

Features

- Compliant with industry standards 100G-ER1-40 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 ¹	BR	53.125±100ppm			GBd
Bit Error Rate	BER	-	-	2.4E-4	-
Supported Link Length on 9/125um SMF, 53.125 GBd ²	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
Transmitter					
Module Supply Current	I _{cc}	-	-	1435	mA
Power Dissipation	PD	-	-	4500	mW
Input Differential Impedance	Z _{in}	90	100	110	Ω
Differential Data Input Swing	V _{in} , p-p	180	-	900	mVP-P
Receiver					
Output Differential Impedance	Z _o	90	100	110	Ω
Differential Data Output Swing	V _{out} , p-p	300	-	900	mVP-P

4. Optical Characteristics

Parameters	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power (Average)	P _o	1.7	-	7.1	dBm	1
Launch Optical Power(OMA)	P _{oma}	4.7	-	7.9	dBm	TDECQ < 1.4 dB
		3.3+ TDECQ				1.4 dB ≤ TDECQ ≤ TDECQ (max)
Extinction Ratio	ER	5	-	-	dB	-
Center Wavelength Range	λ _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	
P _{out} @TX-Disable Asserted	P _{off}	-	-	-15	dBm	
Receiver						
Center Wavelength	λ _c	1308.61	1309.14	1309.66	nm	-
Receive power (P _{ave})		-16	-	-3.4	dBm	
Receiver Sensitivity (OMA)	RxSENS_oma	-		-13.8	dBm	TECQ < 1.4 dB 1.4 ≤ TECQ ≤ 3.9 dB
		-		-15.2 + TECQ		
Receiver Sensitivity(P _{ave})	RxSENS_Pave	-	-	-14	dBm	
		-	-	-15.4 + TECQ		

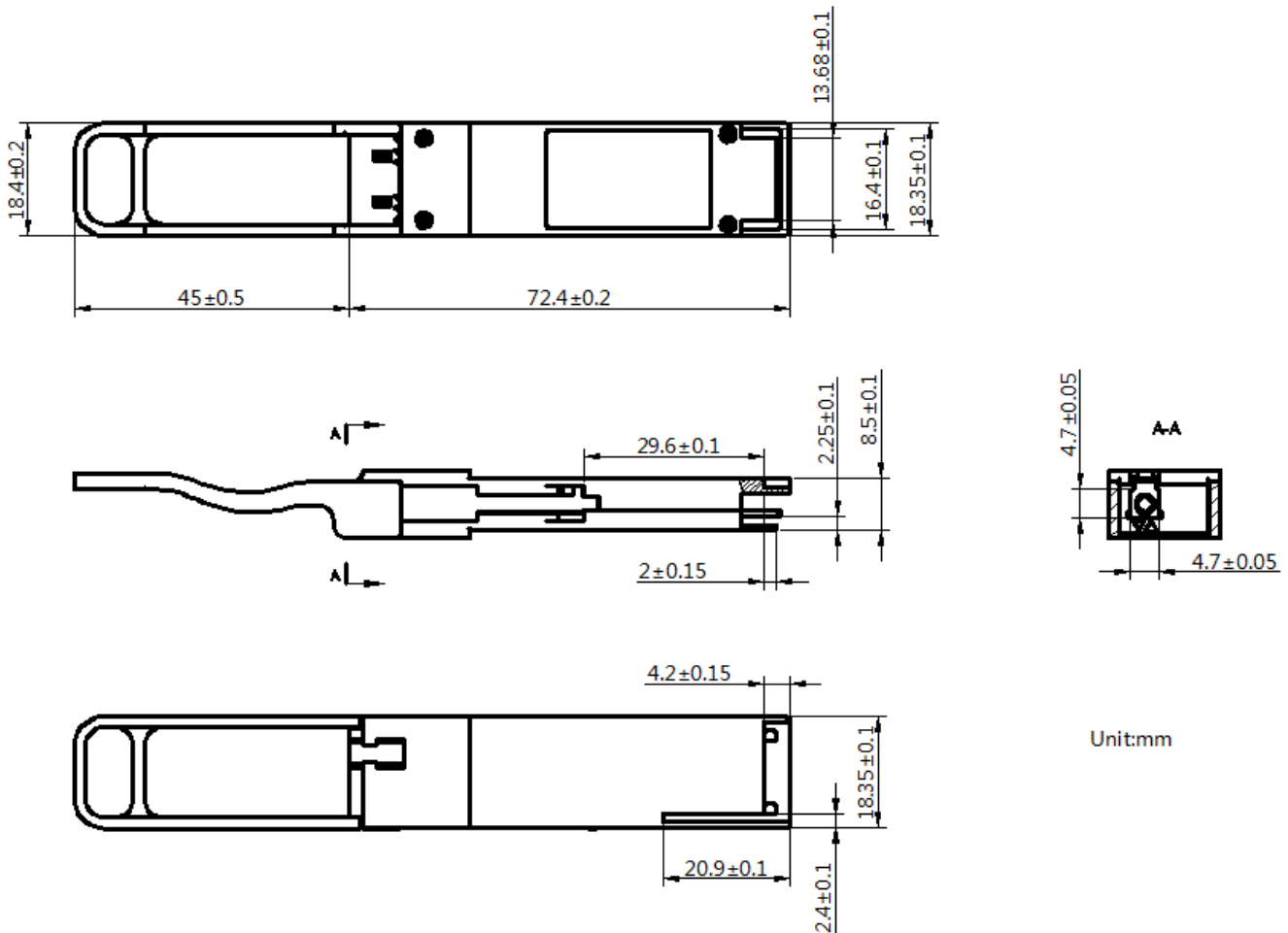
Receiver reflectance	-	-	-	-26	dB	
LOS De-Assert	LOSD	-	-	-16	dBm	
LOS Assert	LOSA	-24	-	-	dBm	
LOS Hysteresis	-	0.5	-	-	dB	

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



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-ER1-BX49-I	MSA	OP-Q28-ER1-BX49-I

7. Contact Information

Tel: 800.590.9535

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