

# 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  $5 \times 10^{-6}$ . 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

| Parameter             | Value  |
|-----------------------|--|
| Technology            | Grey QSFP28  |
| Transmission media    | MM (1x MPO)  |
| Typical reach         | 70m @ OM3, 100m @ OM4                                |
| Nominal wavelength    | 4x 850nm   |
| Interface standards   | 100GBASE-SR4   |
| Bit rate support      | 103.12Gbps <sup>1)</sup><br>25.78 Gbps <sup>2)</sup> |
| Protocol support      | 100GbE   |
| Power budget          | 0 – 4.3dB  |
| Power consumption     | < 3.5W   |
| Operating temperature | 0°C to +70°C   |
| Storage temperature   | -40°C to +85°C                                       |

| Parameter                | Value  |
|--------------------------|--|
| <b>Transmitter data:</b> |  |
| Output power, per lane   | Min: -6.0dBm <sup>3)</sup><br>Max: +2.4dBm <sup>3)</sup> |
| Transmit wavelength      | 840 – 860nm  |
| <b>Receiver data:</b>    |  |
| Minimum input power      | -10.3dBm <sup>2) 3) 4)</sup>                             |
| Overload (max power)     | +2.4dBm <sup>2) 3) 4)</sup>                              |
| Wavelength range         | 840 – 860nm  |
| DDM                      | Yes  |
| MSA compliance           | QSFP28 MSA   |

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

<sup>2)</sup> Per lane

<sup>3)</sup> Average power

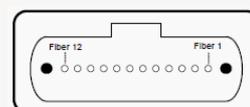
<sup>4)</sup> Specified at BER  $5 \times 10^{-5}$ , PRBS 2<sup>31</sup>-1

### Safety/regulatory compliance:

TUV/UL/FDA (contact Smartoptics for latest certification information)

RoHS compliance

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.



## ORDERING INFORMATION

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

## GENERAL DEFINITIONS

|                               |   |
|-------------------------------|---|
| Technology:                   | Grey; Transceiver type for non-WDM applications. Electrical or optical.<br>CWDM; Transceiver type for CWDM applications using G.694.2 channel grid.<br>DWDM; Transceiver type for DWDM applications using G.694.1 channel grid.<br>BiDi; Transceiver pair using two different wavelength channels operating on a single-fiber.<br>DAC: Direct Attach Cable (DAC). Electrical or optical cable with attached connectors. |
| Transmission Media:           | 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.  |
| Dispersion tolerance/penalty: | Maximum amount of tolerated dispersion and required reduction of power budget to maintain stipulated Bit Error Rate (BER) and at a given bit rate.  |
| Temperature range:            | Max operating case temperature range.<br>Commercial temperature range (C-temp): 0°C to +70°C (32°F to +158°F)<br>Extended temperature range (E-temp): typically -20°C to +75°C (-4°F to +167°F)<br>Industrial temperature range (I-temp): -40°C to +85°C (-40°F to +185°F)  |
| Power consumption:            | Worst case power consumption. Will vary over temperature.   |
| 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.   |

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