

# PRE-QSFP28M-ER4L

QSFP28, ER4L, LWDM, 112G, 25/40km, OTU4



## Product Features:

- LWDM EML Laser Transmitters
- APD Receivers
- SMF Transmission Medium
- Duplex LC/UPC Connector
- Digital Diagnostic Monitoring (DDM)
- C-Temp Rated
- <4.5W Power Consumption
- Supports 100GE and OTU4 Data Rate
- 40km Transmission with KR4 FEC



## Product Applications:

- Data Centers
- Backhaul Networks
- 100GBASE-ER4 Ethernet

## Standards:

- QSFP28 MSA Compliant
- IEEE 802.3bm
- RoHS
- Class 1 Laser

## General Specifications:

Parameter	Min	Typical	Max	Unit
Case Operating Temperature	0	-	70	°C
Power Consumption	-	-	4.5	W
Power Supply Voltage	3.14	3.3	3.46	V
Operating Humidity	5	-	95	%
Storage Temperature	-40	-	85	°C
Transmission Distance (FEC)	-	-	40	km
Transmission Distance (W/o FEC)	-	25	30	km
Data Rate (Total)	-	103.125	111.8	Gbps
Data Rate (Per Lane)	-	25.78	-	Gbps

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## Optical Characteristics: Transmitter

Parameter	Min	Typical	Max	Unit
Center Wavelength 1	1294.53	1295.56	1296.59	nm
Center Wavelength 2	1299.02	1300.05	1301.09	nm
Center Wavelength 3	1303.54	1304.58	1305.63	nm
Center Wavelength 4	1308.09	1309.14	1310.19	nm
Average Transmit Power (Per Lane, 100GE)	-2.5	-	6.5	dBm
Total Average Transmit Power (100GE)	-	-	12.5	dBm
Average Transmit Power (Per Lane, OTU4)	0.6	-	5.1	dBm
Total Average Transmit Power (OTU4)	-	-	11.1	dBm
Transmit Power (Per Lane, OMA)	0.5	-	6.5	dBm
Side Mode Suppression Ratio	30	-	-	dB
Transmitter and Dispersion Penalty (100GE)	-	-	3	dB
Optical Path Penalty (OTU4)	-	-	1.5	dB
Extinction Ratio	7	-	-	dB
Transmitter OFF Output Power	-	-	-30	dBm

## Optical Characteristics: Receiver

Parameter	Min	Typical	Max	Unit
Receiver Wavelength 1	1294.53	1295.56	1296.59	nm
Receiver Wavelength 2	1299.02	1300.05	1301.09	nm
Receiver Wavelength 3	1303.54	1304.58	1305.63	nm
Receiver Wavelength 4	1308.09	1309.14	1310.19	nm
Damage Threshold (Per Lane)	-2.5	-	-	dBm
Receiver Sensitivity (Per Lane, OMA, 100GE) <sup>1</sup>	-	-	-18.5	dBm
Receiver Sensitivity (Per Lane, Avg, OTU4) <sup>2</sup>	-	-	-18.9	dBm
Stressed Receiver Sensitivity (Per Lane, OMA, 100GE)	-	-	-16	dBm
Avg Receive Power (Per Lane)	-20.5	-	-3.5	dBm
Receiver Overload (Per Lane, OMA)	-	-	-3.5	dBm

Note 1: Measured with a PRBS2<sup>31</sup>-1 test pattern @25.78Gbps, BER≤5E-5

Note 2: Measured with a PRBS2<sup>31</sup>-1 test pattern @27.95Gbps, BER≤1.8E-4

## Product Ordering Information

Part Number	Description
PRE-QSFP28M-ER4L	QSFP28, ER4L, LWDM, 112G, 25/40km, SMF/LC, OTU4, C-Temp, DDM