/Hz | |
| Optical Return Loss | TOL | | | 12 | dB | |
| Transmitter Reflectance | RT | | | -12 | dB | |
| Receiver | | | | | | |
| Center Wavelength | λ_c | 840 | 850 | 860 | nm | |
| Overload, each lane | OVL | -1 | | | dBm | |
| Receiver Sensitivity in OMA, each Lane | SEN | | | -11 | dBm | |

● Electrical Specifications

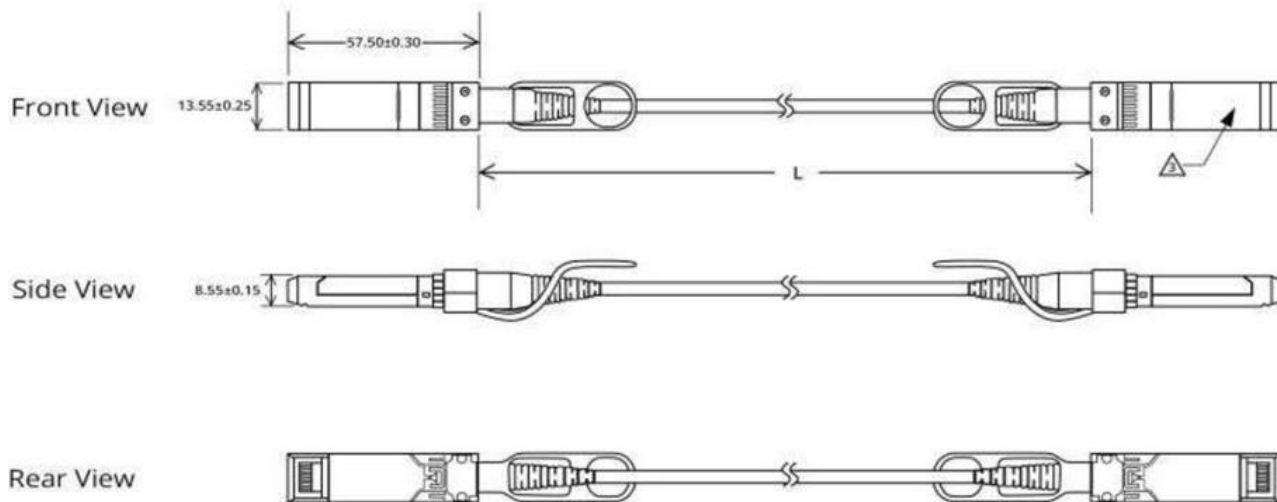
| Parameter | Symbol | Min | Typical | Max | Unit |
|---------------------------------------|------------------|-----|---------|------|-------|
| Differential input impedance | Z_{in} | 90 | 100 | 110 | ohm |
| Differential Output impedance | Z_{out} | 90 | 100 | 110 | ohm |
| Differential input voltage amplitude | ΔV_{in} | 100 | | 1800 | mVp-p |
| Differential output voltage amplitude | ΔV_{out} | 400 | | 800 | mVp-p |
| Bit Error Rate | BR | | | | E-12 |
| Input Logic Level High | VIH | 2.0 | | VCC | V |
| Input Logic Level Low | VIL | 0 | | 0.8 | V |

● Mechanical Dimensions



The length

The length starts at the module connection and the module connection (as shown below). Acceptable Standards are shown below



Acceptable standard

| Type | Length (m) | tolerance (cm) |
|------|-------------|----------------|
| AOC | $L \leq 1$ | $+7 \sim -0$ |
| | $1 < L < 7$ | $+10 \sim -0$ |

| | | |
|--|------------|----------------|
| | $L \geq 7$ | $+2\% \sim -0$ |
|--|------------|----------------|

Lable solt size

| | | |
|-------|-----------|----------------|
| type | Size (mm) | tolerance (mm) |
| lable | 31mm*10mm | ± 0.5 mm |

Order Information:

| Part Number | Product Description |
|--------------|--|
| FWTA-10G-xxx | x meter SFP+ Active Optical Cable,x=0.5~300m |

Note:

1. Cable Length which is 300m maximum can be defined as the customer required.
2. Cable Length is defined as the length of the fiber only (not including the SFP+ module-ends).

ESD

This transceiver is specified as ESD threshold 1KV for high speed data pins and 2KV for all others electrical input pins, tested per MIL-STD-883, Method3015.4 /JESD22-A114-A (HBM).However, normal ESD precautions are still required during the handling of this module. This transceiver is shipped in ESD protective packaging. It should be removed from the packaging and handled only in an ESD protected environment.

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