

QSFP28-100G-ER4-BEI

100GBase QSFP28
LWDM4
40km Reach

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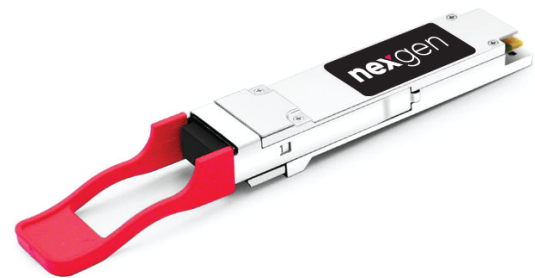


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Features

- QSFP28 MSA compliant
- 4 LAN-WDM lanes MUX/DEMUX design
- 4x 25Gb/s LAN WDM laser
- 4x 25 Gb/s receiver
- Hot-pluggable QSFP28 footprint
- Duplex LC connector
- Up to 40km link length without FEC
- Power dissipation <5W (0~70°C)
- RoHS compliant and Lead Free



Applications

- 100GBASE ER4 Ethernet Links
- Telecom networking
- Data center interconnect

Part number	Product description
QSFP28-100G-ER4-BEI	100GBase SMF QSFP28 LWDM4 40km 0°C to 70°C LC Duplex DDM (EML + BOX) 5.0W

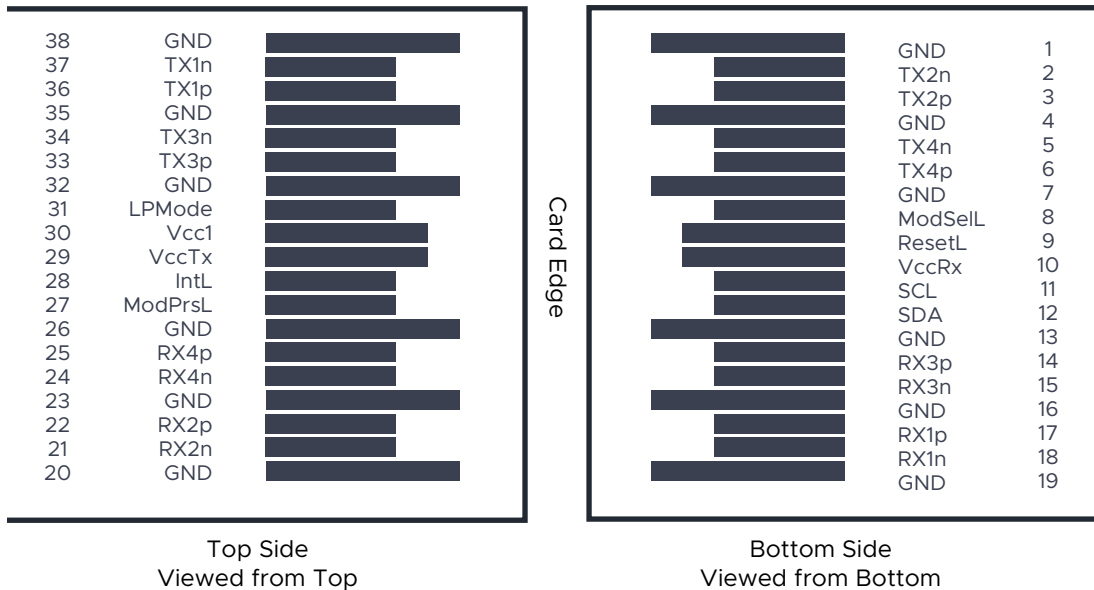
PIN Description

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	Min	Typ	Max	Unit	Notes
Maximum Supply Voltage	-0.3	-	3.6	V	-
Storage Temperature	-40	-	+85	°C	-
Relative Humidity	5	-	95	%	1

Notes:

1. Non-condensing.

Recommend Operation Conditions

Parameter	Min	Typ	Max	Unit	Notes
Power Supply Voltage	3.13	3.3	3.47	V	-
Power Supply Current (com.)	-	-	1440	mA	-
Case Operating Temperature (com.)	0	-	+70	°C	-

