

## Features:

- Compliant with industry standards 100G-LR1 MSA
- Compliant with SFF-8679 MSA hardware specification
- Compliant with SFF-8636
- Compliant with SFF-8661
- 1310nm EML laser
- PIN receiver
- Up to 10km on 9/125um SMF
- Operating temperature options (Industrial) -40°C to +85 °C



- Trouble-free installation and network bring-up
- RoHS Compliant

## Applications:

- Data Center
- 100 Gigabit Ethernet, Telecom

## 1. Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. 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.

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	85	°C
Relative Humidity	RH	5	95	%
Supply Voltage	VCC	3.13	3.47	V
Data input voltage	-	-0.3	3.6	V
Control input voltage	-	-0.3	3.6	V

## 2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ	Max.	Unit
Operating Case Temperature (Industrial)	TC	-40	-	85	°C
Supply Voltage	VCC	3.135	3.3	3.465	V
Operating relative humidity	RH	5	-	85	%

### 3. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
<b>Transmitter</b>					
Module Supply Current	I <sub>cc</sub>	-	-	1280	mA
Power Dissipation	PD	-	-	4000	mW
Input Differential Impedance	Z <sub>in</sub>	90	100	110	Ω
Differential Data Input Swing	V <sub>in</sub> , p-p	180	-	900	mVP-P
<b>Receiver</b>					
Output Differential Impedance	Z <sub>o</sub>	90	100	110	Ω
Differential Data Output Swing	V <sub>out</sub> , p-p	300	-	850	mVP-P

### 4. Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Launch Optical Power(Average)	P <sub>o</sub>	-1.4	-	4.5	dBm	1
Launch Optical Power(OMA)	P <sub>oma</sub>	0.7	-	4.7	dBm	
Extinction Ratio	ER	3.5	-	-	dB	-
Center Wavelength Range	λ <sub>c</sub>	1304.5		1317.5	nm	-
Transmitter and dispersion penalty eye closure for PAM4	TDECQ	-	-	3.4	dB	-
RIN15.6OMA (max)	RIN	-	-	-136	dB/Hz	
Optical Return Loss Tolerance	ORLT	-	-	15.6	dB	
P <sub>out</sub> @TX-Disable Asserted	P <sub>off</sub>	-	-	-30	dBm	
<b>Receiver</b>						
Center Wavelength	λ <sub>c</sub>	1304.5		1317.5	nm	-
Receiver Sensitivity (OMA)	RxSENS	-	-	-6.1	dBm	
Receive Power (OMA)	P <sub>oma</sub>			4.7	dBm	
Average receive power	P	-7.7		4.5	dBm	
Damage threshold	P <sub>thr</sub>	5.5	-	-	dBm	-
Receiver reflectance			-	-26	dB	-
LOS De-Assert	LOSD	-	-	-5	dBm	-
LOS Assert	LOSA	-30	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	

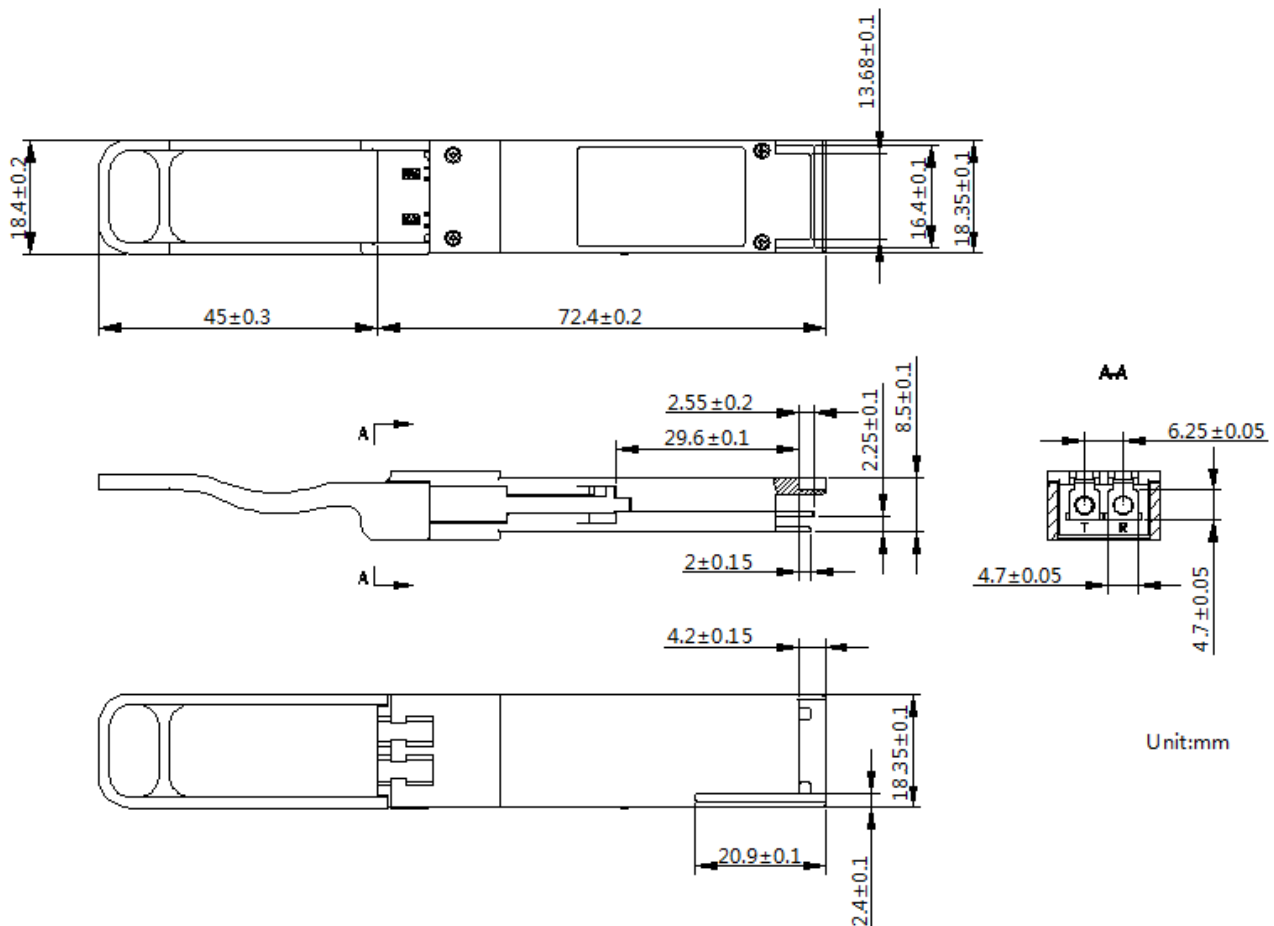
#### Notes:

- Class 1 Laser Safety per FDA/CDRH and EN (IEC) 60825 regulations.
- Measured with PRBS31Q test pattern, 53.125GBd, BER<2.4×10<sup>-4</sup>.

## 5. General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	BR		53.125		GBd	-
Bit Error Rate	BER	-	-	$2.4 \times 10^{-4}$	-	1
Supported Link Length on 9/125um SMF, 53.125 GBd	L	-	10		km	2

## 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
Arista	Q100G-LR1-I-AN-A	Cisco	QSFP-100G-LR-S-A
OnePort	OP-QSFP28-LR1-I	Juniper	QSFP-100G-LR-I-A
MSA Champion ONE	100GQ28E-LR1-H	MSA Generic	AN-QSFP28-LR1-I

## 8. Contact Information

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