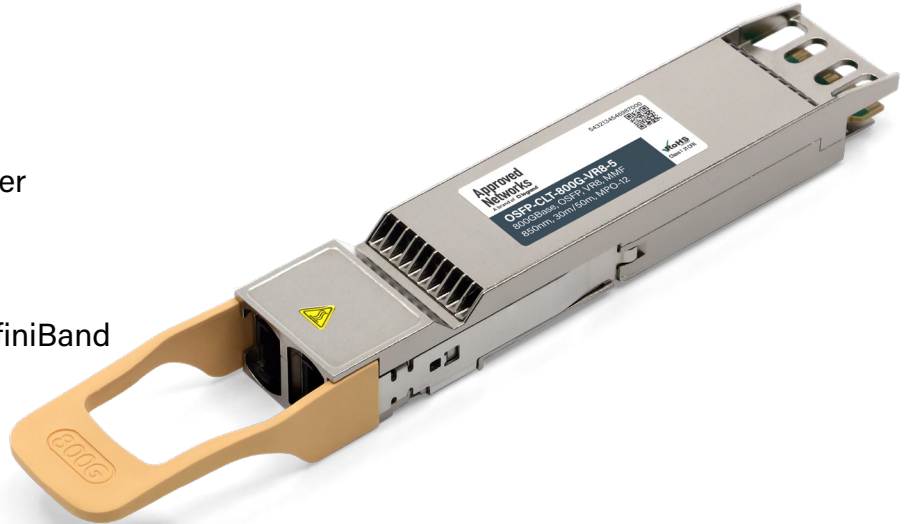


Features

- Hot-pluggable OSFP form factor
- VCSEL transmitter and PIN PD receiver
- Support 850Gb/s aggregate bit rate
- Support both 8x100G Ethernet and InfiniBand NDR
- Compliant with IEEE 802.3-2022:
 - 8x100GBASE-VR1 optical interface
- Compliant with IEEE 802.3ck-2022:
 - 8x100GAUI-1 C2M electrical interface
- Compliant with InfiniBand Trade Association (IBTA)
- Specification 1.6 - InfiniBand NDR electrical and optical interface
- Compliant with OSFP MSA Specification Rev 5.0
- Type 2 housing with Dual MPO-12/APC receptacle
- Compliant with CMIS Rev 5.0
- Case operating temperature 0°C to 70°C
- Power dissipation < 16W
- Two wire serial Interface with digital diagnostic monitoring
- Complies with EU Directive 2011/65/EU (RoHS compliant)
- Class 1 Laser



1. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	85	°C
Supply Voltage	VCC	-0.5	3.6	V
Relative Humidity (non-condensing)	RH	5	85	%
Data Input Voltage Differential	IVDIP-VDINI	-	1	V
Control Input Voltage	VI	-0.3	VCC+0.5	V
Control Output Current	IO	-20	20	mA

2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	TOPR	0	-	70	°C
Power Supply Voltage	VCC	3.135	3.3	3.465	V
Instantaneous peak current at hot plug	ICC_IP	-	-	6400	mA
Sustained peak current at hot plug	ICC_SP	-	-	5328	mA
Maximum Power Dissipation	PD	-	-	16	W
Maximum Power Dissipation, Low Power Mode	PDLP	-	-	2	W
Signalling Speed per Lane	DRL	-	53.125	-	GBd
Control Input Voltage High	VIH	VCC*0.7	-	VCC+0.3	V
Control Input Voltage Low	VIL	-0.3	-	VCC*0.3	V
Two Wire Serial Interface Clock Rate	-	-	-	400	kHz
Power Supply Noise 1 kHz - 1 MHz (p-p)	-	-	-	66	mVpp
Operating Distance ¹	-	2	-	50	m

Notes:

1. 0.5m to 30m for OM3, 0.5m to 50m for OM4 and OM5, with FEC.

