

# QSFP28 ZR4

## 100 Gbps Rate Transceiver, 80km with FEC

### Description:

OPTOKON 100G QSFP28 ZR4 optical transceiver consolidates the receiver and transmitter paths into a single module.

On the transmit side, four lanes of serial data streams undergo recovery, retiming, and distribution to four laser drivers. These drivers control 4-EML lasers with center wavelengths of 1296 nm, 1300 nm, 1305 nm and 1309 nm. The resultant optical signals are then combined and transmitted through a standard LC connector via single-mode fiber. For reception, the four lanes of optical data streams are optically separated using the integrated de-multiplexer. Each stream is then processed by a SOA+PIN and trans-impedance amplifier, followed by retiming. Notably, this module boasts a hot-pluggable electrical interface, minimal power consumption, and a 2-wire serial interface.

This product conforms to the QSFP28 Multi-Source Agreement (MSA) regarding its form factor, optical/electrical connections, and digital diagnostic interface. Additionally, it adheres to IEEE 802.3ba standards.

### Features:

- Compliant with QSFP28 standard SFF-8636 Rev 2.10a
- Support line rates from 103.125 Gbps
- Integrated LAN WDM EML TOSA / SOA+ PIN ROSA, support 80km with FEC
- Digital Diagnostics Monitoring Interface
- Duplex LC optical receptacle
- No external reference clock
- Electrically hot-pluggable
- Compliant with LC connector
- Case operating temperature range: **0°C to 70°C**
- Power dissipation < 5.5 W



### Safety and regulatory compliance and standards:

- Compliant to IEEE 802.3ba, IEEE 802.3bm
- Compliant to SFF-8636

### Applications:

- 100G Ethernet & 100GBASE-ZR4

### Recommended operating conditions:

<i>Parameter</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>	<i>Note</i>
Case Operating Temperature	0	-	70	°C	Without air flow
Relative Humidity	5	-	95	%	
Power Supply Voltage	3.13	3.3	3.47	V	
Data Rate		25.78125		Gbps	Each channel
Transmission Distance			80	km	
Coupled fiber	Single mode fiber				9/125um SMF

Optical characteristics:

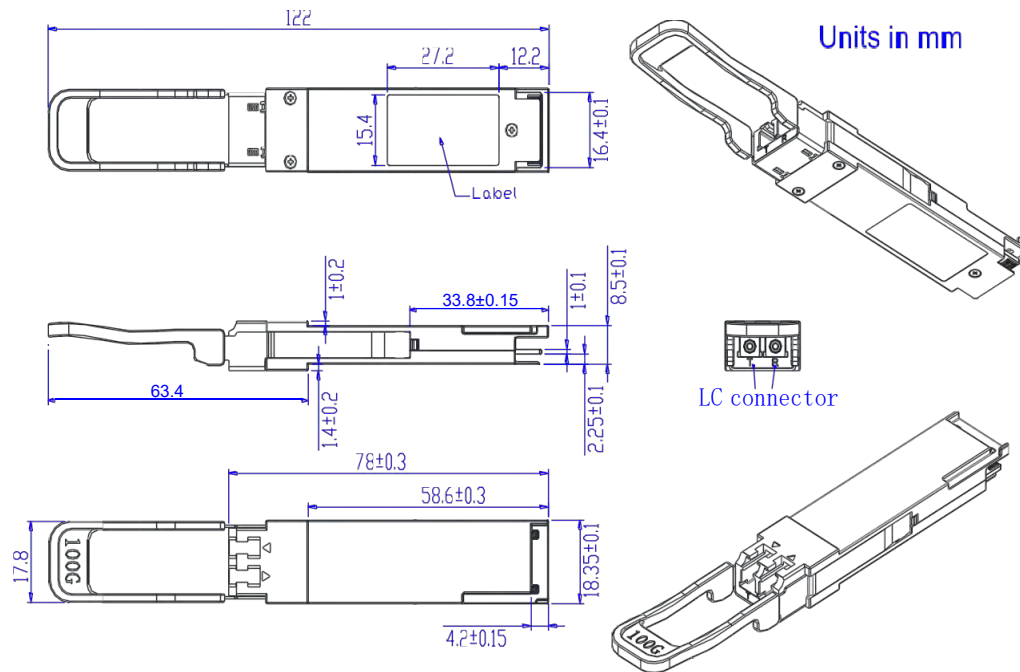
Transmitter

Parameter	Min	Typ	Max	Unit
Signaling Speed per Lane		25.78125		Gbps
Wavelength Assignment	1294.53	1295.56	1296.59	nm
	1299.02	1300.05	1301.09	nm
	1303.54	1304.58	1305.63	nm
	1308.09	1309.14	1310.19	nm
Total Output Power			12.5	dBm
Average Launch Power per Lane	1		6.5	dBm
Average launch Power OFF per Lane			-30	dBm

Receiver

Parameter	Min	Typ	Max	Unit
Receive Power per Lane (Max)			-5	dBm
Receiver Sensitivity (OMA), each Lane (BER = 5x10 <sup>-5</sup> )			-28	dBm
LOS De-Assert			-30	dBm
LOS Assert	-40			dBm

Dimension:



Ordering code

Code	Description
S100G-QP28-ZR4-80-D-XX	100 Gbps (4x25 Gbps), QSFP28 housing, up to 80 km with FEC, 0°C to +70°C, LC connector