QSFP-100G-CWDM4L-S-PRO

Cisco® QSFP-100G-CWDM4L-S Compatible TAA Compliant 100GBase-CWDM4 QSFP28 Transceiver (SMF, 1270nm to 1330nm, 500m, DOM, 15 to 55C, LC)

Features

- SFF-8636/ 8661/ 8679/ 8682 Compliance
- Single-mode Fiber
- Duplex LC Connector
- Integrated CWDM DFB TOSA (1271,1291,1311,1331nm) and PIN ROSA
- Supports 25.78125Gbps Data rate per wavelength
- Single-mode Fiber
- DDM function implemented
- Build in CDR on both TX and RX
- Operating case temperature: 15 to 55C
- Hot pluggable QSFP28 form factor
- Power consumption: 3.5W
- RoHS6 Compliant
- Single +3.3V power supply

Applications:

- Ethernet over CWDM
- Access, Metro and Enterprise

Product Description

This Cisco® QSFP-100G-CWDM4L-S compatible QSFP28 transceiver provides 100GBase-CWDM4 throughput up to 500m 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 Cisco® 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		3.6	V
Storage Temperature	TS	-40		85	°C
Operating Case Temperature	Tc	15	25	55	°C
Relative Humidity (non-condensing)	RH	5		85	%
Receiver Damage Threshold, each lane	Pmax	3.5			dBm

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	Tc	15	25	55	°C
Power Supply Voltage	Vcc	3.135	3.3	3.465	V
Power Dissipation	P_D			3.5	W
Total Data Rate			103.125		Gbps
Data Rate, each lane			25.78125		Gbps
Transmission Distance				0.5	km

Optical and Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter							
Bit Rate, each Lane				25.78125±100ppm		Gbps	
Line Wavelengths (Range)	**CH0**	$\lambda0$	1264.5		1277.5	nm	
	CH1	$\lambda1$	1284.5		1297.5	nm	
	CH2	$\lambda2$	1304.5		1317.5	nm	
	CH3	$\lambda3$	1324.5		1337.5	nm	
Side Mode Suppression Ratio		SMSR	30			dB	
Average Launch Power, each lane		P_{TX}	-6.5		2.5	dBm	
Transmitter Optical Modulation Amplitude (OMA), each lane		OMA	-4		2.5	dBm	
Extinction Ratio		ER	3.5			dB	
Average Launch Power of OFF Transmitter, each lane					-30	dBm	
Transmitter Reflectance					-12	dB	
Input Differential Impedance, each lane				100		Ω	
Transmitter Eye Mask Definition {X1, X2, X3, Y1, Y2, Y3}				{0.31, 0.4, 0.45, 0.34, 0.38, 0.4}			1
Receiver							
Bit Rate, each Lane				25.78125±100ppm		Gbps	
Line wavelengths (range)	**CH0**	$\lambda0$	1264.5		1277.5	nm	
	CH1	$\lambda1$	1284.5		1297.5	nm	
	CH2	$\lambda2$	1304.5		1317.5	nm	
	CH3	$\lambda3$	1324.5		1337.5	nm	
Average receive power, each lane			-11.5		2.5	dBm	
Unstressed Receiver Sensitivity (OMA), each lane					-10	dBm	2

Notes:

1. Eye mask hit ratio 5x10^{-5}.
2. Receiver sensitivity is informative. Measured with 25.78125Gb/s, PRBS31 NRZ, BER=5x10^{-5}.
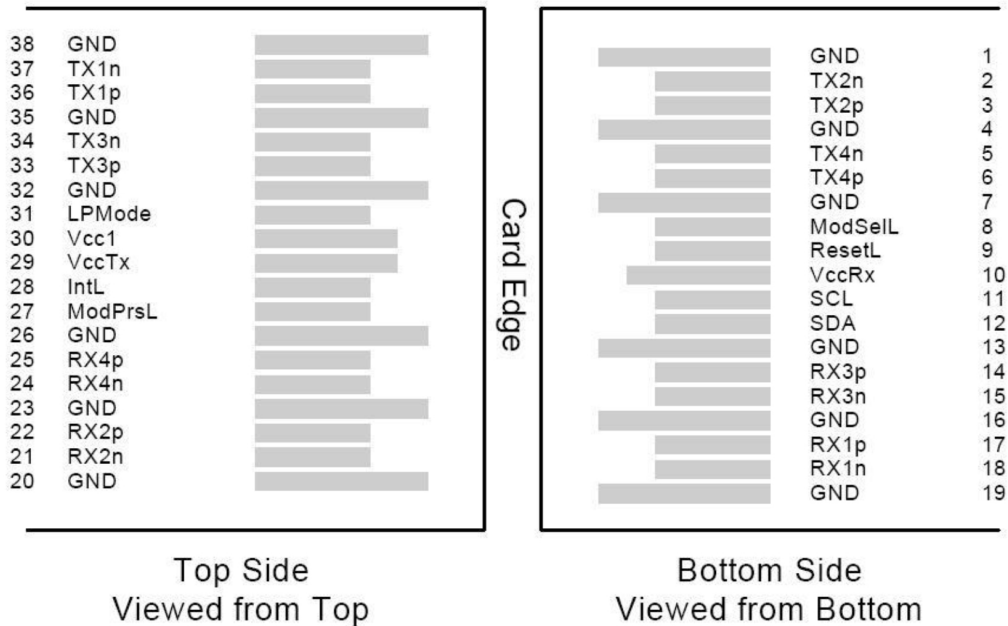
Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data output	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data output	
7	GND	Ground	1
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	VccRx	+3.3V Power Supply Receiver	2
11	SCL	2-Wire Serial Interface Clock	1
12	SDA	2-Wire Serial Interface Data	
13	GND	Ground	
14	Rx3p	Receiver Non-Inverted Data output	
15	Rx3n	Receiver Inverted Data output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data output	
18	Rx1n	Receiver Inverted Data output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data output	
22	Rx2p	Receiver Non-Inverted Data output	
23	GND	Ground	1
24	Rx4n	Receiver Inverted Data output	1
25	Rx4p	Receiver non-Inverted Data output	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	VccTx	+3.3V Power Supply Transmitter	2
30	Vccl	+3.3V Power Supply	2
31	LPMode	Low Power Mode	
32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data input	
34	Tx3n	Transmitter Inverted Data output	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data input	
37	Tx1n	Transmitter Inverted Data output	
38	GND	Ground	1

