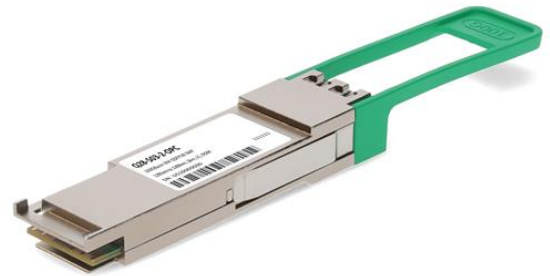


Q28-503-2-OPC

Gigamon Systems® Q28-503-2 Compatible TAA 100GBase-LR4L QSFP28 Transceiver (SMF, 1295nm to 1309nm, 2km, LC, DOM)

Features

- SFF-8665 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



Applications:

- 100GBase Ethernet
- Access and Enterprise

Product Description

This Gigamon Systems® Q28-503-2 compatible QSFP28 transceiver provides 100GBase-LR4 throughput up to 2km over single-mode fiber (SMF) using a wavelength of 1295nm to 1309nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Gigamon® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-3
- EMI/EMC compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS 2.0 directive 2015/863/EU

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	V _{CC}	-0.5		4.0	V
Storage Temperature	T _S	-40		85	°C
Operating Case Temperature	T _C	-5		+70	°C
Operating Humidity	RH	5		95	%
Data Rate Per Lane			25.78125		Gbps

Electrical Characteristics

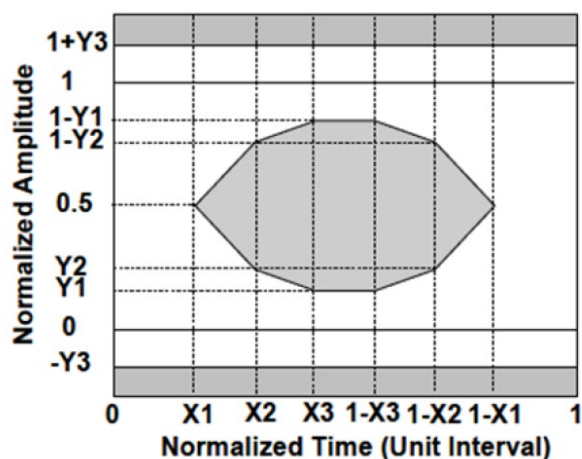
Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Module Supply Current	I _{CC}			1100	mA	
Power Dissipation	P _D			3500	mW	
Transmitter						
Single-ended Input Voltage Tolerance		-0.3		4.0	V	
AC Common Mode Input Voltage Tolerance		15			mV	
Differential Input Voltage Swing Threshold		50			mV _{pp}	
Differential Input Voltage Swing	V _{in,pp}	190		700	mV _{pp}	
Differential Input Impedance	Z _{in}		100		Ω	
Receiver						
Single-ended Output Voltage		-0.3		4.0	V	
AC Common Mode Output Voltage				7.5	mV	
Differential Output Voltage Swing	V _{out,pp}	300		850	mV _{pp}	
Differential Output Impedance	Z _o	90	100	110	Ω	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Lane Wavelength	L0	1294.53	1295.56	1296.59	nm	
	L1	1299.02	1300.05	1301.09		
	L2	1303.54	1304.58	1305.63		
	L3	1308.09	1309.14	1310.19		
Transmitter						
Launch Optical Power per lane	Po	-4.3		+4.5	dBm	1
Total Launch Optical Power	Po			+10.5	dBm	1
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	Poff			-30	dBm	1
Eye Mask Coordinates: X1, X2, X3, Y1, Y2, Y3	Specification Values 0.25, 0.4, 0.45, 0.25, 0.28, 0.4					
Receiver						
Sensitivity per Channel	S			-8.6	dBm	3
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. The optical power is launched into SMF.
2. Measured with a PRBS $2^{31}-1$ test pattern @25.78125Gbps.
3. Measured with PRBS $2^{31}-1$ test pattern, 25.78125Gb/s



