

BN-S10G-SR-AOC-03

10G SFP+ Multimode AOC Cable 3 meter



Description

The 10G SFP+ Active Optical Cables (AOC) are direct-attach fiber assemblies with SFP+ connectors. They are suitable for short distances and offer a cost-effective solution to connect within racks and across adjacent racks. The length is up to 100 meters using OM3 MMF.

Features

- Hot pluggable
- Bit rate support from 1G to 11.3Gbps
- Pre-terminated twin axial cable / fiber cable
- Programmable EEPROM for serial identification
- Low power consumption
- SFP+ housing with enhanced EMI shielding
- Single 3.3V power supply
- Operating environment temperature 0 ~ 70 °C

Applications

- 10G Ethernet
- Applicable to 1G Ethernet
- Applicable to 4G / 2G / 1G Fiber Channel
- 10G Fiber Channel over Ethernet
- 1X QDR Infiniband
- Applicable to 1X DDR / 1x SDR Infiniband
- High capacity IO with SFP+ interface

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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
Management Interface Serial	I ² C (Supports SFF8472)

Electrical Characteristics

Parameter	Symbol	Unit	min	Max
Supply Current	I _{cc}	mA		150
Power Consumption	P _{diss}	W		0.5
Tx Input Differential Impedance	Z _{in_d}	W	100 (typ.)	
Tx Input Differential Swing	V _{in_d}	mV	120	1000
Rx Output Differential Impedance	Z _{out_d}	W	100 (typ.)	
Rx Output Differential Swing	V _{out_d}	mV	400	800
Rx_LOS VOH	V _{LOS_H}	V	2	V _{cc} +0.3
Rx_LOS VOL	V _{LOS_L}	V	-0.3	0.4

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	Pm	-	-	Note 1	nm	
Average Optical Power	Pavg	-6.5	-	-1	dBm	2
Extinction Ratio	ER	3.5	-	-	dB	3
Transmitter Dispersion Penalty	TDP	-	-	3.9	dB	
Relative Intensity Noise	Rin	-	-	-128	dB/Hz	12dB reflection
Optical Return Loss Tolerance		-	-	12	dB	
Receiver						
Center Wavelength	λ_t	840	850	860	nm	
Receiver Sensitivity	Psens	-	-	-11.1	dBm	4
Stressed Sensitivity in OMA		-	-	-7.5	dBm	4
Los function	Los	-30	-	-12	dBm	
Overload	Pin	-	-	-1.0	dBm	4
Receiver Reflectance		-	-	-12	dB	

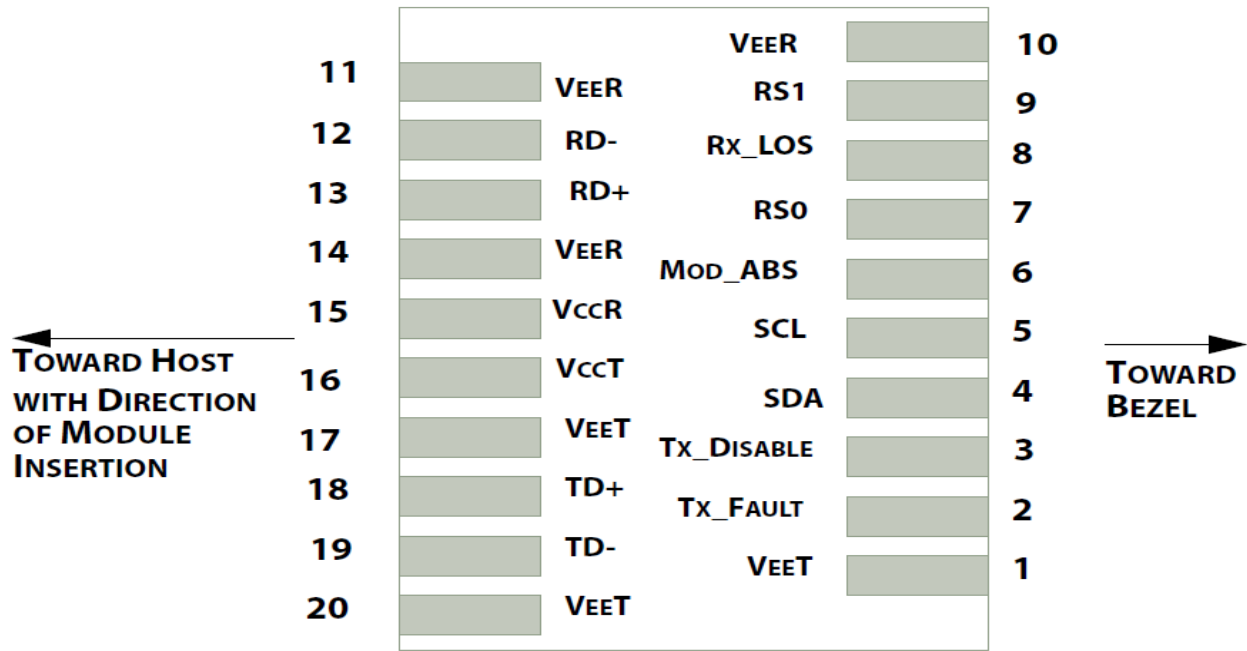
Note:

