



◆ CISCO-COMPATIBLE DATA SHEET:

40G QSFP+ PRODUCT FAMILY

DESCRIPTION

The 40GBASE QSFP+ modules allow a wide variety of 40 Gigabit Ethernet connectivity options for data center, enterprise, and service provider applications. InterOptic 40G QSFP+ modules are supported on a comprehensive suite of switches and routers.

FEATURES & BENEFITS

- ◆ Hot-swappable 40G QSFP+ modules allow for quick additions/changes into an available 40G QSFP+ port
- ◆ “Pay as you Populate” model lowers initial costs
- ◆ Digital optical monitoring capability for strong diagnostic capabilities as supported by the OEM
- ◆ Optical interoperability allows for IEEE compliant 40GBASE optical interfaces on the same link

QSFP-40G-CSR4

The 40GBASE-CSR4 QSFP+ module supports a link length of up to 82m on 500MHz*km OM2 parallel multimode fiber (MMF). A link length of up to 300m is possible using 2000MHz*km parallel MMF (OM3). Using 4700MHz*km parallel MMF (OM4), link lengths up to 400m are possible. This transceiver can also support a 4x10GBASE-SR mode utilizing an external QSFP+ MPO/MTP to four SFP+ LC MMF breakout cable.

QSFP-40G-SR4, QSFP-40G-SR4-S

The 40GBASE-SR4 QSFP+ module supports a link length of up to 30m on 500MHz*km OM2 parallel multimode fiber (MMF). A link length of up to 100m is possible using 2000MHz*km parallel MMF (OM3). Using 4700MHz*km parallel MMF (OM4), link lengths up to 150m are possible. These transceivers can also support a 4x10GBASE-SR mode utilizing an external QSFP+ MPO/MTP to four SFP+ LC MMF breakout cable.

QSFP-40G-SR-BD

The 40GBASE-SR-BiDi QSFP+ module utilizes a duplex LC fiber connector to provide a Bi-Directional (BiDi) short-reach 40 Gigabit Ethernet solution. The BiDi module supports a link length of up to 100m on 2000MHz*km parallel MMF (OM3). Using 4700MHz*km parallel MMF (OM4), link lengths up to 150m are possible.



WSP-Q40GLR4L

The 40GBASE-LR4L QSFP+ module supports a link length of up to 2 km on standard single-mode fiber (SMF, G.652). Interoperability with the 40GBASE-LR4 is supported for distances up to 2km.

QSFP-40G-LR4, QSFP-40G-LR4-S

The 40GBASE-LR QSFP+ module supports a link length of up to 10 km on standard single-mode fiber (SMF, G.652). The OTU3 protocol is additionally supported on the multi-rate QSFP-40G-LR4 transceiver.

QSFP-40G-ER4

The multi-rate 40GBASE-ER4 QSFP+ module supports a 40 Gigabit Ethernet and OTU3 protocols. A link length of up to 40 km are available on standard single-mode fiber (SMF, G.652).

ORDERING INFORMATION

QSFP-40G-CSR4	40GBASE-CSR4 QSFP+ Transceiver for Parallel MMF
QSFP-40G-SR4	40GBASE-SR4 QSFP+ Transceiver for Parallel MMF
QSFP-40G-SR4-S	40GBASE-SR4 QSFP+ Transceiver for Parallel MMF, S-Class
QSFP-40G-SR-BD	40GBASE-SR-BiDi QSFP+ Transceiver for MMF
WSP-Q40GLR4L	40GBASE-LR4L QSFP+ Transceiver for SMF
QSFP-40G-LR4	40GBASE-LR4 and OTU3 QSFP+ Transceiver for SMF
QSFP-40G-LR4-S	40GBASE-LR4 QSFP+ Transceiver for SMF, S-Class
QSFP-40G-ER4	40GBASE-ER4 and OTU3 QSFP+ Transceiver for SMF
QSFP-4SFP10-CUXXM	40GBASE-CR4 QSFP+ to four 10GBASE-CU SFP+ passive copper Direct Attach Cable (DAC) breakout, Variable Lengths
QSFP-4X10G-AOCXXM	40GBASE-AOC QSFP+ to four 10GBASE-AOC SFP+ Active Optical Cable (AOC) breakout, Variable Lengths
QSFP-H40G-CUXXM	40GBASE-CR4 QSFP+ passive copper Direct Attach Cable (DAC), Variable Lengths
QSFP-H40G-ACUXXM	40GBASE-CR4 QSFP+ active copper Direct Attach Cable (DAC), Variable Lengths
QSFP-H40G-AOCXXM	40GBASE-AOC QSFP+ Active Optical Cable (AOC), 1m, Variable Lengths

