

QSFP28-ELR4-100GD

Single-Rate 100GBase QSFP28 ELR4 1294-1310nm SMF 20km Transceiver

Product Features

- Compliant with 100GBASE LR4
- Support line rates to 103.125 Gbps
- Digital Diagnostics Monitoring Interface
- Duplex LC optical receptacle
- No external reference clock
- Electrically hot pluggable
- Compliant with QSFP28 MSA with LC connector
- Power dissipation < 5.5 W
- Compliant to IEEE 802.3ba, IEEE 802.3bm
- Compliant to SFF 8636
- Case operating temperature:
 - Commercial: 0 ~ 70°C
 - Industrial: -40 ~ +85°C



Product Applications

- 100G Ethernet

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	-0.3		4	V
Relative Humidity	RH	5		95	%
Signal Input Voltage		Vcc-0.3		Vcc+0.3	V

II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	TC	0		+70	°C	Commercial
		-40		+85	°C	Industrial
Power Supply Voltage	Vcc	3.13	3.3	3.47	V	
Data Rate (each lane)	BR		25.78125		Gb/s	
Power Supply Current	ICC			1360	mA	Commercial
				1666		Industrial
Link Distance (SMF)	D			20	km	

III. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Input Differential Impedance	Rin		100		Ω	1
Differential Data Input Swing	V _{in,pp}	180		1000	mV	
Transmit Disable Voltage	VD	V _{cc} -1.3		V _{cc}	V	
Transmit Enable Voltage	VEN	V _{ee}		V _{ee} +0.8	V	2
Receiver						
Differential Data Output Swing	V _{out,pp}	300		850	mV	3
LOS Fault	VLOS fault	V _{cc} -1.3		V _{cc} HOST	V	4
LOS Normal	VLOS norm	V _{ee}		V _{ee} +0.8	V	4

Notes:

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Or open circuit.
3. Input 100 ohms differential termination.
4. Loss of Signal is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

IV. Optical Characteristics

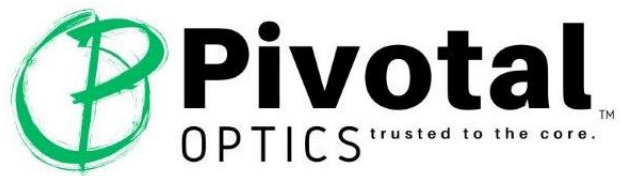
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Lane Wavelength (range)	L0	1294.53	1295.56	1296.59	nm	
	L1	1299.02	1300.05	1301.09	nm	
	L2	1303.54	1304.58	1305.63	nm	
	L3	1308.09	1309.14	1310.09	nm	
Transmitter						
Signaling rate (each lane)			25.78125		Gb/s	
Total Output Power	Pout			10.5	dBm	
Transmit OMA per lane		-1.3		4.5	dBm	
Average Launch Power per lane		-4.3		4.5	dBm	
Side-mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	4			dB	
Average Launch Power off per lane	Poff			-30	dBm	
RIN	RIN			-130	dB/Hz	
Transmitter eye mask { X1, X2, X3, Y1, Y2, Y3 }		{ 0.25, 0.4, 0.45, 0.25, 0.28, 0.4 }				1
Receiver						
Signaling rate (each lane)			25.78125		Gb/s	
Receiver Sensitivity (per lane)	Rsen			-8.6	dBm	
Receive Power (OMA) per lane	ROMA			4.5	dBm	
Average Input Power per channel	RXPx	-10.6		4.5	dBm	2
Receiver reflectance	Rr			-26	dB	
LOS Assert	LOS A	-40			dBm	
LOS De-Assert	LOS D			-12	dBm	

Notes:

1. Hit ratio 5×10^{-5}
2. Measured with a PRBS 231-1 test pattern, @25.78Gb/s, BER< 10^{-12}

QSFP28-ELR4-100GD

Single-Rate 100GBASE, QSFP28, ELR4, SMF TRANSCEIVER
1294-1310nm, 20km REACH, DUPLEX LC CONNECTOR



V. Ordering Information

Pivotal Part Number	Description
QSFP28-ELR4-100GD	QSFP28, 1310nm, LR4 SMF 20km, 100G DDM, C-Temp, OEM compatible
QSFP28-ELR4-100GDI	QSFP28, 1310nm, LR4 SMF 20km, 100G DDM, I-Temp, OEM compatible

Notes:

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

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.