QSFP-100G-CWDM4-AR-PRO

Arista Networks® QSFP-100G-CWDM4 Compatible TAA Compliant 100GBase-CWDM4 QSFP28 Transceiver (SMF, 1270nm to 1330nm, 2km, 0 to 70C, LC)

Features

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

Applications:

- Ethernet over CWDM
- Access, Metro and Enterprise

Product Description

This Arista Networks® QSFP-100G-CWDM4 compatible QSFP28 transceiver provides 100GBase-CWDM4 throughput up to 2km over single-mode fiber (SMF) using wavelengths between 1270nm to 1330nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Arista Networks® 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.

Proline's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products.

Rev. 030524

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	Vcc	-0.5		4.0	V
Storage Temperature	TS	-40		+85	°C
Operating Case Temperature	Tc	0	25	70	°C
Relative Humidity	RH	5		95	%
Data Rate PER Channel			25.78125		Gb/s

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Power Dissipation	PD			3500	mW	
Module Supply Current	Icc			1100	mA	
Transmitter						
Single-ended Input Voltage Tolerance	Z_{IN}	-0.3		4.0	V	
Input Differential Impedance	$V_{IN, P-P}$		100		Ω	
Differential Data Input Swing		190		700	mV_{P-P}	
AC Common Mode Input Voltage Tolerance		15			mV	
Differential Input Voltage Swing Threshold		50			mVpp	
Receiver						
Single-ended Output Voltage		-0.3		4.0	V	
Output Differential Impedance	Zo	90	100	110	Ω	
Differential Data Output Swing	$V_{OUT, P-P}$	300		850	mV_{P-P}	
AC Common Mode Output Voltage				7.5	mV	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power per lane	Po	-6.5		2.5	dBm	1
Total Launch Optical Power	Po			+8.5	dBm	1
Center Wavelength Range	L1	1264.5	1271	1277.5	nm	
	L2	1284.5	1291	1297.5	nm	
	L3	1304.5	1311	1317.5	nm	
	L4	1324.5	1331	1337.5	nm	
Extinction Ratio	EX	4			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				-30		1
Eye Mask {X1, X2, X3, Y1, Y2, Y3}		{0.31, 0.4, 0.45, 0.34, 0.38, 0.4}				
Receiver						
Center Wavelength	L1	1264.5	1271	1277.5	nm	
	L2	1284.5	1291	1297.5	nm	
	L3	1304.5	1311	1317.5	nm	
	L4	1324.5	1331	1337.5	nm	
Sensitivity per Channel	S			-11.5	dBm	3
Overload (each channel)	POL	2.5			dBm	3
Damage Threshold (each channel)	Pdamage	3.5			dBm	
Optical Return Loss	ORL	26			dB	
LOS Assert	LOSA	-24			dBm	
LOS De-Assert	LOSD			-12.0	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.
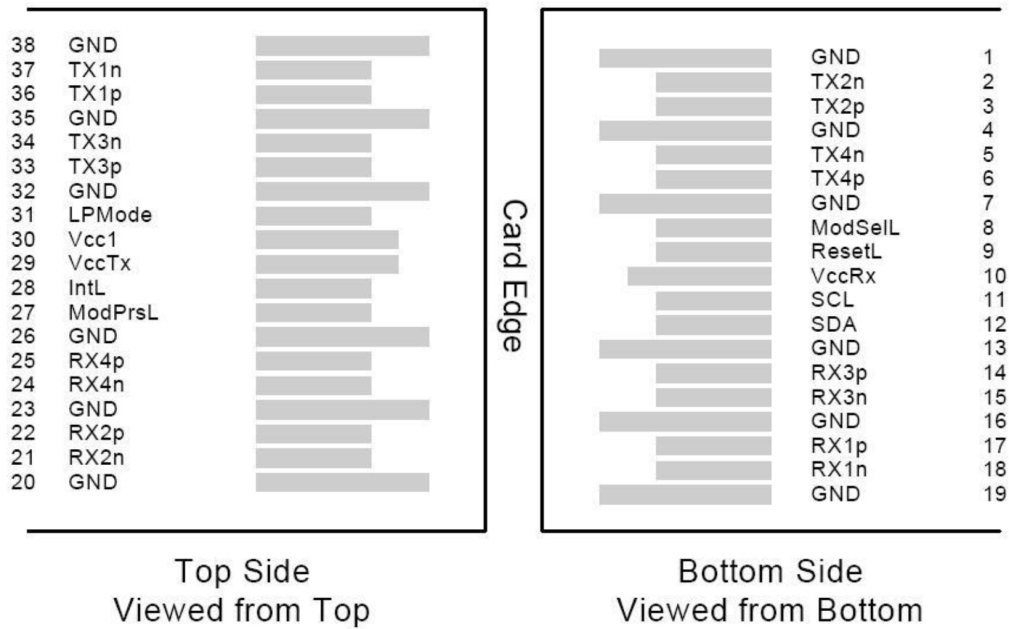3. Measured with PRBS 2^{31}-1 test pattern, 25.78125Gb/s, BER 5.0E-5

