

QSFP28-100GB-PSM4-OPC

MSA and TAA 100GBase-PSM4 QSFP28 Transceiver (SMF, 1310nm, 500m, MPO, DOM)

Features

- SFF-8665 Compliance
- MPO 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 MSA compliant QSFP28 transceiver provides 100GBase-PSM4 throughput up to 500m over single-mode fiber (SMF) using a wavelength of 1310nm via an MPO connector. All of our transceivers are built to comply with Multi-Source Agreement (MSA) standards and are uniquely serialized and tested for data-traffic and application to ensure seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows 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.

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	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	V _{CC}	3.135	3.3	3.465	V	
Power Dissipation	PD			3500	mW	
Module Supply Current	I _{CC}			1100	mA	
Transmitter						
Differential Data Input Swing	V _{IN, P-P}	190		700	mV _{p-p}	
Input Differential Impedance	Z _{in}	90	100	110	Ω	
AC Common Mode Input Voltage Tolerance		15			mV	
Receiver						
Output Differential Impedance	Z _o	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	
Single-ended Output Voltage		-0.3		4	V	

Notes:

1. Internally AC Coupled, but requires an external 100Ω differential load termination.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power per lane	Po	-9		+2	dBm	1
Side Mode Suppression Ratio	SMSR	30			dB	
Center Wavelength Range	Λ	1295	1310	1325	nm	
Extinction Ratio	EX	3.5			dB	2
Optical Return Loss Tolerance	ORLT			12	dB	
Pout @TX-Disable Asserted	Poff			-30	dBm	1
Transmitter Eye Mask Definition {X1, X2, X3, Y1, Y2, Y3}		{0.31, 0.4, 0.45, 0.34, 0.38, 0.4}				
Receiver						
Center Wavelength	λ_c	1295		1325	Nm	
Receiver Sensitivity	S			-12.0	dBm	3
Damage Threshold	POL	3.0			dBm	
LOS Assert	LOSA	-24			dBm	
LOS De-Assert	LOSD			-12.5	dBm	
LOS Hysteresis		0.5			dB	

Notes:

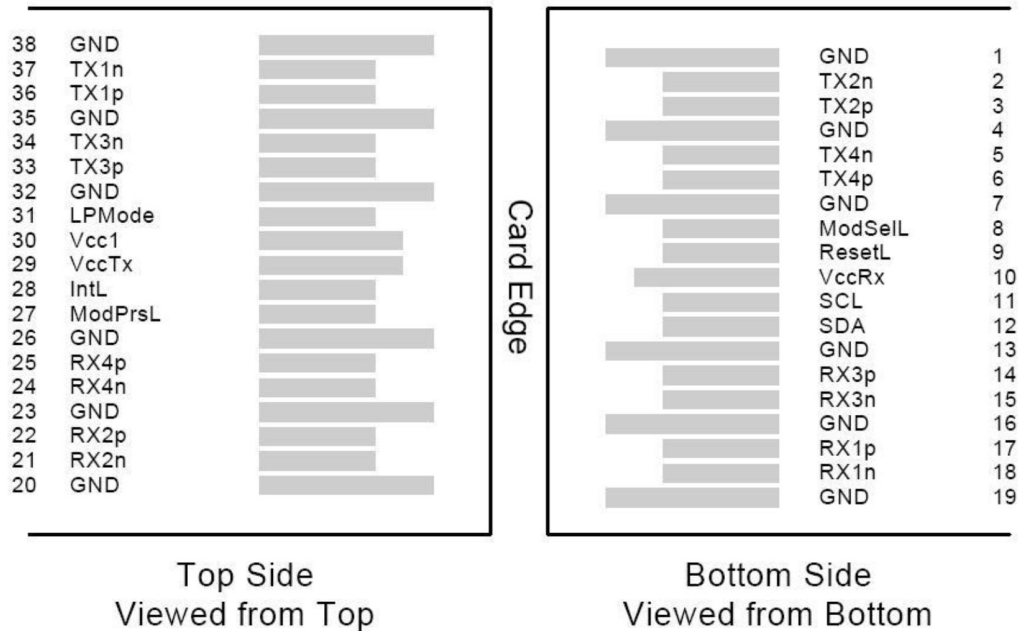
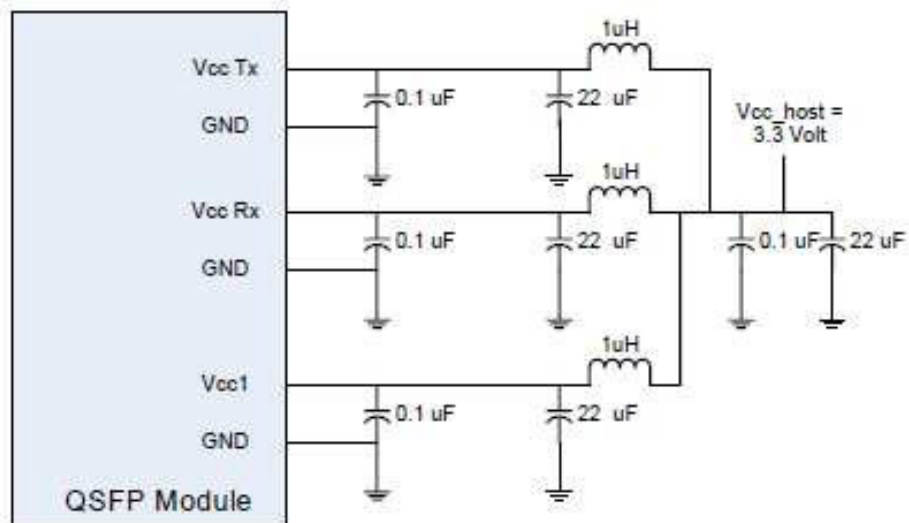
1. The optical power is launched into SMF.
2. Measured with a PRBS $2^{31}-1$ test pattern @25.78125Gbps
3. Measured with a PRBS $2^{31}-1$ test pattern, 25.78125Gb/s, BER of 5×10^{-5} (informative)

