

QSFP28-DOXXX-100GD

Single-Lambda 100GBASE, QSFP28, DWDM ELR (O-Band), SMF TRANSCEIVER, 20-25km REACH, Duplex LC CONNECTOR

Product Features

- Single-wavelength 100 Gbps transmission
- nCP4™ Silicon Photonics Optical Engine
- O-band xWDM with 200GHz channel spacing
- Aligned to 800GHz spacing LAN-WDM grid
- Up to 25km over G.652 SMF (8ch-Mux/Demux) Up to 20km (16ch-Mux/Demux)
- Duplex LC connector
- PAM4 optical signal with integrated FEC
- 4x25.78 Gbps CAUI-4 host interface.
- Compliant with QSFP28 MSA SFF-8636
- QSFP28 MSA digital monitoring functions
- Case operating temperature:
 - Commercial: 0 ~ 70°C



Product Applications

- 100GBASE multiple channel transmissions using O-band xWDM wavelengths.

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

Parameter	Symbol	Min.	Typ.	Max.	Units
Storage Temperature	Ts	-40		85	°C
Power Supply Voltage	Vcc	-0.5		3.6	V
Relative Humidity (non-condensation)	RH	0		85	%
Optical Receiver Damage Threshold	RXdmg	-2			dBm
ESD Sensitivity		500			V

II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	TC	0	25	70	°C	Commercial
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Power Consumption (FEC-On)	P _D		4.7	5.5	W	

III. Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Data Rate	BR	103.125				Gbps
Data Rate Variation		-100			100	ppm
Transmitter						
Center Wavelength	λ_C	See Ordering Details (next pg.)			nm	
Central Wavelength Stability		$\lambda_C-0.1$		$\lambda_C+0.1$	nm	
Average optical output power	P _O	0		5.6	dBm	2
Transmitter and dispersion penalty eye closure for PAM4 (TDECQ)	TDECQ			3.6	dB	1
Extinction Ratio	ER	6			dB	
Average output power (TX-Off)				-20	dBm	
TX Reflectance				-26	dB	
Receiver						
Center Wavelength	λ_C	1290		1325	nm	
Receiver Damage Threshold	RXdmg	-2.4			dB	3
Receive Overload, average power	RXsat	-3			dBm	4
Receiver Sensitivity, average power	RX _{OMA}		-15		dBm	4
Receiver Reflectance	RR			-26	dB	
LOS Assert	LOSA	-18			dBm	
LOS De-assert	LOSD			-15	dBm	
LOS hysteresis	LOSH		1		dB	

Notes:

1. The optical signal data rate is 103.125 Gbps 100GE data rate plus FEC code. The TDECQ and ER are specified for 106.25 Gbps signal.
2. Average optical output power is specified for beginning of life (BOL) with clean fiber connector.
3. The RX shall be able to tolerate, without damage, continuous exposure to an optical signal having this average power level. The RX does not have to operate correctly at this input power.
4. Rx average power overload and sensitivity are for post-FEC BER < 1E-15 with integrated FEC without dispersion at BOL.

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Ordering Details				
Part Number	Data Rate	Applications	Case Temp.	xWDM λ Channel
QSFP28-DOXXX-25-100GD	100Gbps	8ch (up to 25km)	0 - 70°C	XXX
QSFP28-DOXXX-20-100GD		16ch (up to 20km)		

Wavelength Typical (nm)	xWDM Part Number
1295.56	QSFP28-DO295-20-100GD
1296.68	QSFP28-DO296-20-100GD
1297.80	QSFP28-DO297-20-100GD
1298.93	QSFP28-DO298-20-100GD
1300.05	QSFP28-DO300-20-100GD
1301.18	QSFP28-DO301-20-100GD
1302.31	QSFP28-DO302-20-100GD
1303.45	QSFP28-DO303-20-100GD
1304.58	QSFP28-DO304-20-100GD
1305.72	QSFP28-DO305-20-100GD
1306.85	QSFP28-DO306-20-100GD
1308.00	QSFP28-DO308-20-100GD
1309.14	QSFP28-DO309-20-100GD
1310.28	QSFP28-DO310-20-100GD
1311.43	QSFP28-DO311-20-100GD
1312.58	QSFP28-DO312-20-100GD

Notes:

1. Please contact sales for specific OEM Platform part numbers to fit your network.

IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate per Lane (host side)	BRavg		25.78125		Gbps	
Data Rate Variation		-100		100	ppm	
Transmitter						
Input Swing (Differential)	V _{in}			900	mVpp	AC coupled
Input Impedance (Differential)	Z _{in}	90	100	110	Ohm	
Receiver						
Output Swing (Differential)	V _{out}			900	mVpp	AC coupled
Output Impedance (Differential)	Z _{out}	90	100	110	Ohm	
Low Speed Signals						
LPMode, Reset, ModSel	V _{IL}	-0.3		0.8	V	
	V _{IH}	2		V _{cc} +0.3		
ModPrs, Int	V _{OL}	0		0.4	V	IOL = 2.0mA
	V _{OH}	V _{cc} -0.5		V _{cc} +0.3		
SCL, SDA	V _{IL}	-0.3		0.3*V _{cc}	V	
	V _{IH}	0.7*V _{cc}		V _{cc} +0.5		
SCL, SDA	V _{OL}	0		0.4	V	IOLmax = 3.0mA
	V _{OHJ}	V _{cc} -0.5		V _{cc} +0.3		

Notes:

- The host 4x25.78 Gbps electrical interface complies with the CAUI-4 standard.

Warranty

<https://pivotaloptics.com/warranty/>

Disclaimer

External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.