

# SO-CSFP-1000BASE-BX10D-53-O2; C-/I-temp

CSFP BiDi, 100Mbps/1.25Gbps, Tx/Rx=1550/1310nm, SM, DDM, 11dB, 10km

## OVERVIEW

The SO-CSFP-1000BASE-BX10D-53-O2 is a CSFP (Compact SFP) transceiver where both ports are bi-directional, i.e. providing double capacity as compared to normal BiDi transceivers where one port is not used. This requires that the host equipment support CSFP transceivers.

Each port operates directly on a single-fiber without the need for a separate optical filter. Each transceiver function uses a 1550nm transmitter and a receiver operating at 1310nm. The solution requires that the far end host equipment uses bi-directional SFP's that transmit on a 1310nm wavelength and a receiver that accepts a 1550nm wavelength.

The transceiver supports a bit rate range between 100 Mbps and 1.25 Gbps, e.g. 1G Fiberchannel (1G FC) 100M Ethernet (FE) and 1G Ethernet (GbE) services, having an optical performance that provides a bridgeable distance of up to 10km.

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

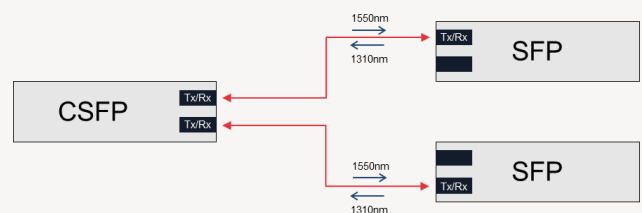
## TECHNICAL DATA

Parameter	Value
Technology	BiDi CSFP
Transmission media	SM (2x LC)
Typical reach	10km
Nominal wavelength Tx/Rx	Tx/Rx: 1550nm/1310nm
Bit rate support	100Mbps to 1.25Gbps
Protocol support	FE, GbE 1G FC STM1/OC3, STM4/OC12
Power budget	0 – 10.5dB
Dispersion penalty	Max 1dB
Power consumption	< 1.0W per BiDi function
Operating temperature	0°C to +70°C -40°C to +85°C (-I)
Storage temperature	-40°C to +85°C

Parameter	Value
<b>Transmitter data:</b>	
Output power	Min: -9.0dBm <sup>1)</sup> Max: -3.0dBm <sup>1)</sup>
Transmit wavelength	1540nm – 1560nm
<b>Receiver data:</b>	
Minimum input power	-19.5dBm <sup>1) 2)</sup>
Overload (max power)	-3.0dBm <sup>1) 2)</sup>
Wavelength range	1260 – 1360nm
LOS Assert	Min -35dBm
LOS De-assert	Max -20dBm
LOS Hysteresis	Min 0.5dB
DDM	Yes
MSA compliance	CSFP MSA Opt 2, SFF-8472

<sup>1)</sup> Average power.

<sup>2)</sup> @ 1.25Gbps, BER ≤ 1x10<sup>-12</sup>, PRBS 2<sup>7</sup>-1, back-to-back.



### Safety/regulatory compliance:

TUV/UL/FDA (contact Smartoptics for latest certification information)

RoHS compliance

Subject to change without notice.

For more information visit [smartoptics.com](http://smartoptics.com).

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## ORDERING INFORMATION

Ordering code	Description
SO-CSFP-1000Base-BX10D-53-O2	CSFP, BiDi, Multirate 100Mbps - 1.25Gbps, TX/RX=1550/1310nm, SM, 10km, 11dB, LC
SO-CSFP-1000Base-BX10D-53-O2-I	CSFP, BiDi, Multirate 100Mbps - 1.25Gbps, TX/RX=1550/1310nm, SM, 10km, 11dB, I-temp, LC

## GENERAL DEFINITIONS

Parameter	Description
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 cable with attached connectors. AOC: Active Optical Cable. 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 typical fiber dispersion, fiber loss and power budget properties, i.e. w/o dispersion compensation and optical amplification. Actual distance is dependent on actual optical path loss and dispersion properties.
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(s) from transmitter.
Interface standards	Referenced interface standards or MSA's, e.g. IEEE 802.3 standard for 10GbE services or 100G 4WDM-10 etc.
Power budget	Min and max power budget between Transmitter and Receiver w/o optical path penalties.
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. Standard 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 $1E^{-12}$ . Note that some protocols require FEC to achieve sufficient BER.
Receiver max input power	Maximum average input power giving a BER, normally $1E^{-12}$ .
DDM	Digital Diagnostic Monitoring functionality as defined in e.g. SFF-8472 MSA.

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