

SO-SFP-1G-10G-LR

SFP+, 1000Base-LX / 10GBase-LR, 1310nm, SM, DDM, 10km

OVERVIEW

SO-SFP-1G-10G-LR is a versatile 1310nm SFP+ transceiver for SingleMode (SM) fiber with a rate select between GbE and 10GbE-LAN/-WAN services. The optical performance is in accordance with the IEEE 802.3ae standard, providing a bridgeable distance of up to 10km for 10GbE-LAN (10GBASE-LR), 10GbE-WAN (10GBASE-LW) and 1000BASE-LX (GbE) services.

The transceiver has no minimum distance (i.e. no minimum attenuation) which is ideal for intra-office connections since extra attenuators need not be considered.

This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification.

TECHNICAL DATA

Technology	Grey SFP+
Transmission media	SM (2x LC)
Typical reach	10 km
Nominal wavelength	1310 nm
Interface standards	10GBASE-LR 10GBASE-LW 1000BASE-LX
Bit rate range	9.953 - 10.312 Gbps 1.25 Gbps
Protocols	Eth: 10GbE-LAN 10GbE-WAN GbE
	SDH/SONET STM-64/OC-192
Power budget	0 - 6.2 dB ¹⁾ 0 - 11.5 dB ²⁾
Temperature range	0°C to 70°C
Power consumption	< 1.0W

Transmitter data	Output power:	Min: -8.2 dBm ¹⁾ Max: +0.5 dBm ¹⁾ Min: -9.5 dBm ²⁾ Max: -3.0 dBm ²⁾
	Tx wavelength:	Min: 1270 nm Max: 1355 nm
Receiver data	Minimum input power:	-14.4 dBm ¹⁾ -21.0 dBm ²⁾
	Overload (max power):	+0.5 dBm
	Wavelength range:	1260 - 1565 nm
DDM		Yes
MSA compliance		SFF-8431 SFF-8472

¹⁾ @ 10.3 Gbps (10GbE-LAN)

²⁾ @ 1.25 Gbps (GbE)

Regulatory compliance

EMC CE	EN 55022:2010 EN 55024:2010
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
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Note! See "Definitions" below.

ORDERING INFORMATION

Part number	Description
SO-SFP-1G-10G-LR	SFP+, 1/10GBase-LR, 1310nm, SM, DDM, 11.5dB@1.25Gbps, 6.2dB@10.3Gbps,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.