

# SO-SFP-10GE-BX80D-4955/-5549

SFP+, BiDi, 10G Multirate 9.8-11.3Gbps, Tx/Rx=1490/1550nm, SM, 80km 22dB, LC

## OVERVIEW

The SO-SFP-10GE-BX80D is a bi-directional transceiver solution operating directly on a single-fiber without the need for a separate optical filter. This is achieved by having two transceivers that inject different wavelengths into the same single-fiber. The solution thus consists of two transceivers; SO-SFP-10GE-BX80D-4955 and SO-SFP-10GE-BX80D-5549, operating at transmit channels 1490nm and 1550nm respectively. Using a single-fiber solution provides a cost-efficient solution for interconnect and it simplifies the patching since no separate transmit/receive direction has to be taken into account.

The distance performance of the transceiver pair is according to IEEE 802.3ae ZR-standard, providing a bridgeable distance of up to 80km for 10GbE-LAN and 10GbE-WAN services. The transceiver pair supports the 10G Ethernet protocols as well as CPRI rates in the bit rate range.

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

## TECHNICAL DATA

<b>Technology</b>	BiDi SFP+
<b>Transmission media</b>	SM (1x LC)
<b>Typical reach</b>	80 km
<b>Nominal wavelength</b>	1490 nm <sup>1)</sup> & 1550 nm <sup>2)</sup>
<b>Interface standards</b>	10GBASE-ZR
<b>Bit rate range</b>	9.8 - 11.3 Gbps
<b>Protocols</b>	Eth: 10GbE-LAN 10GbE-WAN
	CPRI: Opt 7 (9.8304 Gbps) Opt 8 (10.1376 Gbps)
<b>Power budget</b>	12.0 - 21.0 dB
<b>Dispersion penalty</b>	2dB@80km
<b>Temperature range</b>	0°C to +70°C
<b>Power consumption</b>	< 2.0W

<b>Transmitter data</b>	<b>Output power:</b>	Min: -1.0 dBm Max: +4.0 dBm
	<b>Tx wavelength:</b>	1480 - 1500 nm <sup>1)</sup> 1540 - 1560 nm <sup>2)</sup>
<b>Receiver data</b>	<b>Minimum input power:</b>	-23.0 dBm <sup>3)</sup>
	<b>Overload (max power):</b>	-6.0 dBm
	<b>Wavelength range:</b>	1540 - 1560 nm <sup>1)</sup> 1480 - 1500 nm <sup>2)</sup>
<b>DDM</b>		Yes
<b>MSA compliance</b>		SFF-8431 SFF 8472

<sup>1)</sup> SO-SFP-10GE-BX80D-4955

<sup>2)</sup> SO-SFP-10GE-BX80D-5549

<sup>3)</sup> @ 10.3Gbps

### Regulatory compliance

<b>EMC CE</b>	EN 55022:2010 EN 55024:2010
<b>UL/Safety</b>	UL 60950-1
<b>FCC</b>	47 CFR PART 15 OCT, 2013
<b>RoHS</b>	RoHS 6
<b>TUV</b>	EN 60950-1:2006+A11+A1+A12+A2 EN 60825-1:2014 EN 60825-2:2004+A1+A2

<b>Storage temp.</b>	-40°C to +85°C
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**Note! See "Definitions" below.**

Note: IEEE 802.3ae 10GBASE-ER/EW is defined only at 1550 nm. The standard is referred to from bridgeable distance perspective.

## ORDERING INFORMATION

Part number	Description
SO-SFP-10GE-BX80D-4955	SFP+, BiDi, 10G Multirate 9.8-11.3Gbps, Tx/Rx=1490/1550nm, SM, 80km 22dB, LC
SO-SFP-10GE-BX80D-5549	SFP+, BiDi, 10G Multirate 9.8-11.3Gbps, Tx/Rx=1550/1490nm, SM, 80km 22dB, 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.
Transmission Media:	DAC: Direct Attach Cable. Electrical or optical cable with attached connectors. 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.