INDEPENDENT DATA SOLUTIONS

smartoptics

DATASHEET 5.1

SO-QSFP-SR4

QSFP+, 40G Ethernet SR4, MM 850nm, 150m@OM4, 1.9dB, MPO

OVERVIEW

The SO-QSFP-SR4 is a 40GBASE-SR4 compliant QSFP+ (Quad Small Form-factor Pluggable Plus) transceiver for 40 Gbps applications where the transport is made using four channels at 10 Gbps. It is intended for use in intra-connect applications in data centers between switches, routers, storage equipment etc. The transceiver can also be used for 10GbE-LAN interconnect applications, providing a higher density as compared to four individual 10G connections using e.g. SFP+ transceivers.

The SO-QSFP-SR4 provides transport over an MPO/MTP 12 or 8 ribbon fiber cable up to 150 m when using an OM4-grade MultiMode (MM) fiber.

TECHNICAL DATA

Parameter	Value
Technology	Grey QSFP+
Transmission media	MM (1x MPO8/MPO12)
Typical reach	150m (OM4), 100m (OM3)
Nominal wavelength	4x 850nm
Interface standards	40GBASE-SR4
Bit rate support	41.25Gbps [1]
	4x 10.3125Gbps [2]
Protocol support	40GbE / 4x 10GbE-LAN
Power budget	0 – 1.9dB
Power consumption	< 1.5W
Operating temperature	0°C to +70°C
Storage temperature	-40°C to +85°C

Parameter	Value
Transmitter data:	
Output power, per lane	Min: -7.6dBm [3]
	Max: +2.4dBm [3]
Transmit wavelength	840 – 860nm
Receiver data:	
Minimum input power	-9.5dBm [2] [3] [4]
Overload (max power)	+2.4dBm [2] [3] [4]
Wavelength range	840 – 860nm
LOS Assert	Min -30dBm
LOS De-Assert	Max -7.5dBm
LOS Hysteresis	Min 0.5dB
DDM	Yes
MSA compliance	QSFP+ MSA, SFF-8436

[1] Aggregated line rate

[2] Per lane

[3] Average power

[4] At BER less than 10^{-12}, with a 2^{31}-1PRBS

Safety/regulatory compliance:
TUV/UL/FDA (contact Smartoptics for latest certification information)
RoHS compliance

ORDERING INFORMATION

Ordering number	Description
SO-QSFP-SR4	QSFP+, 40G Ethernet SR4, MM 850nm, 150m@OM4, 1.9dB, 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.