QSFP-40G-SR4

40GBase QSFP+
850nm
100m Reach

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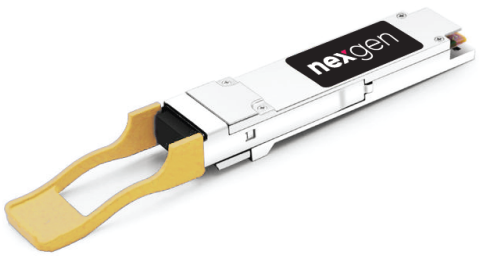
Features

- Hot-pluggable QSFP+
- Supports 40Gb/s aggregate bit rate
- DDM function compliant with SFF-8436
- Compliant with IEEE 802.3ba
- QSFP+ MSA compliant
- MPO connector
- 40Gb/s link distances 100m on OM3
- Power consumption ≤ 1.5W
- 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

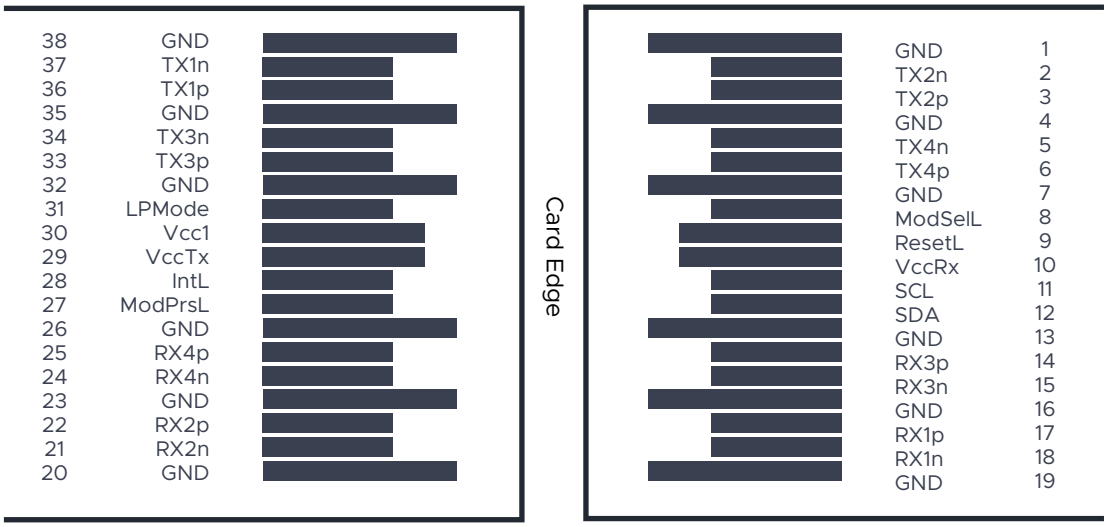
Part number	Product description
QSFP-40G-SR4	40GBase MMF QSFP+ 850nm 100m 0°C to 70°C LC Duplex DDM

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	4.0	V	
Relative Humidity (non-condensation)	RH	5	95	%	

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	-	-	-	100	m

Transceiver Electrical Characteristics

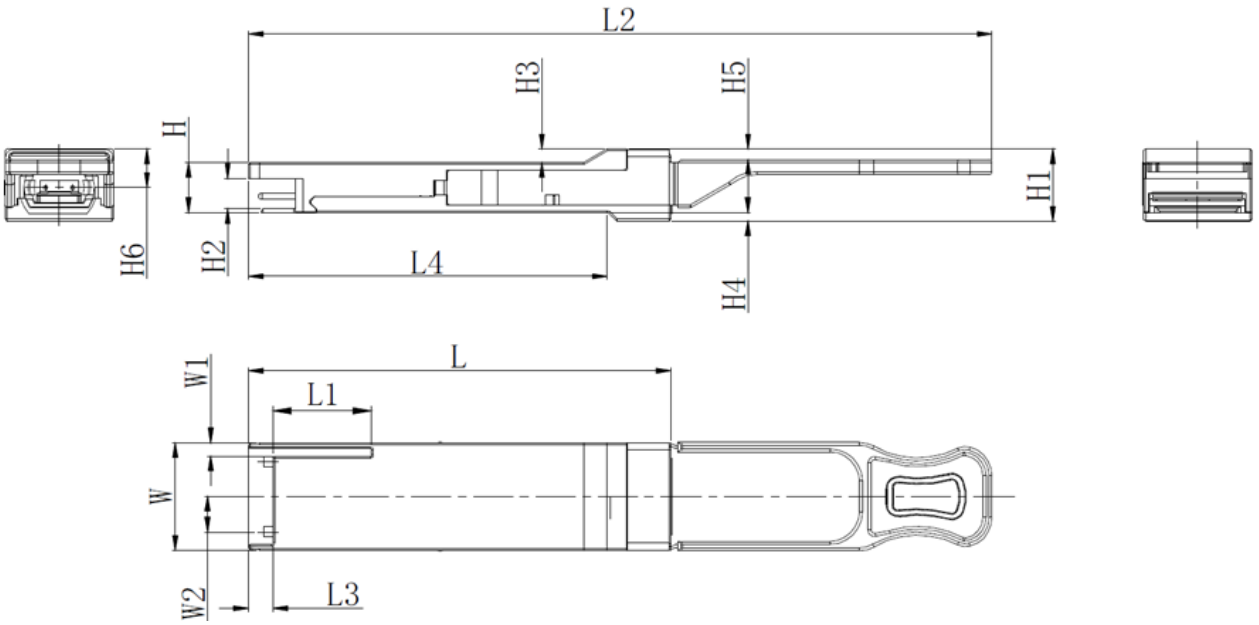
Parameter	Symbol	Min	Typical	Max	Units	Notes
Power Dissipation	-	-	-	1.5	W	-
Supply Current	Icc	-	-	430	mA	-
Transmitter						
Input Differential Impedance	Zin	80	100	120	Ω	-
Differential Data Input Swing	Vin,P-P	200	-	1600	mVpp	-
Receiver						
Output Differential Impedance	Zout	90	100	120	Ω	-
Differential Data Input Swing	Vout,P-P	350	-	1000	mVpp	-

Transceiver Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Units	Notes
Transmitter						
Center wavelength	λ	830	850	870	nm	-
RMS Spectral Width	Pm	-	0.5	0.65	nm	-
Average Optical Power per Channel	Pavg	-7.6	-	2.4	dBm	1
Extinction Ratio	ER	3.0	-	-	dB	-
Laser Off Power Per Channel	Poff	-	-	-30	dBm	-
Receiver						
Center Wavelength	λ	820	-	880	nm	-
Receiver Sensitivity OMA per Channel	R	-	-	-10.2	dBm	2
Overload per channel	Pmax	2.5	-	-	dBm	-
LOS De-Assert	LOSD	-	-	-12	dBm	-
LOS Assert	LOSA	-30	-	-	dBm	-
LOS Hysteresis	LOSH	0.5	-	-	dB	-

Notes:
1. Coupled into 50/125 MMF
2. Measured with PRBS 231-1 test pattern @10.3125Gbps, BER = 1E-12

Mechanical specifications



Unit : mm

Revision history

Revision	Date	Author	Description
V1.0	31-05-2020	JGN	Initial Document

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