

### Features

- 53.125 GBd PAM4 x4 channel 400G-SR4 Optical interface
- 26.5625 GBd PAM4 x8 channel 400G AUI-C2M Electrical interface
- Up to 100m transmission distance on OM4 OM5 MMF
- 850nm VCSEL and PIN receiver
- QSFP-DD MSA package with MPO-12 APC
- Very low EMI and excellent ESD protection
- +3.3V power supply
- Power consumption less than 8W
- Operating case temperature: 0~70°C
- IIC rate up to 1MHz

### Applications

- 400G Ethernet
- Datacenter switch

### 1. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	TSTG	-40		85	°C
Operating Relative Humidity <sup>1</sup>		5		85	%
Supply Voltage	VCC	-0.5		3.6	V
Optical Input Power	PIN	5			dBm

Note 1: No condensation



### Compliance

- Compliant with QSFP-DD MSA
- Compliant with IEEE 802.3db
- Compliant with IEEE 802.3bs
- Compliant with CMIS Rev4.0
- Compliant with OIF-CEI-05.0
- Compliant with RoHS 2.0

## 2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Case temperature	Tcase	0		70	°C
Supply Voltage	VCC	3.135	3.3	3.465	V
Supply Current	ICC			2552	mA
Module Power Dissipation	P			8	W

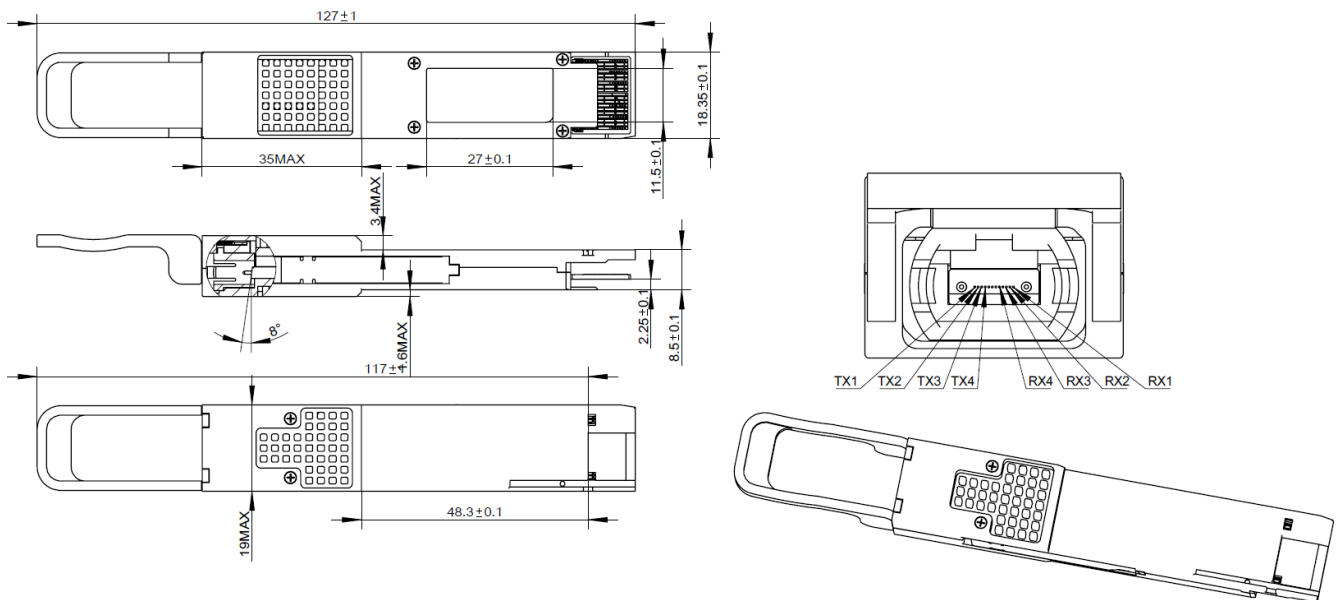
## 3. Operating Characteristic-Optical/Electrical

Parameter	Symbol	Unit	Min.	Typical	Max.
<b>Transmitter</b>					
Data Rate per channel (PAM4)	DR		53.125		GBd
Frequency tracking	Ft	-100		100	Ppm
Center Wavelength	$\lambda C$		850		nm
RMS Spectral Width <sup>1</sup>				0.6	nm
Laser Off Power	Poff			-30	dBm
Average Optical Power	Pavg	-4.6		4	dBm
Extinction Ratio	ER	2.5			dB
Transmitter and dispersion eye closure	TDECQ	0.8		4.4	dB
Outer Optical Modulation Amplitude <sup>2</sup>	OMAouter	-2.6		3.5	
Encircled flux, each lane <sup>3</sup>		dB	≥ 86% @ 19 $\mu$ m, ≤ 30% @ 4.5 $\mu$ m		
Optical Return Loss Tolerance				14	dB
<b>Receiver</b>					
Data Rate per channel (PAM4)	DR		26.5625		GBd
Frequency tracking	Ft	-100		100	ppm
Center Wavelength	$\lambda r$		850		nm
Average receive power <sup>4</sup>		-6.4		4	dBm
Receiver Reflectance				-15	dB
Receiver sensitivity(OMAouter)				-4.6	
Differential Data Output Voltage Peak to Peak Swing	Vopp			900	mV
Differential output Impedance	Zos	90	100	110	ohm
Transition Time, 20 to 80%	Tr, Tf	9.5			ps
Los Assert	LosA	-15			dBm
Los Deassert	LosD			-7	dBm
Hysteresis	Hys	0.5			dB

**Notes:**

1. RMS spectral width is the standard deviation of the spectrum.
2. if  $\max(\text{TECQ}, \text{TDECQ}) \leq 1.8\text{dB}$ , the OMA (min) = -2.6, if  $1.8 < \max(\text{TECQ}, \text{TDECQ}) \leq 4.4\text{dB}$ , the OMA (min) =  $-4.4 + \max(\text{TECQ}, \text{TDECQ})$
3. If measured into type A1a.2, type A1a.3 or type A1a.4, 50  $\mu\text{m}$  fiber, in accordance with IEC 61280-1-4.
4. Average receive power, each lane (min) is informative and not the principal indicator of signal strength. A received power below this value cannot be compliant; however, a value above this does not ensure compliance.

## 4. 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.

## 5. Ordering Information

OEM	Part Number	OEM	Part Number
Arista	QDD-400G-VSR4-A	MSA	AN-QSFPDD-SR4

## 6. Contact Information

Tel: 800.590.9535

Web: <http://www.approvednetworks.com>