

Features:

- Compliant with IEEE Std 802.3cd, 400GBASE-SR8 Ethernet
- Compliant with QSFP-DD MSA
- Compliant with QSFP-DD Management interface specifications
- MPO16 APC Male connector receptacle
- 8 channels 850nm VCSEL array
- 8 channels PIN photo detector array
- Up to 425Gb/s data rates
- Single +3.3V power supply
- Commercial operating temperature: 0°C to +70°C



- Up to 70m on OM3 MMF and 100m on OM4 and OM5 MMF
- RoHS Compliant

Applications:

- 400G BASE-SR8 Ethernet
- Data Center

1. Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Max	Unit
Storage Temperature	TS	-40	85	°C
Relative Humidity	RH	15	85	%
Supply Voltage	VCC	-0.5	4.0	V

2. Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	TC	0	25	70	°C
Supply Voltage	VCC	3.135	3.3	3.465	V
Data Rate PER Channel	-	-	53.125	-	Gb/s
Modulation format	PAM4				

3. Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Module Supply Current	I _{cc}	-	-	2.5	A	-
Power Dissipation	PD	-	-	8	W	-
Transmitter						
Input Differential Impedance	Z _{IN}	-	100	-	Ω	-
Differential Data Input Swing	V _{IN} , P-P	180	-	900	mVP-P	-
Transition Time (20% to 80%)	T _r ,T _f			34	ps	
Receiver						
Output Differential Impedance	Z _O	-	100	-	Ω	-
Differential Data Output Swing	V _{OUT} , P-P	300	-	850	mVP-P	1

