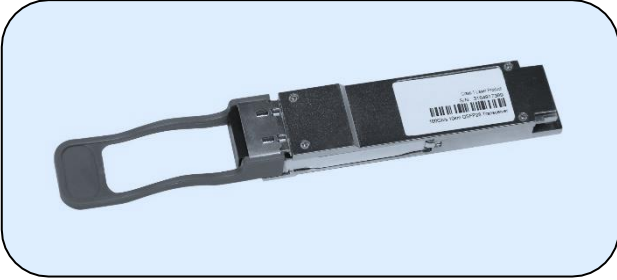


## XQS319-02LY

### 100G LR4 Lite QSFP28 2 km Optical Transceiver Module



#### Applications

- 100GBASE-LR4 lite Ethernet links
- Data center

#### Features

- Compliant with IEEE Std 802.3ba, 100G Ethernet LR4
- Compliant with QSFP28 MSA
- 4 cooled 25 Gb/s channels LAN WDM DFB TOSA
- 4 channels PIN photo detector
- Single +3.3 V power supply
- Class 1 laser safety certified
- Power consumption less than 3.5 W
- Commercial operating temperature -5°C to +70°C
- Up to 2 km on SMF
- RoHS 6/6 Compliant

#### Description

XQS319-02LY QSFP28 transceiver modules are designed for 100 Gigabit Ethernet over single mode fiber. They are compliant with the QSFP28 MSA, IEEE 802.3ba 100GBASE-LR4. Digital diagnostics functions are available via the I2C interface, as specified by the QSFP28 MSA.

XQS319-02LY are compliant with RoHS.

### Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Storage Temperature	$T_S$	-40	85	°C
Relative Humidity	RH	5	95	%
Supply Voltage	$V_{CC}$	-0.5	4.0	V

### Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	$T_C$	-5	25	70	°C
Supply Voltage	$V_{CC}$	3.135	3.3	3.465	V
Data Rate PER Channel	-	-	25.78125		Gb/s

### Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit
Module Supply Current	$I_{CC}$	-	-	1100	mA
Power Dissipation	$P_D$	-	-	3500	mW
<b>Transmitter</b>					
Single-ended Input Voltage Tolerance	-	-0.3	-	4.0	V
Input Differential Impedance	$Z_{IN}$	-	100	-	$\Omega$
Differential Data Input Swing	$V_{IN, P-P}$	190	-	700	mV <sub>P-P</sub>
AC Common Mode Input Voltage Tolerance	-	15	-	-	mV
Differential Input Voltage Swing Threshold	-	50	-	-	mVpp
<b>Receiver</b>					
Single-ended Output Voltage	-	-0.3	-	4.0	V
Output Differential Impedance	$Z_O$	90	100	110	$\Omega$
Differential Data Output Swing	$V_{OUT, P-P}$	300	-	850	mV <sub>P-P</sub>
AC Common Mode Output Voltage	-	-	-	7.5	mV

### Transmitter Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Launch Optical Power per lane	P <sub>o</sub>	-4.3	-	+4.5	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)	$\Delta\lambda$	-	-	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 @25.78125 Gbps.

### Receiver Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Center Wavelength	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	-
Sensitivity per Channel	S	-	-	-8.6	dBm	1
Damage Threshold (each channel)	POL	4.5	-	-	dBm	-
Optical Return Loss	ORL	26	-	-	dB	-
LOS De-Assert	LOSD	-	-	-11.6	dBm	-
LOS Assert	LOSA	-24	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	-

#### Notes

1. Measured with PRBS 2<sup>31</sup>-1 test pattern, 25.78125 Gbps.

## Ordering information

Part number	Product Description
XQS319-02LY	QSFP28, 100GE LR4, 2 km reach, DDMI, -5°C ~ 70°C

### Notes

<sup>1</sup> For accurate order specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice.

These modules are available in multiple customized compatible versions. **Please specify any compatibility requirements at time of ordering.** Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

### Important Notice

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