- 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 231-1 test pattern @10.3125Gbps
- 4.Measured with a PRBS 231-1 test pattern @10.3125Gbps,BER≤10-12.

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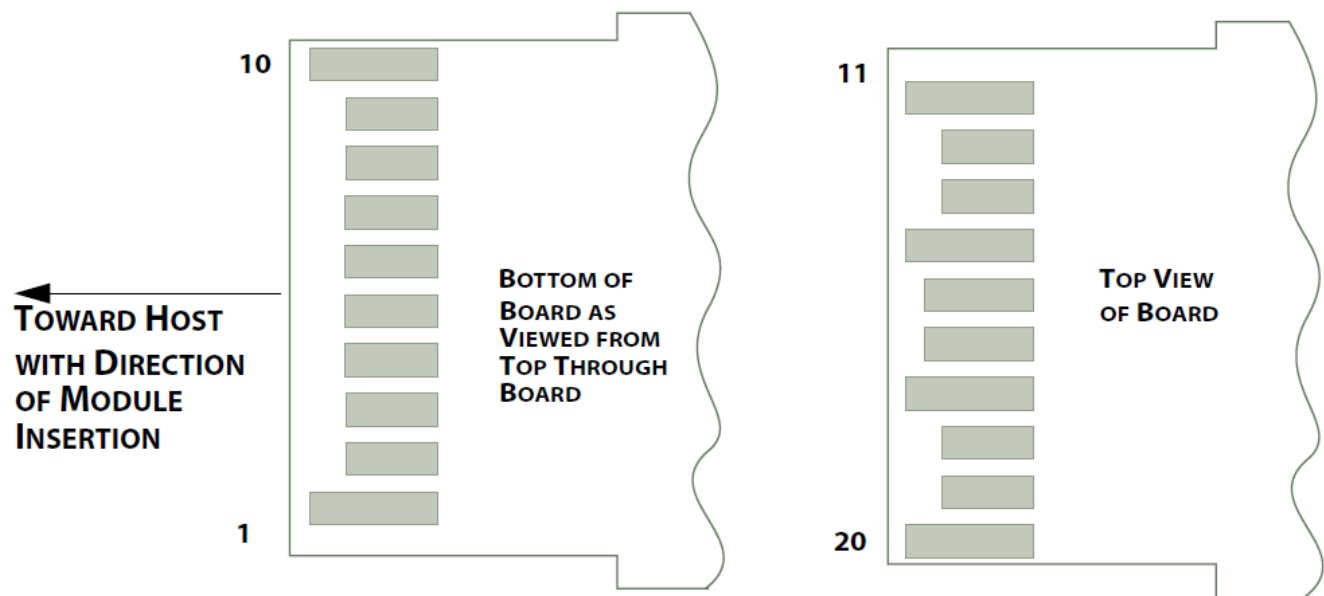
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Host Board Connector Pin (Top View)



