OSFP-FIN-800G-DR8-5

800GBase-DR8, OSFP, 2x 400G DR4, SMF TRANSCEIVER
1310nm, 500m REACH, DUAL MPO-12 APC CONNECTOR

Features

- 8x100G PAM4 data rates
- Hot pluggable OSFP form factor
- 5nm DSP for low power dissipation: <14W
- Electrical interface compliant with 100Gbps per lane defined by IEEE 802.3ck
- I2C Management interface compliant to CMIS Rev 5.0
- Compliant with IEEE Std 802.3 400GBASE DR4
- Internal CDR on both Transmitter and Receiver channels
- OSFP MSA package with Dual MPO 12 connectors
- Cooled 1 310 EML Laser
- Up to 500m on 9/125um SMF
- Single +3.3V power supply
- Class 1 laser safety certified
- Operating case temperature range: 0ºC to 70ºC
- RoHS 6 Compliant

Applications

- High speed storage area networks
- 2x 400G DR4 applications

Absolute Maximum Ratings				
Parameter	**Symbol**	**Minimum**	**Maximum**	**Unit**
Storage Temperature	TS	-40	85	ºC
Relative Humidity	RH	5	95	%
Supply Voltage	VCC	-0.5	3.6	V

Note: 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 othe r 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.

Recommended Operating Conditions					
Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**
Operating Temperature	TC	0	40	70	°C
Supply Voltage	VCC	3.135	3.3	3.465	V
Data Rate			106.25	-	Gb/s
			53.125	-	Gb/s

Electrical Characteristics						
Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**	**Notes**
Module Supply Current	Icc	-	-	4.47	A	
Power Dissipation	PD	-	-	14	W	
Transmitter						
Input Differential Impedance	ZIN	90	100	110	Ω	
Differential Data Input Swing	VIN, P-P	-	-	900	mVP-P	
DC Common-Mode Input Voltage		-350	-	2850	mV	
Receiver						
Output Differential Impedance	ZO	90	100	110	Ω	
Differential Data Output Swing	VOUT, P-P	-	-	900	mVP-P	1
Dual Function Signals						
INT/RSTn	V_INT/RSTn_1	0.000	0.000	1.000	V	2
	V_INT/RSTn_2	0.000	0.000	1.000	V	3
	V_INT/RSTn_3	1.500	1.900	2.250	V	4
	V_INT/RSTn_4	2.750	3.000	3.465	V	5
LPWn/PRSn	V_ LPWn/PRSn_1	0.000	0.950	1.100	V	6
	V_ LPWn/PRSn_2	1.400	1.700	2.250	V	7
	V_ LPWn/PRSn_3	2.750	3.300	3.465	V	8

Notes:

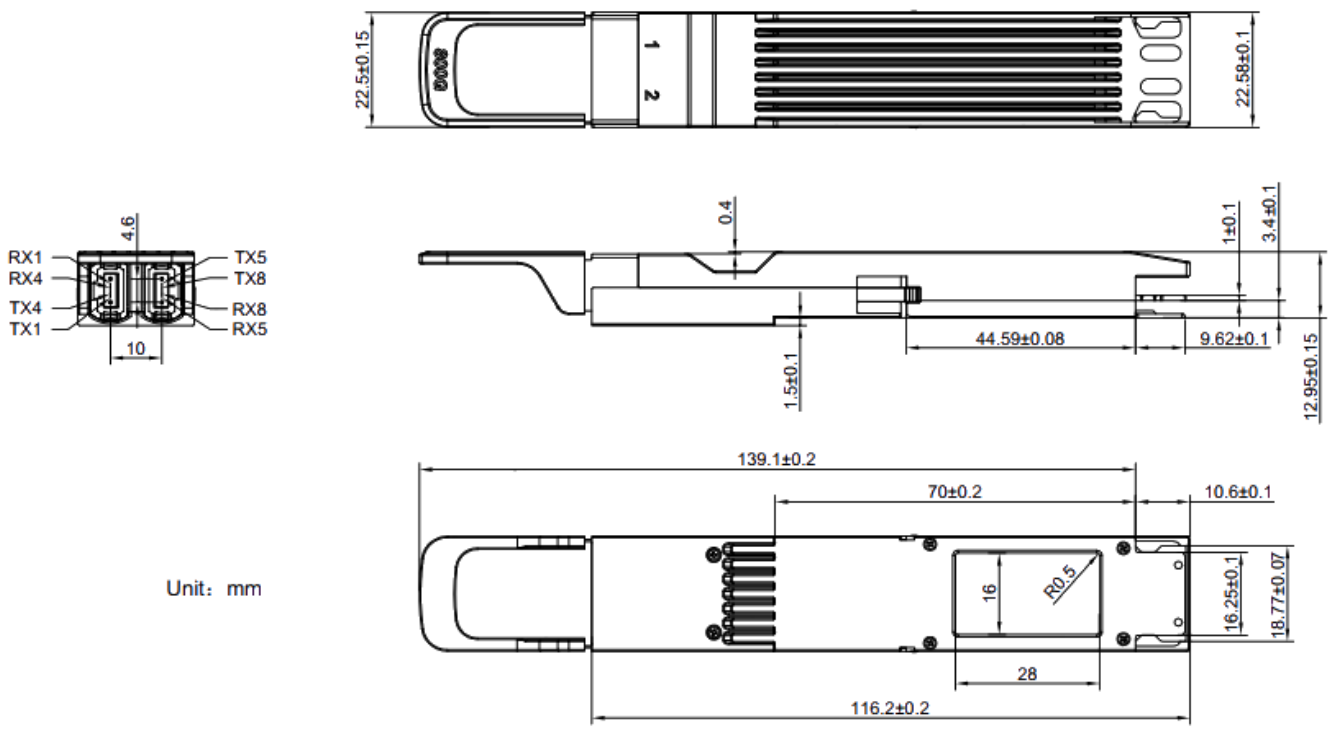
1. Internally AC coupled, but requires an external 100Ω differential load termination.
2. INT/RSTn voltage for no Module.
3. INT/RSTn voltage for Module installed, H_RSTn=Low.
4. INT/RSTn voltage for Module installed, H_RSTn=High, M_INT=Low.
5. INT/RSTn voltage for Module installed, H_RSTn=High , M_INT=High.
6. LPWn/PRSn voltage for Module installed, H_LPWn=Low.
7. LPWn/PRSn voltage for Module installed, H_LPWn =High.
8. LPWn/PRSn voltage for no Module.

