

PRE-QSFP28-FR

QSFP28, FR, 1310nm, 100G, 2km, SMF/LC



Product Features:

- Single Wave PAM4 Modulation
- EML Transmitters
- PIN Receiver
- 1310nm Operating Wavelength
- SMF Transmission Medium
- LC/UPC Connector
- C-Temp Rated
- On-Board KP4 FEC
- <3.5W Power Consumption



Product Applications:

- Data Center
- Enterprise Networks
- 100GBASE-FR Ethernet

Standards:

- IEEE 802.3cd
- RoHS
- Class 1 Laser

General Specifications:

Parameter	Min	Typical	Max	Unit
Operating Case Temperature	0	-	70	°C
Power Consumption	-	-	3.5	W
Power Supply Voltage	3.135	3.3	3.465	V
Operating Humidity	5	-	85	%
Storage Temperature	-40	-	85	°C
Transmission Distance	-	-	2	km
Electrical Data Rate (Per Lane)	-	25.78125	-	Gbps
Optical Data Rate (PAM4)	-	53.125	-	GBd

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Optical Characteristics: Transmitter

Parameter	Min	Typical	Max	Unit
Center Wavelength	1304.5	1310	1317.5	nm
Transmit Power (Avg) ¹	-2.4	-	4	dBm
Transmit Power (OMA)	-0.2	-	4.2	dBm
Launch Power in OMA minus TDECQ	-	-	-	dBm
for ER ≥ 4.5dB	-	-1.6	-	
for ER ≤ 4.5dB	-	-1.5	-	
Transmitter and Dispersion Eye Closure for PAM4 (TDECQ)	-	-	3.4	dB
TDECQ – 10*log ₁₀ (C _{eq})	-	-	3.4	dB
Transmitter Reflectance	-	-	-26	dB
Side Mode Suppression Ratio	30	-	-	dB
Extinction Ratio	3.5	-	-	dB
Relative Intensity Noise (OMA)	-	-	-136	dB/Hz
Optical Return Loss Tolerance	-	-	17.1	dB
Output Power (P _{off})	-	-	-15	dBm

Optical Characteristics: Receiver

Parameter	Min	Typical	Max	Unit
Receive Power (Avg) ¹	-6.4	-	4	dBm
Receive Power (OMA _{outer})	-	-	4.2	dBm
Receiver Sensitivity (OMA _{outer})	-	-	Max (-4.5, SECQ-5.9)	dBm
Stressed Receiver Sensitivity (OMA) ²	-	-	-2.5	dBm
Receiver Reflectance	-	-	-26	dBm
Damage Threshold	5	-	-	dBm
LOS Assert	-15	-	-	dBm
LOS De-Assert	-	-	-9.4	dBm
LOS Hysteresis	0.5	-	-	dB
Stressed Eye Closure for PAM4 (SECQ)	-	3.4	-	dB
SECQ – 10*log ₁₀ (C _{eq})	-	-	3.4	dB

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

Note 2: Measured with conformance test signal at TP3 for the BER equal to 2.4x10⁻⁴.

Product Ordering Information

Part Number	Description
PRE-QSFP28-FR	QSFP28, FR, 1310nm, 100G, 2km, SMF/LC, C-Temp, DDM