

# SO-QSFP28-SR4

QSFP28, 100GBASE-SR4, 850nm, MM, DDM, 4.3dB, 100m@OM4, MPO

## OVERVIEW

The SO-QSFP28-SR4 is a QSFP28 form-factor transceiver for 100 Gbps Ethernet (100GBASE-SR4) applications. It is intended for use in inter- and intra-connect applications within data centers between switches, routers, storage equipment etc. The optical performance is in accordance with the 100GBASE-SR IEEE 802.3bm standard, i.e. for optical distances up to 100m over a MultiMode (MM) OM4-grade ribbon fiber.

Forward Error Correction (FEC) is required in the host equipment in order to ensure reliable system operation at the specified distance. The FEC type shall be as defined in IEEE802.3bj, i.e. Reed Solomon RS(528,514). The below optical parameters will provide a bit error ratio (BER) of  $5 \times 10^{-5}$ . FEC will render in the required BER of better than  $1 \times 10^{-12}$ .

SO-QSFP28-SR4 uses 4x channels @ 25.78 Gbps to transport a 100G Ethernet signal. The transceiver has a single 12 lane optical fiber MPO/MTP-connector interface.

## TECHNICAL DATA

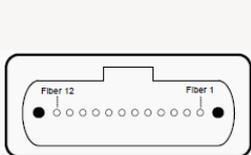
<b>Technology</b>	Grey QSFP28
<b>Transmission media</b>	MM (1x MPO)
<b>Typical reach</b>	70 m @ OM3 100 m @ OM4
<b>Nominal wavelength</b>	850 nm
<b>Interface standards</b>	100GBASE-SR4
<b>Bit rate range</b>	103.125 Gbps <sup>1)</sup> 25.78 Gbps <sup>2)</sup>
<b>Protocols</b> Eth:	100GbE
<b>Power budget</b>	0 - 4.3 dB
<b>Temperature range</b>	0°C to +70°C
<b>Power consumption</b>	< 3.5W

<sup>1)</sup> Aggregated line rate (100GbE)

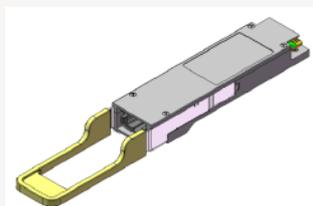
<sup>2)</sup> Per channel line rate

<sup>3)</sup> Per channel/lane

<b>Transmitter data</b>	Output power, per lane	Min: -6.0 dBm <sup>3)</sup> Max: +2.4dBm <sup>3)</sup>
	Wavelength range:	840 – 860 nm <sup>3)</sup>
<b>Receiver data</b>	Minimum input power:	-10.3 dBm <sup>3)</sup>
	Overload (max power):	+2.4 dBm <sup>3)</sup>
	Wavelength range:	840 – 860 nm <sup>3)</sup>
<b>DDM</b>		Yes
<b>MSA compliance</b>		QSFP28 MSA



MPO/MPT connector



### Regulatory compliance

<b>EMC CE</b>	EN 55022:2010 EN 55024:2010
<b>UL/Safety</b>	UL 60950-1
<b>FCC</b>	47 CFR PART 15 OCT, 2013
<b>RoHS</b>	RoHS 6
<b>TUV</b>	EN 60950-1:2006+A11+A1+A12+A2 EN 60825-1:2014 EN 60825-2:2004+A1+A2

**Storage temp.** -40°C to +85°C

**Note! See “Definitions” below.**

MPO (Multi-fiber Push On) is an optical connector for ribbon cables with four to twenty-four fibers. MTP is a specific brand of an MPO connector.

Note: IEEE 802.3bx stipulates that 100GBASE-SR4 interfaces requires FEC. Host equipment normally enable FEC automatically when using SR4 type transceivers.

Subject to change without notice.

For more information visit [smaroptics.com](http://smaroptics.com).

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## ORDERING INFORMATION

Part number	Description
SO-QSFP28-SR4	QSFP28, 100GBASE-SR4, 850nm, MM, DDM, 4.3dB, 100m@OM4, MPO

## DEFINITIONS

Technology:	Grey; Transceiver type for non-WDM applications. Electrical or optical. CWDM; Transceiver type for CWDM applications using G.694.2 channel grid. DWDM; Transceiver type for DWDM applications using G.694.1 channel grid. BiDi; Transceiver pair using two different wavelength channels operating on a single-fiber.
Transmission Media:	DAC: Direct Attach Cable (DAC). Electrical or optical cable with attached connectors. Type of fiber, e.g. Multimode (MM) or Singlemode (SM). Number of and connector type within brackets (e.g. 2x LC, 1x MPO).
Typical reach:	Nominal distance performance based on dispersion and power budget properties, i.e. w/o dispersion compensation and optical amplification.
Bit rate range:	Supported bit rate range in Gigabit or Megabit per second (Gbps or Mbps).
Protocols:	Protocols within supported bit rate range.
Nominal wavelength:	Typical wavelength from transmitter.
Interface standards:	Referenced interface standards e.g. IEEE 802.3 standard for 10GbE services.
Power budget:	Min and max power budget between Transmitter and Receiver. Excluding any dispersion penalty.
Dispersion tolerance/penalty:	Maximum amount of tolerated dispersion and required reduction of power budget to maintain BER better than $1E^{-12}$ . Defined at a specific bit rate.
Temperature range:	Max operating case temperature range. Standard temperature range: typically 0°C to +70°C (32°F to +158°F) Extended temperature range (E-temp): typically -20°C to +75°C (-4°F to +167°F) Industrial temperature range (I-temp): -40°C to +85°C (-40°F to +185°F)
Power consumption:	Worst case power consumption.
Transmitter Output power:	Average output power. Provided in min and max values.
Receiver minimum input power:	Minimum average input power at specified BER, normally $1E^{-12}$ .
Receiver max input power:	Maximum average input power giving a BER, normally $1E^{-12}$ .
DDM:	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.