AFBR-2CAR03Z-OPC

Avago® AFBR-2CAR03Z Compatible TAA Compliant 10GBase-AOC SFP+ Active Optical Cable (850nm, MMF, 3m)

Features

- High Speed/ High Density: Supports up to 10Gbps bi-directional operation
- Compliant to SFP MSA Standards
- Reliable VCSEL and PIN photonic devices
- I2C Standard Management Interface
- Excellent High Speed Signal Interface
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free

Applications:

- 10G Ethernet
- High Performance Computing, Server, and Data Starage

Product Description

This is an Avago® AFBR-2CAR03Z compatible 10GBase-AOC SFP+ to SFP+ active optical cable that operates over multi-mode fiber with a maximum reach of 3.0m (9.8ft). 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 TAA (Trade Agreements Act) compliant, and 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.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Storage Temperature	Tstg	-40		85	°C	
Operating Temperature	Tc	0	25	70	°C	
Relative Humidity	RH	5		85	%	
Maximum Supply Voltage	Vcc	0		3.6	V	
Data Rate			10.3		Gbps	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage	Vcc	3.135	3.3	3.465	V	
+3.3V Supply Current	Icc			290	mA	
Transmitter Fault (Tx_Fault)	VOH	2.0		Vcc	V	1
Loss of Signal (LOS)	VOL	0		0.8	V	1
Transmitter Disable (Tx_Disable)	VIH	2.0		Vcc	V	2
MOD_DEF1, MOD_DEF2	VIL	0		0.8	V	2
Clock Rate-I2C						3

Notes:

1. For all control input pins: Tx_Disable.
2. For all status output pins: Rx_LOS, Tx_Fault.
3. For the management interface.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Reference Differential Input Impedance	ZD		100		Ω	1
Signal Speed			10.3		Gbps	2
Differential Data Input Swing	VIN,pp	180		700	mV	
Receiver						
Reference Differential Input Impedance	ZD		100		Ω	1
Signal Speed			10.3		Gbps	2
Differential Data Output Swing		150		850	mV	
Differential Data Output Swing When Squelched				50	mV	
Rise/Fall Time (20-80%)		24			ps	

Notes:

1. AC coupled inside the AOC module.
2. Tested with PRBS 2^{31}-1 and BER:10^{-12}.

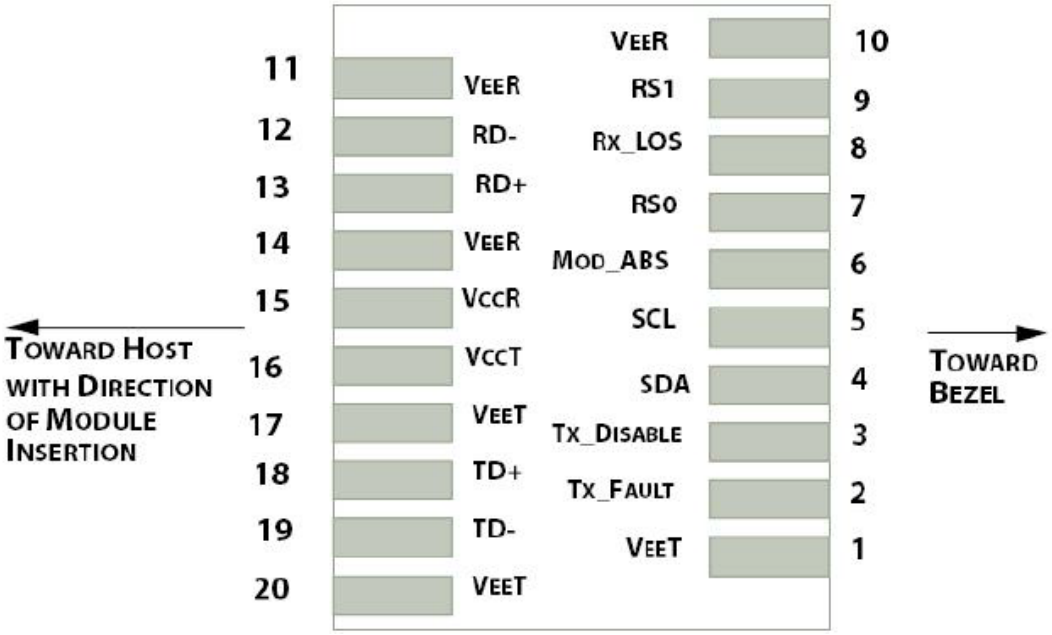
Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground.	1
2	Tx_Fault	Transmitter Fault (LVTTL-O). “High” indicates a fault condition.	2
3	Tx_Disable	Transmitter Disable (LVTTL-I). “High” or “open” disables the transmitter.	3
4	SDA	2-Wire Serial Interface Data Line. LVCMOS-I/O. MOD_DEF2.	4
5	SCL	2-Wire Serial Interface Clock Line. LVCMOS-I/O. MOD_DEF1.	4
6	MOD_ABS	Module Absent (Output). Connected to the VeeT or VeeR in the module.	5
7	RS0	Rate Select 0. Not Used. Presents high input impedance.	
8	Rx_LOS	Receiver Loss of Signal. LVTTL-O.	2
9	RS1	Rate Select 1. Not Used. Presents high input impedance.	
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Inverse Received Data Out (CML-O).	
13	RD+	Received Data Out (CML-O).	
14	VeeR	Receiver Ground.	
15	VccR	+3.3V Receiver Power.	
16	VccT	+3.3V Transmitter Power.	
17	VeeT	Transmitter Ground.	1
18	TD+	Transmitter Data In (CML-I).	
19	TD-	Inverse Transmitter Data In (CML-I).	
20	VeeT	Transmitter Ground.	1

