

# 4L-Q100PLR4-M02

QSFP28 100GBASE-PSM4, 1310nm, SM, DDM, MPO, 2Km



## Applications

- Compliant with 100GBASE-PSM4 Ethernet IEEE 802.3bm,
- Up to 103.1 Gbps Bit Rate
- Datacenter backbones
- High-speed servers
- 4 x 25GBASE Ethernet
- SAN, Routers, Hubs, Load Balancer
- High-performance Computing Clusters
- Other optical links

## Features

- QSFP28 100G Optical Transceiver
- QSFP28 MSA Compliant
- Up to 2Km links on SMF
- DFB laser transmitter
- MPO-12 receptacles
- Digital Diagnostic Monitoring
- RoHS-6 and Lead Free
- Operating temperature: 0°C ~ +70°C

## Description

The 4L-Q100PLR4-M02 is a QSFP28 four channel parallel transceiver module for singlemode (SMF) 100GBASE-PSM4 / 100 Gigabit optical data communications.

This modules are compatible with most switch/router/server brands and designed to operate with single mode fiber (SMF) and MPO connectors, using 4 parallel channels of 25Gb/s with up to 2km reach.

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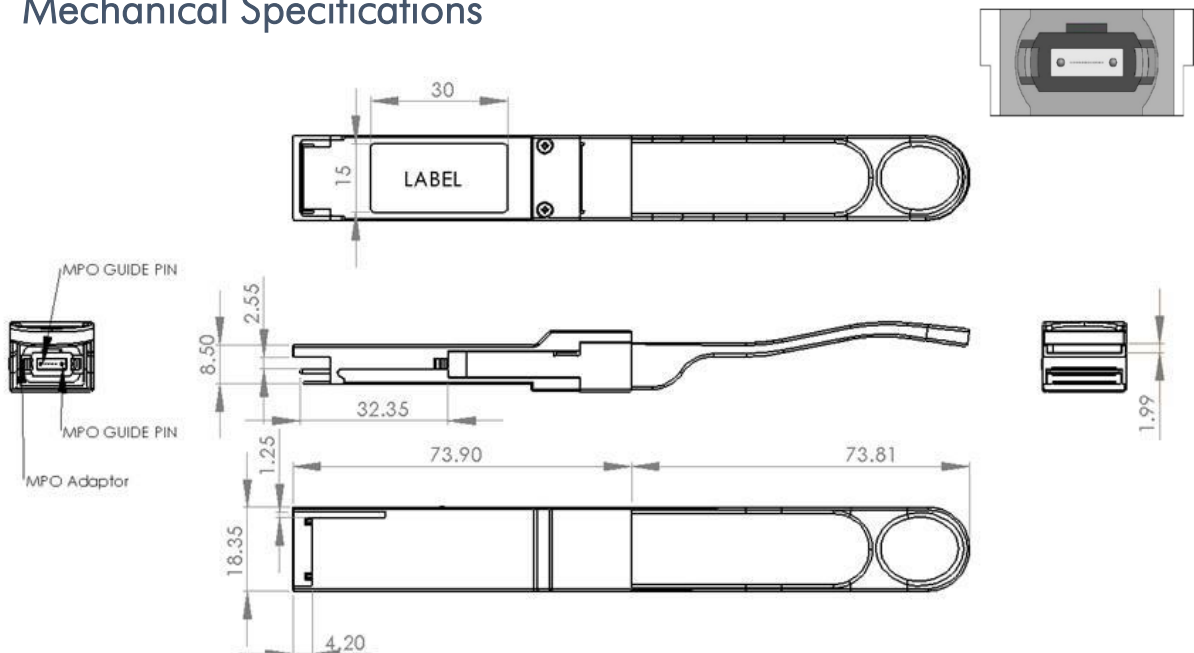
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## General Specifications – Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max
Max Link Length	Lmax			2Km on SMF *MPO-12
Supply Voltage	Vcc	-0.5		3.8
Storage Temperature	T <sub>s</sub>	-40°C		85°C
Case Operating Temperature	T <sub>OP</sub>	0		70°C
Relative Humidity	RH	15		85%
Receiver Damage Threshold	pRdmg	+3dBm		
Bit Rate (all wavelngths)	BR			103.1Gb/s