Pin Descriptions

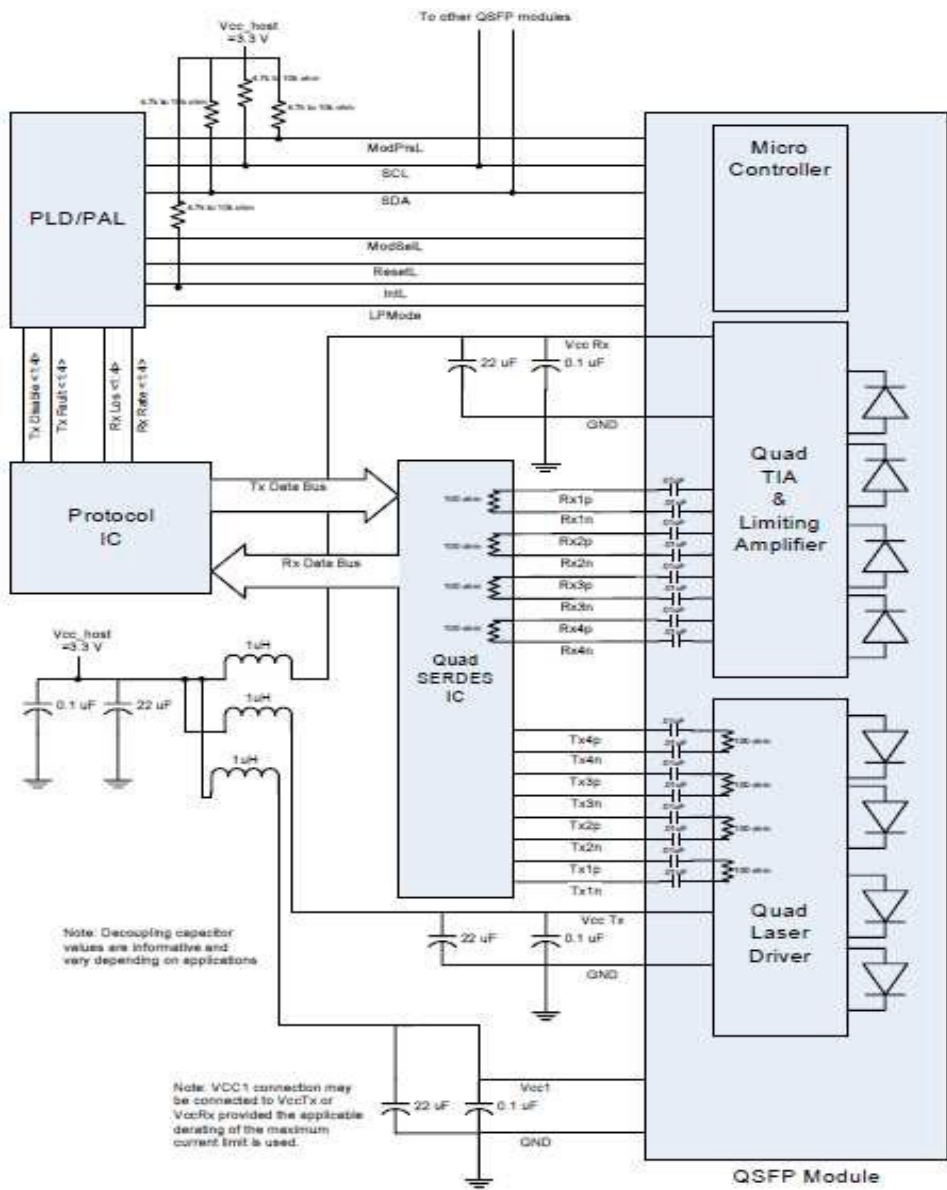
Pin	Symbol	Name/Descriptions	Ref.
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	Tx2-	Transmitter Inverted Data Input	
3	Tx2+	Transmitter Non-Inverted Data output	
4	GND	Transmitter Ground (Common with Receiver Ground)	1
5	Tx4-	Transmitter Inverted Data Input	
6	Tx4+	Transmitter Non-Inverted 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 4.7KΩ to 10KΩ pull-up resistor to VccHost.

**Recommended Host Board Power Supply Filter Network**

Recommended Application Interface Block Diagram



Mechanical Specifications

Measurement unit: mm

