

SO-QSFP28-PSM4

QSFP28, 100GBASE-PSM4, 1310nm, SM, DDM, 4.7dB, 2km, MPO

OVERVIEW

The SO-QSFP28-PSM4 is a QSFP28 form-factor transceiver for 100 Gbps Ethernet applications. It is intended for use in inter- and intra-connect applications within and between data centers between switches, routers, storage equipment etc. The optical performance is based on the 100GBASE PSM4 MSA industry standard where the minimum required operating range is up to 500m over a SingleMode (SM) 8-fiber ribbon cable.

SO-QSFP28-PSM4 has an optical performance enabling distances of up to 2km over a SingleMode (SM) ribbon fiber. Forward Error Correction (FEC) is required to be implemented by the host in order to ensure reliable system operation. The FEC type shall be as defined in IEEE802.3bj, i.e. Reed Solomon RS(528,514). The optical parameters will provide a bit error ratio (BER) of 5×10^{-5} . FEC will render in the required BER of better than 1×10^{-12} .

SO-QSFP28-PSM4 uses four 1310nm channels/lanes @ 25.78 Gbps to transport the Ethernet signal. The transceiver has a single 12 lane optical fiber MPO/MTP-connector interface. Digital diagnostics functions (DDM) are available via an I2C interface, as specified by the QSFP28 MSA.

TECHNICAL DATA

Parameter	Value
Technology	Grey QSFP28
Transmission media	SM (1x MPO)
Typical reach	2km
Nominal wavelength	4x 1310nm
Interface standards	100GBASE-PSM4
Bit rate support	103.12Gbps ¹⁾ 25.78 Gbps ²⁾
Protocol support	100GbE
Power budget	0 – 4.7dB
Path penalty	2.9dB
Power consumption	< 3.5W
Operating temperature	0°C to +70°C
Storage temperature	-40°C to +85°C

¹⁾ Aggregated line rate 100GbE

²⁾ Per lane

³⁾ Average power

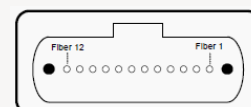
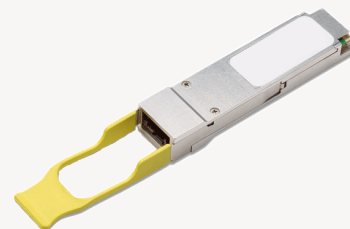
⁴⁾ Specified at BER 5×10^{-5}

Safety/regulatory compliance:

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

RoHS compliance

Parameter	Value
Transmitter data:	
Output power, total	Max +8.0dBm ³⁾
Output power, per lane	Min: -5.5dBm ³⁾ Max: +2.0Bm ³⁾
Transmit wavelength	1295 – 1325nm
Receiver data:	
Minimum input power	-10.2dBm ^{2) 3) 4)}
Overload (max power)	+2.0dBm ^{2) 3) 4)}
Wavelength range	1295 – 1325nm
DDM	Yes
MSA compliance	QSFP28 MSA



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.

Subject to change without notice.

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ORDERING INFORMATION

Ordering number	Description
SO-QSFP28-PSM4	QSFP28, 100GBase, 1310nm, SM, DDM, 4.7dB, 2km, MPO

GENERAL 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. 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. Commercial temperature range (C-temp): 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. 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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