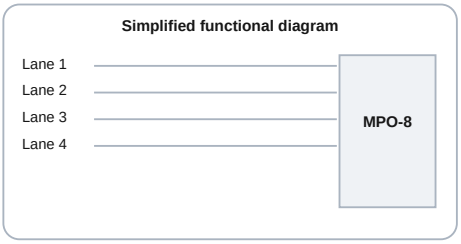
QSFP-eSR4-40G

QSFP+, 40GbE-eSR4, (4x 11.2Gbps), 300m,MPO-8

QSFP-eSR4-40G

1. Product overview

The QSFP-eSR4-40G is a parallel 40Gb/s QSFP+ optical transceiver with four independent transmit and receive channels over multimode fiber. It uses an MPO/MTP interface and is specified for extended short-reach transmission up to 300 m.



2. Key features

- 4 independent full-duplex optical channels
- Up to 11.2 Gb/s per channel; aggregate bandwidth >40 Gb/s
- MTP/MPO optical connector
- Extended short reach up to 300 m
- Digital diagnostics with TX input and RX output CDR retiming
- Single +3.3 V supply; 0°C to +70°C

3. Applications

- 40GbE extended short reach
- Rack-to-rack
- Data center switches and routers
- InfiniBand SDR/DDR/QDR

4. Technical data

Parameter	Value	Parameter	Value
Technology	40G QSFP+ eSR4	Transmission media	MMF, MPO-8
Typical reach	300 m	Nominal wavelength	850 nm
Host interface	4 x 10.3125 Gb/s NRZ	Protocol support	40GbE / InfiniBand
Optical budget	5 dB	Operating temperature	0°C to +70°C
Power consumption	3.5 W max	Digital diagnostics	Yes

5. Recommended operating conditions

Parameter	Symbol	Min	Typical	Max	Units
Operating case temperature	Tcase	0		70	°C
Supply voltage	Vcc	3.13	3.3	3.47	V
Data rate, each lane		10.3125		11.2	Gb/s
Link distance	D			300	m

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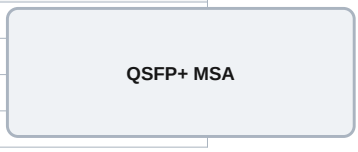
6. Optical characteristics

Parameter	Symbol	Min	Typical	Max	Units
Optical wavelength	λ	840		860	nm
RMS spectral width	Pm		0.5	0.65	nm
Average optical power, each lane	Pavg	-8	-2.5	+1.0	dBm
Extinction ratio	ER	3.5			dB
Receiver sensitivity, each lane	R	-13			dBm
Maximum input power	Pmax			+0.5	dBm
LOS de-assert	LOSD	-14			dBm
LOS assert	LOSA	-30			dBm

7. Digital diagnostics and management

Figure 3. QSFP+ mechanical form factor

Parameter	Value
Digital diagnostic monitoring	Supported
Management interface	2-wire serial / I2C via QSFP+ MSA
Monitored parameters	Temperature, supply voltage, TX bias/power and RX power
Module controls	Module select, reset, interrupt and low-power mode



8. Safety, regulatory and ESD

RoHS compliant. Normal ESD precautions are recommended when handling optical transceivers and host equipment.

9. Ordering information

Ordering number	Product description
Q40G-eSR4	QSFP+, 40GbE-eSR4, (4x 11.2Gbps), 300m; 850nm, 5dB, MM, MPO-8

10. General definitions

Parameter	Description
Technology	Optical transceiver type and optical application, e.g. SR, LR, CWDM, DWDM or parallel optics.
Transmission media	Fiber type and connector type, e.g. single-mode or multimode fiber with LC or MPO connector.
Typical reach	Nominal distance stated in the product specification and dependent on link loss and operating conditions.
Power consumption	Maximum or worst-case operating power stated in the source specification.
DDM / DMI	Digital Diagnostic Monitoring via the module management interface.