

NS-SFP-W35S20D

1.25Gbps SFP Bi-Directional Transceiver

1310nm TX / 1550 nm RX

Особенности

Двойная скорость передачи данных 1.25Gbps/1.063Gbps
 1310nm FP лазер и PIN фотоприемник до 20km передачи
 Согласован с SFP MSA и SFF-8472 с simplex SC коннектором
 DDM

Согласован с SONET OC-24-LR-1

Согласован с RoHS

Источник питания +3.3V

Рабочие температуры

Стандартная : 0 to +70°C

Применение

Gigabit Ethernet

Fiber Channel

Switch to Switch interface

Switched backplane applications

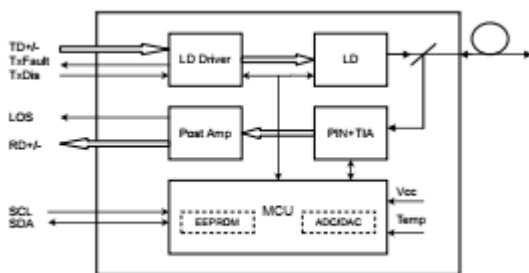
Router/Server interface

Описание

SFP-BIDI высокоэффективные трансиверы, содержат модули поддерживающие скорость передачи данных 1.25Gbps/1.0625Gbps и 20km дальность передачи с SMF.

Трансивер состоит из 3х секций : FP лазерный передатчик , PIN фотодиод интегрированный в (TIA) и MCU управляющая панель.

Все модули удовлетворяют требованиям безопасности лазера класса I .



Абсолютные максимальные характеристики

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.5	4.5	V
Storage Temperature	Ts	-40	+85	°C
Operating Humidity	-	5	85	%

Рекомендуемые условия эксплуатации

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Standard	Tc	0	+70	°C
Power Supply Voltage	Vcc	3.13	3.3	3.47	V
Power Supply Current	Icc	300	mA		



Data Rate	Gigabit Ethernet	1.25	Gbps		
Fiber Channel	1.063				

Оптические и электрические характеристики

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λ_c	1260	1310	1360	nm	
Spectral Width (RMS)	$\Delta\lambda$	4	nm			
Average Output Power	P _{out}	-9	-3	dBm	1	
Extinction Ratio	ER	9	dB			
Optical Rise/Fall Time (20%~80%)	tr/ta	0.26	ns			
Data Input Swing Differential	V _{IN}	400	1800	mV	2	
Input Differential Impedance	Z _{IN}	90	100	110	Ω	
TX Disable	Disable	2.0	V _{cc}	V		
Enable	0	0.8	V			
TX Fault	Fault	2.0	V _{cc}	V		
Normal	0	0.8	V			
Receiver						
Centre Wavelength	λ_c	1480	1580	nm		
Receiver Sensitivity	-23	dBm	3			
Receiver Overload	-3	dBm	3			
LOS De-Assert	LOS _D	-24	dBm			
LOS Assert	LOS _A	-35	dBm			
LOS Hysteresis	1	4	dB			
Data Output Swing Differential	V _{out}	400	1800	mV	4	
LOS	High	2.0	V _{cc}	V		
Low	0.8	V				

Notes:

1. The optical power is launched into SMF.
2. PECL input, internally AC-coupled and terminated.
3. Measured with a PRBS 27-1 test pattern @1250Mbps, BER $\leq 1 \times 10^{-12}$.
4. Internally AC-coupled.

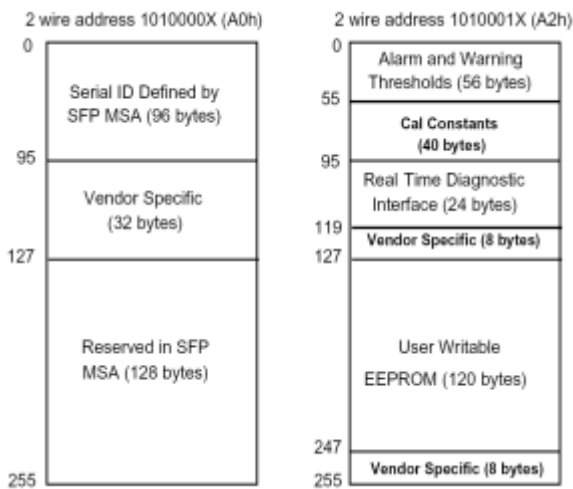
Временные и электрические параметры

Parameter	Symbol	Min	Typical	Max	Unit
Tx Disable Negate Time	t _{on}	1	ms		
Tx Disable Assert Time	t _{off}	10	μ s		
Time To Initialize, including Reset of Tx Fault	t _{init}	300	ms		
Tx Fault Assert Time	t _{fault}	100	μ s		
Tx Disable To Reset	t _{reset}	10	μ s		
LOS Assert Time	t _{loss_on}	100	μ s		
LOS De-assert Time	t _{loss_off}	100	μ s		
Serial ID Clock Rate	f _{serial_clock}	400	KHz		
MOD_DEF (0:2)-High	V _H	2	V _{cc}	V	
MOD_DEF (0:2)-Low	V _L	0.8	V		