Note:
For detail information, please refer to SFF-8083 0.8mm Card Edge Connector for 8/10 Gbps Applications

SFP+ Connector Pin

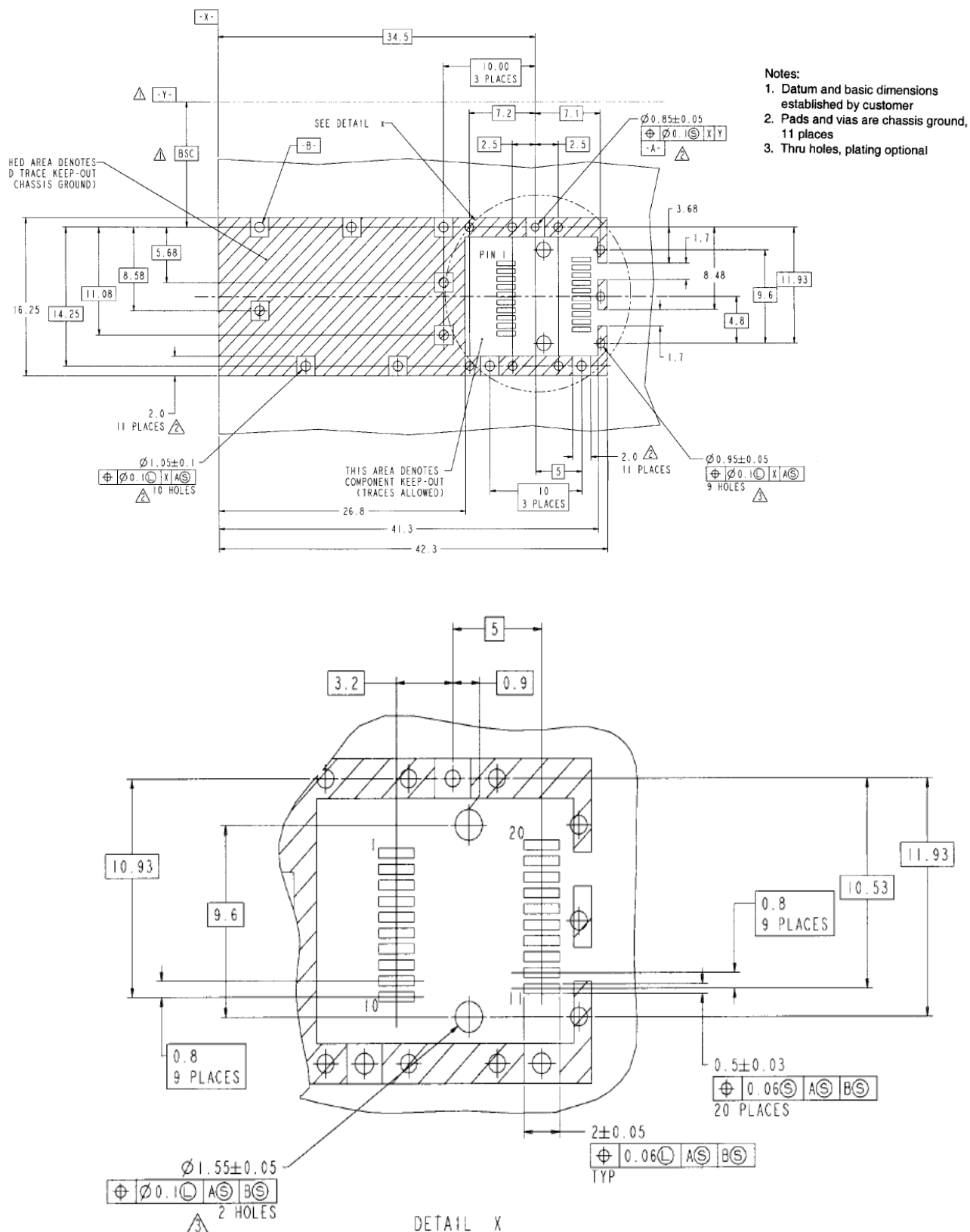


Pin Description

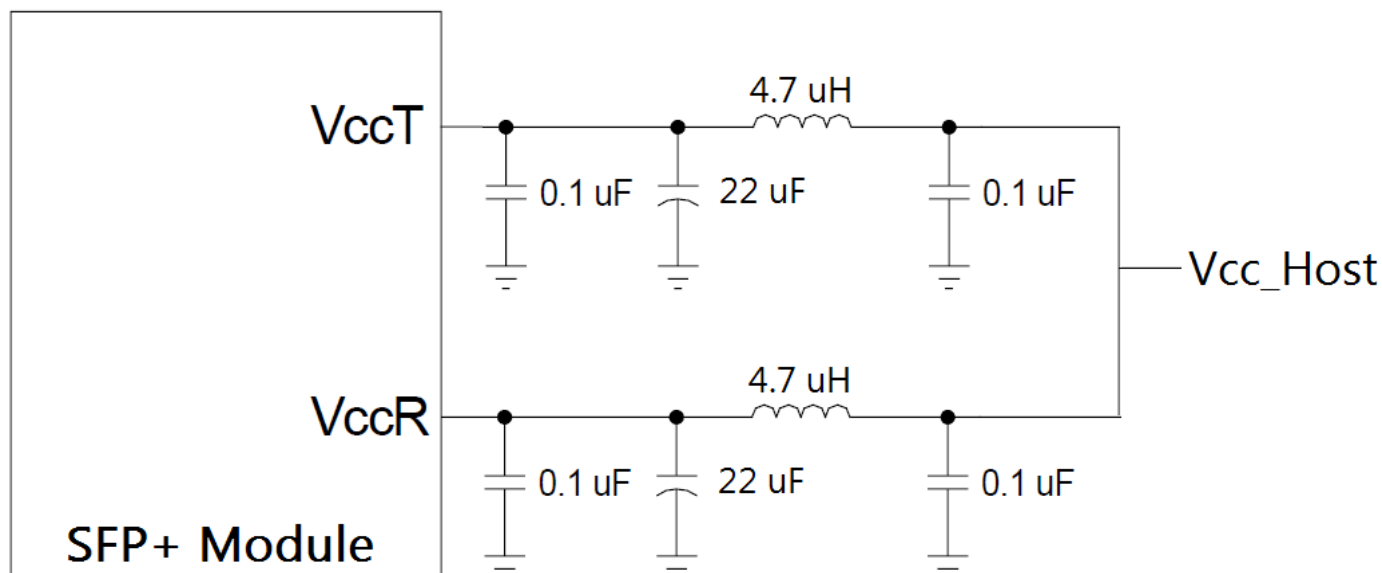
Pin	Symbol	Logic	Description	Note
1	VeeT		Module Transmitter Ground	1
2	Tx_Fault	LVTTL-O	Not supported.	3
3	Tx_Disable	LVTTL-I	Not supported.	3
4	SDA	LVTTL-I/O	2-wire Serial Interface Data Line	2
5	SCL	LVTTL-I/O	2-wire Serial Interface Clock	2
6	Mod_ABS		Module Absent	2
7	RS0	LVTTL-I	Not supported.	3
8	Rx_LOS	LVTTL-O	Not supported.	3
9	RS1	LVTTL-I	Not supported.	3
10	VeeR		Module Receiver Ground	1
11	VeeR		Module Receiver Ground	1
12	RD-	CML-O	Receiver Inverted Data Output	
13	RD+	CML-O	Receiver Non-Inverted Data Output	
14	VeeR		Module Receiver Ground	1
15	VccR		Module Receiver 3.3 V Supply	4
16	VccT		Module Transmitter 3.3 V Supply	4
17	VeeT		Module Transmitter Ground	1
18	TD+	CML-I	Transmitter Non-Inverted Data Input	
19	TD-	CML-I	Transmitter Inverted Data Input	
20	VeeT		Module Transmitter Ground	1

Notes:

- Module circuit ground pins are isolated from the module chassis ground.
- Pull up to VccHost with 4.7k – 10kΩ.
- No connection required.
- Power supply filtering circuit required.



