

## 100Gbps QSFP28 XZR4 100km Transceiver

Commercial Level 0°C~70°C

**CL100GQSFPXZR4**

### Product Features:

- Compliant with QSFP28 Standard:
- SFF-8661 Rev 2.5, SFF-8636 Rev 2.10a
- High speed I/O electrical interface (CAUI-4) compliant with IEEE 802.3bm-2015
- 100GBASE-ZR4 103.125G 100km point-to-point Ethernet links
- Rx sensitivity of -29dBm 5E-5 with enabled KR4 FEC in host for up to 100km SMF
- Single 3.3V Supply Voltage
- Power Dissipation 4.5W at 55°C ,6.5W at 70°C Case Operating Temperature
- 0 °C is environment temp; 70 °C is Case Operating Temperature
- LAN WDM EML cooled laser and SOA+PIN cooled Receiver
- Universal QSFP28 MSA package with duplex LC connector
- Two Wire Serial Interface with Digital Diagnostic Monitoring
- Complies with EU Directive 2011/65/EU (RoHS compliant)
- LPMODE, ModPrsL, ModSeIL and ResetL are supported
- Telecom networking
- Class 1 Laser



### Functional Characteristics (Optical)

The following tables list the performance specifications for the various functional blocks of the integrated optical transceiver module.

**Table 1 – Transmitter Optical Specifications**

| Parameter                                              | Symbol          | Min.    | Typical | Max.    | Unit | Notes |
|--------------------------------------------------------|-----------------|---------|---------|---------|------|-------|
| Wavelength L0                                          | $\lambda C0$    | 1294.53 | 1295.56 | 1296.59 | nm   |       |
| Wavelength L1                                          | $\lambda C1$    | 1299.02 | 1300.05 | 1301.09 | nm   |       |
| Wavelength L2                                          | $\lambda C2$    | 1303.54 | 1304.58 | 1305.63 | nm   |       |
| Wavelength L3                                          | $\lambda C3$    | 1308.09 | 1309.14 | 1310.19 | nm   |       |
| Side-mode suppression ratio                            | SMSR            | 30      |         |         | dB   |       |
| Total Average Optical Launch Power                     | POUT            | -       | -       | 12.5    | dBm  |       |
| Average Launch Power Tx_Off (Each Lane)                | POUT_OFF        | -       | -       | -30     | dBm  |       |
| Average Optical Launch Power (Each Lane)               | POUTL           | 4       | -       | 6.5     | dBm  |       |
| Extinction Ratio                                       | ER              | 8       | -       | -       | dB   |       |
| Spectral Width                                         | $\Delta\lambda$ | -       | -       | 1       | nm   |       |
| Optical Modulation Amplitude (Each Lane)               | OMA             | 0       | -       | 6.5     | dBm  |       |
| Launch Power in OMA minus TDP (Each Lane)              | OMA-TDP         | 0       | -       | -       | dBm  |       |
| Difference in launch power between any two lanes (OMA) | DT_OMA          | -       | -       | 2.5     | dB   |       |
| Optical Return Loss Tolerance                          | ORLT            | -       | -       | 20      | dB   |       |



|                                 |     |                                                         |   |      |       |  |
|---------------------------------|-----|---------------------------------------------------------|---|------|-------|--|
| RIN20OMA                        | RIN | -                                                       | - | -130 | dB/Hz |  |
| Transmitter Reflectance         | TR  | -                                                       | - | -12  | dB    |  |
| Transmitter Eye Mask Definition | -   | IEEE 802.3bs-2010<br>{0.25, 0.4, 0.45, 0.25, 0.28, 0.4} |   |      |       |  |

**Table 2 – Receiver Optical Specifications**

| Parameter                                        | Symbol       | Min.    | Typical | Max.    | Unit | Notes |
|--------------------------------------------------|--------------|---------|---------|---------|------|-------|
| Wavelength L0                                    | $\lambda C0$ | 1294.53 | 1295.56 | 1296.59 | nm   |       |
| Wavelength L1                                    | $\lambda C1$ | 1299.02 | 1300.05 | 1301.09 | nm   |       |
| Wavelength L2                                    | $\lambda C2$ | 1303.54 | 1304.58 | 1305.63 | nm   |       |
| Wavelength L3                                    | $\lambda C3$ | 1308.09 | 1309.14 | 1310.19 | nm   |       |
| Receiver Sensitivity (OMA) per Lane              |              |         |         | -30.0   | dBm  | 1     |
| Stressed Receiver Sensitivity in OMA (Each Lane) | -            | -       | -       | -28     | dBm  | 1     |
| Saturation Power, each lane                      | SP           | -4.5    |         |         | dBm  |       |
| Damage Threshold for Receiver                    | Pin, damage  | 0       | -       | -       | dBm  |       |
| Average Receive Power (Each Lane)                | -            | -32     | -       | -4.5    | dBm  |       |
| Receive Power in OMA (Each Lane), Overload       | OMA          | -       | -       | -4.5    | dBm  |       |
| LOS Assert                                       | LOSA         | -40     | -       | -       | dBm  |       |
| LOS De-assert                                    | LOSD         | -       | -       | -30     | dBm  |       |
| LOS hysteresis                                   | LOSH         | 0.5     | -       | -       | dB   |       |

Note 1: Sensitivity is measured @ BER5E-5

## Ordering Information

**Table 3 - Ordering Information**

| Part No.      | Data Rate | DDM | Wave   | Fiber Type | Dist. | Temp.  | Optical Interface |
|---------------|-----------|-----|--------|------------|-------|--------|-------------------|
| CL100QSFPXZR4 | 100Gbps   | Yes | 1310nm | SMF        | 100km | 0~70°C | LC                |

## CONTACT:

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