SO-QSFP28-SR-BD
QSFP28, 100G Ethernet, BiDi, MM, 850nm / 910nm, 150m, 1.5dB, LC

OVERVIEW

The SO-QSFP28-SR-BD is a pluggable QSFP28 transceiver designed for high capacity 100 Gigabit Ethernet (100GbE) Data Center Interconnect (DCI) applications up to 150m over a multimode fiber.

The transceiver provides 100 Gbps transport by integrating the four electrical data lanes (CAUI-4) in each direction at 25Gbps into two optical lanes at 50Gbps using PAM4 modulation technique. Each electrical lane operates at 25.78125 Gbps and conforms to the 100GE CAUI4 interface with host FEC turned off. The two wavelength channels operate at the nominal wavelengths of 850nm and 910nm.

The transceiver incorporates a FEC encoder/decoder and diagnostic monitors.

TECHNICAL DATA

<table>
<thead>
<tr>
<th>Technology</th>
<th>Grey QSFP28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission media</td>
<td>MM (2x LC)</td>
</tr>
<tr>
<td>Typical reach</td>
<td>70m@OM3 100m@OM4 150m@OM5</td>
</tr>
<tr>
<td>Nominal wavelength</td>
<td>850nm 910nm</td>
</tr>
<tr>
<td>Bit rate range</td>
<td>103.12 Gbps 1x 25.78125 Gbps 2</td>
</tr>
<tr>
<td>Protocols</td>
<td>Eth: 100Gbe</td>
</tr>
<tr>
<td>Power budget</td>
<td>0.5 – 1.5 dB</td>
</tr>
<tr>
<td>Temperature range</td>
<td>10°C to +70°C 3</td>
</tr>
<tr>
<td>Power consumption</td>
<td>&lt; 3.5 W</td>
</tr>
</tbody>
</table>

Transmitter data

Output power, per lane
Min: -6.0 dBm
Max: +4.0 dBm

Tx wavelength:
847 – 863 nm
900 – 916 nm

Receiver data

Minimum input power:
-7.5 dBm 2
3.5 dBm 2

Overload (max power):
847 – 863 nm
900 – 916 nm

Wavelength range (nm):

DDM
Yes

MSA compliance
SFF-8665
SFF-8836
SFF-8661
SFF-8679

Safety

(IEC) EN60825-1:1994 +A1 +A2
(IEC) EN60825-2:1994 +A1 +A2
(IEC) EN60825-2:1994 +A1 +A2 +A3 +A4 +A11
US FDA CDRH AEL Class 1

EMI
FCC Part 15 Class A, EN55022 Class A

ESD
EN61000-4-2, Test Level 4, Criterion A

RoSH
RoHS 6

Storage temp. -40°C to +85°C

Note! See “Definitions” below.

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
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<tbody>
<tr>
<td>SO-QSFP28-SR-BD</td>
<td>QSFP28, 100G Ethernet, BiDi, MM, 850nm / 910nm, 150m, 1.5dB, LC</td>
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</table>

Subject to change without notice.
For more information visit smartoptics.com.
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/penalty: 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.