

**DATASHEET 5.0**

# SO-CSFP-1000BASE-BX20D-53-O2 & -I

**CSFP BiDi, 100Mbps/1.25Gbps, TX/RX=1550/1310nm, SM, DDM, 14dB, 20kmz**

## OVERVIEW

The SO-CSFP-1000BASE-BX20D-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.

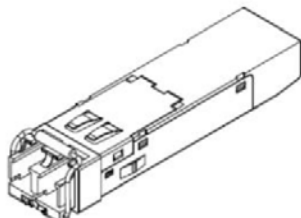
Each port operates directly on a single-fiber without the need for a separate optical filter. Each transceiver function uses a 1550nm transmitter and a receiver operating at 1310nm. The solution requires that the far end host equipment uses bi-directional SFP's that transmit on a 1310nm wavelength and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



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



## TECHNICAL DATA

Technology	BiDi CSFP
Transmission media	SM (2x LC)
Typical reach	20 km
Nominal wavelengths	1550 nm & 1310 nm
Bit rate range	100 Mbps - 1.25 Gbps
Protocol support	Eth: GbE 100M (FE) FC 1G FC SDH/SONET: STM-1 / OC-3 STM-4 / OC-12
Power budget	0.0 - 14 dB <sup>3)</sup>
Dispersion penalty	1 dB
Temperature range	-0°C to +70°C -40°C to +85°C (-I)
Power consumption	< 1.0W per ch
<b>Transmitter data:</b>	
Output power	Min: -8.0 dBm Max : -3.0 dBm
Tx wavelength	1540 - 1560
<b>Receiver data:</b>	
Minimum input power	-22.0 dBm <sup>1)</sup>
Overload (Max power)	-3.0 dBm
Wavelength range	1260 - 1360 nm
DDM	Yes
MSA compliance	CFP MSA opt 2 SFF 8472
Storage temp.	-40°C to +85°C
<b>Regulatory compliance:</b>	
EMC CE	EN 55022:2010 EN 55024:2010
UL/Safety	UL 60950-1
FCC	47 CFR PART 15 OCT, 2013
RoHS	RoHS 6, 2011/65/EU
TUV	EN 60950-1:2006+A11 +A1+A12 EN 60825-1:2007 EN 60825-2:2004+A1+A2

## ORDERING INFORMATION

Part Number	Description
SO-CSFP-1000Base-BX20D-53-O2	CSFP BiDi, 100Mbps/1.25Gbps, TX/RX=1550/1310nm, SM, DDM, 14dB, 20km
SO-CSFP-1000Base-BX20D-53-O2-I	CSFP BiDi, 100Mbps/1.25Gbps, TX/RX=1550/1310nm, SM, DDM, 14dB, 20km, I-temp

## DEFINITIONS

<b>Technology</b>	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.
<b>Transmission Media</b>	Type of fiber, e.g. Multimode (MM) or Singlemode (SM). Number of and connector type within brackets (e.g. 2x LC, 1x MPO).
<b>Typical reach</b>	Nominal distance performance based on dispersion and power budget properties, i.e. w/o dispersion compensation and optical amplification.
<b>Bit rate range:</b>	Supported bit rate range in Gigabit or Megabit per second (Gbps or Mbps).
<b>Protocols:</b>	Protocols within supported bit rate range.
<b>Nominal wavelength</b>	Typical wavelength from transmitter.
<b>Interface standards</b>	Referenced interface standards e.g. IEEE 802.3 standard for 10GbE services.
<b>Power budget</b>	Min and max power budget between Transmitter and Receiver. Excluding any dispersion penalty.
<b>Dispersion tolerance/penalty</b>	Maximum amount of tolerated dispersion and required reduction of power budget to maintain BER better than $1E^{-12}$ . Defined at a specific bit rate.
<b>Temperature range</b>	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)
<b>Power consumption</b>	Worst case power consumption.
<b>Transmitter Output power</b>	Average output power. Provided in min and max values.
<b>Receiver minimum input power</b>	Minimum average input power at specified BER, normally $1E^{-12}$ .
<b>Receiver max input power</b>	Maximum average input power giving a BER, normally $1E^{-12}$ .
<b>DDM</b>	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.