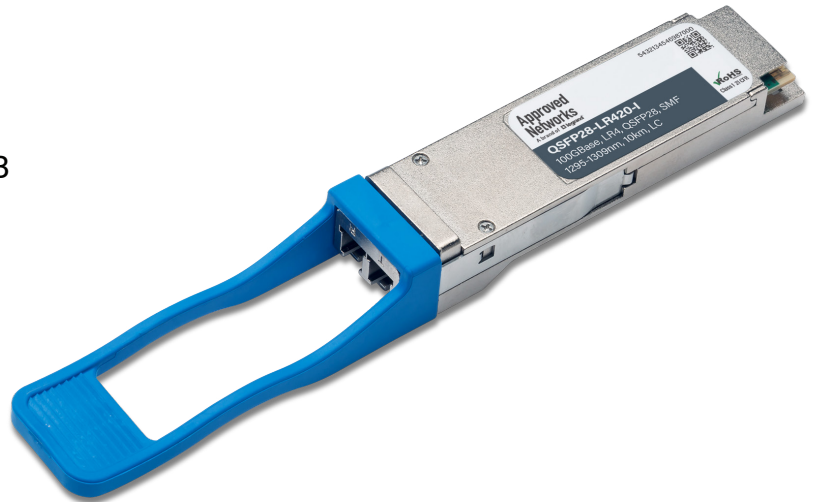


## Features

- Compliant with QSFP28 MSA
- 4 cooled 25Gb/s channels LAN WDM DFB TOSA
- 4 channels PIN photo detector
- Single +3.3V power supply
- Class 1 laser safety certified
- Power consumption less than 5.0W
- Industrial operating temperature: -40°C to +85°C
- Up to 20km on SMF
- RoHS 6/6 Compliant



## Applications

- 100GBASE-eLR4 Ethernet links
- Data center

## 1. Absolute Maximum Ratings

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.

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

## 2. Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	TC	-40	25	85	°C
Supply Voltage	VCC	3.135	3.3	3.465	V
Data Rate PER Channel	-	-	25.78125		Gb/s

### 3. Transceiver Electrical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Module Supply Current	I <sub>cc</sub>	-	-	1500	mA
Power Dissipation	PD	-	-	5000	mW
Transmitter					
Single-ended Input Voltage Tolerance	-	-0.3	-	4.0	V
Input Differential Impedance	Z <sub>IN</sub>	-	100	-	Ω
Differential Data Input Swing	V <sub>IN</sub> , P-P	190	-	700	mVP-P
AC Common Mode Input Voltage	-	15	-	-	mV
Differential Input Voltage Swing	-	50	-	-	mVpp
Receiver					
Single-ended Output Voltage	-	-0.3	-	4.0	V
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
AC Common Mode Output Voltage	-	-	-	7.5	mV

### 4. Transmitter Optical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Launch Optical Power per lane	P <sub>o</sub>	0	-	+5	dBm	1
Total Launch Optical Power	P <sub>o</sub>	-	-	+10.5	dBm	1
Center Wavelength Range	L1	1294.53	1295.56	1296.59	nm	-
	L2	1299.02	1300.05	1301.09	nm	-
	L3	1303.54	1304.58	1305.63	nm	-
	L4	1308.09	1309.14	1310.19	nm	-
Extinction Ratio	EX	4.0	-	-	dB	2
Spectral width(-20dB)	Δλ	-	-	1	nm	-
Side Mode Suppression Ratio	SMSR	30	-	-	dB	-
Optical Return Loss Tolerance	ORLT	-	-	20	dB	-
Pout @TX-Disable Asserted	P <sub>off</sub>	-	-	-30	dBm	1
Eye Mask {X1, X2, X3,Y1,Y2,Y3}		{0.25, 0.4, 0.45, 0.25, 0.28, 0.4}				

**Notes:**

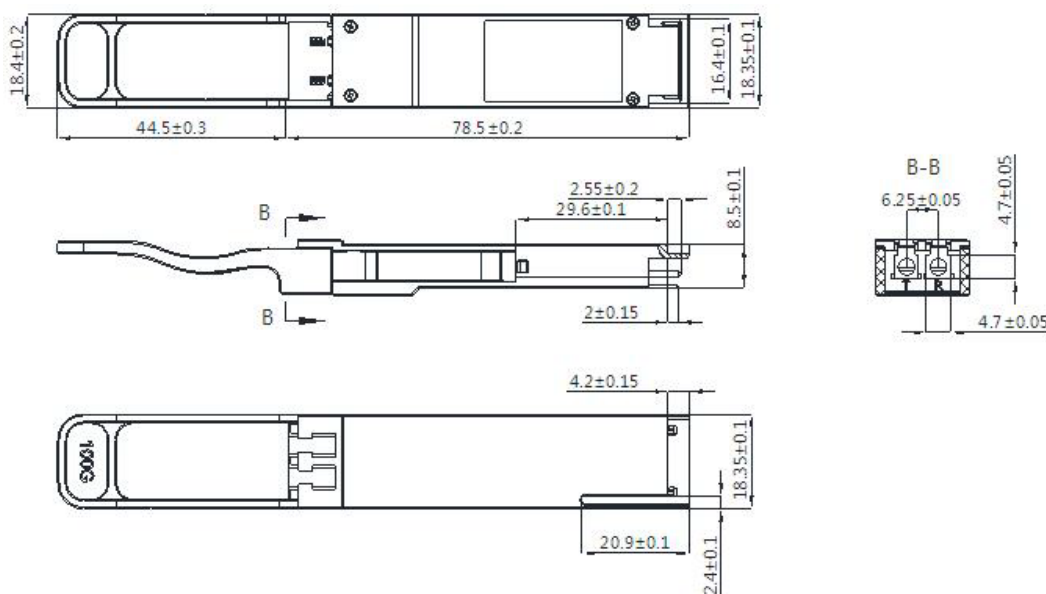
1. The optical power is launched into SMF.
2. Measured with a PRBS 2<sup>31</sup>-1 test pattern @25.78125Gbps.

**5. Receiver Optical Characteristics**

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Center Wavelength	L1	1294.53	1295.56	1296.59	nm	-
	L2	1299.02	1303.54	1300.05	nm	-
	L3	1304.58	1301.09	1305.63	nm	-
	L4	1308.09	1309.14	1310.19	nm	-
Sensitivity per Channel (OMA)	S	-	-	-8.6	dBm	1
Overload (each channel)	POL	4.5	-	-	dBm	1
Damage Threshold (each channel)	Pdamage	5.5	-	-	dBm	-
Optical Return Loss	ORL	26	-	-	dB	-
LOS De-Assert	LOSD	-	-	-11.6	dBm	-
LOS Assert	LOSA	-24	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	-

**Note 1:** Measured with PRBS 231-1 test pattern, 25.78125Gb/s;

**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	QSFP-100G-LR4-20K-A	MSA	AN-QSFP28-LR420-I
Juniper	JNP-QSFP-100G-LR420K-A	OnePort	OP-QSFP28-LR420

## 8. Contact Information

Tel: 800.590.9535

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