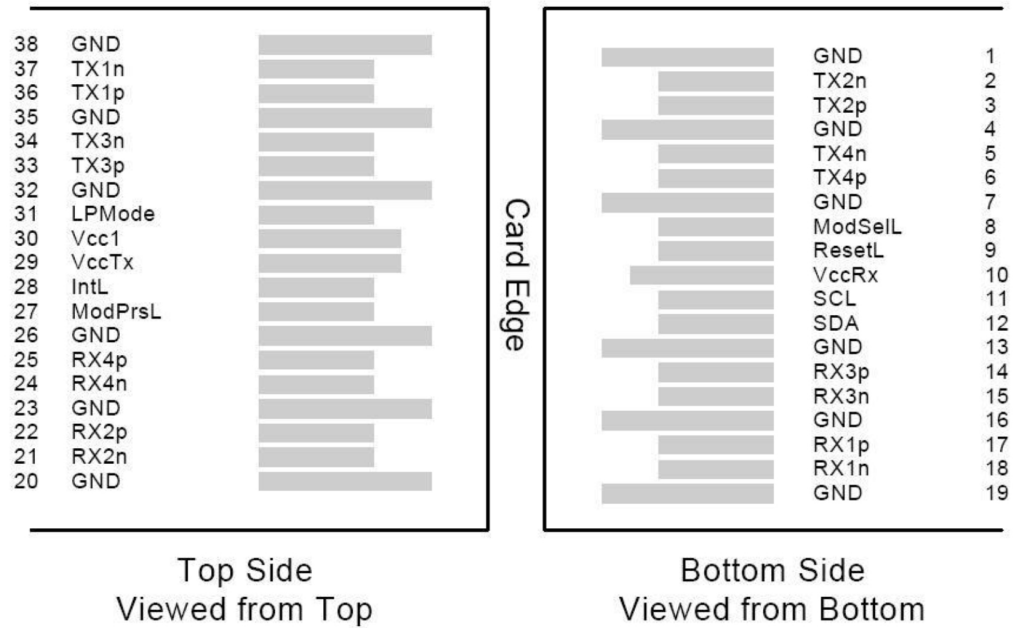
Pin Descriptions

Pin	Logic	Symbol	Name/Descriptions	Ref.
1		GND	Module Ground	1
2	CML-I	Tx2-	Transmitter inverted data input	
3	CML-I	Tx2+	Transmitter non-inverted data input	
4		GND	Module Ground	1
5	CML-I	Tx4-	Transmitter inverted data input	
6	CML-I	Tx4+	Transmitter non-inverted data input	
7		GND	Module Ground	1
8	LVTTL-I	MODSEIL	Module Select	2
9	LVTTL-I	ResetL	Module Reset	2
10		VCCRx	+3.3v Receiver Power Supply	
11	LVC MOS-I	SCL	2-wire Serial interface clock	2
12	LVC MOS-I/O	SDA	2-wire Serial interface data	2
13		GND	Module Ground	1
14	CML-O	RX3+	Receiver non-inverted data output	
15	CML-O	RX3-	Receiver inverted data output	
16		GND	Module Ground	1
17	CML-O	RX1+	Receiver non-inverted data output	
18	CML-O	RX1-	Receiver inverted data output	
19		GND	Module Ground	1
20		GND	Module Ground	1
21	CML-O	RX2-	Receiver inverted data output	
22	CML-O	RX2+	Receiver non-inverted data output	
23		GND	Module Ground	1
24	CML-O	RX4-	Receiver inverted data output	
25	CML-O	RX4+	Receiver non-inverted data output	
26		GND	Module Ground	1
27	LVTTL-O	ModPrsL	Module Present, internal pulled down to GND	
28	LVTTL-O	IntL	Interrupt output, should be pulled up on host board	2
29		VCCTx	+3.3v Transmitter Power Supply	
30		VCC1	+3.3v Power Supply	
31	LVTTL-I	LPMODE	Low Power Mode	2
32		GND	Module Ground	1
33	CML-I	Tx3+	Transmitter non-inverted data input	
34	CML-I	Tx3-	Transmitter inverted data input	
35		GND	Module Ground	1
36	CML-I	Tx1+	Transmitter non-inverted data input	
37	CML-I	Tx1-	Transmitter inverted data input	
38		GND	Module Ground	1

Notes:

- 1. Module circuit ground is isolated from module chassis ground with in the module.
- 2. Open collector; should be pulled up with 4.7k-10k ohms on host board to a voltage between 3.15V and 3.6V.

Electrical Pin-out Details



Mechanical Specifications

Measurement unit: mm

