

HSD-70501-yy-xx

1.25Gbps DWDM 100GHz grid 40km SFP Transceiver

Product Description

The HSD-70501-yy-xx is a 1.25Gbps small form factor pluggable SFP DWDM transceiver compatible with relevant standards. The 16dB Power Budget allows long reach in single-mode duplex fiber at rated transmission speed.

Features

- Up to 2.5 Gbps datalinks
- Up to 40km reach
- DFB laser
- Hot-pluggable
- Single 3.3V power supply
- Digital Diagnostic Monitor (DDM)
- Power Consumption < 1.5W



Applications

- 1000BASE-EX DWDM
- 1/2G Fibre Channel

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
Power Supply Voltage	V _{CC}	3.15	3.3	3.45	V
Power Supply Current	I _{CC}			350	mA
Data Rate				2.5	GBps
Max Link Length	L _{max}			40	km

Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
CentreWavelength *1	λ_c	X-100	X	X+100	nm
Centre Wavelength Spacing			0.8		nm
Spectral Width (RMS)	σ			0.3	nm
Average Output Power	P _{out}	-6		2	dBm
Extinction Ratio	ER	8			dB
Average Launch Power of Off Transmitter	P _{off}			-25	dBm
Relative Intensity Noise	RIN			-130	dB/Hz
Receiver					
Centre Wavelength	λ_c	1200		1600	nm
Receiver Sensitivity	P _{IN}			-22	dBm
Receiver Overload	P _{max}	1			dBm
LOS De-Assert	LOS _D			-34	dBm
LOS Assert	LOS _A	-39			dBm
LOS Hysteresis		0.5		4.5	dB

*1. X= Center Wavelength. Wavelength stability is reached within 60 seconds after power up.

Electrical Characteristics

Parameter	Symbol	Min.	Typic	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

DDM Thresholds

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature	-5°C	-0°C	70°C	75°C
Voltage	2.9V	3V	3.6V	3.7V
Tx Bias	15mA	20mA	75mA	80mA
Tx Power	-2dBm	-1dBm	6dBm	7dBm
Rx Power	-37dBm	-35dBm	1dBm	2dBm

Part Number and Channel guide -yy*

Channel	Part Number	Frequency (THz)	Center Wave (nm)
C21	HSD-70501-C21-xx	192.1	1560.61
C22	HSD-70501-C22-xx	192.2	1559.79
C23	HSD-70501-C23-xx	192.3	1558.98
C24	HSD-70501-C24-xx	192.4	1558.17
C25	HSD-70501-C25-xx	192.5	1557.36
C26	HSD-70501-C26-xx	192.6	1556.55
C27	HSD-70501-C27-xx	192.7	1555.75
C28	HSD-70501-C28-xx	192.8	1554.94
C29	HSD-70501-C29-xx	192.9	1554.13
C30	HSD-70501-C30-xx	193.0	1553.33
C31	HSD-70501-C31-xx	193.1	1552.52
C32	HSD-70501-C32-xx	193.2	1551.72
C33	HSD-70501-C33-xx	193.3	1550.92
C34	HSD-70501-C34-xx	193.4	1550.12
C35	HSD-70501-C35-xx	193.5	1549.32
C36	HSD-70501-C36-xx	193.6	1548.51
C37	HSD-70501-C37-xx	193.7	1547.72
C38	HSD-70501-C38-xx	193.8	1546.92
C39	HSD-70501-C39-xx	193.9	1546.12
C40	HSD-70501-C40-xx	194.0	1545.32
C41	HSD-70501-C41-xx	194.1	1544.53
C42	HSD-70501-C42-xx	194.2	1543.73
C43	HSD-70501-C43-xx	194.3	1542.94
C44	HSD-70501-C44-xx	194.4	1542.14
C45	HSD-70501-C45-xx	194.5	1541.35
C46	HSD-70501-C46-xx	194.6	1540.56
C47	HSD-70501-C47-xx	194.7	1539.77
C48	HSD-70501-C48-xx	194.8	1538.98
C49	HSD-70501-C49-xx	194.9	1538.19
C50	HSD-70501-C50-xx	195.0	1537.40
C51	HSD-70501-C51-xx	195.1	1536.61
C52	HSD-70501-C52-xx	195.2	1535.82
C53	HSD-70501-C53-xx	195.3	1535.04
C54	HSD-70501-C54-xx	195.4	1534.25
C55	HSD-70501-C55-xx	195.5	1533.47
C56	HSD-70501-C56-xx	195.6	1532.68
C57	HSD-70501-C57-xx	195.7	1531.90
C58	HSD-70501-C58-xx	195.8	1531.12
C59	HSD-70501-C59-xx	195.9	1530.33
C60	HSD-70501-C60-xx	196.0	1529.55

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

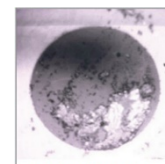
When one of the above-listed variables fails to meet specifications, the performance of the network can be greatly affected or worse, the degradation can lead to network failure. Unfortunately, not all the variables can be controlled with ease during the deployment of the network or the maintenance stage; 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.



Dirt / debris

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.

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

-51	Cisco	-59	Alcatel (Nokia)
-52	Ericsson	-60	Combo code
-53	Huawei	-61	H3C (HP)
-54	Juniper	-62	Brocade
-55	Generic (MSA)	-63	AristaNetworks
-56	HP	-64	Adva
-57	Extreme	-65	Microsens
-58	3COM (HP)	-66	DELL
		-67	Intel