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	Tx2-	Transmitter Inverted Data Input	
3	Tx2+	Transmitter Non-Inverted Data output	
4	GND	Transmitter Ground (Common with Receiver Ground)	1
5	Tx4-	Transmitter Inverted Data Input	
6	Tx4+	Transmitter Non-Inverted Data output	
7	GND	Transmitter Ground (Common with Receiver Ground)	1
8	ModSelL	Module Select	2
9	ResetL	Module Reset	2
10	VccRx	3.3V Power Supply Receiver	
11	SCL	2-Wire serial Interface Clock	2
12	SDA	2-Wire serial Interface Data	2
13	GND	Transmitter Ground (Common with Receiver Ground)	1
14	Rx3+	Receiver Non-Inverted Data Output	
15	Rx3-	Receiver Inverted Data Output	
16	GND	Transmitter Ground (Common with Receiver Ground)	1
17	Rx1+	Receiver Non-Inverted Data Output	
18	Rx1-	Receiver Inverted Data Output	
19	GND	Transmitter Ground (Common with Receiver Ground)	1
20	GND	Transmitter Ground (Common with Receiver Ground)	1
21	Rx2-	Receiver Inverted Data Output	
22	Rx2+	Receiver Non-Inverted Data Output	
23	GND	Transmitter Ground (Common with Receiver Ground)	1
24	Rx4-	Receiver Inverted Data Output	1
25	Rx4+	Receiver Non-Inverted Data Output	
26	GND	Transmitter Ground (Common with Receiver Ground)	1
27	ModPrsl	Module Present	
28	IntL	Interrupt	2
29	VccTx	3.3V power supply transmitter	
30	Vcc1	3.3V power supply	
31	LPMode	Low Power Mode	2
32	GND	Transmitter Ground (Common with Receiver Ground)	1
33	Tx3+	Transmitter Non-Inverted Data Input	
34	Tx3-	Transmitter Inverted Data Output	
35	GND	Transmitter Ground (Common with Receiver Ground)	1
36	Tx1+	Transmitter Non-Inverted Data Input	
37	Tx1-	Transmitter Inverted Data Output	
38	GND	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the host board requires a a 4.7KΩ to 10KΩ pull-up resistor to VccHost.
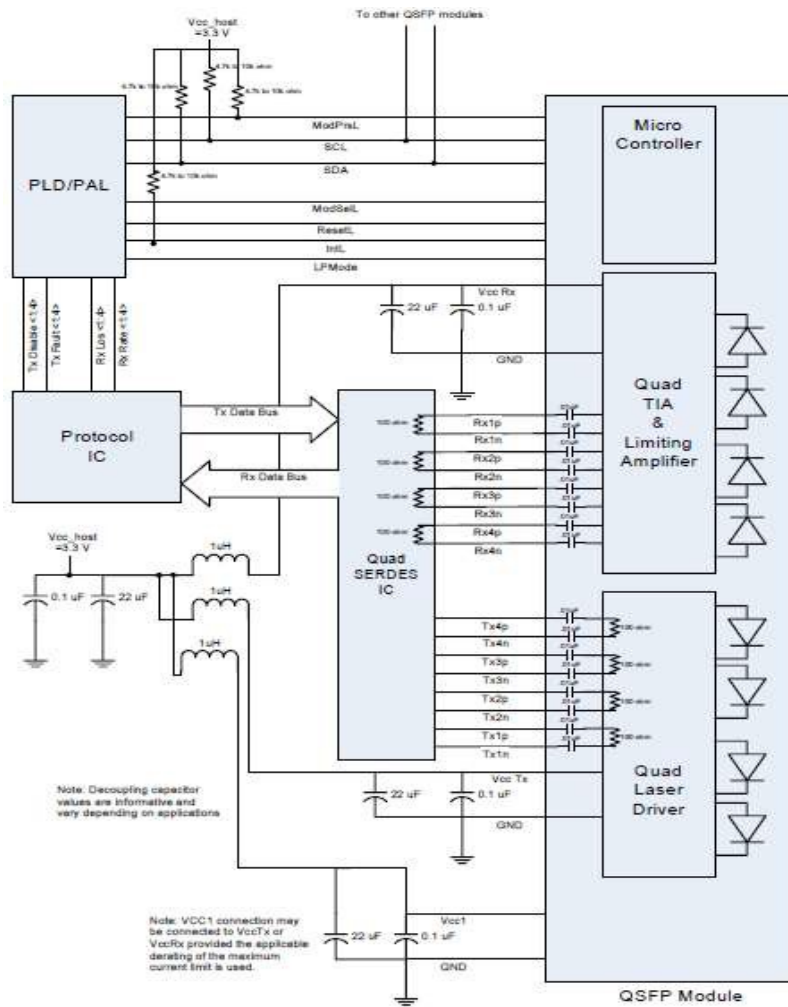
Electrical Pin-out Details

