

QSFP28-FC Active Optical Cable

Key Features

- ❑ Multirate capability: up to 28.05 Gbps per channel
- ❑ 4-channel full-duplex
- ❑ Single 3.3 V power supply
- ❑ Low power consumption: < 2.0 W per cable end
- ❑ Up to 100 m
- ❑ Hot pluggable
- ❑ Commercial operating case temperature range: 0 to 70°C
- ❑ RoHS compliant



Applications

- ❑ Fibre Channel: 128GFC
- ❑ Proprietary HPC interconnections, SAN

Description

QSFP28-FC AOC fully takes advantage of the high transmission bandwidth, low power consumption, and long reach.

1. Absolute Maximum Ratings

Parameters	Symbol	Min.	Typ.	Max.	Units	Note
Supply Voltage	V_{IN}	0	-	4.0	V	
Storage Temperature	T_{STG}	-20	-	70	°C	Ambient
Relative Humidity	RH	5		85	%	

2. Operating Specifications

Parameters	Symbol	Min.	Typ.	Max.	Units	Note
Operating Case Temperature	T_{OP}	0	-	70	°C	
Power Supply Voltage	V_{CC}	3.13	3.30	3.47	V	
Power Supply Current	I_{CC}	-	600	-	mA	
Power Consumption		-	2.0	-	W	

3. Electrical Characteristics

Parameters	Symbol	Min.	Typ.	Max.	Units	Note
Data Rate (Per Channel)	BR	-	28.05	28.05	Gbps	
Transmitter						
Input Differential Impedance	R_{IN}	-	100	-	Ω	
Differential Data Input Swing	V_{INP-P}	-	-	900	mV	
Receiver						
Output Differential Impedance	R_{OUT}	-	100	-	Ω	
Differential Data Output Swing	V_{OUTP-P}	-	-	800	mV	
Raw Bit Error Ratio (@ 28.05 Gbps)	-	-	-	10^{-6}	-	PRBS 2 ³¹ -1

4. Pin Description

Pin	Name	Description	Note
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	Vcc Rx	3.3V Power supply receiver	2
11	SCL	2-wire serial interface clock	
12	SDA	2-wire serial interface data	
13	GND	Ground	1
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	1
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	3.3V Power supply transmitter	2
30	Vcc 1	3.3V Power Supply	2
31	LPMODE	Low Power Mode	3
32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	1

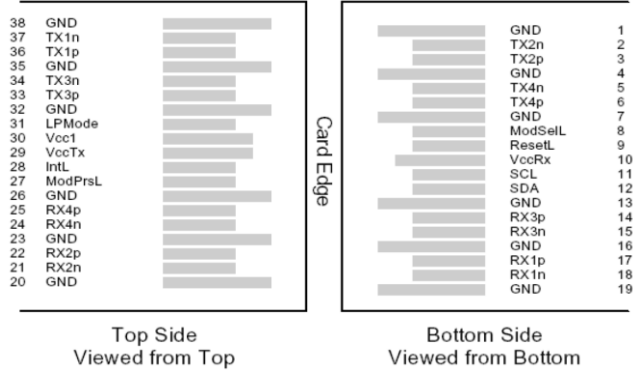
Note : 1. GND is the symbol for signal and supply (power) common for the QSFP module. All are common within the QSFP module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal -common ground plane.

2. Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the QSFP transceiver module in any combination. The connector pins are each rated for a maximum current of 500 mA.

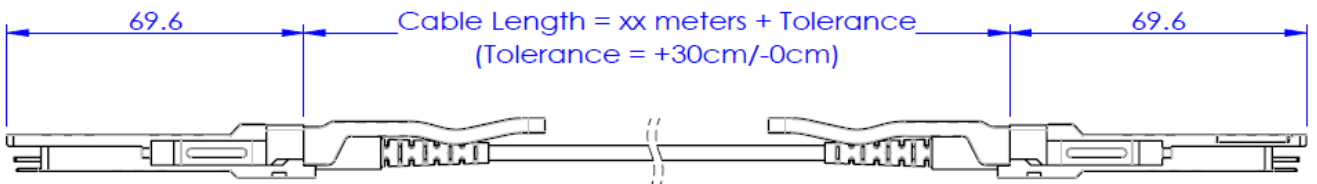
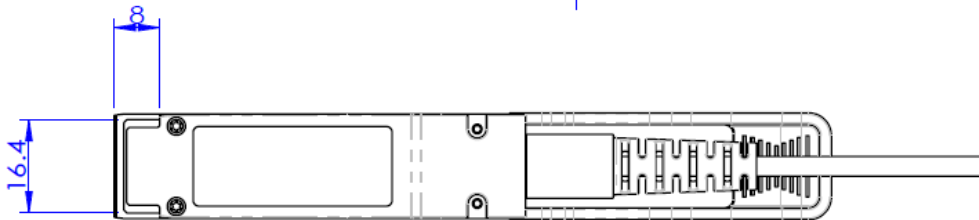
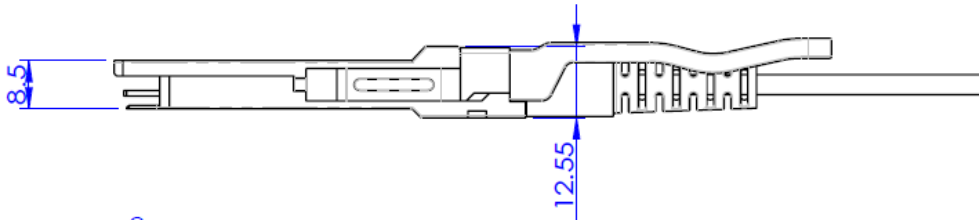
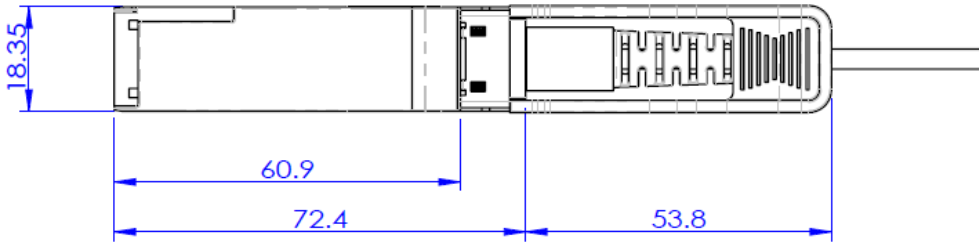
3. No used.

4. Pin Description

PAD Layout



5. Mechanical Specifications



6. Active Optical Cable

Parameter	Value	Unit	Note
Cable Diameter	$\varnothing 3.0 \pm 0.15$	mm	
Minimum Bend Radius	50	mm	
Length Tolerance	+300 / -0	mm	
Cable Jacket	PVC, Aqua (Orange color is available upon request)		

7. Ordering Information

LBXAQ100Fyyy-MSA

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Length in m
(003 – 3m
010 -10m)

Contact

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