

# SO-CSFP-1000BASE-BX20D-43-O2 & -I

CSFP BiDi, 100Mbps/1.25Gbps, TX/RX=1490/1310nm, SM, DDM, 14dB, 20km

## OVERVIEW

The SO-CSFP-1000BASE-BX20D-43-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 1490nm 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 1490nm 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 20km.

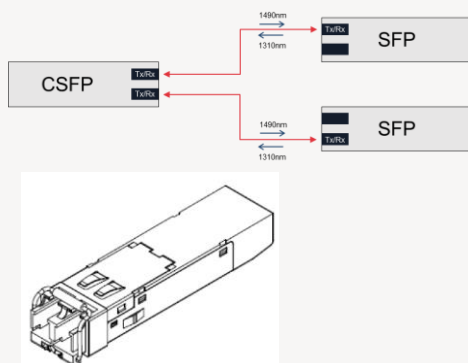
The transceiver solution is available in two temperature range options, one being the Industrial temperature range (I-temp) of -40°C to +85°C (-40°F to +185°F). The transceivers provide digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification.

## TECHNICAL DATA

<b>Technology</b>	BiDi CSFP
<b>Transmission media</b>	SM (2x LC)
<b>Typical reach</b>	20 km
<b>Nominal wavelength</b>	1490 nm & 1310 nm
<b>Bit rate range</b>	100 Mbps - 1.25 Gbps
<b>Protocols</b>	Eth:
	GbE
	100M (FE)
FC:	1G FC
SDH/SONET:	STM-1 / OC-3 STM-4 / OC-12
<b>Power budget</b>	0.0 - 14 dB <sup>3)</sup>
<b>Dispersion penalty</b>	1 dB
<b>Temperature range</b>	0°C to +70°C -40°C to +85°C (-I)
<b>Power consumption</b>	< 1.0W per ch

<b>Transmitter data</b>	Output power:	Min: -8.0 dBm Max: -3.0 dBm
	Tx wavelength:	1490 – 1500 nm
<b>Receiver data</b>	Minimum input power:	-22.0 dBm <sup>1)</sup>
	Overload (max power):	-3.0 dBm
	Wavelength range:	1260 - 1360 nm
<b>DDM</b>		Yes
<b>MSA compliance</b>		CSFP MSA opt 2 SFF 8472

<sup>1)</sup> @ 1.25 Gbps



## 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, 2011/65/EU
<b>TUV</b>	EN 60950-1:2006+A11+A1+A12 EN 60825-1:2007 EN 60825-2:2004+A1+A2

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

## ORDERING INFORMATION

Part number	Description
SO-CSFP-1000Base-BX20D-43-O2	CSFP BiDi, 100Mbps/1.25Gbps, TX/RX=1490/1310nm, SM, DDM, 14dB, 20km
SO-CSFP-1000Base-BX20D-43-O2-I	CSFP BiDi, 100Mbps/1.25Gbps, TX/RX=1490/1310nm, SM, DDM, 14dB, 20km, I-temp

## 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.