Диагностика

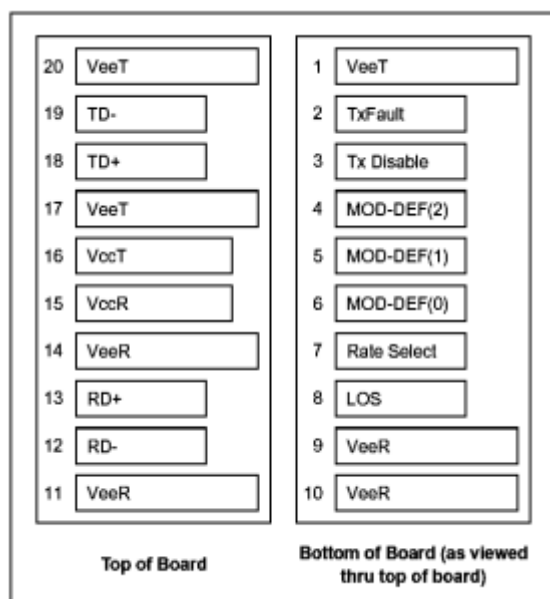
Parameter	Range	Unit	Accuracy	Calibration
Temperature	0 to +70	°C	±3°C	Internal / External
Voltage	3.0 to 3.6	V	±3%	Internal / External
Bias Current	0 to 100	mA	±10%	Internal / External
TX Power	-9 to -3	dBm	±3dB	Internal / External
RX Power	-23 to -3	dBm	±3dB	Internal / External

DDM



Pin Определение

Pin Диаграмма



Pin Описание

Pin	Signal Name	Description	Plug Seq.	Notes
1	VEET	Transmitter Ground	1	



2	TX FAULT	Transmitter Fault Indication	3	Note 1
3	TX DISABLE	Transmitter Disable	3	Note 2
4	MOD_DEF(2)	SDA Serial Data Signal	3	Note 3
5	MOD_DEF(1)	SCL Serial Clock Signal	3	Note 3
6	MOD_DEF(0)	TTL Low	3	Note 3
7	Rate Select	Not Connected	3	
8	LOS	Loss of Signal	3	Note 4
9	VEER	Receiver ground	1	
10	VEER	Receiver ground	1	
11	VEER	Receiver ground	1	
12	RD-	Inv. Received Data Out	3	Note 5
13	RD+	Received Data Out	3	Note 5
14	VEER	Receiver ground	1	
15	VCCR	Receiver Power Supply	2	
16	VCCT	Transmitter Power Supply	2	
17	VEET	Transmitter Ground	1	
18	TD+	Transmit Data In	3	Note 6
19	TD-	Inv. Transmit Data In	3	Note 6
20	VEET	Transmitter Ground	1	

Notes:

Plug Seq.: Pin engagement sequence during hot plugging.

1) TX Fault is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; Logic 1 indicates a laser fault of some kind. In the low state, the output will be pulled to less than 0.8V.

2) TX Disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a 4.7k~10kΩ resistor. Its states are:

Low (0 to 0.8V): Transmitter on

(>0.8V, < 2.0V): Undefined

High (2.0 to 3.465V): Transmitter Disabled

Open: Transmitter Disabled

3) Mod-Def 0,1,2. These are the module definition pins. They should be pulled up with a 4.7k~10kΩ resistor on the host board. The pull-up voltage shall be VccT or VccR.

Mod-Def 0 is grounded by the module to indicate that the module is present

Mod-Def 1 is the clock line of two wire serial interface for serial ID

Mod-Def 2 is the data line of two wire serial interface for serial ID

4) LOS is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor. Pull up voltage between 2.0V and Vcc+0.3V. Logic 1 indicates loss of signal; Logic 0 indicates normal operation. In the low state, the output will be pulled to less than 0.8V.

5) RD-/+ : These are the differential receiver outputs. They are internally AC-coupled 100 differential lines which should be terminated with 100Ω (differential) at the user SERDES.

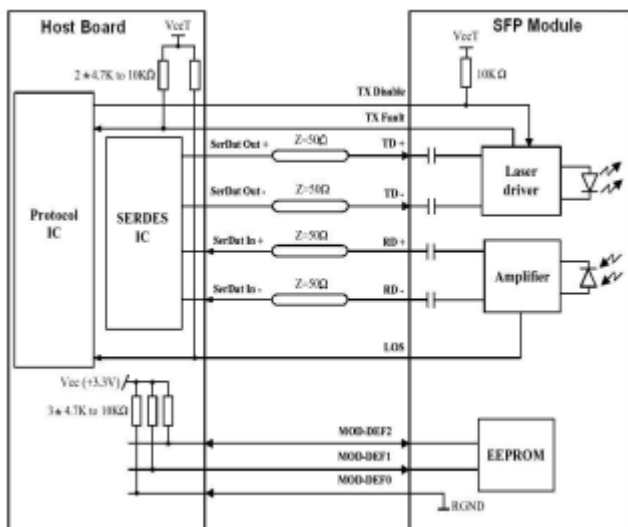
6) TD-/+ : These are the differential transmitter inputs. They are internally AC-coupled, differential lines with 100Ω differential termination inside the module.

Рекомендуемая схема интерфейса

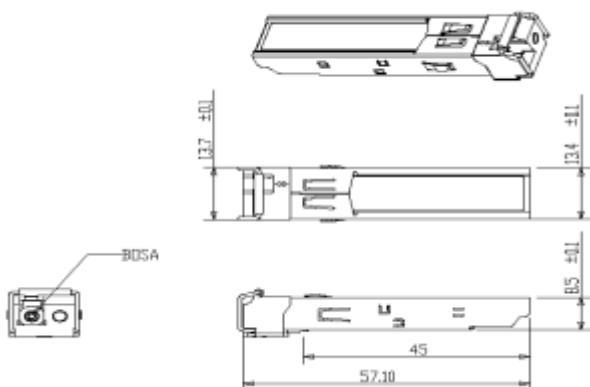


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Механические параметры



Информация для заказа

Part Number	Product Description
NS-SFP-W35S20D	1310-1550nm, 1.25Gbps, SC,20km, 0°C~+70°C