

Product Specification

1.25Gbps 40KM SFP Transceiver

NXSFP15GEEXD

V20170819

Product Features

- 1.25Gbps data links
- 40km with 9/125μm SMF
- 1550nm DFB laser
- Duplex LC Connector
- Hot-pluggable SFP footprint
- Single 3.3V power supply
- Operating temperature: Ref.to Ordering Info.
- RoHS
- Digital Diagnostic Monitor (DDM)



Applications

- 1.25Gbps 1000Base-EX
- 1 /2Gbps Fiber Channel

1. Product Description

The NXSFP15GEEXD is a small form factor pluggable (SFP) transceiver compatible with multi-sourcing agreement (MSA). It is suitable for single-mode fiber (SMF) communications in 1.25Gbps Ethernet and 1G/2G Fiber Channel.

2. Regulatory Compliance

NEXSA transceivers are Class 1 Laser Products comply with FDA regulations. Meet Class 1 eye safety requirements of EN 60825 and the electrical safety requirements of EN 60950.

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	V _{CC}	-0.5	3.6	V
Storage Temperature	T _s	-40	85	°C
Com. Operating Case Temperature	T _c	0	70	°C

4. 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}			300	mA
Data Rate			1.25		GBps
Max Link Length on 9/125µm SMF	L _{max}			40	km

5. Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Centre Wavelength	λ _c	1500	1550	1570	nm
Spectral Width (-20dB)	σ			1	nm
Average Output Power	P _{out}	-5		2	dBm
Extinction Ratio	ER	9			dB
Optical Rise/Fall Time	tr/ta			1	ns
Receiver					
Centre Wavelength	λ _c	1200	1550	1600	nm
Receiver Sensitivity	P _{IN}			-23	dBm
Receiver Overload	P _{max}	1			dBm
LOS De-Assert	LOS _D			-26	dBm
LOS Assert	LOS _A	-35			dBm
LOS Hysteresis		0.5		4.5	dB

6. 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

7. Pin Descriptions

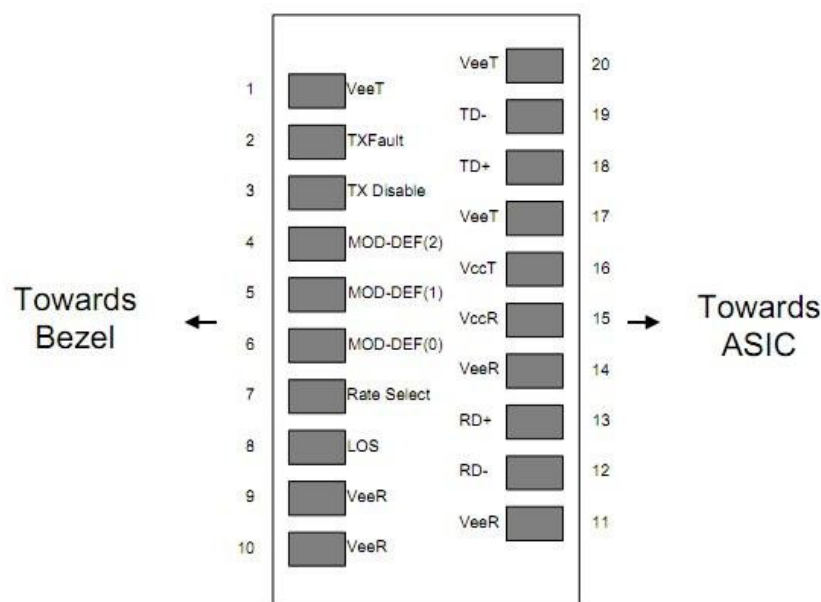


Diagram of Host Board Connector Block Pin Numbers and Names

Pin	Symbol	Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	6.1
2	TFAULT	Transmitter Fault.	
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	6.2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	6.3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	6.3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	6.3
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal	6.4

		operation.	
9	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
10	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
11	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
12	RD-	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
14	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	6.1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	6.1

Notes:

6.1 Circuit ground is internally isolated from chassis ground.

6.2 Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.

6.3 Should be pulled up with 4.7k - 10kohms on host board to a voltage between 2.0V and 3.6V. MOD_DEF(0) pulls line low to indicate module is plugged in.