3. Optical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Transmitter					
Signaling rate, each lane (range)	-	53.125 ± 100 ppm			GBd
Wavelength	λC	844	-	860	nm
RMS spectral width ¹	RMS	-	-	0.65	dB
Average Launch Power, each lane	AOPL	-4.6	-	4	dBm
Outer Optical Modulation Amplitude (OMA _{outer}), each lane for max (TECQ, TDECQ) ≤ 1.8 dB for 1.8 < max (TECQ, TDECQ) ≤ 4.4 dB	OMA _{outer}	-2.6 -4.4+max- (TECQ, TDECQ)		3.5	dBm
Transmitter and Dispersion Eye Closure for PAM4					
(TDECQ), each lane	TDECQ	-	-	4.4	dB
Transmitter eye closure for PAM4					
(TECQ), each lane	TECQ	-	-	4.4	dB
Over/under-shoot	-	-	-	29	%
Transmitter power excursion, each lane	-	-	-	2.3	dBm

Average Launch Power of OFF Transmitter, each lane	TOFF	-	-	-30	dBm
Extinction Ratio, each lane	ER	2.5	-	-	dB
Transmitter transition time, each lane	Tr	-	-	17	ps
RIN14OMA	RIN			-132	dB/Hz
Optical return loss tolerance	ORL			14	dB
Encircled flux	-	>=86% at 19µm <=30% at 4.5µm			
Receiver					
Signaling rate, each lane (range)	-	53.125 ± 100 ppm			GBd
Wavelength	λC0	840	-	860	nm
Damage Threshold, each Lane	AOPD	5	-	-	dBm
Average Receive Power, each Lane	AOPR	-6.3	-	4	dBm
Receive Power (OMAouter), each Lane	OMAR	-	-	3.5	dBm
Receiver Reflectance	RR	-	-	-15	dB
Receiver sensitivity (OMAouter) for TECQ < 1.4 dB for 1.4 dB <=TECQ<=3.4 dB	SOMA	-	-	-4.4 -6.2 + TECQ	dBm
Stressed Receiver Sensitivity (OMAouter), each Lane ²	SRS	-	-	-1.8	dBm
Conditions of stressed receiver sensitivity test					
Stressed eye closure for PAM4 (SECQ), lane under test	SECQ	-	4.4	-	dB
OMAouter of each aggressor lane			3.5		dBm

Notes:

1. RMS spectral width is the standard deviation of the spectrum.
2. Measured with conformance test signal at TP3 for the BER = 2.4x10⁻⁴.

