QSFP28-OTU4-LR4-BDF

OTU4 QSFP28
LWDM4
10km Reach

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Features

- QSFP28 MSA compliant
- 4 LAN-WDM lanes MUX/DEMUX design
- 4x 27.95Gb/s LAN WDM cooled DML laser for OTU4
- 4x 25.78Gb/s LAN WDM cooled DML laser for 100GE
- 4x 27.95 Gb/s PIN receiver for OTU
- 4x 25.78 Gb/s PIN receiver for 100GE
- Hot-pluggable QSFP28 footprint
- Duplex LC connector
- Up to 10km link length
- Power dissipation <3.5W (0~70°C)
- RoHS compliant and Lead Free

Applications

- 100GBASE LR4 Ethernet Links
- Infiniband QDR & DDR interconnects
- OTN OTU4

Part number	Product description
QSFP28-OTU4-LR4-BDF	OTU4 SMF QSFP28 DML (BOX) LWDM4 10km 0°C to 70°C LC Duplex DDM (3.5W)

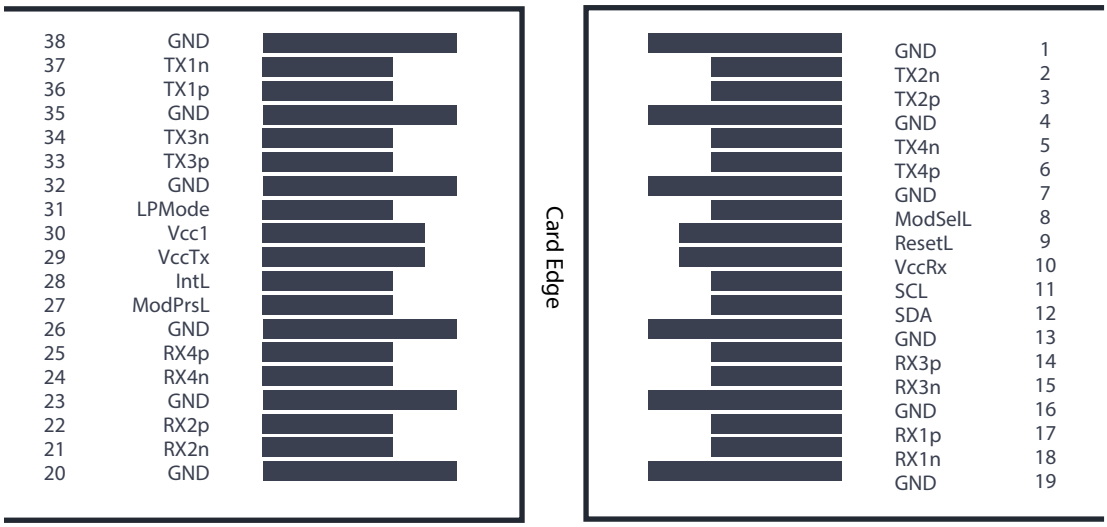
PIN Description

Pin		Function/Description	Notes
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	Tx2 -	Tran smitter 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 (C ommon 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 Inve rted 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.

Pin Assignment and Description



Top Side
Viewed from Top

Bottom Side
Viewed from Bottom

Absolute Maximum Ratings

Parameter	Min	Typ	Max	Unit	Notes
Maximum Supply Voltage	-0.5	-	4.0	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	3.135	3.3	3.465	V	-
Power Supply Current (com.)	-	-	1100	mA	-
Case Operating Temperature (com.)	0		+70	°C	-

Transceiver Electrical Characteristics

Parameter	Min	Typical	Max	Units	Notes
Power Dissipation	-	-	3.5	W	-
Supply Current	-	-	1100	mA	-
Transmitter					
Input Differential Impedance	-	100	-	Ω	-
Differential Data Input Swing	190	-	700	mVp-p	-
Receiver					
Output Differential Impedance	-	100	-	Ω	-
Differential Data Output Swing	300	-	850	mVp-p	1