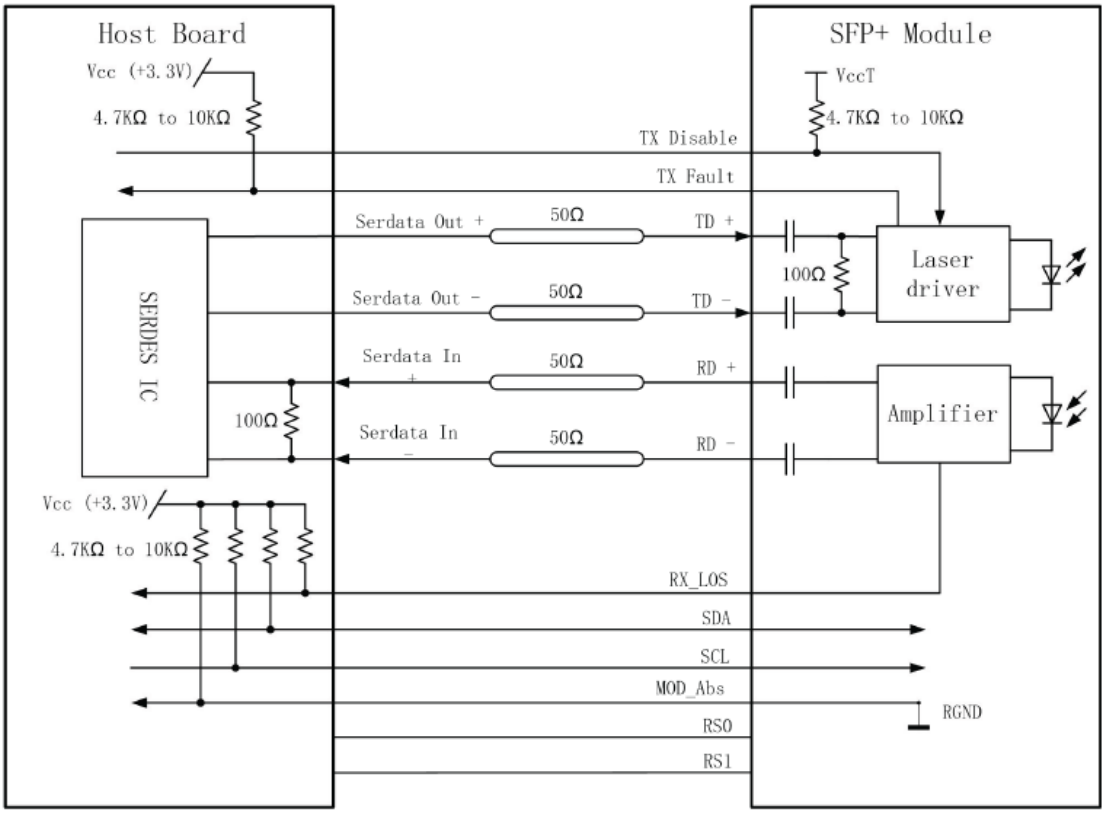
Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that, on the host board, requires a 4.7kΩ to 10kΩ pull-up resistor to the Host_Vcc.
3. This input is internally biased "high" with a 4.7kΩ to 10kΩ pull-up resistor to the VccT.
4. 2-Wire Serial Interface Clock and Data Lines require an external pull-up resistor dependent on the capacitance load.
5. This is a ground return that, on the host board, requires a 4.7kΩ to 10kΩ pull-up resistor to the Host_Vcc.

