

PRE-QSFP28-BL(H)-LR1(I)

QSFP28, PAM4, BIDI, 100G, 10km, 1271/1331nm



Product Features:

- Single Wavelength PAM4
- EML Transmitter
- PIN Receiver
- Up to 10km on SMF
- Simplex LC/UPC Connector
- Digital Diagnostic Monitoring (DDM)
- 100Gbps Maximum Data Rate
- C-Temp and I-Temp Rated
- <5.0W Power Consumption
- On-board KP4 FEC



Product Applications:

- 100G Single Fiber
- 100GBASE-LR Ethernet
- Data Center Applications
- Switch & Router Connections

Standards:

- 100G λ MSA 100G-LR
- SFF-8636
- Class 1 Laser
- RoHS

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General Specifications:

Parameter	Symbol	Min	Typ	Max	Unit
Case Operating Temperature (C-Temp)	T_{op}	0	-	70	°C
Case Operating Temperature (I-Temp)	T_{op}	-40	-	85	°C
Power Consumption (C-Temp)	P_W	-	-	4.5	W
Power Consumption (I-Temp)	P_W	-	-	5.0	W
Power Supply Voltage	V_{cc}	3.135	3.3	3.465	V
Operating Humidity	H_s	5	-	85	%
Storage Temperature	T_s	-40	-	85	°C
Transmission Distance	TD	-	-	10	km
Data Rate (Total)	DR_T	-	103.125	-	Gbps
Optical Signal Rate Per Lane	BR	-	53.125	-	GBd

Optical Characteristics: Transmitter

Parameter	Symbol	Min	Typ	Max	Unit
Center Wavelength (Low Wave, BL)	λ_c	1264.5	1271	1277.5	nm
Center Wavelength (High Wave, BH)	λ_c	1324.5	1331	1337.5	nm
Transmit Power (Avg)	P_{TX_AVG}	-1.4	-	4.5	dBm
Transmit Power (OMA)	P_O	0.7	-	4.7	dBm
Launch Power (OMOuter) minus TDECQ	P_{OMA}	-	-	-	dBm
For $ER \geq 4.5dB$		-0.7	-	-	
For $ER < 4.5dB$		-0.6	-	-	
Transmitter and Dispersion Eye Closure Penalty	TDECQ	-	-	3.4	dB
Side Mode Suppression Ratio	SMSR	30	-	-	dB
Extinction Ratio	ER	3.5	-	-	dB
Relative Intensity Noise OMA	RIN	-	-	-136	dB/Hz
Optical Return Loss Tolerance	ORLT	-	-	15.6	dB
Transmitter Reflectance	ORL	-	-	-26	dB
Transmitter Off Output Power	P^{OFF}	-	-	-30	dBm

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Optical Characteristics: Receiver

Parameter	Symbol	Min	Typ	Max	Unit
Receiver Wavelength (Low Wave, BL)	λ_r	1324.5	1331	1337.5	nm
Receiver Wavelength (High Wave, BH)	λ_r	1264.5	1271	1277.5	nm
Receiver Damage Threshold	P_{Rdmg}	5.5	-	-	dBm
Average Receive Power ¹	P_{RX_AVG}	-7.7	-	4.5	dBm
Receive Power (OMA _{outer})	R_{xOMA}	-	-	4.7	dBm
Receiver Sensitivity (OMA _{outer}) ²	RxSENS	-	-	-6.1, SECQ-7.5	dBm
Stressed Receiver Sensitivity	SRS	-	-	-4.1	dBm
Receiver Reflectance	RR	-	-	-26	dB
LOS Assert	LOS _A	-24	-	-12	dBm
LOS De-Assert	LOS _D	-	-	-10	dBm
LOS Hysteresis	LOS _H	0.5	-	-	dB

Note 1: Average power is informative and not the principal indicator of signal strength.

Note 2: Specified @ 2.4x10⁻⁴ BER with PRBS31Q.

Product Ordering Information

Part Number	Description
PRE-QSFP28-BL-LR1	QSFP28, PAM4, BIDI, 100G, 10km, Low Wave, C-Temp, DDM
PRE-QSFP28-BL-LR1I	QSFP28, PAM4, BIDI, 100G, 10km, Low Wave, I-Temp, DDM
PRE-QSFP28-BH-LR1	QSFP28, PAM4, BIDI, 100G, 10km, High Wave, C-Temp, DDM
PRE-QSFP28-BH-LR1I	QSFP28, PAM4, BIDI, 100G, 10km, High Wave, I-Temp, DDM

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