6.4 LOS is open collector output. Should be pulled up with 4.7k -10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

8. EEPROM & DDM THRESHOLD

8.1 EEPROM

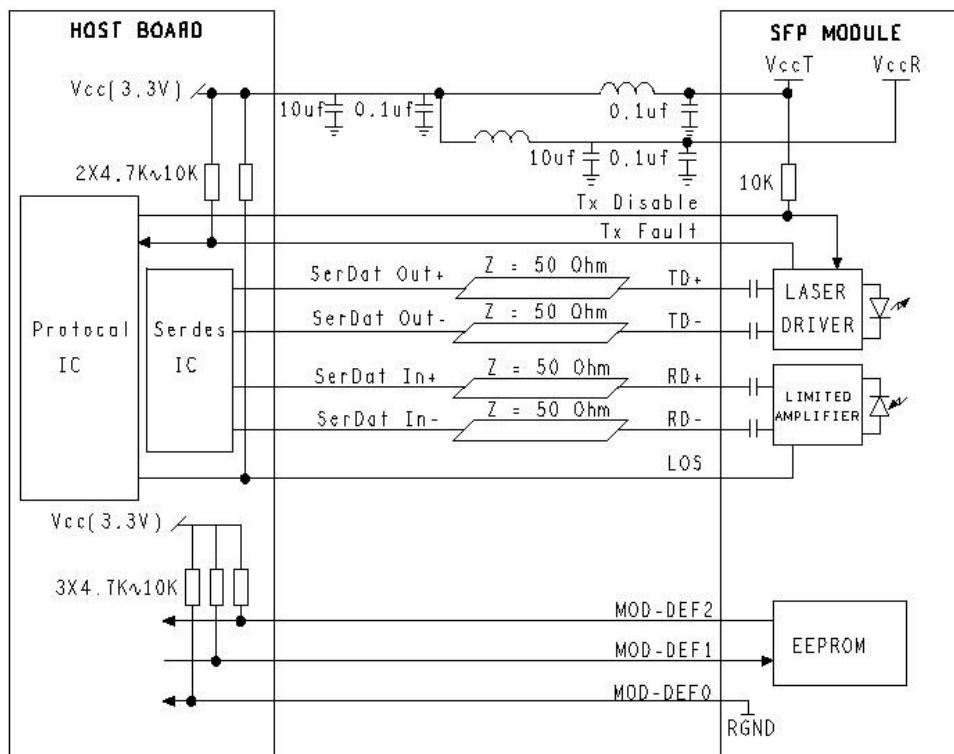
2 wire address 1010000X (A0h)

0~95
Serial ID Defined by SFP MSA (96 bytes)
96~127
Vendor Speific (32 bytes)
128~255
Reserved (128 bytes)

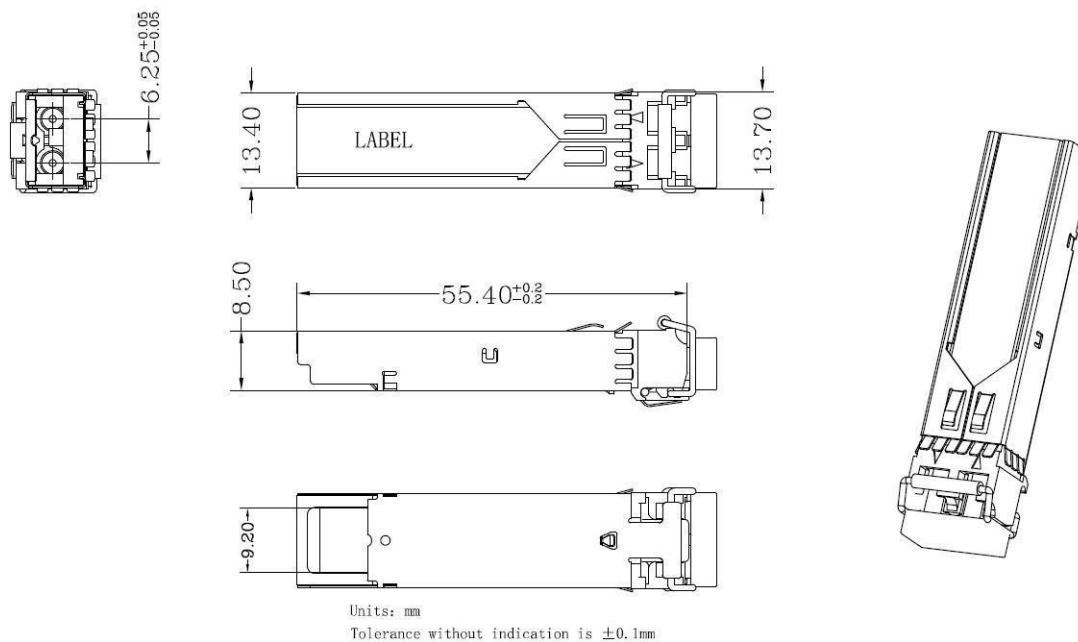
8.2 DDM THRESHOLD

		Low Alarm	Low Warn	High Warn	High Alarm
Temperature	NXSFP15GEEXD	-5°C	0°C	70°C	75°C
Voltage		3V	3.1V	3.6V	3.7V
Tx Bias NXSFP15GEEXD		3mA	4mA	70mA	75mA
Tx Power		-8dBm	-7dBm	3dBm	4dBm
Rx Power		-24dBm	-23dBm	1dBm	2dBm

9. Recommend Circuit



10. Mechanical Specifications



11. LABEL

NEXSA offers label OEM design and print.

Label barcode supports code128 and 2D barcode

SIZE: 30mm * 9mm

Ordering Information

Part No.	Data Rate	DDM	Wave	Fiber Type	Dist.	Temp.	Optical Interface
NXSFP15GEEEXD	1.25Gbps	yes	1550nm	SMF	40km	0~70℃	LC

VERSION UPDATE:

VERSION NO.	DATE	UPDATED INFORMATION
V20161010	20161010	- EEPROM& DDM Threshold updated "LABEL" added - Ordering information updated - Product picture updated
V20170819	20170819	1. Ordering information updated

NOTICE:

NEXSA reserves the right to make changes to this product in this specification without notice, in order to improve product performance.

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