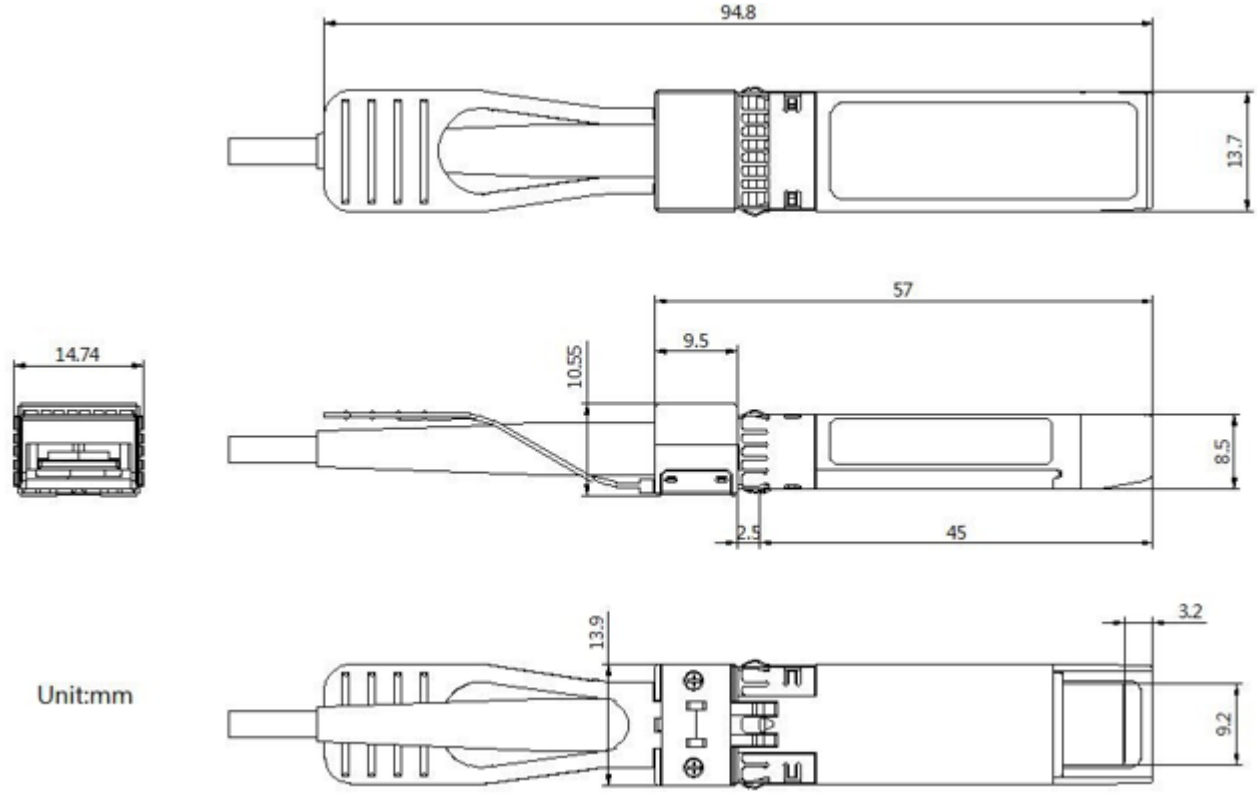
Pin-Out Connectors



Application Interface Circuit



Mechanical Specifications



Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Module Retention		90		170	N	
Module Insertion		0		18	N	
Module Extraction		0		25	N	
Cable Pull Strength – Apply Load at 0°		25			N	
Cable Pull Strength – Apply Load at 90°		20			N	
Cable Bending Radius		50			mm	
Insertion/Removal Cycles		50			Cycles	