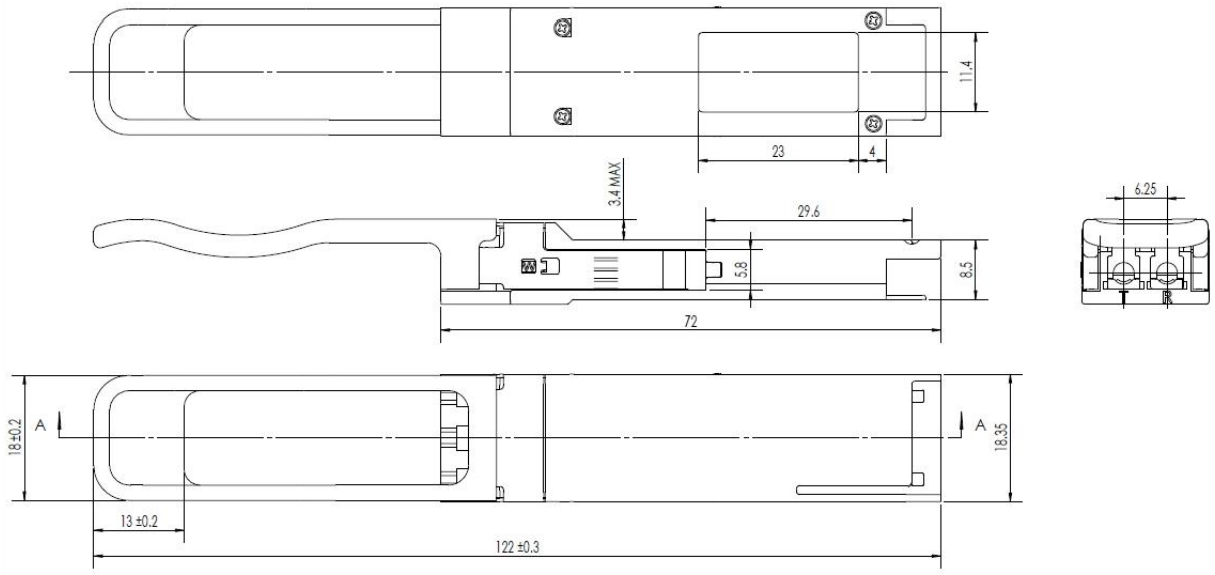
Notes:
1. Internally AC coupled, but requires a external 100Ω differential load termination.

Optical Characteristics

Parameter	Min	Typ	Max	Unit	Notes
Transmitter					
Optical Center Wavelength λ0	1294.53	1295.56	1296.59	nm	-
Optical Center Wavelength λ1	1299.02	1300.05	1301.09	nm	-
Optical Center Wavelength λ2	1303.54	1304.58	1305.63	nm	-
Optical Center Wavelength λ3	1308.09	1309.14	1310.19	nm	-
Average Output Power per lane	-0.6	-	4.0	dBm	1
Total Output Power	-	-	10	dBm	1
Exctinction Ratio	4.0	-	-	dB	2
Side Mode Suppression Ratio	30	-	-	dB	-
Data Rate per lane	-	-	27.95	Gb/s	-
Average launch power (Tx OFF)	-	-	-30	dBm	1
Optical Return Loss Tolerance	-	-	20	dB	-
Receiver					
Optical Center Wavelength	1294.53	-	1310.19	nm	-
Receiver Sensitivity per lane (OMA)	-	-	-8.4	dBm	2
Receiver Overload per channel	4.5	-	-	dBm	2
Damage Treshold	5.5	-	-	dBm	-
Optical Return Loss	26	-	-	dB	-
LOS Assert	-24	-	-	dBm	-
LOS De-Assert	-	-	-11.6	dBm	-
LOS Hysteresis	0.5	-	-	dB	-

Notes:
1. The optical power is launched into SMF.
2. Measured with PRBS 2^{31}-1 @ 27.95 Gb/s

Mechanical specifications



units : mm

Revision history

Revision	Date	Author	Description
V1.1	11-11-2024	ML	Initial Document

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