HPL-70235-xx

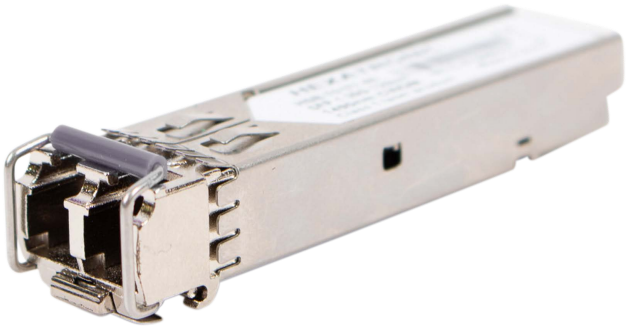
10Gb/s CWDM SFP+ Transceiver

Product Description

The 70235 is a part of our 80km CWDM SFP+ transceiver family compatible with applicable multi-sourcing agreements (MSA) It's designed for use in 10Gb/s 80km links over dual strand Single Mode fiber.

Features

- Up to 10Gbps data links
- Power Budget 24dB
- EML laser
- APD receiver
- Hot-pluggable
- Single 3. 3V power supply
- Digital Diagnostic Monitor (DDM)
- Power Consumption < 1.5W



Applications

- 10GBASE-ZR
- 10G FC

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Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	V_{CC}	-0.5	4	V
Storage Temperature	T_S	-40	85	°C
Operating Case Temperature	T_C	0	70	°C

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	V_{CC}	3.15	3.3	3.45	V
Supply Current	I_{CC}			450	mA
Data Rate			10		GBps
Max Link Length on 9/125µm SMF	Lmax			80	km

Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Centre Wavelength	λc	1470-6	1470	1470+6	nm
Centre Wavelength Spacing			20		nm
Spectral Width (-20dB)	σ			1	nm
Average Output Power	Pout	0		5	dBm
Extinction Ratio	ER	8.2			dB
Average Launch Power of Off Transmitter	Poff			-30	dBm
Relative Intensity Noise	RIN			-130	dB/Hz
Receiver					
Centre Wavelength	λc	1260		1620	nm
Receiver Sensitivity/Overload	P_{IN}			-24	dBm
	Pmax	-7			dBm
LOS De-Assert	LOS_D			-35	dBm
LOS Assert	LOS_A	-37			dBm
LOS Hysteresis		0.5		4.5	dB

Wavelength stability is achieved within 60 seconds after power up

Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Input Differential Impedance	Zin	90	100	110	Ω
Data Input Swing Differential	Vin	250		1200	mV
Tx-Dis Disable	Vd	2.0		Vcc	V
Tx-Dis Enable	Ven	0		0.8	V
Receiver					
Data Output Swing Differential	Vout	250		800	mV
Rx-Los Fault	Vlf	2.0		VccHOST	V
Rx-Los Normal	Vln	0		0+0.8	V
Output rise and fall time	Tr, Tf	30			ps

Part number & wavelength guide

Part No.	Wave length	Latch color
HPL-70235-xx	1470nm	Gray
HPL-70236-xx	1490nm	Violet
HPL-70237-xx	1510nm	Blue
HPL-70238-xx	1530nm	Green
HPL-70239-xx	1550nm	Yellow
HPL-70240-xx	1570nm	Orange
HPL-70241-xx	1590nm	Red
HPL-70242-xx	1610nm	Brown

DDM Threshold

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature	-10℃	-5℃	75℃	80℃
Voltage	3V	3.1V	3.5V	3.6V
Tx Bias	15mA	20mA	90mA	100mA
Tx Power	-3dBm	-2dBm	5dBm	7dBm
Rx Power	-27dBm	-26dBm	-8dBm	-7dBm

For safety and reliability reasons, please read the following information carefully.

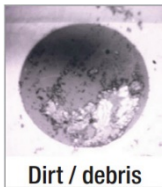
Light Budget is one of the key items for designing fiber optic network. in order to create a product that will meet application requirements. To adequately characterize the budget loss, the following key parameters are generally considered:

- Transmitter: Output power, temperature and aging
- Fiber connections: Active connection and splices
- Fiber Cable: fiber attenuation and temperature effect
- Receiver: Detector sensitivity
- Others: Safety margin and repairs

When one of the above-listed variables fails to meet specifications, the performance of the network can be greatly affected or worse, the degradation can lead to network failure. Unfortunately, not all the variables can be controlled with ease during the deployment of the network or the maintenance stage; however, there exists one component—the connector—that is too-often overlooked, sometimes overused (test jumpers) but that can be controlled using the proper procedure.

This is a Class 1 Laser Product according to IEC 60825-1:2014 compatible with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination. In a study by NTT-Advanced Technology, 98% of installers and 80% of network owners reported that issues with connector contamination were the greatest cause of network failures.