

QSFP-40G-ZR4

40GBase QSFP+
LWDM4
<80km

Datasheet | product specifications

ESD threshold 1kV for SFI pins and 2kV for all other electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114A (HBM). However, normal ESD precautions are still required during the handling of this module.

Class 1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.



Features

- Up to 80km
- Duplex LC connector
- Up to 4x 10Gb/s
- PIN receiver
- 4x LWDM DFB
- Power dissipation <3.5W
- Case Operating Temperature 0°C to 70 °C

Applications

- 40GBase ZR4 Ethernet Links
- Metro networks
- Data center interconnect

Compliances

- QSFP MSA compliant
- Compliant with 40G Ethernet IEEE802.3ba and 40GBASE-ZR4
- Compliant with QDR/DDR Infiniband data rate
- RoHS compliant

Overview

Part Number	Transmitter	Average Launch Power	Receiver	Reach	Temp.
QSFP-40G-ZR4	DFB	10.5 dBm	PIN receiver	<80km	0°C to 70°C

Ordering Information

Part Number	Product Description
QSFP-40G-ZR4	40GBase SMF QSFP+ LWDM4 80km 0°C to 70°C LC Duplex DDM (BOX + DFB) 3.5W

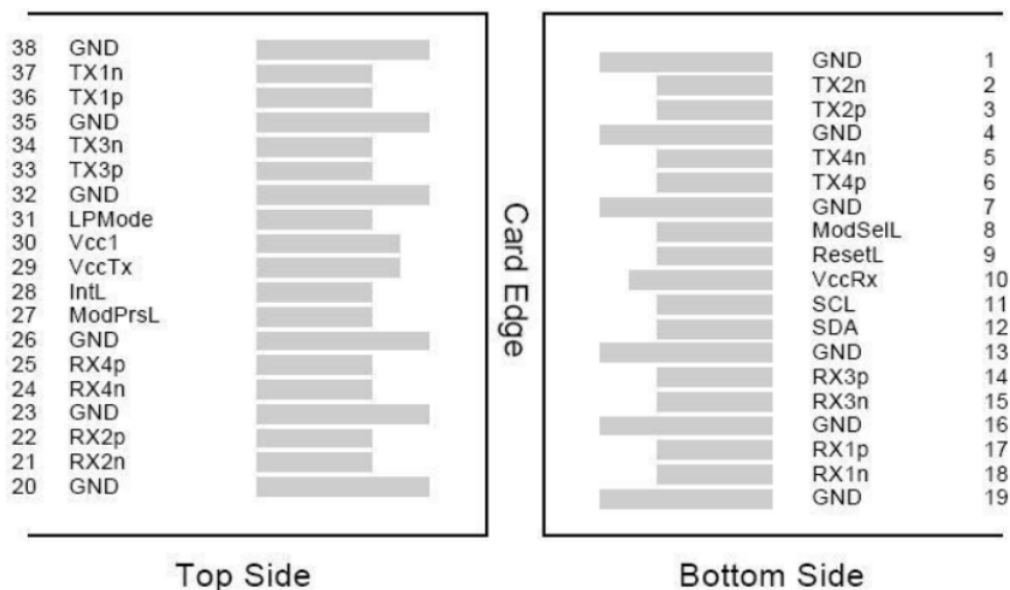


PIN Description

PIN	Symbol	Name - Description	Notes	PIN	Symbol	Name - Description	Notes
1	GND	Ground		20	GND	Ground	
2	Tx2n	Transmitter Inverted Data Input	1	21	Rx2n	Receiver Inverted Data Output	1
3	Tx2p	Transmitter Non-Inverted Data Input		22	Rx2p	Receiver Non-Inverted Data Output	
4	GND	Ground	1	23	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	1	24	Rx4n	Receiver Inverted Data Output	1
6	Tx4p	Transmitter Non-Inverted Data Input	1	25	Rx4p	Receiver Non-Inverted Data Output	1
7	GND	Ground		26	GND	Ground	
8	ModSelL	Module Select		27	ModPrsL	Module Present	
9	ResetL	Module Reset		28	IntL	Interrupt	
10	VccRx	+3.3V Power Supply Receiver		29	VccTx	+3.3V Power Supply Transmitter	
11	SCL	2-wire Serial Interface Clock		30	Vcc1	+3.3V Power Supply	
12	SDA	2-wire Serial Interface Data		31	LPMODE	Low Power Mode	
13	GND	Ground		32	GND	Ground	
14	Rx3p	Receiver Non-Inverted Data Output		33	Tx3p	Transmitter Non-Inverted Data Input	
15	Rx3n	Receiver Inverted Data Output		34	Tx3n	Transmitter Inverted Data Input	
16	GND	Ground		35	GND	Ground	
17	Rx1p	Receiver Non-Inverted Data Output		36	Tx1p	Transmitter Non-Inverted Data Input	
18	Rx1n	Receiver Inverted Data Output		37	Tx1n	Transmitter Inverted Data Input	
19	GND	Ground		38	GND	Ground	

Notes:

1. Open collector/drain output, which should be pulled up with a 4.7kΩ to 10kΩ resistor on the host board if intended for use.





Absolute Maximum Ratings

Parameters	Symbols	Min	Typ	Max	Unit	Notes
Storage Temperature	Ts	-40	-	85	°C	
Relative Humidity	RH	0	-	85	%	1
Operating Case Temperature	Ts	0	-	70	°C	

Notes:

1. Non-condensing.

Recommended Operating Conditions

Parameters	Symbols	Min	Typ	Max	Unit	Notes
Data Rate Per Lane	D	-	10.3125	-	Gbps	
Link Distance	Top	-	-	80	km	
Power Supply Voltage	Vcc	3.13	3.3	3.47	V	
Power Supply Current	Icc	-	-	1000	mA	
Power Consumption	Po	-	-	3.5	W	

Optical Characteristics

Parameters	Symbols	Min	Typ	Max	Unit	Notes
Transmitter						
Center Wavelength L0	λ_{C0}	1294.53	1295.56	1296.59	nm	
Center Wavelength L1	λ_{C1}	1299.02	1300.05	1301.09	nm	
Center Wavelength L2	λ_{C2}	1303.54	1304.58	1305.63	nm	
Center Wavelength L3	λ_{C3}	1308.09	1309.14	1310.19	nm	
Average Launch Power Each Lane	PAVG	+2	-	7	dBm	
Total Average Launch Power	PT	-	-	10.5	dBm	
Difference in Launch Power - any two lanes	Ptx, diff	-	-	4.7	dBm	
Optical Module Amplitude (OMA)	TxOMA	0.3	-	5.0	dBm	
Transmitter and Dispersion Penalty	TDP	-	-	2.6	dB	
Optical Return Loss Tolerance	TOL	-	-	12	dB	
Side Mode Suppression Ratio	SMSR	30	-	-	dB	
RIN20 OMA	RIN	-	-	-128	dB/Hz	
Extinction Ratio	ER	5.5	6.5	-	dB	



Parameters	Symbols	Min	Typ	Max	Unit	Notes
Receiver						
Average Receive Power	-	-24	-	-6	dBm	
Receiver Overload	THd	0	-	-	dBm	
LOS Assert	LOSA	-35	-	-	dBm	
LOS De-Assert	LOSD	-	-	-25	dBm	
LOS Hysteresis	LOSH	0.5	-	-	dB	

Mechanical Dimensions

Revision History

Revision	Doc. #	Date	Author	Description
	DT000043			

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