1. Internally AC coupled, but requires a external 100Ω differential load termination.

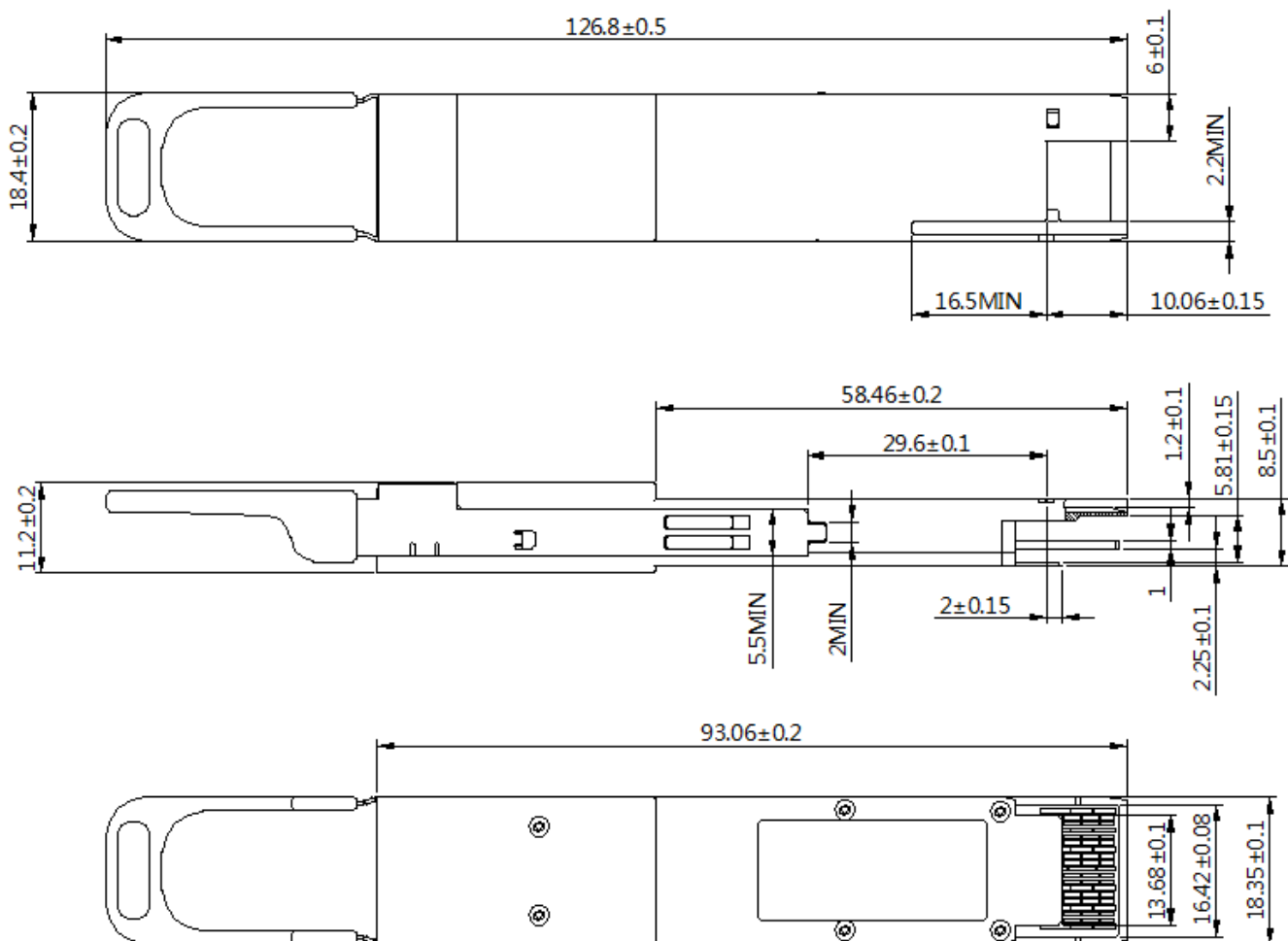
4. Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Launch Optical Power, each lane	P _{avg}	-3.4	-	+3	dBm	1
OMA _{outer} , each lane	P _{oma}	-4.5		+3	dBm	
Center Wavelength Range	λ _c	840	850	860	nm	-
Extinction Ratio	EX	3	-	-	dB	2
Spectral width(RMS)	Δλ	-	-	0.6	nm	
Transmitter and Dispersion for PAM4	TDECQ	-	-	4.5	dB	2
Average launch power of OFF transmitter	P _{off}	-	-	-30	dBm	
Optical Return Loss Tolerance	ORLT	-	-	12	dB	-
TX Disable Assert Time	T _{off}	-	-	100	ms	
TX Disable De-assert Time	T _{on}	-	-	400	ms	
Receiver						
Center Wavelength	λ _c	840	850	860	nm	-
Receiver Sensitivity (P _{oma})	S _{oma}	-	-	-6.5	dBm	3
Receiver Sensitivity (P _{avg})	S _{avg}	-	-	-5.4	dBm	4
Receiver Overload (P _{avg})	POL	4	-	-	dBm	
Damage Threshold	POL	5	-	-	dBm	
Optical Reflectance	ORL	-	-	-12	dB	-

LOS De-Assert	LOSD	-	-	-9	dBm	-
LOS Assert	LOSA	-30	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	-

1. The optical power is launched into OM3 MMF.
2. Measured with a SSPRQ test pattern @ 53.125Gb/s PAM4 format.
3. Measured with PRBS31Q test pattern, 53.125Gb/s, PAM4, BER<2.4E⁻⁴.
4. Measured with PRBS31Q test pattern, 53.125Gb/s, PAM4, BER<2.4E⁻⁴, ER=3.5dB

5. Mechanical Diagram



Note: External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

6. Ordering Information

OEM	Part Number	OEM	Part Number
Arista	QDD-400G-SR8-C-A	Juniper	QDD-400G-SR8-A
Cisco	QDD-400G-SR8-S-A	Mellanox	MMA1U00-WS-A
MSA Generic	AN-QSFPDD-MR-SR8	MSA OnePort	OP-QSFPDD-MR-SR8

7. Contact Information

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