Recommended Power Supply Filter



References:

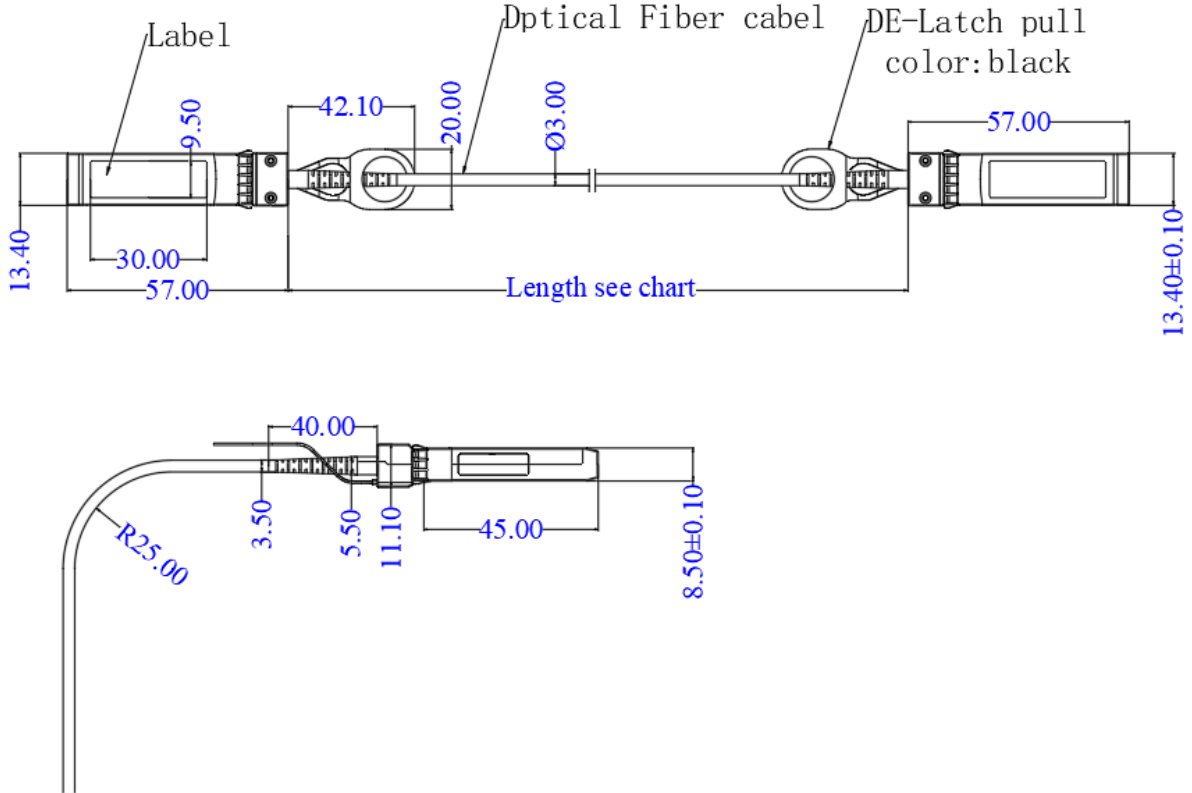
- SFF-8431 "Specifications for Enhanced Small Form Factor Pluggable Module SFP+"
- SFF-8432 "Specification for Improved Pluggable Form factor"
- SFF-8472 "Specification for Diagnostic Monitoring Interface for Optical Transceivers"

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Mechanical Drawing



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, Method 3015.4 /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.