

XHS319-40LY

100GBASE-ER4 CFP2 40 km Optical Transceiver Module



Applications

- 100GbE IEEE 802.3ba 100GBASE-ER4
- ITU-T G.959.1 OTU4 (4L1-9C1F)
- Switch to switch interface or Switch to router applications

Features

- 4 wavelength lanes full-duplex transceiver modules
- Data rate up to 28 Gbps per wavelength
- 4 x 25/28G LAN-WDM EML Integrated TOSA Cooling transmitter
- 4 channels PIN-base Integrated ROSA with SOA
- CFP2 MSA hardware specification and CFP MSA management specification compliance
- IEEE 802.3ba specification for 100GBASE-ER4 qualified
- OTU4 compliant
- Maximal distance 40 km on SMF
- 4 parallel electrical serial interface and AC coupling of CML signals
- MDIO real-time digital diagnostic and management interface
- Internal CDR circuits on both receiver and transmitter channels
- Hot pluggable
- Total Power Dissipation less than 9 W
- 3.3 V power supply
- Operating case temperature 0°C to +70°C
- Duplex LC optical receptacle

Description

The XenOpt CFP2 100GBASE-ER4 multi-rate optical transceiver is a hot pluggable 100Gbps small-form-factor transceiver module. It is meant to support 100 Gigabit Ethernet networks and 4x28G OTN data links over single mode fiber up to 40 km. Digital diagnostic is available via the MDIO interface. The module carries 100 Gigabit signal over four wavelengths. Multiplexing and demultiplexing of the four wavelengths are carried out within the device.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	VCC	-0.5	3.6	V
Storage Temperature	Ts	-40	85	°C
Operating Case Temperature	Tc	0	70	°C
Relative Humidity (Non condensation)	-	5	85	%

Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	Tc	0	-	70	°C
Supply Voltage	VCC	3.13	3.3	3.47	V
Supply Current	ICC	-	-	2.8	A
Power Dissipation	-	-	-	9	W

Optical Characteristics

(Tested under recommended operating conditions, unless otherwise noted.)

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Optical Transmitter Characteristics						
Signaling Rate for Each Lane (100 GbE)	-		25.78125		Gbps	
Signaling Rate for Each Lane (OTU4)			27.9525			
Four lane Wavelength Range	λ 1	1294.53	1295.56	1296.59	nm	
	λ 2	1299.02	1300.05	1301.09		
	λ 3	1303.54	1304.58	1305.63		
	λ 4	1308.09	1309.14	1310.19		
Side Mode Suppression Ratio	SMSR	30			dB	
Total Average Launch				8.9	dBm	
Average Launch Power for Each Lane (100GbE)	Pa	-2.9		+2.9	dBm	
Average Launch Power for Each Lane(OTU4)		-2.7		+2.9		
Difference in launch power between any two lanes (Average and OMA)				3.6	dB	
Extinction Ratio	ER	8			dB	
Average Launch Power OFF	Poff			-30	dBm	
Optical Return Loss Tolerance	dB			20		

Optical Receiver Characteristics						
Receiver Sensitivity in OMA for Each Lane (100GbE)	Pmin	-	-	-21.4	dBm	1
Equivalent Sensitivity for Each Lane (OTU4)				-23.2		
Los Assert		-35		-26	dBm	
Los De-assert				-25	dBm	
Los Hysteresis		0.5			dBm	
Damage Threshold, each Lane	THd	5.5			dBm	2
Receive Power In OMA for Each Lane	PinOMA			4.5	dBm	
Difference in Receive Power between any Two Lanes (Average and OMA)	Prx, diff			4.5	dB	
Average Receive Power for Each Lane (100GbE)	Pin	-20.9		4.5	dBm	
Average Receive Power for Each Lane (OTU4)		-20.7		4.5		

Notes

1. Minimum average optical power measured at BER less than 1E-12, with a $2^{31}-1$ PRBS.
2. The receiver shall be able to tolerate, without damage, continuous exposure to a modulated optical input signal having this power level on one lane. The receiver does not have to operate correctly at this input power.

Electrical Characteristics

(Tested under recommended operating conditions, unless otherwise noted.)

Parameter	Symbol	Min	Typ	Max	Unit
Differential Data Output Swing	Vout, pp	300	-	850	mV
Differential Input Voltage Swing	Vin, pp			900	mV
Differential Signal Output Resistance		90	-	110	Ω
Differential Signal Input Resistance		90	-	110	Ω

Ordering information

Part number	Product Description
XHS319-40LY	CFP2, 100GE/OTU4, LAN-WDM EML transmitter, PIN-base Integrated ROSA with SOA, 40 km, LC, DDMI, 0°C ~ 70°C

Notes

¹ For accurate order specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice.

These modules are available in multiple customized compatible versions. **Please specify any compatibility requirements at time of ordering.** Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by XenOpt before they become applicable to any particular order or contract. In accordance with the XenOpt policy of continuous improvement specifications may change without notice.

The publication of information in this data sheet does not imply freedom from patent or other protective rights of XenOpt or others. Further details are available from any XenOpt sales representative.

To find out more, please contact: