

AOC-SFP-10G-I-xM

10GBase SFP+ Active Optical Cable

1m to 100m Lengths, Industrial Temperature

FEATURES

- 10Gbps active optical cable up to 100m OM2/OM3 MMF
- 850nm VCSEL and PIN receiver
- Single 3.3V power supply
- Hot pluggable
- Light weight
- Small Bend Radius
- Digital Diagnostic Monitoring (DDM)
- Industrial Operating Temperature Range: -40°C to 85°C

APPLICATIONS

- 10G Ethernet
- 10G Datacom

DESCRIPTION

This SFP+ Active Optical Cable (AOC) is a 10Gbps solution for 10G Ethernet and data centres. The integrated cable transmits 10Gbps data in each direction over MMF with options up to 100m. The AOC is SFP+ MSA compliant with low power consumption.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Typical	Max.	Unit
Storage Temperature	Ts	-20	-	+85	°C
Storage Relative Humidity	RH	-	-	85	%
Supply Voltage	Vcc	-0.3	-	+3.6	V
Supply Current	Icc	-	-	450	mA

RECOMMENDED OPERATING ENVIRONMENT

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Temperature	Tc	-40	-	+85	°C
Supply Voltage	Vcc	3.13	3.3	3.47	V
Supply Current	Icc	-	60	-	mA
Power Supply Noise Tolerance		-	-	200	mVpp
Bit Rate	BR	-	10.3125	-	Gbps

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typical	Max.	Unit
TRANSMITTER					
Input Differential Impedance	Zin	90	100	110	Ω
Data Input Swing Differential	Vin	200	-	700	mV
Tx-Dis Disable	Vd	2.0	-	Vcc	V
Tx-Dis Enable	Ven	0	-	0.8	V
RECEIVER					
Data Output Swing Differential	Vout	300	-	800	mV
Rx-Los Fault	Vlf	2.0	-	VccHOST	V
Rx-Los Normal	Vln	0	-	0+0.8	V
Output rise and fall time	Tr, Tf	28	-	-	ps

OPTICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typical	Max.	Unit
TRANSMITTER					
Centre Wavelength	λ_c	840	850	860	nm
Spectral Width (-20dB)	σ	-	-	0.5	nm
Average Output Power	Pout	-5	-	-1	dBm
Extinction Ratio	ER	3.5	-	-	dB
Average Launch Power of Off Transmitter	Poff	-	-	-30	dBm
RECEIVER					
Centre Wavelength	λ_c	840	-	860	nm
Receiver Sensitivity	PIN	-	-	-13	dBm
Receiver Overload	Pmax	0.5	-	-	dBm
LOS De-Assert	LOSD	-	-	-15	dBm
LOS Assert	LOSA	-30	-	-	dBm
LOS Hysteresis		0.5	-	-	dB

CABLE SPECIFICATION

Parameter	Value	Note
Type	OM2 Multimode Fibre Loose tube fibre	
Minimum Bend radius (mm)	30	
Cable diameter (mm)	3.0 ± 0.15	
Cable length (m)	1, 2, 3, 4, 5, 10, 20, 30, 50,100	Custom Length

