

# SO-QSFP-IR4-PSM

QSFP+, 40G Ethernet IR4, SM, 1310nm, 2km, 7.4dB, MPO (APC)

## OVERVIEW

The SO-QSFP-IR4-PSM is a QSFP+ (Quad Small Form-factor Pluggable Plus) transceiver for 40Gbps applications such as inter- and intra-connect within and between data centers between switches, routers, storage equipment etc.

The SO-QSFP-IR4-PSM converts 4x 10Gbps flows into four channels at 1310nm up to 2 km over a SingleMode (SM) fiber.

The transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification. The SO-QSFP-IR4-PSM provides transport over an MPO/MTP12 or 8 ribbon fiber cable.

## TECHNICAL DATA

| Parameter             | Value  |
|-----------------------|--|
| Technology            | Grey QSFP+   |
| Transmission media    | SM (1x MPO)  |
| Typical reach         | 2km  |
| Nominal wavelength    | 1310nm   |
| Interface standards   | 40GBASE-IR4  |
| Bit rate support      | 41.25Gbps <sup>1)</sup><br>10.3125Gbps <sup>2)</sup> |
| Protocol support      | 40GbE  |
| Power budget          | 0 – 7.4dB  |
| Power consumption     | < 3.5W   |
| Operating temperature | 0°C to +70°C   |
| Storage temperature   | -40°C to +85°C                                       |

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

<sup>2)</sup> Per lane

<sup>3)</sup> Average power

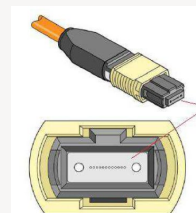
<sup>4)</sup> At BER less than  $10^{-12}$ , with a  $2^{31}-1$  PRBS

| Parameter                | Value  |
|--------------------------|--|
| <b>Transmitter data:</b> |  |
| Output power, per lane   | Min: -5.2dBm <sup>3)</sup><br>Max: +0.5dBm <sup>3)</sup> |
| Transmit wavelength      | 1260 – 1360nm  |
| <b>Receiver data:</b>    |  |
| Minimum input power      | -12.6Bm <sup>2) 3) 4)</sup>                              |
| Overload (max power)     | +0.5dBm <sup>2) 3) 4)</sup>                              |
| Wavelength range         | 1260 – 1360nm  |
| LOS Assert               | Min -30dBm   |
| LOS De-Assert            | Max -15dBm   |
| LOS Hysteresis           | Min 0.5dB  |
| DDM                      | Yes  |
| MSA compliance           | QSFP+ MSA, SFF-8436                                      |

### Safety/regulatory compliance:

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

RoHS compliance



8-degree contact face

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: An MPO/MTP connector with 8-degree Angled Physical Contact (APC) shall be used with this product to minimize MPO/MTP connection induced reflections.

Subject to change without notice.

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

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## ORDERING INFORMATION

| Ordering number | Description  |
|-----------------|--|
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## 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. |
| Transmission Media:           | DAC: Direct Attach Cable (DAC). Electrical or optical cable with attached connectors.<br>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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