

10G SFP+ Active Optical Cable

Features

- Electrical interface compliant to SFF-8431
- Hot Pluggable
- 850nm VCSEL transmitter, PIN photo-detector receiver
- Up to 300m on OM3 MMF
- Operating case temperature: 0 to 70°C
- All-metal housing for superior EMI performance
- RoHS compliant



Applications

- 10 Gigabit Ethernet
- 4G and 8G Fibre Channel Applications
- 1x InfiniBand QDR, DDR, SDR
- High-performance computing clusters
- Servers, switches, storage and host card adapters

Description

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

SFP+ AOC Specifications

Parameter	Description
Module Form Factor	SFP+ (Supports SFF8431/SFF8432/SFF8472)
Protocols Supported	InfiniBand, Ethernet, Fiber Channel
Channel Data Rate	Rate 1 to 10.3125Gbps
BER	$<10^{-12}$
Operating Case Temperature	0 to + 70°C
Storage Temperature	-20 to + 85°C
Supply Voltage	3.3V

Supply current	230mA per end typical
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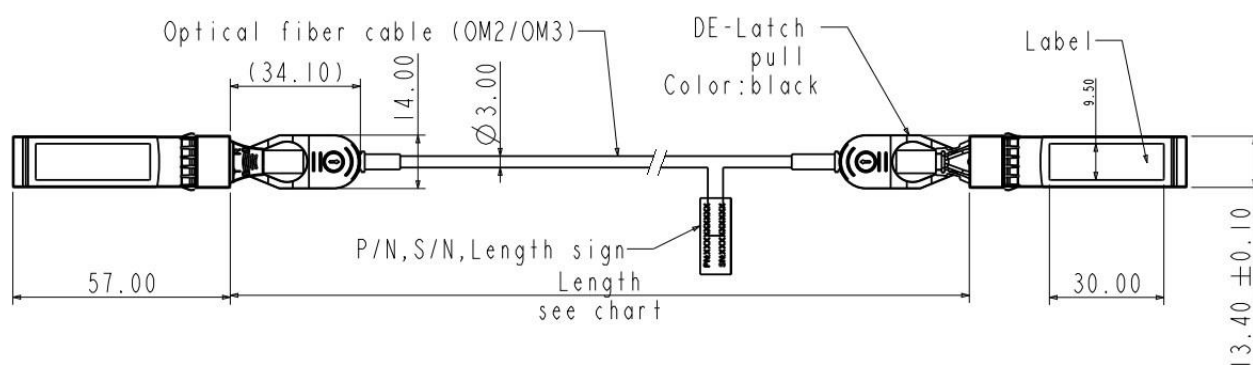
Optical characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength	λ_t	840	850	860	Nm	
RMS spectral width	P_m				Nm	1
Average Optical Power	P_{avg}	-6.5		-1	dBm	2
Extinction Ratio	ER	3.5			dB	3
Transmitter Dispersion Penalty	TDP			3.9	dB	
Relative Intensity Noise	R_{in}			-128	dB/Hz	12dB reflection
Optical Return Loss Tolerance				-12	dB	
Receiver						
Center Wavelength	λ_r	840	850	860	nm	
Receiver Sensitivity	P_{sens}			-11.1	dBm	4
Stressed Sensitivity in OMA				-7.5	dBm	4
Los function	Los	-30		-12	dBm	
Overload	P_{in}			-1.0	dBm	4
Receiver Reflectance				-12	dB	

Note:

1. Trade-offs are available between spectral width, center wavelength and minimum OMA, as shown in table 6.
2. The optical power is launched into MMF
3. Measured with a PRBS $2^{31}-1$ test pattern @10.3125Gbps
4. Measured with a PRBS $2^{31}-1$ test pattern @10.3125Gbps, $BER \leq 10^{-12}$.



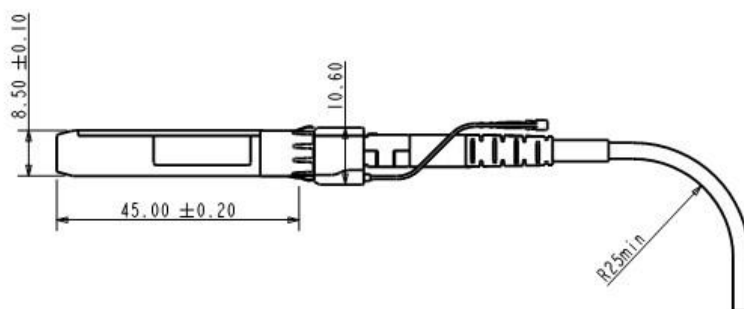


Figure1. Mechanical Specifications

Ordering information

Part Number	Product Description
TS-SFP+-AOC-1	1 meter 10G SFP+ Active Optical Cable
TS-SFP+-AOC-1.5	1.5 meter 10G SFP+ Active Optical Cable
TS-SFP+-AOC-2	2 meter 10G SFP+ Active Optical Cable
TS-SFP+-AOC-3	3 meter 10G SFP+ Active Optical Cable
TS-SFP+-AOC-5	5 meter 10G SFP+ Active Optical Cable
TS-SFP+-AOC-7	7 meter 10G SFP+ Active Optical Cable
TS-SFP+-AOC-SR	10G SFP+ Active Optical Cable up to 300m on OM3 MMF

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by TONGSION before they become applicable to any particular order or contract. In accordance with the TONGSION policy of continuous improvement specifications may change without notice.

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