

DATASHEET 5.0

SO-XFP-ER & -ER-I

XFP, 10G Multirate, 1550nm, SM, DDM, 16dB, 40km

OVERVIEW

The SO-SFP-10GE-ER is a versatile 1550nm XFP transceiver for SingleMode fiber supporting a wide range of traffic formats. The optical performance is in accordance with the IEEE 802.3ae standard, providing a bridgeable distance of up to 40km for 10GbE-LAN (10GBASE-ER) and 10GbE-WAN (10GBASE-EW) services. The support also spans down to 8.5 Gbps enabling the transceiver to be used for both 8G as well as 10G Fiberchannel services.

This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification. The transceiver is available in two temperature range options, one being the Industrial temperature range (I-temp): -40°C to 85°C (-40°F to 185°F).

TECHNICAL DATA

Technology	Grey XFP										
Transmission Media	SM (2x LC)										
Typical reach	40 km										
Nominal wavelength	1550 nm										
Interface standards	10GBASE-ER 10GBASE-EW										
Bit rate range	8.5 - 11.1 Gbps										
Protocols	<table border="0"> <tr> <td>Eth:</td> <td>10GbE-LAN 10GbE-WAN</td> </tr> <tr> <td>OTN:</td> <td>OTU2e, OTU2</td> </tr> <tr> <td>SDH/SONET:</td> <td>STM-64/OC-192</td> </tr> <tr> <td>FC:</td> <td>10G FC, 8G FC</td> </tr> <tr> <td>CPRI:</td> <td>Opt 7 (9.8304 Gbps), Opt 8 (10.1376 Gbps)</td> </tr> </table>	Eth:	10GbE-LAN 10GbE-WAN	OTN:	OTU2e, OTU2	SDH/SONET:	STM-64/OC-192	FC:	10G FC, 8G FC	CPRI:	Opt 7 (9.8304 Gbps), Opt 8 (10.1376 Gbps)
Eth:	10GbE-LAN 10GbE-WAN										
OTN:	OTU2e, OTU2										
SDH/SONET:	STM-64/OC-192										
FC:	10G FC, 8G FC										
CPRI:	Opt 7 (9.8304 Gbps), Opt 8 (10.1376 Gbps)										
Power budget	4.0 – 16.0 dB										
Dispersion tolerance	800 ps/nm ¹⁾										
Power consumption	< 3.5W										
Transmitter data	<table border="0"> <tr> <td>Output power:</td> <td>Min: 0.0 dBm Max: +4.0 dBm</td> </tr> <tr> <td>Tx wavelength:</td> <td>Min: 1530 nm Max: 1565 nm</td> </tr> </table>	Output power:	Min: 0.0 dBm Max: +4.0 dBm	Tx wavelength:	Min: 1530 nm Max: 1565 nm						
Output power:	Min: 0.0 dBm Max: +4.0 dBm										
Tx wavelength:	Min: 1530 nm Max: 1565 nm										

Receiver data	Minimum input power:	-16.0 dBm ¹⁾
	Overload (max power):	0.0 dBm
	Wavelength range:	1270 - 1600 nm
DDM		Yes
MSA compliance		SFF-8431 SFF-8432 SFF-8472

¹⁾@ 10.5Gbps

Regulatory Compliance

EMC / CE	EN 55022:2010 EN 55024:2010
UL/Safety FCC	UL 60950-1 47 CFR PART 15 OCT, 2013
RoHS	RoHS 6 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-XFP-ER & -ER-I	XFP, 10G Multirate, 1550nm, SM, DDM, 16dB, 40km

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.