

## Features

- Compliant with industry standards 100G-ER1-30 MSA
- Compliant with SFF-8679 MSA hardware specification
- Compliant with SFF-8636
- Compliant with SFF-8661
- EML laser
- APD receiver
- Up to 40km on 9/125um SMF
- Operating temperature -40°C to +85°C
- Trouble-free installation and network bring-up
- RoHS Compliant



## Applications

- Data Center
- 100 Gigabit Ethernet

## 1. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units
Storage Temperature	TS	-40	85	°C
Relative Humidity	RH	5	95	%
Supply Voltage	VCC	-0.5	3.6	V

## 2. General Specifications

Parameter	Symbol	Min	Typical	Max	Units
Data Rate <sup>1</sup>	BR	53.125±100ppm			GBd
Bit Error Rate	BER	-	-	2.4E-4	-
Supported Link Length on 9/125um SMF, 53.125 GBd <sup>2</sup>	L	-		40	km

### Notes:

1. Tested with a PRBS31Q test pattern for 53.125 GBd operation.
2. Distances are based on FC-PI-6 Rev. 3.1 and IEEE 802.3 standards, with FEC.

### 3. Electrical Characteristics

Parameters	Symbol	Min.	Typ.	Max.	Unit
<b>Transmitter</b>					
Module Supply Current	Icc	-	-	1435	mA
Power Dissipation	PD	-	-	4500	mW
Input Differential Impedance	Zin	90	100	110	$\Omega$
Differential Data Input Swing	Vin, p-p	180	-	900	mVP-P
<b>Receiver</b>					
Output Differential Impedance	Zo	90	100	110	$\Omega$
Differential Data Output Swing	Vout, p-p	300	-	900	mVP-P

### 4. Optical Characteristics

Parameters	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Launch Optical Power (Average)	Po	0	-	5.6	dBm	1
Launch Optical Power(OMA)	Poma	3.0	-	6.4	dBm	TDECQ < 1.4 dB
		1.6+ TDECQ				1.4 dB $\leq$ TDECQ $\leq$ TDECQ (max)
Extinction Ratio	ER	5	-	-	dB	-
Center Wavelength Range	$\lambda_c$	1304.06	1304.58	1305.1	nm	-
Transmitter and dispersion penalty eye closure for PAM4	TDECQ	-	-	3.9	dB	-
RIN15OMA (max)	RIN	-	-	-136	dB/Hz	
Optical Return Loss Tolerance	ORLT	-	-	15	dB	
Pout @TX-Disable Asserted	Poff	-	-	-15	dBm	
<b>Receiver</b>						
Center Wavelength	$\lambda_c$	1308.61	1309.14	1309.66	nm	-
Receive power (Pave)		-14.7	-	-3.4	dBm	
Receiver Sensitivity (OMA)	RxSENS_oma	-		-12.5	dBm	TECQ < 1.4 dB
		-		-13.9 + TECQ		1.4 $\leq$ TECQ $\leq$ 3.9 dB
Receiver Sensitivity(Pave)		-	-	-12.67	dBm	
Receiver reflectance				-26	dB	
LOS De-Assert	LOSD	-	-	-16	dBm	

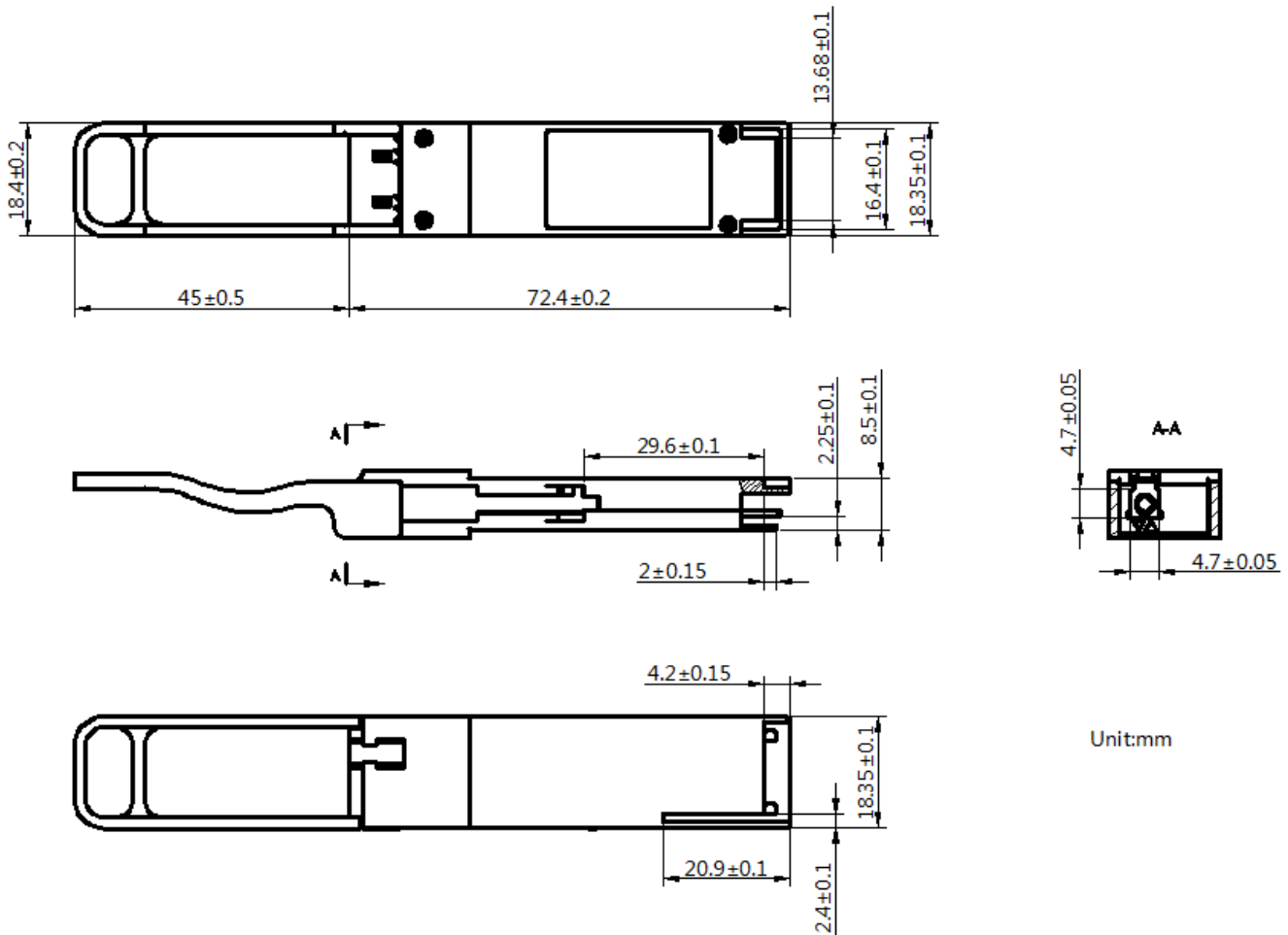
LOS Assert	LOSA	-24	-	-	dBm	
LOS Hysteresis	-	0.5	-	-	dB	

**Notes:**

1. Class 1 Laser Safety per FDA/CDRH and EN (IEC) 60825 regulations.

Measured with PRBS31Q test pattern, 53.125GBd, BER<2.4E-4.

**5. Mechanical Diagram**



Unit:mm

**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	AN-Q28-ER1L-BX49-I	OnePort	OP-Q28-ER1L-BX49-I

## 7. Contact Information

Tel: 800.590.9535

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