

## 100 Gb/s 2km QSFP28 LX4 Transceiver

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### QSFP Series



The 100GBASE-LX4 module is a versatile and high-performance optical transceiver designed to support link lengths of up to 2 km over single-mode fiber (SMF) and up to 100 meters on OM3 multimode fiber (MMF) using a Duplex LC connector. It is designed for a wide range of applications, including data centers and enterprise networking environments where reliable high-speed data transmission is essential. Its ability to operate across both SMF and MMF provides flexibility for network architects, enabling seamless integration into existing infrastructure while meeting the demands of 100G Ethernet applications.

This transceiver is a fully integrated 4 x 25.78 Gbps optical module, utilizing advanced optical components to ensure exceptional performance. It incorporates cooled distributed feedback laser diodes (DFB LDs) operating at wavelengths of 1270 nm, 1290 nm, 1310 nm, and 1330 nm. These are paired with high-performance driver integrated circuits (ICs), PIN photodiodes, and clock and data recovery (CDR) ICs that support 25 Gbps electrical interfaces. This combination ensures precise and efficient optical signal transmission, making it well-suited for high-density network environments and demanding data rates.

Additionally, the 100GBASE-LX4 module features built-in digital diagnostics monitoring (DDM), which provides access to real-time operating parameters such as temperature, laser bias current, and transmitted/received optical power. This monitoring capability enhances network reliability by enabling proactive maintenance and reducing downtime.

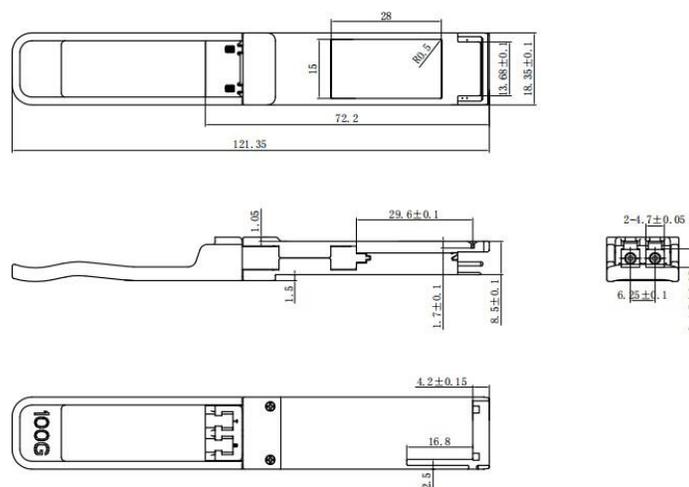
### Key Features

- QSFP28 MSA compliant
- Supports 103.1 Gb/s aggregate bit rate
- 4x25Gb/s electrical interface
- Up to 2km on SMF and 100m on MMF(OM3)
- Hot-pluggable QSFP28 footprint
- LC duplex connector
- Maximum power consumption 3.5 Watts
- Single 3.3V power supply
- Support Digital Diagnostic Monitor interface
- Case operating temperature: 0°C to +70°C
- RoHS compliant

## Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Case Temperature	T <sub>case</sub>	0		70	°C	
Power Supply Voltage	V <sub>cc</sub>	3.135	3.3	3.465	V	
Power Consumption	P <sub>D</sub>			3.5	W	
Data Rate (Optical)	DR <sub>O</sub>		4*25.78125		Gbps	
Data Rate (Electrical)	DR <sub>E</sub>		4*25.78125		Gbps	
Operating Link Distance	L <sub>D</sub>		SMF:2 MMF:0.1@OM3		km	
Signaling Speed per Lane	BR	25.78125 ± 100 ppm			Gbps	
Lane Wavelength	λ <sub>0</sub>	1264.5	1271	1277.5	nm	
	λ <sub>1</sub>	1284.5	1291	1297.5	nm	
	λ <sub>2</sub>	1304.5	1311	1317.5	nm	
	λ <sub>3</sub>	1324.5	1331	1337.5	nm	
Total Average Launch Power for SMF	P <sub>total</sub>			8.5	dBm	
Total Average Launch Power for MMF		-2.5		9.5	dBm	
Average Launch Power per Lane for SMF	P <sub>out</sub>	-6.5		2.5	dBm	
Average Launch Power per Lane for MMF		-5.0		3.5	dBm	
Launch Power OFF per Lane	POff			-30	dBm	
Signaling Rate, Each Lane	BR	10.3125 ± 100 ppm			Gb/s	
Receive Wavelength	λ <sub>0</sub>	1264.5	1271	1277.5	nm	
Damage Threshold, each Lane	P <sub>max</sub>			3.5	dBm	
Average Receive Power per Lane for SMF		-11.5		2.5	dBm	
Average Receive Power per Lane for MMF		-8.6		3.5	dBm	
Differential Voltage Pk-Pk	V <sub>pp</sub>	300		850	mV	
Differential Output Voltage	V <sub>out, pp</sub>	260		850	mV	

## Outline Diagram



## Ordering Information

Product Name	Product Description
QSFP28-100G-LX02	QSFP28 Plug-in, 100GBASE-LX4, CWDM wavelength 2km SMF/100m MMF, Optical Transceiver, LC, DOM



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