4. Electrical Specification High Speed Signal

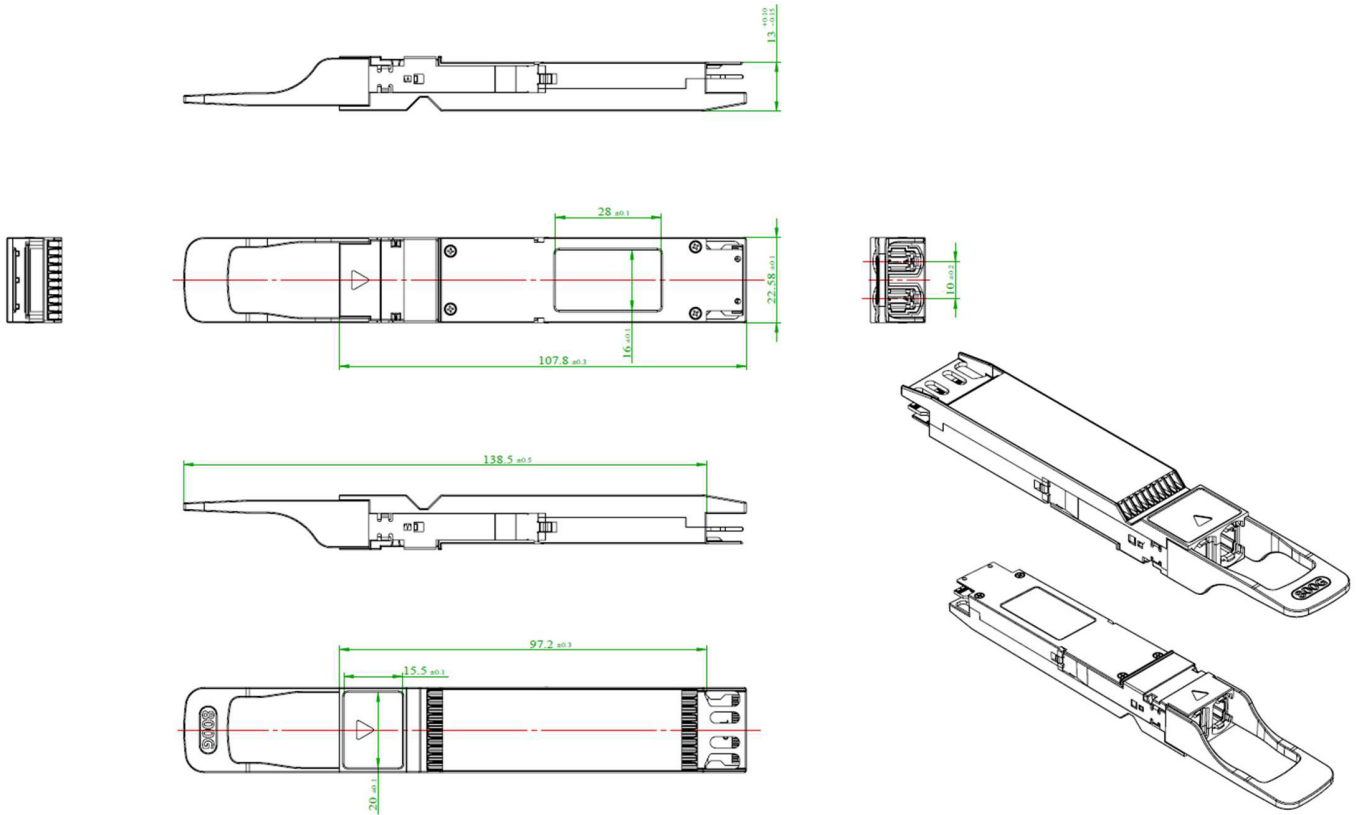
Parameter	Symbol	Min.	Typ.	Max.	Unit
Receiver (Module Output, TP4)					
Peak-to-peak AC common-mode voltage Low-frequency, VCMLF Full-band, VCMFB	-	-	-	32 80	mV
Differential peak-to-peak output voltage Short mode Long Mode	-			600 845	mV
Eye height	EH	15	-	-	mV

Vertical eye closure	VEC	-	-	12	dB
Common-mode to differential-mode return loss	RLDc	802.3ck 120G-1			dB
Effective return loss	ERL	8.5	-	-	dB
Differential termination mismatch	-	-	-	10	%
Transition time	-	8.5	-	-	ps
DC common-mode voltage tolerance	-	-0.35	-	2.85	V
Transmitter (Module Input, TP1)					
Differential pk-pk input Voltage tolerance (TP1a)	-	750	-	-	mV
Peak-to-peak AC common-mode voltage tolerance					mV
Low-frequency, VCMLF		32			
Full-band, VCMFB		80			
Differential-mode to common-mode return loss	RLcd	802.3ck 120G-2			dB
Effective return loss	ERL	8.5	-	-	dB
Differential termination mismatch	-	-	-	10	%
Single-ended voltage tolerance range	-	-0.4	-	3.3	V
DC common-mode voltage tolerance	-	-0.35	-	2.85	V

5. Electrical Specification Low Speed Control and Sense Signals

Parameter	Symbol	Min.	Max.	Unit
Module output SCL and SDA	VOL	0	0.4	V
Module Input SCL and SDA	VIL	-0.3	VCC*0.3	V
	VIH	VCC*0.7	VCC+0.5	
InitMode, ResetL and ModSelL	VIL	-0.3	0.8	V
	VIH	2	VCC+0.3	V
IntL	VOL	0	0.4	V
	VOH	VCC-0.5	VCC+0.3	V

6. 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.

7. Ordering Information

OEM	Part Number	OEM	Part Number
MSA	AN-O800G-CLT-VR8	Nvidia	MMA4Z00-NS-A

8. Contact Information

Tel: 800.590.9535

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