## Mechanical Specifications

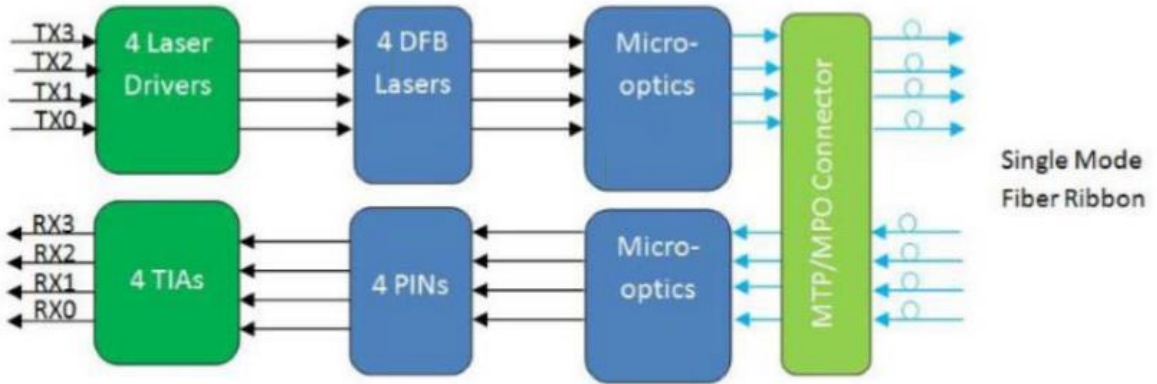


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## Transceiver Diagram



## Optical Specifications - Transmitter

Parameter	Symbol	Min	Typ	Max	Unit
Signaling Speed per lane		25.78125±100ppm			Gb/s
Wavelength		1260	1310	1355	nm
Total Output Optical Power	$P_T$				
Average Launch Power (Each Lane)	$P_{TX}$	-9.4		+2	dBm
Optical Modulation Amplitude(Each Lane)	OMA	-5		+2.2	dB
Extinction Ratio	ER	3.5			dB
Side Mode Suppression Ratio	SMSR	30			dB
Relative Intensity Noise	RIN			-130	dB/Hz
Transmitter Dispersion Penalty	TDP			2.2	dB
Optical Return Loss Tolerance				20	dB
Transmitter Eye Mask		Compliant with IEEE 802.3ba			

## Optical Specifications – Receiver

Parameter	Symbol	Min	Typ	Max	Unit
Signaling Speed per lane			25.78125±100ppm		Gb/s
Wavelength	$\lambda_C$	1260	1310	1355	nm
Optical Input Power, each lane	PRX	+2		-12.5	dBm
Receiver Sensitivity , each Lane	RX_SEN1			-11	dBm
Receiver Overload	PIN-OL	+3			dBm
LOS Assert	LOS <sub>A</sub>	-30			dBm
LOS De-Assert	LOS <sub>D</sub>			-15	dBm
LOS Hysteresis	LOS <sub>H</sub>	0.5		6	dB
Optical Return Loss	ORL			-12	dBm

## Electrical Specifications - Transmitter

Parameter	Symbol	Min	Typ	Max	Unit
Signaling Rate per lane		25.78125±100ppm			Gb/s
Differential data input swing	v <sub>IN_PP</sub>	190		700	mV
Transmit disable voltage	V <sub>D</sub>	V <sub>CC</sub> -1.0		v <sub>CC</sub>	V
Transmit enable voltage	v <sub>EN</sub>	v <sub>EE</sub>		V <sub>EE</sub> +0.8	V

## Electrical Specifications - Receiver

Parameter	Symbol	Min	Typ	Max	Unit
Signaling Rate per lane		25.78125±100ppm			Gb/s
Differential data output swing	v <sub>OUT_PP</sub>	300		850	mV
Data output rise time (20%-80%)	t <sub>r</sub>		12		ps
Data output fall time (20%-80%)	t <sub>f</sub>		12		ps
LOS Fault	LOS <sub>A</sub>	V <sub>CC</sub> -1.0		v <sub>CC_HOST</sub>	V
LOS Normal	LOS <sub>D</sub>	v <sub>EE</sub>		V <sub>EE</sub> +0.8	V

## Ordering Information

Part Number	Description
4L-Q100SR4-M100	QSFP28 100GBASE-SR4, 850nm, MM, DDM, MPO/MTP, 100m
4L-Q100BSR4-100	QSFP28 100GBASE-SR4, 850/900nm, BiDi MM, DDM, LC, 150m
4L-Q100CW4-02	QSFP28 100GBASE-CWDM4, LC, DDM, SM 2km.
4L-Q100PLR4-M02	QSFP28 100GBASE-PLR4, 1310nm, SM, DDM, MPO/MTP, 2km
4L-Q100PSM4-M10	QSFP28 100GBASE-PLR4, 1310nm, SM, DDM, MPO/MTP, 10km
4L-Q100LR4-10	QSFP28 100GBASE-LR4, 1310nm, SM, DDM, Duplex LC, 10Km
4L-Q100LR4-20	QSFP28 100GBASE-LR4, 1310nm, SM, DDM, Duplex LC, 20Km
4L-Q100ER4-40	QSFP28 100GGBASE-ER4, 1310nm, SM, DDM, Duplex LC, 40Km
4L-Q100ZR4-70	QSFP28 100GGBASE-ZR4, 1310nm, SM, DDM, Duplex LC, 70Km
4L-Q100ZR4-80	QSFP28 100GGBASE-ZR4, 1310nm, SM, DDM, Duplex LC, 80Km

### Note

This modules have been tested by 4LAN on equipment like Cisco, Juniper, Dell, HP, Mikrotik, Huawei, and other brands. The equipment brand must be informed before shipping the order, so the transceivers are reprogrammed to the corresponding brand.

### Contact Information

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