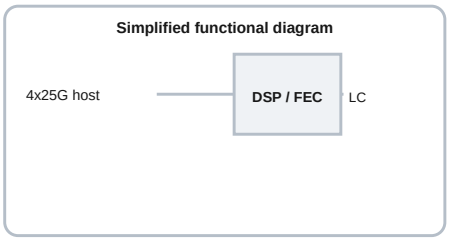
QSFP28-FR-100G

QSFP28, 100GbE-FR, Single Lambda, 2km

1310nm, 4dB, SM, LC

1. Product overview

100G single-lambda FR-class QSFP28 transceiver for 2 km over single-mode fiber. A DSP gearbox converts 4x25 Gb/s NRZ host signals to one 50/53.125 Gbaud PAM4 optical lane with integrated FEC.



2. Key features

- QSFP28 MSA compliant
- 53.125 Gbaud support
- 100G Lambda MSA 100G-FR compliant
- Up to 2 km over SMF with FEC
- 4x25G OIF CEI-28G-VSR host interface
- Duplex LC; maximum power feature states 4.5 W

3. Applications

- Data Center Interconnect
- 100G Ethernet
- Enterprise networking

4. Technical data

Parameter	Value	Parameter	Value
Technology	100G single-lambda FR PAM4	Media	SMF, duplex LC
Reach	2 km	Wavelength	1310 nm
Optical rate	53.125 GBd	Host	4x25.78125 Gb/s NRZ
Budget	4 dB	Power	4.5 W max feature

5. Recommended operating conditions

Parameter	Value
Operating case temperature	0 to +70 °C
Supply voltage	3.135 / 3.3 / 3.465 V
Electrical rate / lane	25.78125 Gb/s
Optical rate	53.125 GBd
Link distance	0.002 to 2 km

QSFP28-FR-100G

6. Optical characteristics

Parameter	Specification
OPTICAL CHARACTERISTICS	
Transmitter	
Center Wavelength λt	1304.5 1317.5 nm
Side Mode Suppression Ratio SMSR	30 dB
Average Launch Power PAVG	-2.4 4 dBm 1
Outer Optical Modulation Amplitude (OMAouter) POMA	-0.2 4.2 dBm 2
Launch Power in OMAouter minus Transmitter and	
Dispersion Eye Closure (TDECQ)	-1.6 dBm for ER≥4.5dB
Dispersion Eye Closure (TDECQ)	-1.5 dBm for ER<4.5dB
Transmitter and Dispersion Eye Closure for PAM4	
(TDECQ) TDECQ	3.4 dB
Extinction Ratio ER	3.5 dB
RIN1	7.1OMA RIN -136 dB/Hz
Optical Return Loss Tolerance TOL	17.1 dB
Transmitter Reflectance RT	-26 dB
Average Launch Power OFF Transmitter Poff	-15 dBm

Parameter	Specification
Receiver	
Center Wavelength λr	1304.5 1317.5 nm
Damage Threshold THd	5.5 dBm 3
Average Receive Power	-6.4 4.5 dBm
Receive Power (OMAouter)	4.7 dBm
Receiver Sensitivity (OMAouter) SEN	-4.5 dBm for BER= 2.4x10-4
Stressed Receiver Sensitivity (OMAouter) SRS	-2.5 dBm
Receiver Reflectance RR	-26 dB
LOS Assert LOSA	-30 dBm
LOS Deassert LOSD	-15 dBm
LOS Hysteresis LOSH	0.5 dB
Conditions of Stress Receiver Sensitivity Test (Note	4)
Stressed Eye Closure for PAM4 (SECQ)	3.4 dB
(min) must exceed the minimum value specified here.	
the receiver.	

7. Digital diagnostics and management

Parameter	Specification
Management interface	2-wire serial / I2C through QSFP28 management interface
Digital diagnostics	Temperature, supply voltage, TX bias/power and RX power where implemented
Module controls	ModSelL, ResetL, LPMode, ModPrsL and IntL as applicable
Form factor	Hot-pluggable QSFP28, 38-pin host interface

8. Safety and regulatory

RoHS compliance and normal ESD handling precautions apply. Where stated in the source specification, the optical module is a Class 1 laser product and must be handled in accordance with applicable laser-safety requirements.

9. Ordering information

Ordering number	Product description
Q100G-FR	QSFP28, 100GbE-FR, Single Lambda, 2km; 1310nm, 4dB, SM

10. General notes

Specifications in this two-page summary are condensed from the supplied GLOBALfiber source data sheet. Values and terminology are retained from the source; no external specifications have been substituted.

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