

ACTIVE OPTICAL CABLE

40G QSFP+ AOC



FEATURE

- Full duplex 4 channel 850nm parallel active optical cable
- Transmission data rate up to 10.3Gbit/s per channel
- SFF-8436 QSFP+ compliant
- Hot pluggable electrical interface
- Differential AC-coupled high speed data interface
- 4 channels 850nm VCSEL array
- 4 channels PIN photo detector array
- Maximum link length of 300m on OM3 Multimode Fiber (MMF) and 400m on OM4 MMF
- Low power consumption <1.5W
- Operating case temperature 0°C to +70°C
- 3.3V power supply voltage
- RoHS 6 compliant



APPLICATIONS

- Infiniband transmission at 4ch SDR, DDR and QDR
- 40GBASE-SR4 40G Ethernet
- Data Centers

OVERVIEW

QSFP active optic cables are a high performance, low power consumption, long reach interconnect solution supporting 40G Ethernet, fiber channel and PCIe. It is compliant with the QSFP MSA and IEEE P802.3ba 40GBASE-SR4. Focomm QSFP AOC is an assembly of 4 full-duplex lanes, where each lane is capable of transmitting data at rates up to 10Gb/s, providing an aggregated rate of 40Gb/s.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.3	3.6	V
Input Voltage	Vin	-0.3	Vcc+0.3	V
Storage Temperature	Tst	-20	85	°C
Case Operating Temperature	Top	0	70	°C
Humidity(non-condensing)	Rh	5	95	%

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Operating Case temperature	Tca	0		70	°C
Data Rate Per Lane	fd	2.5		10.3	Gbps
Humidity	Rh	5		85	%
Power Dissipation	Pm			1.5	W
Fiber Bend Radius	Rb	3			cm

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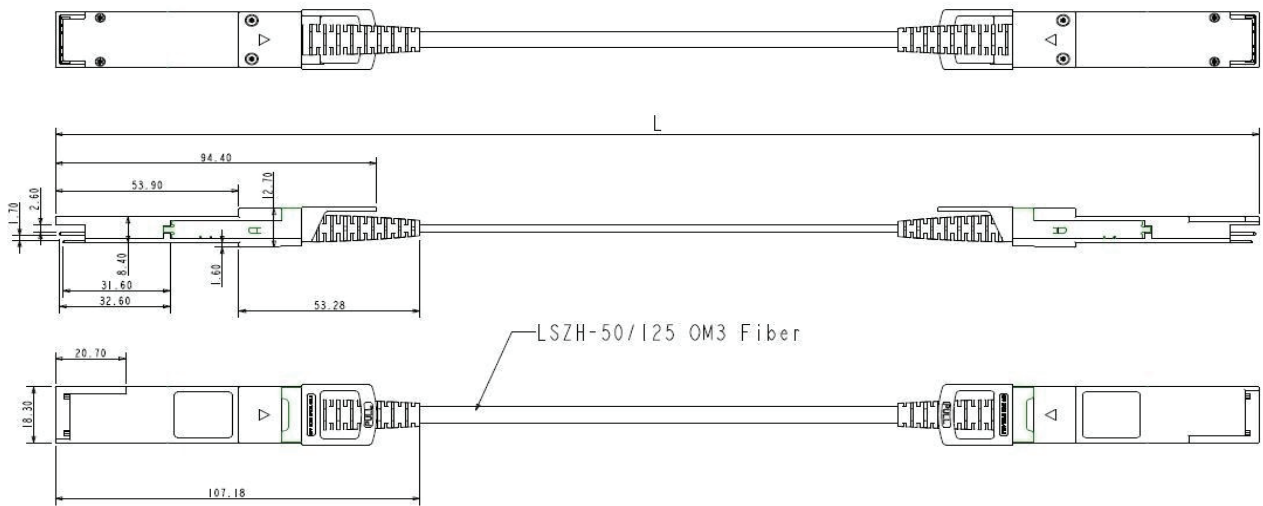
SPECIFICATIONS

Parameter	Symbol	Min	Typical	Max	Unit
Differential input impedance	Zin	90	100	110	ohm
Differential Output impedance	Zout	90	100	110	ohm
Differential input voltage amplitude	ΔV_{in}	300		1100	mVp-p
Amplitude Differential output voltage amplitude	ΔV_{out}	500		800	mVp-p
Skew	Sw			300	ps
Bit Error Rate	BR			E-12	
Input Logic Level High	VIH	2.0		VCC	V
Input Logic Level Low	VIL	0		0.8	V
Output Logic Level High	VOH	VCC-0.5		VCC	V
Output Logic Level Low	VOL	0		0.4	V

OPTICAL CHARACTERISTICS

Parameter	Symbol	Min	Typical	Max	Unit
Transmitter					
Centre Wavelength	λ_c	840	850	860	nm
RMS spectral width	$\Delta\lambda$	-	-	0.65	nm
Average launch power, each lane	Pout	-7.5	-	2.5	dBm
Difference in launch power between any two lanes (OMA)				4	dB
Extinction Ratio	ER	3	-	-	dB
Peak power, each lane				4	dBm
Transmitter and dispersion penalty (TDP), each lane	TDP			3.5	dB
Average launch power of OFF transmitter, each lane				-30	dB
Eye Mask coordinates: X1, X2, X3, Y1, Y2, Y3	SPECIFICATION VALUES 0.23, 0.34, 0.43, 0.27, 0.35, 0.4				
Receiver					
Centre Wavelength	λ_c	840	850	860	nm
Stressed receiver sensitivity in OMA, each lane				-5.4	dBm
Maximum Average power at receiver input, each lane				2.4	dBm
Receiver Reflectance				-12	dB
Peak power, each lane				4	dBm
LOS Assert		-30			dBm
LOS De-Assert – OMA				-7.5	dBm
LOS Hysteresis		0.5			dB

MECHANICAL DIMENSIONS



ORDER INFORMATION

PRODUCT	PART NUMBER
3 meter 40G QSFP+ Active Optical Cable	MC-OPT-QSFP+-AOC-3
5 meter 40G QSFP+ Active Optical Cable	MC-OPT-QSFP+-AOC-5
10 meter 40G QSFP+ Active Optical Cable	MC-OPT-QSFP+-AOC-10
20 meter 40G QSFP+ Active Optical Cable	MC-OPT-QSFP+-AOC-20
300 meter 40G QSFP+ Active Optical Cable	MC-OPT-QSFP+-AOC-300