PIN ASSIGNMENT

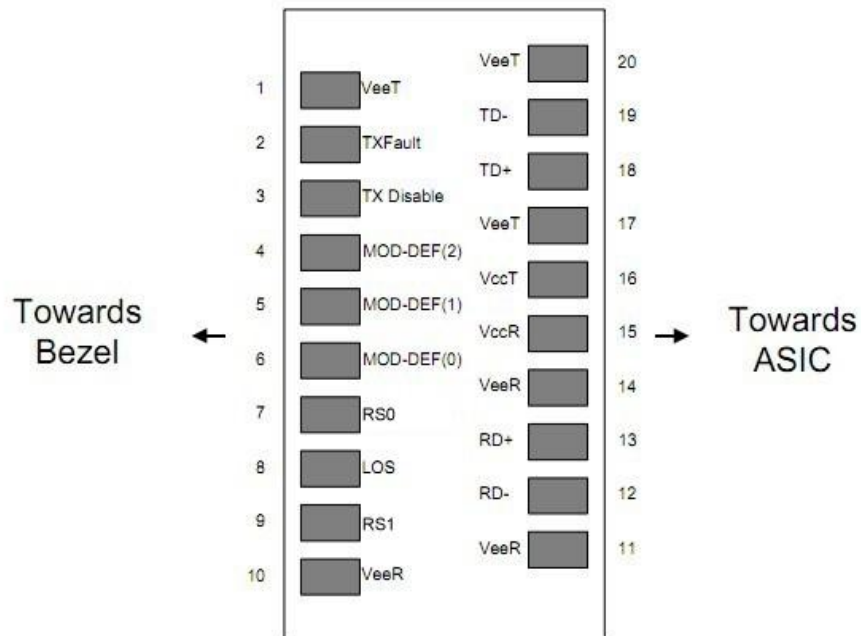


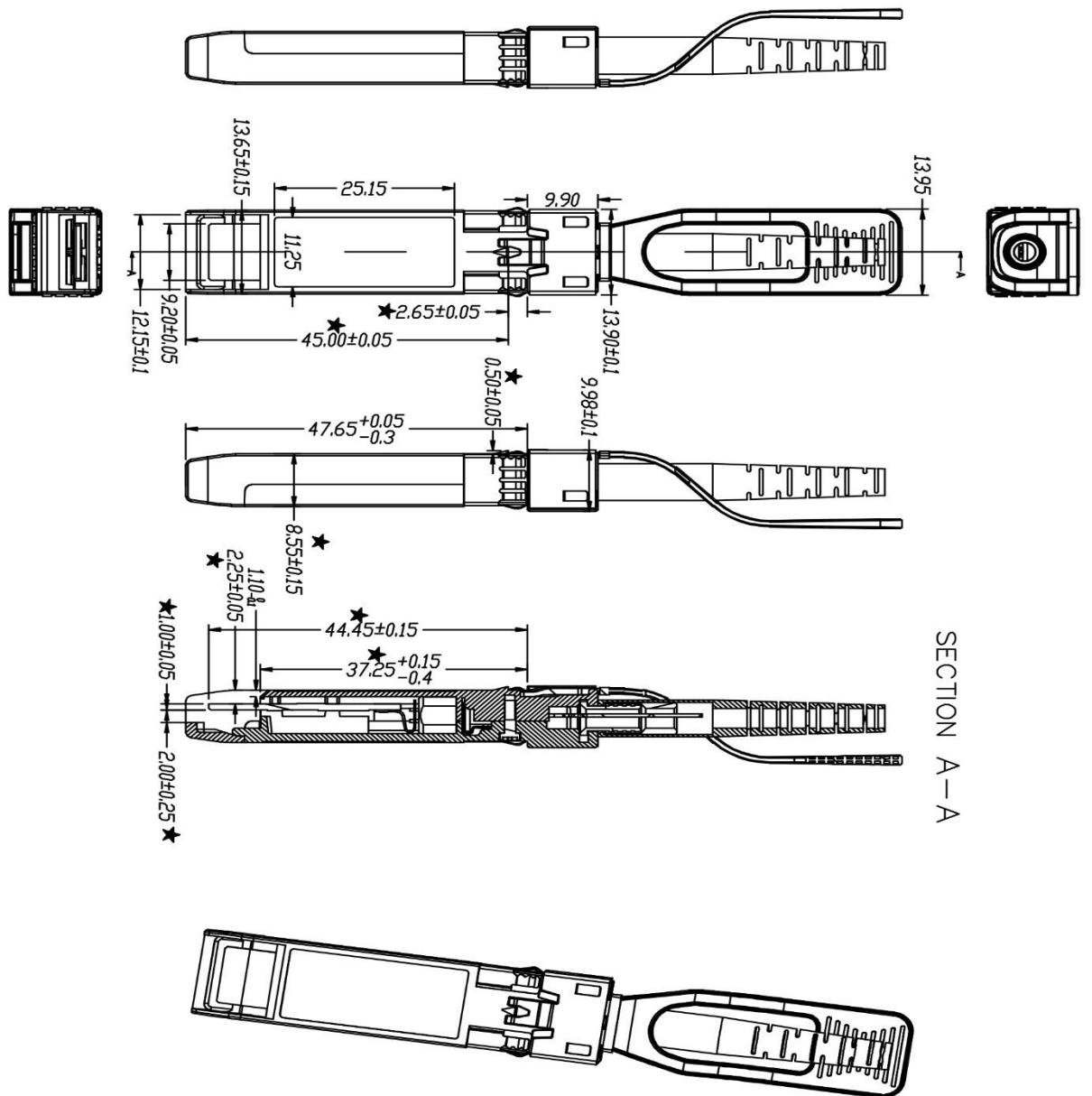
Diagram of Host Board Connector Block Pin Numbers and Names

Pin	Symbol	Definition
1	VEET	Transmitter Ground (Common with Receiver Ground)
2	TFAULT	Transmitter Fault. Not supported.
3	TDIS	Transmitter Disable. Laser output disabled on high or open.
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.
7	RS0	Rate Select0, optionally controls SFP+ module receiver. When high input signaling rate>4.25 GBd and when low input signaling rate<4.25GBd
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.
9	RS1	Rate Select1, optionally controls SFP+ module receiver. When high input signaling rate>4.25 GBd and when low input signaling rate<4.25GBd
10	VEER	Receiver Ground (Common with Transmitter Ground)
11	VEER	Receiver Ground (Common with Transmitter Ground)
12	RD-	Receiver Inverted DATA out. AC Coupled.
13	RD+	Receiver Non-inverted DATA out. AC Coupled.
14	VEER	Receiver Ground (Common with Transmitter Ground)
15	VCCR	Receiver Power Supply
16	VCCT	Transmitter Power Supply
17	VEET	Transmitter Ground (Common with Receiver Ground)
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.
19	TD-	Transmitter Inverted DATA in. AC Coupled.
20	VEET	Transmitter Ground (Common with Receiver Ground)

EEPROM

ATGBICS SFP+ AOC is equipped with a two-wire serial interface. An engineering mode utilising the A4h memory page is implemented to allow complete evaluation of the DUT.

MECHANICAL DIMENSIONS (UNITS: mm)



SECTION A-A