

QSFP-100G-PSM4-L05

100GBase QSFP28
1310nm
500m Reach

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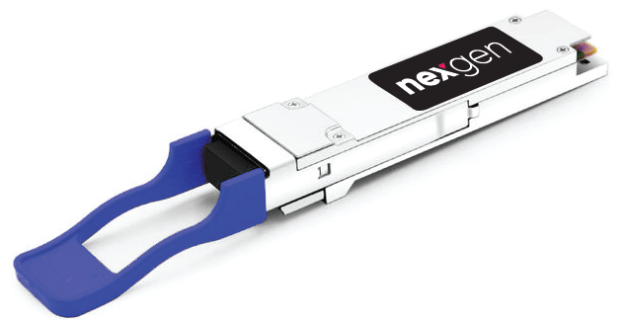


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Features

- 4 Parallel lanes design
- Compliant with QSFP28 MSA
- Compliant to IEEE 802.3bm 100GBASE PSM IR4
- 4 channels PIN photo detector
- Up to 25.78125Gb/s per channel data links
- Single +3.3V power supply
- Class 1 laser safety certified
- Commercial operating temperature: -5°C to +70°C
- Up to 500m on SMF
- RoHS 6/6 Compliant



Applications

- 100GBASE Ethernet links
- Infiniband QDR and DDR
- Data center

Part number

Product description

QSFP28-100G-PSM4-L05

100GBase SMF QSFP28 1310nm 500m 0°C to 70°C MTP/MPO-12 DDM

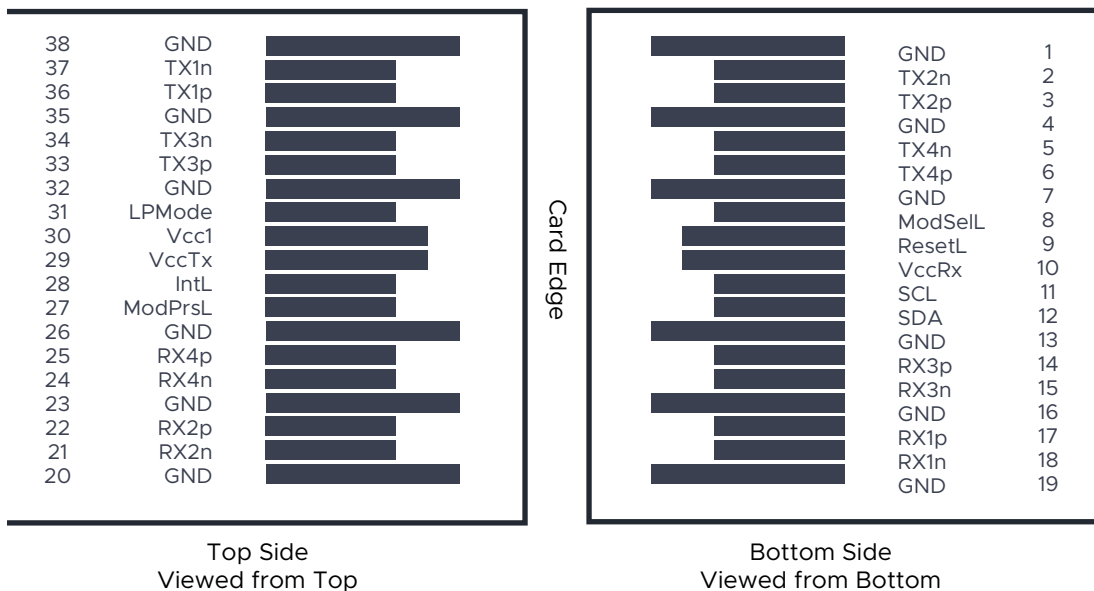
PIN Description

Pin		Function/Description	Notes
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 4.7K Ω to 10K Ω pull-up resistor to VccHost.