Notes:

1. GND is the symbol for signal and supply (power) common for QSPF28 modules. All are common within the QSPF28 module and all module voltages are referenced to this potential unless otherwise noted. Connected these directly to the host board signal common ground plane.
2. VccRx, Vcc1 and VccTx are the receiving and transmission power suppliers and shall be applied concurrently. VccRx, Vcc1 and VccTx may be internally connected within the QSFP28 transceiver module in any combination. The connector pins are each rated for a maximum current of 1000mA.

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

Digital Diagnostic Functions

| Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Temperature monitor absolute error	DMI_Temp	-3		3	ºC	1
Supply voltage monitor absolute error	DMI_Vcc	-3%		3%	V	2
Bias current monitor absolute error	DMI_Ibias	-10%		10%	mA	
Laser power monitor absolute error	DMI_Tx	-3		3	dB	
RX power monitor absolute error	DMI_Rx	-3		3	dB	

Notes:

1. Over operating temperature
2. Over operating voltage

Recommended Interface Circuit
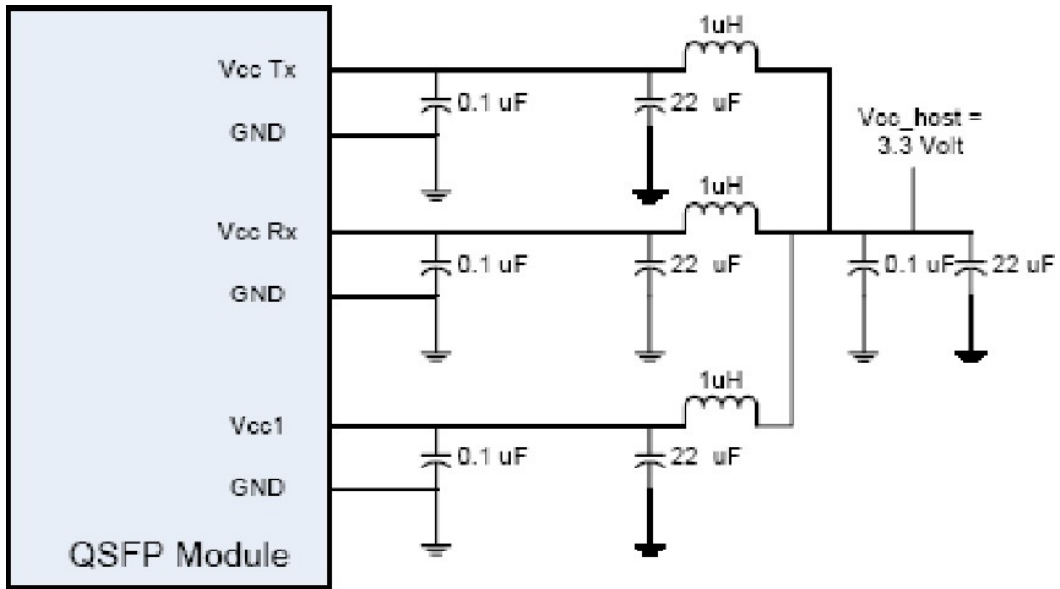
Mechanical Specifications

Measurement unit: mm
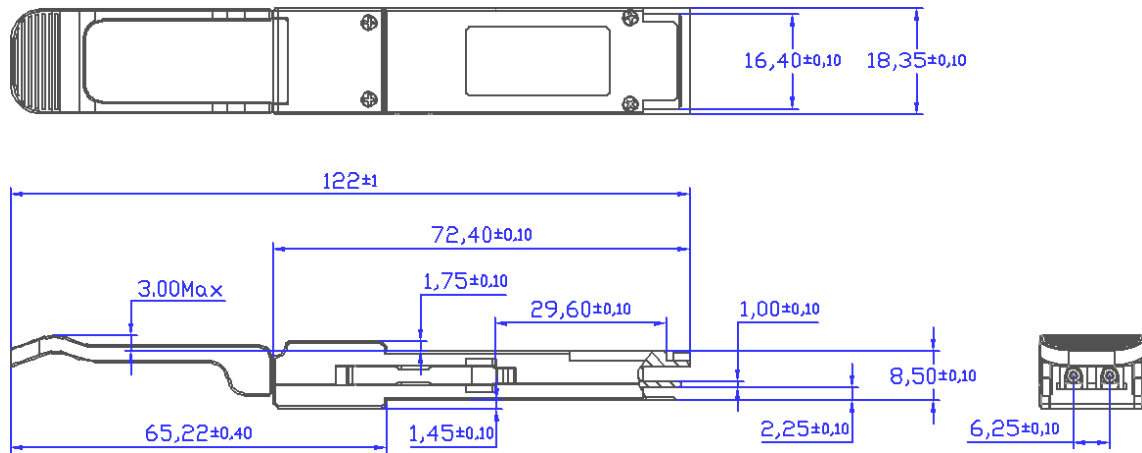
About Us:

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.

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