SO-QSFP28-LR4-20L

QSFP28, 100G Ethernet eLR4, SM, 1296/1300/1305/1309nm, 20km, 8.1dB, LC

OVERVIEW

The SO-QSFP28-LR4-20L is a QSFP28 form-factor transceiver for 100G 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 supports optical distances up to 20km over a SingleMode (SM) fiber.

For Ethernet services, 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 x 10^{-5}. FEC will render in the required BER of better than 1 x 10^{-12}.

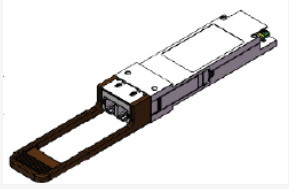
SO-QSFP28-LR4-20L uses four optical channels/lanes @ 25.78 Gbps to transport the Ethernet signal. Digital diagnostics functions are available via an I2C interface, as specified by the QSFP28 MSA.

TECHNICAL DATA

Technology		Grey QSFP28
Transmission media		SM (2x LC)
Typical reach		20 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 eLR4
Bit rate range		103.12 [1]
Protocols	Eth:	100GbE
Power budget		0 – 8.1 dB
Temperature range		0°C to +70°C
Power consumption		< 3.5 W

Transmitter data	Output power, tot:	Max: +10.5 dBm [2]
	Output power, per lane	Min: -2.5 dBm Max: +4.5 dBm
	Tx wavelength (nm):	1294.53 – 1296.59 [3] 1299.02 – 1301.09 [4] 1303.54 – 1305.63 [5] 1308.09 – 1310.19 [6]
Receiver data	Minimum input power:	-10.6 dBm [7]
	Overload (max power):	+4.5 dBm [7]
	Wavelength range:	1294.53 – 1296.59 [3] 1299.02 – 1301.09 [4] 1303.54 – 1305.63 [5] 1308.09 – 1310.19 [6]
DDM		Yes
MSA compliance		QSFP28 MSA

[1] Aggregated line rate 100GbE
[2] Total power (all lanes)
[3] Lane 1
[4] Lane 2
[5] Lane 3
[6] Lane 4
[7] Per lane and @ BER 1E-5



EMC CE	EN 55032:2012, EN 55032:2015 EN 55024:2010, EN 55024:2010+A1
UL/Safety	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-LR4-20L	QSFP28, 100G Ethernet eLR4, SM, 1296/1300/1305/1309nm, 20km, 8.1dB, LC

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