Electrical Characteristics

Parameter	Min	Typ	Max	Unit	Notes
Transmitter					
Input differential impedance	90	100	110	Ω	1
Differential data input swing	95	-	900	mV	-
TX Disable-High	Vcc-0.8	-	Vcc	V	-
TX Disable-Low	Vee	-	Vee+0.8	V	-
TX Fault-High	Vcc-0.8	-	Vcc	V	-
TX Fault-Low	Vee	-	Vee+0.8	V	-
Receiver					
Output Differential Impedance	90	100	110	Ω	1
Differential Data Output Swing	-	-	900	mV	2
LOS-High	Vcc-0.8	-	Vcc	V	-
LOS-Low	Vee	-	Vee+0.8	V	-

Notes:

1. AC coupled
2. into 100 Ω differential termination

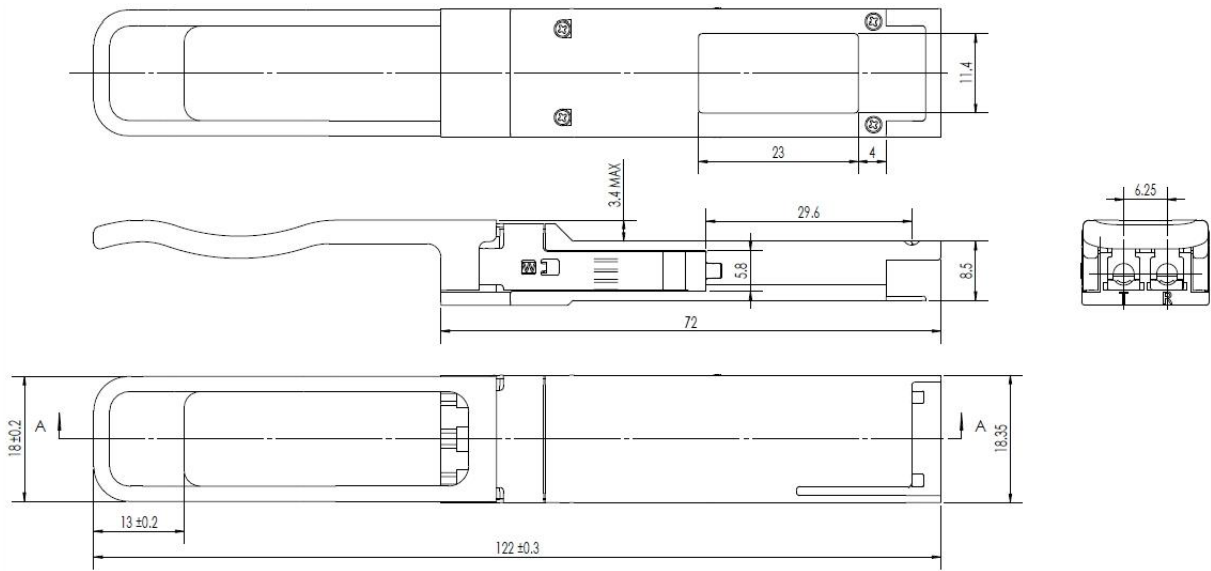
Optical Characteristics

Parameter	Min	Typ	Max	Unit	Notes
Transmitter					
Optical Center Wavelength λ_0	1294.53	1295.56	1296.59	nm	-
Optical Center Wavelength λ_1	1299.02	1300.05	1301.09	nm	-
Optical Center Wavelength λ_2	1303.54	1304.58	1305.63	nm	-
Optical Center Wavelength λ_3	1308.09	1309.14	1310.19	nm	-
Average Output Power per lane	-2.5	-	2.9	dBm	1
Optical Modulation Amplitude per lane	0.1	-	4.5	dBm	2
Extinction Ratio	8.0	-	-	dB	-
Side Mode Suppression Ration	30	-	-	dB	-
Data Rate per lane	-	25.78125	-	Gb/s	-
Receiver					
Optical Center Wavelength	1260	-	1340	nm	-
Receiver Sensitivity per lane (AOP)	-	-	-18.4	dBm	3
Damage Treshold	5.5	-	-	dBm	3
LOS Assert	-30	-	-	dBm	-
LOS De-Assert	-	-	-22	dBm	-
LOS Hysteresis	0.5	-	-	dB	-

Notes:

1. The optical power is launched into SMF.
2. Measured with PRBS 2³¹-1 @ 25.78125 Gb/s.
3. Measured with PRBS 2³¹-1 @ 25.78125 Gb/s, BER 1⁻¹² before FEC.

Mechanical specifications



units : mm

Revision history

Revision	Date	Author	Description
V1.0	16-03-2020	JGN	Initial Document

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