Pin Assignment and Description



Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Storage Temperature	TS	-40	85	°C
Relative Humidity	RH	5	95	%
Supply Voltage	VCC	-0.5	4.0	V

Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	TC	-5	25	70	°C
Supply Voltage	VCC	3.135	3.3	3.465	V
Data Rate per Channel	-	-	25.78125	-	Gb/s

Transceiver Electrical Characteristics

Parameter	Symbol	Typical	Maximum	Unit	Notes
Module Supply Current	I _{CC}	-	1100	mA	-
Power Dissipation	PD	-	3500	mW	-
Transmitter					
Input Differential Impedance	Z _{IN}	90	110	Ω	-
Differential Data Input Swing	V _{IN, P-P}	190	700	mVP-P	-
Receiver					
Output Differential Impedance	Z _O	90	110	Ω	-
Differential Data Output Swing	V _{OUT, P-P}	300	850	mVP-P	1
Single-ended Output Voltage	-	-0.3	4	V	-

Notes:

- Internally AC coupled, but requires an external 100Ω differential load termination

Transmitter Optical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Launch Optical Power per lane	EX	-4	-	+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}		

Notes:

1. The optical power is launched into SMF
2. Measured with a PRBS 2³¹-1 test pattern @25.78125Gbps

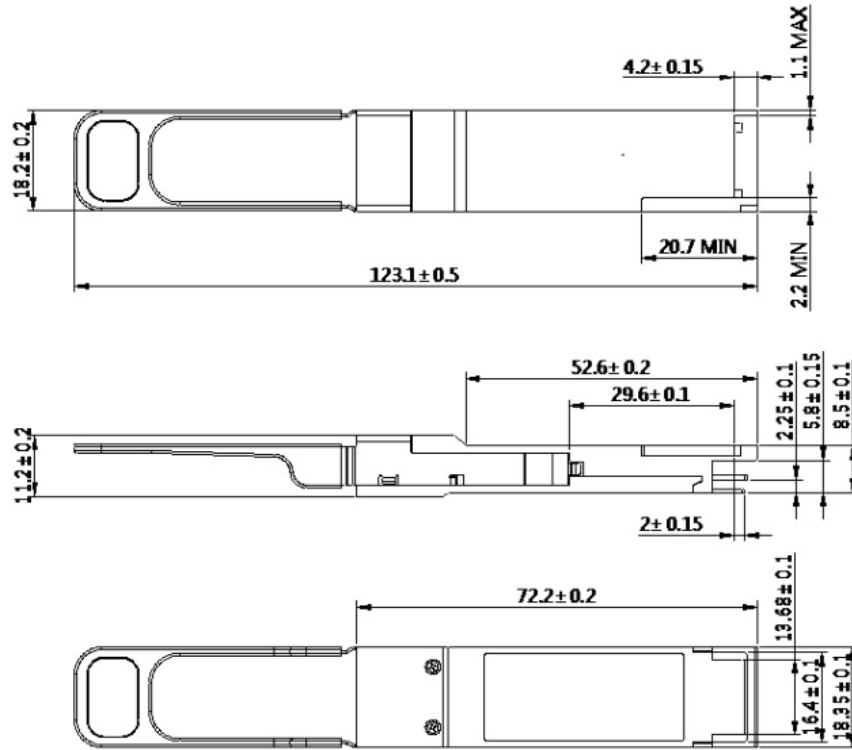
Receiver Optical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Center Wavelength	λ_c	1295	-	1325	nm	-
Receiver Sensitivity	S	-	-	-9.0	dBm	1
Damage Threshold	POL	3.0	-	-	dBm	1
LOS De-Assert	LOSD	-	-	-12	dBm	-
LOS Assert	LOSA	-24	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	-

Notes:

1. Measured with PRBS 2³¹-1 test pattern, 25.78125Gb/s, BER of 5×10⁻¹²

Mechanical specifications



Unit : mm

Revision history

Revision	Date	Author	Description
V1.0	24-01-2021	JGN	Initial Document

Note : Nexgen A/S reserves the right to change this document without notice.