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SA-SFP-SXDH

1.25Gb/s SFP 1310nm MMF Duplex 2km Transceiver

DESCRIPTION

SA-SFP-SXDH Small Form Factor Pluggable (SFP) transceivers are compatible with the Small Form Factor Pluggable Multi-Sourcing Agreement (MSA). The transceiver consists of five sections:

The LED driver, the limiting amplifier, the digital diagnostic monitor, the 1310nmDFB laser and thePIN photo-detector. The module data link up to 2km in 50/125um Multi mode fiber.

The optical output can be disabled by a TTL logic high-level input of Tx Disable, and the systemalso can disable the module via I2C. Tx Fault is provided to indicate that degradation of the laser. Loss of signal (LOS) output is provided to indicate the loss of an input optical signal of receiver or the link status with partner. The system can also get the LOS (or Link)/Disable/Fault informationvia I2C register access.

FEATURES

- Up to 1.25Gb/s data links
- 1310nm DFB laser transmitter and PIN photo-detector
- Up to 2km on 50/125μm MMF
- Hot-pluggable SFP footprint
- Duplex LC/UPC type pluggable optical interface
- Low power dissipation
- Metal enclosure, for lower EMI
- RoHS compliant and lead-free
- Single +3.3V power supply
- Support Digital Diagnostic Monitoring interface
- Compliant with SFF-8472
- Case operating temperature
  Commercial: 0°C to +70°C
  Industrial: -40°C to +8

APPLICATIONS

- Switch to Switch Interface
- Gigabit Ethernet
- Switched Backplane Applications
- Router/Server Interface
- Other Optical Links

PRODUCT SELECTION

Part Number	Operating Case temperature	DDMI
SA-SFP-SXD	Commercial (0~70°C)	Yes
SA-SFP-SXDH	Industrial (-40~85°C)	Yes

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ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-50		+95	°C	
Relative Humidity	RH	5		95	%	
Power Supply Voltage	VCC	-0.5		+4	V	

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tc	0		70	°C	Commercial
	TI	-40		85	°C	Industrial
Power Supply Voltage	Vcc	3.13	3.3	3.47	V	
Power Supply Current	Icc			200	mA	
Power Consumption	Pc			0.6	W	
Data Rate	BR		1250		Mbps	
50/125μm MMF	Lmax			2	km	

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Tx Disable Input-High	VDISH	2		Vcc+0.3	V	
Tx Disable Input-Low	VDISL	0		0.8	V	
Tx Fault Input-High	VTxFH	2		Vcc+0.3	V	
Tx Fault Input-Low	VTxFL	0		0.8	V	
Receiver						
LOSS -High	VLOSH	2		Vcc+0.3	V	
LOSS -Low	VLOSL	0		0.8	V	

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OPTICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Average Output Power	POUT	-10		-3	dBm	
Extinction Ratio	ER	9		15	dB	
Center Wavelength	λc	1270	1310	1360	nm	DFB Laser
Transmitter OFF Output Power	Poff			-45	dBm	
Receiver						
Receiver Sensitivity	SENS			-22	dBm	1
Receiver Overload		-3			dBm	
Input Optical Wavelength	λC	1260	1310	1620	nm	
LOS De-assert	LOSD			-26	dBm	
LOS Assert	LOSA	-38			dBm	2
LOS Hysteresis		0.5	2	6	dB	

Notes:

1. Measured with Light source 1310nm, ER=9dB; BER =<10^-12 @PRBS=2^7-1 NRZ.
2. When SD De-Assert, the RX-LOS output is High-level (fixed).

DIGITAL DIAGNOSTIC MONITORING INTERFACE

Five transceiver parameter values are monitored. The following table defines the monitored parameter's accuracy.

Parameter	Range	Accuracy	Calibration
Temperature	0 to +70°C (C)	±3°C	Internal
	-40 to +85°C (I)		
Voltage	2.97 to 3.63V	±3%	Internal
Bias Current	0 to 100mA	±10%	Internal
TX Power	-11 to -2dBm	±3dBm	Internal
RX Power	-23 to -2dBm	±3dBm	Internal

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REGULATORY COMPLIANCE[1]

Feature	Test	Method
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	Class 1(>1000V for SFI pins, >2000Vfor other pins.)
Electrostatic Discharge (ESD) Immunity	IEC61000-4-2	Class 4 (>8.0kV)
Electromagnetic Interference (EMI)	CISPR22 ITE Class B FCC Class B CENELEC EN55022 VCCI Class 1	Comply with standard
Immunity	IEC61000-4-3	Comply with standard
Eye Safety	FDA 21CFR 1040.10 and 1040.11 EN (IEC) 60825-1,2	Compatible with Class I laser Product

[1] The listed certifications are issued for markets in different regions. For the current status of the listed certifications in your region, please contact an authorized Starview representative.

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Performance specifications are typical. Due to constant research, specifications are subject to change without notice. For the most up-to-date specifications, please contact an authorized Starview representative.

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