38	GND
37	TX1n
36	TX1p
35	GND
34	TX3n
33	TX3p
32	GND
31	LPMode
30	Vcc1
29	VccTx
28	IntL
27	ModPrsL
26	GND
25	RX4p
24	RX4n
23	GND
22	RX2p
21	RX2n
20	GND

Card Edge

GND	1
TX2n	2
TX2p	3
GND	4
TX4n	5
TX4p	6
GND	7
ModSelL	8
ResetL	9
VccRx	10
SCL	11
SDA	12
GND	13
RX3p	14
RX3n	15
GND	16
RX1p	17
RX1n	18
GND	19

Top Side
Viewed from Top

Bottom Side
Viewed from Bottom

Recommended Host Board Power Supply Filter Network

Recommended Application Interface Block Diagram

Mechanical Specifications

Measurement unit: mm

13.68±0.1

18.4±0.2

16.4±0.1

18.35±0.1

45±0.3

72.4±0.2

2.55±0.2

29.6±0.1

2.25±0.1

8.5±0.1

A

A

2±0.15

A-A

6.25±0.05

4.7±0.05

T R

4.7±0.05

4.2±0.15

18.35±0.1

Unit:mm

20.9±0.1

2.4±0.1
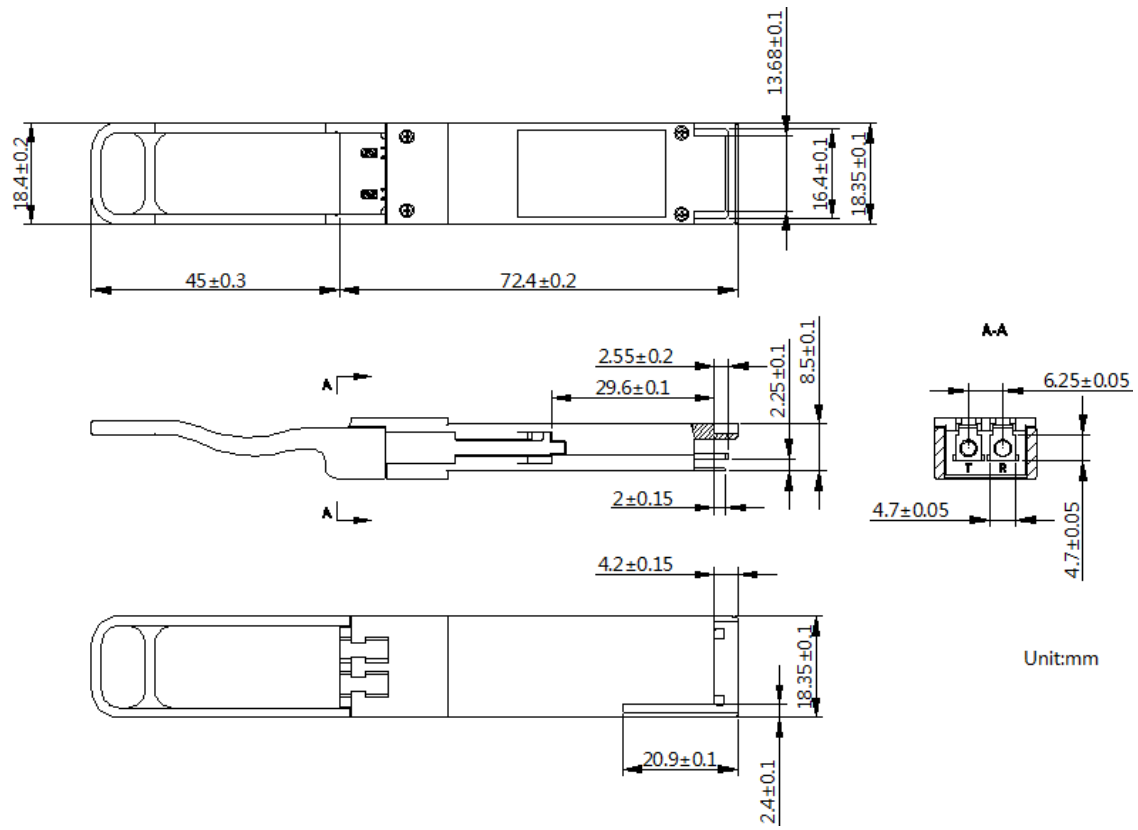
About Us:

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.

Tel: 855.933.3223
Email: sales@prolineoptions.com
Email: techsupport@prolineoptions.com
Web: https://www.prolineoptions.com