Optical Characteristics						
Parameter	**Symbol**	**Minimum**	**Typical**	**Maximum**	**Unit**	**Notes**
Transmitter						
Average launch power, each lane	Po(100G)	-2.9	-	4	dBm	1
	Po(50G)	-5.1		3	dBm	1
Outer Optical Modulation Amplitude, each lane	P1 (100G)	-0.8	-	4.2	dBm	1
	P1(50G)	-3		2.8	dBm	1
Extinction Ratio	EX	3.5	-	-	dB	2,3
Lane wavelengths	λ	1304.5	-	1317.5	nm	4
Side-mode suppression ratio	SMSR	30	-	-	dB	5
Transmitter and dispersion penalty						
eye closure for 100Gbps PAM4, each lane	TDECQ1	-	-	3.4	dB	2
Transmitter and dispersion penalty eye closure for 50Gbps PAM4, each lane	TDECQ2	-	-	3.2	dB	3
Launch power in OMAouter minus TDECQ for 100Gbps PAM4, each lane	OMA-TDECQ	-2.2	-	-	dBm	2
Launch power in OMAouter minus TDECQ for 50Gbps PAM4, each lane	OMA-TDECQ	-4.4	-	-	dBm	3
Average launch power of OFF transmitter	Poff	-	-	-15	dBm	-
Optical Return Loss Tolerance	ORLT	-	-	21.4	dB	-
Transmitter reflectance	-	-	-	-26	dB	-
Receiver						
Lane wavelengths	λ	1304.5	-	1317.5	nm	-
100G Receiver Sensitivity (OMA)	RxSENS1	-	-	-3.9	dBm	1
50G Receiver Sensitivity (OMA)	RxSENS2	-	-	-6.1	dBm	2
Receiver Overload, each lane (Pavg)	POL	4	-	-	dBm	
Damage Threshold, each lane		5	-	-	dBm	
Receive power, each lane (OMAouter)	OMA	-	-	4.2	dBm	-
Receiver Reflectance		-	-	-26	dB	-
LOS De-Assert	LOSD	-	-	-10	dBm	-
LOS Assert	LOSA	-16	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	-

Notes:

1. Class 1 Laser Safety per FDA/CDRH and EN (IEC) 60825 regulations.
2. 106.25 Gbps PAM4.
3. 53.125Gbps PAM4.
4. 13nm width.
5. Modulated.
6. Measured with PRBS31Q test pattern, 53.125GBd , PAM4, BER<2.4E⁴
7. Measured with PRBS31Q test pattern, 26.5625GBd , PAM4, BER<2.4E⁴

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.

Ordering Information

OEM	Part Number	OEM	Part Number
Arista	OSFP-800G-2DR4-A	Juniper	OSFP-2X400G-DR4-P-A
MSA	AN-O800G-FIN-DR8	Nvidia	MMS4X00-NM-A

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