

Features

- 4 Parallel lanes design
- Compliant with 100G-PSM4-Specification MSA
- Compliant to IEEE 802.3bm
- 4 channels PIN photo detector
- Up to 27.95Gb/s per channel data links
- Single +3.3V power supply
- Class 1 laser safety certified
- Commercial operating temperature: 0 °C to +70°C
- Up to 10km on SMF
- RoHS Compliant



Applications

- 100Gb/s Ethernet links
- OTU4
- Data center

1. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	85	°C
Relative Humidity	RH	5	95	%
Supply Voltage	VCC	-0.5	4.0	V

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.

2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	TC	0	25	70	°C
Supply Voltage	VCC	3.135	3.3	3.465	V
Data Rate PER Channel	-	-	25.78 27.95	-	Gb/s

3. Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Launch Optical Power per lane	Po	-4	-	2	dBm	1
Transmitter and dispersion penalty per lane	TDP	-	-	2.9	dBm	-
Side Mode Suppression Ratio	SMSR	30	-	-	dB	-
Center Wavelength Range	Λ	1295	1310	1325	nm	-
Extinction Ratio	ER	3.5	-	-	dB	2
Optical Return Loss Tolerance	ORLT	-	-	20	dB	-
Pout @TX-Disable Asserted	Poff	-	-	-30	dBm	1
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3}	{0.31,0.4,0.45,0.34,0.38,0.4}					
Receiver						
Center Wavelength	λ_c	1295	-	1325	nm	-
Average receive power, each lane	P1	-12.66	-	2.00	dBm	-
Receiver Sensitivity1 (AVG)@5E-5, each Lane	Savg	-	-	-11.8	dBm	3
Receiver Sensitivity1 (OMA)@5E-5, each Lane	Soma	-	-	-12.0	dBm	3
Receiver Sensitivity1 (AVG)@5E-5, each Lane	Savg	-	-	-10.8	dBm	4
Receiver Sensitivity1 (OMA)@5E-5, each Lane	Soma	-	-	-11.0	dBm	4
Overload (each channel)	POL	2.0	-	-	dBm	3
Damage Threshold	Pdamage	3.0	-	-	dBm	-
LOS De-Assert	LOSD	-	-	-12.5	dBm	-
LOS Assert	LOSA	-24	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	-

Notes:

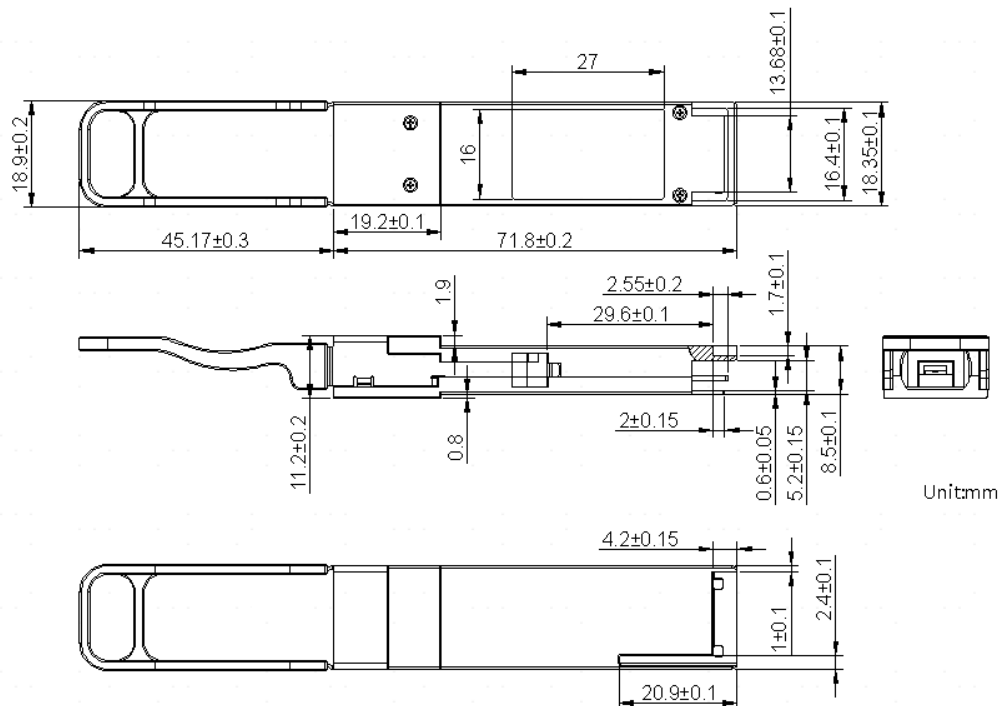
1. The optical power is launched into SMF.
2. Measured with a PRBS $2^{31}-1$ test pattern @25.78125Gbps.
3. Measured with PRBS $2^{31}-1$ test pattern, at 25.78125Gb/s each lane, BER= 5×10^{-5} .
4. Measured with PRBS $2^{31}-1$ test pattern, at 27.95Gb/s each lane, BER= 5×10^{-5} .

4. Electrical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Module Supply Current	I _{cc}	-	-	1100	mA	-
Power Dissipation	PD	-	-	3500	mW	-
Transmitter						
Input Differential Impedance	Z _{IN}	90	100	110	Ω	-
Differential Data Input Swing	V _{IN} , P-P	190	-	700	mVP-P	-
AC Common Mode Input Voltage Tolerance	-	15	-	-	mV	-
Receiver						
Output Differential Impedance	Z _O	90	100	110	Ω	-
Differential Data Output Swing	V _{OUT} , P-P	300	-	850	mVP-P	1
AC Common Mode Output Voltage	-	-	-	7.5	mV	-
Single-ended Output Voltage	-	-0.3	-	4	V	-

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

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
MSA Generic	AN-QSFP28-PLR4		

7. Contact Information

Tel: 800.590.9535

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