SO-CFP4-LR4

CFP4, 100GBASE-LR4, OTU4, 1310nm, SM, DDM, 6.3dB, 10km

OVERVIEW

The SO-CFP4-LR4 is a CFP4 (C Form-factor Pluggable) 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-CFP4-LR4 uses four channels/lanes @ 25.78 Gbps and 27.95 Gbps to transport an Ethernet and OTN signal, respectively.

TECHNICAL DATA

Parameter	Value
Technology	Grey CFP4
Transmission media	SM (2x LC)
Typical reach	10km
Nominal wavelength	Lane 1: 1295.56nm
	Lane 2: 1300.05nm
	Lane 3: 1304.58nm
	Lane 4: 1309.14nm
Interface standards	100GBASE-LR4
	OTU4 4I1-9D1F
Bit rate support	103.12 / 111.81 Gbps [1]
	25.78 / 27.95 Gbps [2]
Protocol support	100GbE
	OTU4
Power budget	0 – 6.3dB (100GbE/OTU4)
Optical path penalty	2.2dB (100GbE)
	1.5dB (OTU4)
Power consumption	< 6W
Operating temperature	0°C to +70°C
Storage temperature	-40°C to +85°C

[1] Aggregated line rate 100GbE / OTU4

[2] Per lane

[3] Average power

[4] Specified at BER $1x10^{-12}$

[5] Specified at pre-FEC BER $1x10^{-5}$

Parameter	Value
Transmitter data:	
Output power, total	Max +10.5dBm [3] (100GbE)
	Max +8.9dBm [3] (OTU4)
Output power, per lane 100GbE	Min: -4.3dBm [3]
	Max: +4.5dBm [3]
Output power, per lane OTU4	Min: -2.5dBm [3]
	Max: +2.9dBm [3]
Transmit wavelength	1294.53 – 1296.59nm
	1299.02 – 1301.09nm
	1303.54 – 1305.63nm
	1308.09 – 1310.19nm
Receiver data:	
Minimum input power	-10.6dBm [2] [3] [4] (100GbE)
	-8.8dBm [2] [3] [5] (OTU4)
Overload (max power)	+4.5dBm [2] [3] [4] (100GbE)
	+2.9dBm [2] [3] [5] (OTU4)
Wavelength range	1294.53 – 1296.59nm
	1299.02 – 1301.09nm
	1303.54 – 1305.63nm
	1308.09 – 1310.19nm
DDM	Yes
MSA compliance	CFP4 MSA

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

ORDERING INFORMATION

Ordering number	Description
SO-CFP4-LR4	CFP4, 100GBASE-LR4, OTU4, 1310nm, SM, DDM, 6.3dB, 10km

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.