

TRQ5E13DNF-LF000

100GE QSFP28 4WDM-10 10 km Transceiver



Description

CIG's 100GbE QSFP28 4-WDM10 transceiver module (TRQ5E13DNF-LF) enables dense port count and high throughput capacity with its compact size (W x L x H = 18.4 x 72 x 8.5 (mm)) and low power consumption (3.5 W). These modules can be used in a wide range of network applications, including high capacity Ethernet switches and IP routers. A maximum transmission distance of up to 10km over single mode fiber is realized using an DFB-based optical transmitter and PIN-PD based optical receiver operating on the CWDM wavelength grid. Clock and data recovery ICs in transmit and receive paths ensure robust link performance over all operating conditions. The module is hot pluggable when mated to a compliant 38-pin connector that delivers a supply voltage of 3.3 V.

Features

- 100 Gigabit Ethernet (100GbE) 100GBASE-LR4 Transceiver
- Aggregate Data Rate: 103.125 Gbit/s
- Optical Interface: Compliant to CWDM4 MSA [1] and 100G 4WDM-10 MSA [2]
- Electrical Interface: Compliant to CAUI-4 [3]
- Reach: Up to 2km over single mode fiber
- Form Factor: Compliant to QSFP+ 28Gb/s 4X Pluggable Transceiver Specification (SFF-8665) [4]
- Optical Transmitter: CWDM DFB
- Optical Receiver: PIN photodetector
- Power Consumption: 3.5 W max
- Operating Case Temperature: 0 to 70 degC
- Size (W x L x H): 18.4 mm x 72 mm x 8.5 mm
- Hot Z-Pluggable to 38-pin electrical connector
- Latching Mechanism: Pull tab
- Management Interface: Two-wire management interface protocol (SFF-8636) [5]
- Environmental: RoHS6 compliant

References

- [1] CWDM4 MSA Technical Specification Rev 1.1, November 23, 2015
- [2] 100G 4WDM-10 MSA Technical Specifications, Release 1.0, March 10, 2017
- [3] IEEE Std 802.3bm-2015
- [4] SFF-8665 Rev 1.9 June 29, 2015
- [5] SFF-8636 Rev 2.9 April 21, 2017

Operating Environments

Table 1 Operating Environment

No	Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
1	Supply Voltage	Vcc	3.135	3.3	3.465	V	
2	Power Consumption	P	-	-	3.5	W	
3	Case Temperature	Tc	0	-	70	°C	

Optical Characteristics

Table 2 Optical Characteristics

No.	Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
1	Channel data rate		25.78125			Gbit/s	
2	Aggregate data rate		103.125			Gbit/s	IEEE 802.3ba
3	Transmitter Center Wavelength						
	Lane 0		1264.5		1277.5	nm	
	Lane 1		1284.5		1297.5		
	Lane 2		1304.5		1317.5		
	Lane 3		1324.5		1337.5		
4	Optical Output Power (OMA), each lane	OMA	-4		+2.5	dBm	
5	Average Optical Output Power of OFF Transmitter	P _{off}			-30	dBm	
6	Extinction Ratio	ER	3.5			dB	
7	Receiver Sensitivity (OMA), each lane				-11.5	dBm	
8	Stressed Receiver Sensitivity (OMA), each lane	SRS			-8.6	dBm	
9	Average Receive Power (OMA), each lane		-12.5		+2.5	dBm	

EMI Compliance

This product meets Electromagnetic Interference (EMI) specifications of following standards.

- 1 FCC Part 15, Subpart B (Class B)
- 2 EN55032 (Class B)

Laser Safety

Certified as a Class 1 laser product per international standard IEC 60825-1:2014 3rd edition

Complies with 21 CFR 1040.10 except for deviations pursuant to Laser Notice No. 50, and IEC 60825-1 as Class 1 and with FDA 21 CFR as Class I laser product.

For more Information

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