HSS-70047-xx

2.125Gbps 850nm SFP Transceiver

Product Description

The 70047-xx is a small form factor pluggable (SFP) transceiver compatible with applicable multi-sourcing agreement (MSA). Its 850 nm emitter is designed for multi-mode fiber (MMF) communications as 1G Ethernet and 1 & 2 Gbps Fiber Channel.

Features

- Up to 2.125Gbps data links
- 550m in 50/125µm MMF
- 850nm VCSEL laser
- Digital Diagnostic Monitor DDM
- Duplex LC Connector
- Hot-pluggable
- Single 3. 3V power supply

Applications

- 1.25Gbps 1000Base-SX
- 1G/2G Fiber Channel

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Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	V_{CC}	-0.5	3.6	V
Storage Temperature	T_S	-40	85	°C
Operating Case Temperature	Tc	0	70	°C

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Power Supply Voltage	V_{CC}	3.15	3.3	3.45	V
Power Supply Current	I_{CC}			200	mA
Data Rate			2.125		GBps
Max Link Length on 50/125µm 2000MHz MMF	Lmax			550	m

Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Centre Wavelength	λc	830	850	860	nm
Spectral Width (RMS)	σ			1	nm
Average Output Power	Pout	-9		-3	dBm
Extinction Ratio	EX	9			dB
Optical Rise/Fall Time	tr/tf			250	ps
Receiver					
Centre Wavelength	λc	780	850	860	nm
Receiver Sensitivity	P_{IN}			-17	dBm
Receiver Overload	Pmax	2			dBm
LOS De-Assert	LOS_D			-20	dBm
LOS Assert	LOS_A	-35			dBm
LOS Hysteresis		0.5		4.5	dB

Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Input Differential Impedance	Zin	90	100	110	Ω
Data Input Swing Differential	Vin	500		2400	mV
Tx-Dis Disable	Vd	2.0		Vcc	V
Tx-Dis Enable	Ven	0		0.8	V
TX-Fault (Fault)		2.0		Vcc+0.3	V
TX-Fault (Normal)		0		0.8	V
Receiver					
Data Output Swing Differential	Vout	370		2000	mV
Rx-Los Fault	Vlf	2.0		Vcc+0.3	V
Rx-Los Normal	Vln	0		0+0.8	V

DDM Thresholds

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature	-10°C	-5°C	75°C	80°C
Voltage	3V	3.1V	3.5V	3.6V
Tx Bias	4mA	5mA	10.8mA	11.8mA
Tx Power	-13.5dBm	-9.5dBm	-3dBm	0dBm
Rx Power	-21dBm	-17dBm	0dBm	1dBm

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.

CE EU declaration of conformity

The CE marking is mandatory for this category of products. It is the manufacturer's declaration that the product meets the requirements of the applicable EU directives required to allow free movement and sale of the product throughout the European Economic Area.

Equipment Specific part number extension

-XX*

-51	Cisco
-52	Ericsson
-53	Huawei
-54	Juniper
-55	Generic (MSA)
-56	HP
-57	Extreme
-58	3COM (HP)
-59	Alcatel (Nokia)
-60	Combo code
-61	H3C (HP)
-62	Brocade
-63	Arista Networs
-64	Adva
-65	Microsens