SO-QSFP28-LR4

QSFP28, 100GBASE-LR4, OTU4, 1310nm, SM, DDM, 6.3dB, 10km

OVERVIEW

The SO-QSFP28-LR4 is a QSFP28 form-factor transceiver for 100 Gbps Ethernet (100GBASE-LR4) and OTN (OTU4) 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 in accordance with the 100GBASE-LR standard, i.e. for optical distances up to 10km over a SingleMode (SM) fiber.

SO-QSFP28-LR4 uses four channels/lanes @ 25.78 Gbps and 27.95 Gbps to transport an Ethernet and OTN signal, respectively. Digital diagnostics functions are available via an I^2C interface, as specified by the QSFP28 MSA.

TECHNICAL DATA

Technology		Grey QSFP28
Transmission media		SM (2x LC)
Typical reach		10 km
Nominal wavelength		Lane 1: 1295.56 nm Lane 2: 1300.05 nm Lane 3: 1304.58 nm Lane 4: 1309.14 nm
Interface standards		100GBASE-LR4 OTU4 4I1-9D1F
Bit rate range		103.12 / 111.81 Gbps [1] 25.78 / 27.95 Gbps [2]
Protocols	Eth:	100GbE
	OTN:	OTU4
Power budget		0 - 6.3 dB (100GbE) 0 - 6.3 dB (OTU4)
Dispersion penalty		2.2dB [9] 1.5 dB [10]
Temperature range		0°C to +70°C
Power consumption		< 4.5 W

Transmitter data	Output power, tot:	Max: +10.5 dBm [3] Max: +8.9 dBm [4]
	Output power, per lane	Min: -4.3 dBm [9] Max: +4.5 dBm [9]
		Min: -2.5 dBm [10] Max: +2.9 dBm [10]
	Tx wavelength (nm):	1294.53 – 1296.59 [5] 1299.02 – 1301.09 [6] 1303.54 – 1305.63 [7] 1308.09 – 1310.19 [8]
Receiver data	Minimum input power:	-10.6 dBm [9] -8.8 dBm [10]
	Overload (max power):	+4.5 dBm [9] +2.9 dBm [10]
	Wavelength range:	1294.53 – 1296.59 [5] 1299.02 – 1301.09 [6] 1303.54 – 1305.63 [7] 1308.09 – 1310.19 [8]
DDM		Yes
MSA compliance		QSFP28 MSA

[1] Aggregated line rate (100GbE / OTU4)
[2] Per lane line rate (100GbE / OTU4)
[3] Total power (all lanes) in 100GbE mode
[4] Total power (all lanes) in OTU4 mode
[5] Lane 1
[6] Lane 2
[7] Lane 3
[8] Lane 4
[9] Per lane @ 25.78 Gbps (100GbE)
[10] Per lane @ 27.95 Gbps (OTU4)

Regulatory compliance

EMC CE	EN 55032:2012, EN 55032:2015 EN 55024:2010, EN 55024:2010+A1
	UL 60950-1
FCC	47 CFR PART 15 OCT, 2013
RoHS	RoHS 6
TUV	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.

ORDERING INFORMATION

Part number	Description
SO-QSFP28-LR4	QSFP28, 100GBASE-LR4, OTU4, 1310nm, SM, DDM, 6.3dB, 10km

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. 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. 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 at specified BER, normally $1E^{-12}$.
DDM:	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.