PART NUMBER	CONNECTOR TYPE	WAVELENGTH (nm)	CABLE TYPE	CORE SIZE (um)	MODAL BANDWIDTH (MHz*km)	MAXIMUM OPERATING DISTANCE
QSFP-40G-CSR4	MPO/MTP	850	Parallel MMF	50	500 (OM2)	82m
					2000 (OM3)	300m
					4700 (OM4)	400m
QSFP-40G-SR4 QSFP-40G-SR4-S	MPO/MTP	850	Parallel MMF	50	500 (OM2)	30m
					2000 (OM3)	100m
					4700 (OM4)	150m
QSFP-40G-SR-BD	LC - Duplex	832 - 918	MMF	50	500 (OM2)	30m
					2000 (OM3)	100m
					4700 (OM4)	150m
WSP-Q40GLR4L	LC - Duplex	1310	SMF	G.652	N/A	2km
QSFP-40G-LR4 QSFP-40G-LR4-S	LC - Duplex	1310	SMF	G.652	N/A	10km
QSFP-40G-ER4	LC - Duplex	1310	SMF	G.652	N/A	40km

PART NUMBER	PHY TYPE	TX POWER (dBm) Max-Min	RX POWER (dBm) Max - Min	TEMPERATURE RANGE	OPERATING TEMPERATURE
QSFP-40G-CSR4	40GBASE-CSR4	0.0 to -7.3 per lane	0.0 to -9.9 per lane	COM	0 to 70 °C
QSFP-40G-SR4 QSFP-40G-SR4-S	40GBASE-SR4	-1.0 to -7.6 per lane	2.4 to -9.5 per lane	COM	0 to 70 °C
QSFP-40G-SR-BD	40GBASE-SR-BiDi	5.0 to -4.0 per lane	5.0 to -6.0 per lane	Limited COM	10 to 70 °C
WSP-Q40GLR4L	40GBASE-LR4L	2.3 to -10.0 per lane	2.3 to -13.7 per lane	COM	0 to 70 °C
QSFP-40G-LR4-S	40GBASE-LR4	2.3 to -7.0 per lane	2.3 to -13.7 per lane	COM	0 to 70 °C
QSFP-40G-LR4	40GBASE-LR4 and OTU3	2.3 to -7.0 per lane	2.3 to -13.7 per lane	COM	0 to 70 °C
QSFP-40G-ER4	40GBASE-ER4 and OTU3	4.5 to -2.7 per lane	-4.5 to -21.2 per lane	COM	0 to 70 °C
QSFP-4SFPI0G-CUXXM	40GBASE-CR4 to 4x10GBASE-CU	N/A	N/A	COM	0 to 70 °C
QSFP-4X10G-AOCXXM	40GBASE-AOC to 4x10GBASE-AOC	N/A	N/A	COM	0 to 70 °C
QSFP-H40G-CUXXM	40GBASE-CR4	N/A	N/A	COM	0 to 70 °C
QSFP-H40G-ACUXXM	40GBASE-CR4	N/A	N/A	COM	0 to 70 °C
QSFP-H40G-AOCXXM	40GBASE-AOC	N/A	N/A	COM	0 to 70 °C

PHYSICAL DIMENSIONS (HxWxD)

QSFP+ Module: 13.5 x 18.4 x 72.4 mm (excluding pull tab)

POWER REQUIREMENTS (TYPICAL)

QSFP+ Module: 1.5 W (40GBASE-CSR4, SR4)
QSFP+ Module: 3.5 W (40GBASE-SR-BD, LR4L, LR4, ER4)

WARRANTY

Standard: 3 Year
Extended: Optional, up to 5 Years

SAFETY

Laser Class 1: 21CFR-1040 LN#50
Laser Class 1: IEC60825-1

STANDARDS COMPLIANCE

IEEE 802.3ba: 40 Gigabit Ethernet
IEEE 802.3ae: 10 Gigabit Ethernet
GR-20-CORE: Generic Requirements for Optical Fiber and Optical Fiber Cable
GR-326-CORE: Generic Requirements for Single-mode Optical Connectors and Jumper Assemblies
GR-1435-CORE: Generic Requirements for Multi-Fiber Optical Connectors
QSFP+ Module: QSFP+ MSA SFF-8436