

SO-SFP28-SR

SFP28, 25GBase, 850nm, MM, DDM, 1.9dB, 70m@OM3, 100m@OM4

OVERVIEW

The SO-SFP28-SR is an SFP+ form-factor transceiver for 25 Gbps Ethernet applications. Since the transmission rate can reach up to 28Gbps, the engineering and industry name is SFP28. It is intended for use in inter- and intra-connect applications within data centers between switches, routers, storage equipment etc. The optical performance is in accordance with the IEEE -SR standard, i.e. for optical distances up to 100m over a MultiMode (MM) OM4-grade fiber.

SO-SFP28-SR uses a single 850nm channel @ 25.78 Gbps to transport a 25G Ethernet signal. Digital diagnostics functions are available via an I2C interface, as specified by the MSA.

As stipulated by the 25G Ethernet standards, Forward Error Correction (FEC) is required to be implemented by the host in order to ensure reliable system operation. The optical parameters below will provide a bit error ratio (BER) of 1×10^{-5} for 25G Ethernet. FEC will provide the required quality for secure service.

TECHNICAL DATA

Technology	Grey SFP28
Transmission media	MM (2x LC)
Typical reach	70 m @ OM3 100 m @ OM4
Nominal wavelength	850 nm
Interface standards	25GBASE-SR
Bit rate range	25.78 Gbps ¹⁾
Protocols Eth:	25GbE
Power budget	0 - 1.9 dB
Temperature range	0°C to +70°C
Power consumption	< 1 W

¹⁾ 25GbE or single lane 100GbE SR4.

²⁾ @ BER 5E-5

Transmitter data	Output power, per lane	Min: -8.4 dBm Max: +2.4dBm
	Wavelength range:	840 – 860 nm
Receiver data	Minimum input power:	-10.3 dBm ²⁾
	Overload (max power):	+3.0 dBm
	Wavelength range:	840 – 860 nm
DDM		Yes
MSA compliance		SFP28 SFF-8402

Regulatory compliance

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
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Note! See “Definitions” below.

Note: The 25GbE specification states that a 25GbE interface can operate with or without FEC. The optical data above is defined at a BER of 5×10^{-5} , implying that FEC shall be enabled on the host equipment to provide required quality at specified distance.

ORDERING INFORMATION

Part number	Description
SO-SFP28-SR	SFP28, 25GBase, 850nm, MM, DDM, 1.9dB, 70m@OM3, 100m@OM4

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.