



Product Introduction

LR4 module is designed to meet the requirements of optical fiber interface for 2km reach over duplex SMF in data centers. It is a cost-effective, low power CWDM optical transceiver with high port densities and compact size. Each transceiver incorporates four direct modulated lasers with driver ICs, four PIN diodes with TIAs, and two Mux/De-Mux blocks in a highly integrated CWDM configuration for operation over duplex LC connectors. Mechanical dimensions, connectors and the footprint of this product is QSFP+ specifications compliant.

Features

- Single channel rate up to 25.8Gbps
- Transmission distance up to 2km
- Compliant with QSFP+ specifications
- 4 CWDM uncooled DML lasers
- Duplex LC connectors
- Single +3.3V power supply
- Low power consumption less than 3.5W
- Operating temperature range: 0 ~ +70
- Compliant with RoHS6

Applications

- 100G Ethernet
- Data Center Networking

Standards

- QSFP28:SFF-8665,SFF-8679, SFF-8636
- IEEE802.3bm
- 100G CLR4 Specifications Rev. 1.3

Specifications

Parameter	Symbol	Unit	Specifications
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			Min	Typ	Max
Tx					
Center wavelength		nm	1264.5 1284.5 1304.5 1324.5		1277.5 1297.5 1317.5 1337.5
Signaling rate, per lane		Gbit/s	25.78125±100ppm		
Operating link reach		km	0.002		2
Optical modulation amplitude, per lane	OMA	dBm	-4		2.5
Transmitter and dispersion penalty, per lane	TDP	dB			3
Optical extinction ratio	ER	dB	3.5		
Average launch power, per lane		dBm	-6.5		2.3
Average launch power of OFF transmitter, per lane		dBm			-30
Transmitter reflectance		dB			-12
Relative intensity noise	RIN	dB/Hz			-130
Rx					
Center wavelength		nm	Same as Tx		
Signaling rate, per lane		Gbit/s	Same as Tx		
Damage threshold	DT	dBm	3.3		
Average launch power, per lane		dBm	-10		2.3
Receive Power(OMA) per lane		dBm			3.0
Receive Sensitivity(OMA) per lane ¹		dBm			-8.5
Receiver reflectance		dB			-26
LOS De-Assert (OMA)	LOSD	dBm	-30		-17
LOS Assert (OMA)	LOSA	dBm			-16

Input Differential Impedance	R_{IN}		90	100	100
Single Ended Data Input Swing	V_{IN}	mVp-p	350		800
Transmit Disable Voltage	V_{DIS}	V	2		3.5
Transmit Enable Voltage	V_{EN}	V	-0.3		0.8
Transmit Fault Assert Voltage	V_{FA}	V	2		3.5
Transmit Fault De-Assert Voltage	V_{FDA}	V	-0.3		0.8
Receiver					
Single Ended Data Output Swing	V_{OD}	mVp-p	185		900
LOS Fault	V_{LOSFT}	V	2		3.5
LOS Normal	V_{LOSNR}	V	-0.3		0.8