QSFP-40G-SWDM4

40GBase QSFP+
SWDM4
240m Reach

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Features

- Hot-pluggable QSFP+
- Supports 41.2Gb/s aggregate bit rate
- DDM function compliant with SFF-8436
- Compliant with IEEE 802.3ba
- QSFP+ MSA compliant
- LC Duplex connector
- 40GE link distances 240m OM3, 350m OM4
- Operating case temperature range 0 to 70°C
- Single 3.3V power supply
- RoHS-6 compliant

Applications

- 40 Gigabit Ethernet interconnects
- Datacom/Telecom switch & router connections
- Data aggregation and backplane applications
- Proprietary protocol and density applications

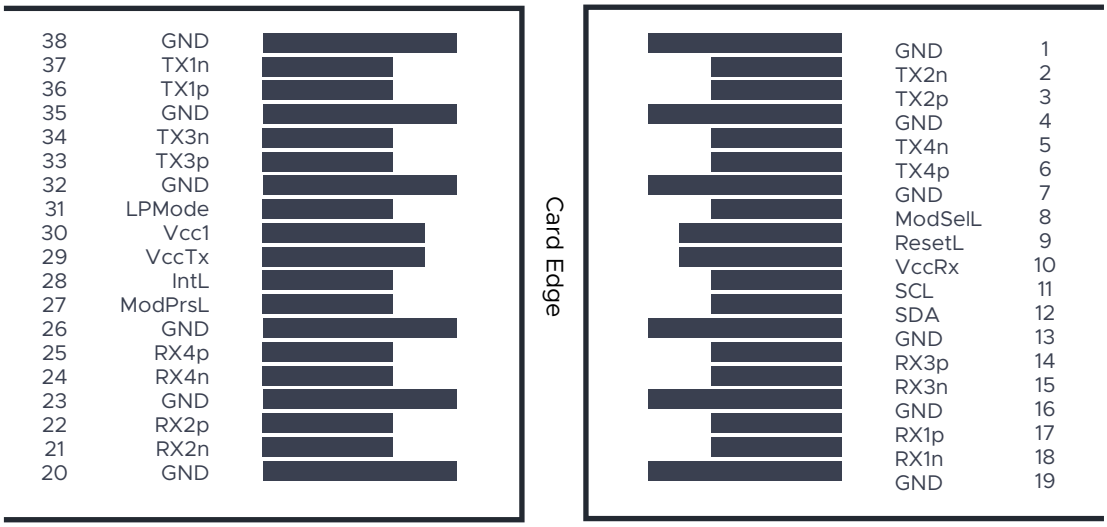
Part number	Product description
QSFP-40G-SWDM4	40GBase MMF QSFP+ SWDM4 240m 0°C to 70°C LC Duplex DDM

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 (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 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.

Pin Assignment and Description



Top Side
Viewed from Top

Bottom Side
Viewed from Bottom

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units	Notes
Storage Temperature	Ts	-40	85	℃	
Power Supply Voltage	Vcc	-0.5	3.6	V	
Relative Humidity (non-condensation)	RH	15	85	%	

Notes:
Exceeding any of these values may be harmful for the device

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Units
Operating Case Temperature	Tc	0	-	70	℃
Supply Voltage	Vcc	3.13	3.3	3.47	V
Data Rate per Lane	-	-	-	10.3125	Gb/s
Distance on OM3 MMF	-	-	-	240	m
Distance on OM4 MMF	-	-	-	350	m
Distance on OM4 MMF	-	-	-	440	m

Transceiver Electrical Characteristics

Parameter	Min	Typical	Max	Units	Notes
Power Dissipation	-	-	3.5	W	-
Supply Current	-	-	900	mA	-
Transmitter					
Single ended input voltage tolerance	-0.3	-	4	V	1
AC common-mode input voltage tolerance	15	-	-	mV	2
Differential input return loss	-	See 86A.4.1.1	-	dB	3
Diffrential to common-mode input return loss	10	-	-	dB	3
J2 Jitter tolerance	0.17	-	-	UI	-
J9 Jitter tolerance	0.29	-	-	UI	-
(DDPWS) tolerance	0.07	-	-	UI	-
Crosstalk calibration signal VMA	-	850	-	mV	4
Crosstalk calibration signal transition times, 20% to 80%	-	34	-	ps	4
Receiver					
Single ended output voltage tolerance range	-0.3	-	4	V	1
AC common-mode output voltage (RMS)	-	-	75	mV	-
Termination mismatch at 1MHz	-	-	5	%	-
Differential output return loss	-	See 86A.4.2.1	-	dB	3
Common-mode output return loss	-	See 86A.4.2.2	-	dB	3
Output transition time,20% to 80%	28	-	-	ps	-
J2 Jitter output	-	-	0.42	UI	-
J9 Jitter output	-	-	0.65	UI	-
Crosstalk source VMA, each lane	-	700	-	mV	5
Crosstalk source transition times,20% to 80%	-	37	-	ps	5

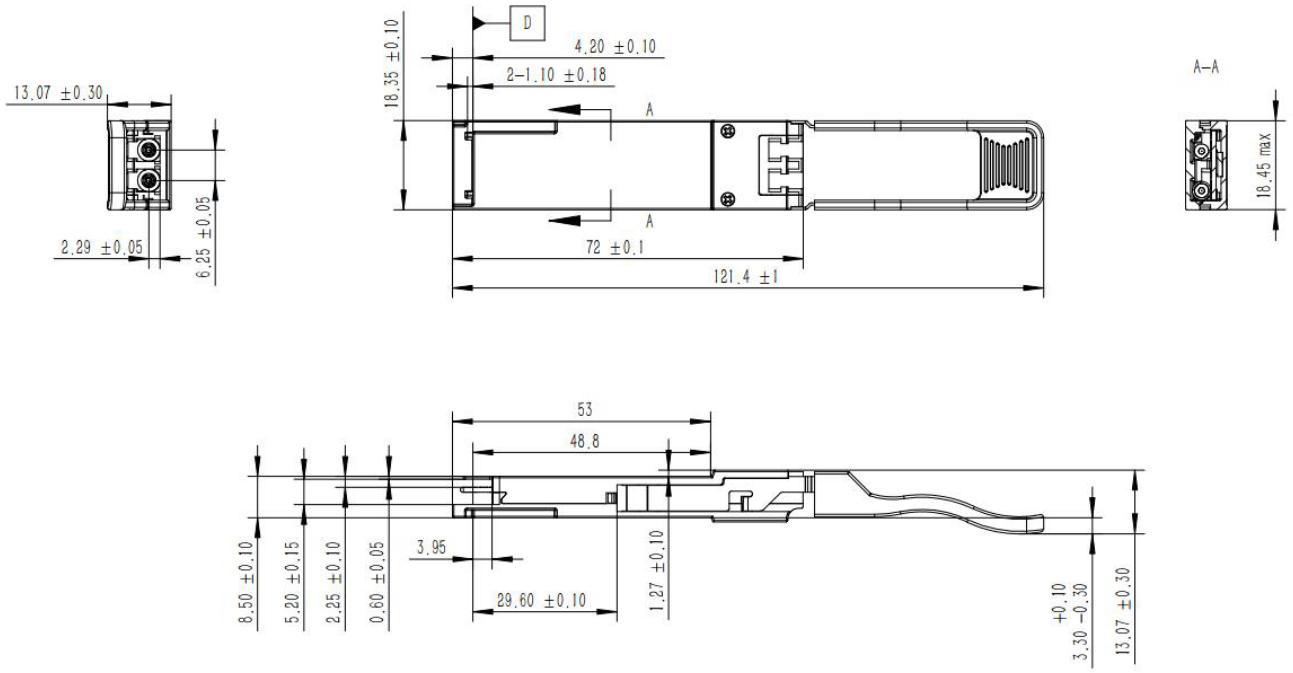
Notes:
1. Referred to TP1 signal common
2. RMS
3. from 10 MHz to 11.1 GHz
4. While caliobrating compliance signal
5. At TP1a

Transceiver Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Units	Notes
Transmitter						
Center wavelength 1	λ1	-	850	-	nm	-
Center wavelength 2	λ2	-	880	-	nm	-
Center wavelength 3	λ3	-	910	-	nm	-
Center wavelength 4	λ4	-	940	-	nm	-
Average Optical Power per Channel	Pavg	-7.5	-	3.0	dBm	-
Extinction Ratio	ER	2.0	-	-	dB	-
Laser Off Power Per Channel	Poff	-	-	-30	dBm	-
Relative Intensity Noise	Rin	-	-	-128	dB/HZ	1
Optical Return Loss Tolerance	-	12	-	-	dB	-
Receiver						
Center Wavelength 1	λ1	-	850	-	nm	-
Center Wavelength 2	λ2	-	880	-	nm	-
Center Wavelength 3	λ3	-	910	-	nm	-
Center Wavelength 4	λ4	-	940	-	nm	-
Receiver Sensitivity per Channel	R	-9.1	-	3.0	dBm	-
Maximum Input Power	Pmax	4.0	-	-	dBm	-
Return Loss	RL	-	-	12	dB	-
LOS De-Assert	LOSD	-	-	-13	dBm	-
LOS Assert	LOSA	-30	-	-	dBm	-
LOS Hysteresis	LOSH	0.5	-	-	dB	-

Notes:
1. Maximum value is informative

Mechanical specifications



Unit : mm

Revision history

Revision	Date	Author	Description
V1.1	31-03-2023	JGN	Initial Document

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