SO-SFP-1000BASE-BX20D-35 & -53
SFP BiDi, 1.25 Gbps GbE, 1310/1550nm, SM, DDM, 14dB, 20km

OVERVIEW

The SO-SFP-1000BASE-BX20D 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-1000BASE-BX20D-35 and SO-SFP-1000BASE-BX20D-53, operating at 1310nm 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 transceiver pair supports 1G Fiberchannel (1G FC) 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

<table>
<thead>
<tr>
<th>Technology</th>
<th>BiDi SFP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission media</td>
<td>SM (1x LC)</td>
</tr>
<tr>
<td>Typical reach</td>
<td>20 km</td>
</tr>
<tr>
<td>Nominal wavelength</td>
<td>1310 nm &amp; 1550 nm</td>
</tr>
<tr>
<td>Bit rate range</td>
<td>1.063 / 1.25 Gbps</td>
</tr>
<tr>
<td>Protocols</td>
<td>Eth: GbE FC: 1G FC</td>
</tr>
<tr>
<td>Power budget</td>
<td>0.0 - 14.0 dB</td>
</tr>
<tr>
<td>Temperature range</td>
<td>0°C to +70°C &amp; -40°C to +85°C (-I)</td>
</tr>
<tr>
<td>Power consumption</td>
<td>&lt; 1.0W</td>
</tr>
</tbody>
</table>

Transmitter data

- Output power:
  - Min: -8.0 dBm
  - Max: -3.0 dBm
- Tx wavelength:
  - 1270 - 1350 nm
  - 1520 - 1580 nm

Receiver data

- Minimum input power:
  - -22.0 dBm
- Overload (max power):
  - -3.0 dBm
- Wavelength range:
  - 1530 - 1580 nm
  - 1260 - 1360 nm

DDM

Yes

MSA compliance

SFP MSA SFF 8472

Regulatory compliance

<table>
<thead>
<tr>
<th>EMC CE</th>
<th>UL/Safety</th>
<th>FCC</th>
<th>RoHS</th>
<th>TUV</th>
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<tbody>
<tr>
<td>EN 55024:2010</td>
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<td>EN 60825-1:2014</td>
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<td>EN 60825-2:2004+A1+A2</td>
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</tbody>
</table>

Storage temp.

-40°C to +85°C

1) SO-SFP-1000Base-BX20D-35
2) SO-SFP-1000Base-BX20D-53
3) GbE

Note! See “Definitions” below.
ORDERING INFORMATION

<table>
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<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO-SFP-1000Base-BX20D-35</td>
<td>SFP BiDi, 1.25 Gbps GbE, TX/RX=1310/1550nm, SM, DDM, 14dB, 20km</td>
</tr>
<tr>
<td>SO-SFP-1000Base-BX20D-53</td>
<td>SFP BiDi, 1.25 Gbps GbE, TX/RX=1550/1310nm, SM, DDM, 14dB, 20km</td>
</tr>
<tr>
<td>SO-SFP-1000Base-BX20D-35-I</td>
<td>SFP BiDi, 1.25 Gbps GbE, TX/RX=1310/1550nm, SM, DDM, 14dB, 20km, l-temp</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

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.