SFP-25GB-BX-D-20-N-C

Alcatel-Lucent Nokia® Compatible TAA 25GBase-BX SFP28 Transceiver (SMF, 1330nmTx/1270nmRx, 20km, LC, DOM)

Features:

- SFF-8432 and SFF-8472 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free

Applications:

- 25GBase Ethernet
- Access and Enterprise

Product Description

This Alcatel-Lucent Nokia® SFP28 transceiver provides 25GBase-BX throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1330nmTx/1270nmRx via an LC connector. It is guaranteed to be 100% compatible with the equivalent Alcatel-Lucent Nokia® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs' transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

TAA COMPLIANT

Rev. 060524

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	-0.3		4.0	V	
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	0	25	70	°C	
Relative Humidity	RH	5		95	%	
Data Rate	DR		24.33		Gbps	
			25.78		Gbps	

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage		Vcc	3.135	3.3	3.465	V	
Power Supply Current		Icc			450	mA	
Power Dissipation		P_{DISS}			1500	mW	
Transmitter							
Input Differential Impedance		ZIN		100		Ω	
Differential Data Input Swing		VIN,pp	180		700	mVp-p	
Tx_Fault	**Transmitter Fault**	VOH	2.0		Host_Vcc	V	
	Normal Operation	VOL	0		0.8	V	
Tx_Disable	**Transmitter Disable**	VIH	2.0		Host_Vcc	V	
	Transmitter Enable	VIL	0		0.8	V	
Receiver							
Output Differential Impedance		ZOUT		100		Ω	
Differential Data Output Swing		VOUT,pp	300		850	mVp-p	1
Data Output Rise/Fall Time		Tr/Tf			15	ps	2
Rx_LOS	**Loss of Signal (LOS)**	VOH	2.0		Host_Vcc	V	3
	Normal Operation	VOL	0		0.8	V	3

Notes:

1. Internally AC coupled but requires an external 100Ω differential load termination.
2. 20-80%.
3. LOS is an open collector output and should be pulled up with 4.7kΩ on the host board.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power	Po	0		5	dBm	1
Center Wavelength Range	λC	1320	1330	1340	nm	
Extinction Ratio	ER	3.5			dB	2
Spectral Width (-20dB)	Δλ			1	nm	
Side-Mode Suppression Ratio	SMSR	30			dB	
Optical Rise/Fall Time @25.78Gbps	Tr/Tf	15			ps	3
Optical Return Loss Tolerance	ORLT			12	dB	
POUT @Tx_Disable Asserted	Poff			-30	dBm	1
Receiver						
Center Wavelength	λC	1260	1270	1280	nm	
Receiver OMA Sensitivity	RxSENS1			-18	dBm	4
Receiver OMA Sensitivity	RxSENS2			-14	dBm	5
Receiver Overload (Pavg)	POL	-3			dBm	
Optical Return Loss	ORL	26			dB	
LOS De-Assert	LOSD			-19	dBm	
LOS Assert	LOSA	-35			dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. Class 1 Laser Safety per FDA/CDRH and EN (IEC) 60825 regulations.
2. 20dB spectral width.
3. Unfiltered, 20-80%.
4. Measured with PRBS $2^{31}-1$ at $5x10^{-5}$ BER.
5. Measured with PRBS $2^{31}-1$ at $1x10^{-12}$ BER.

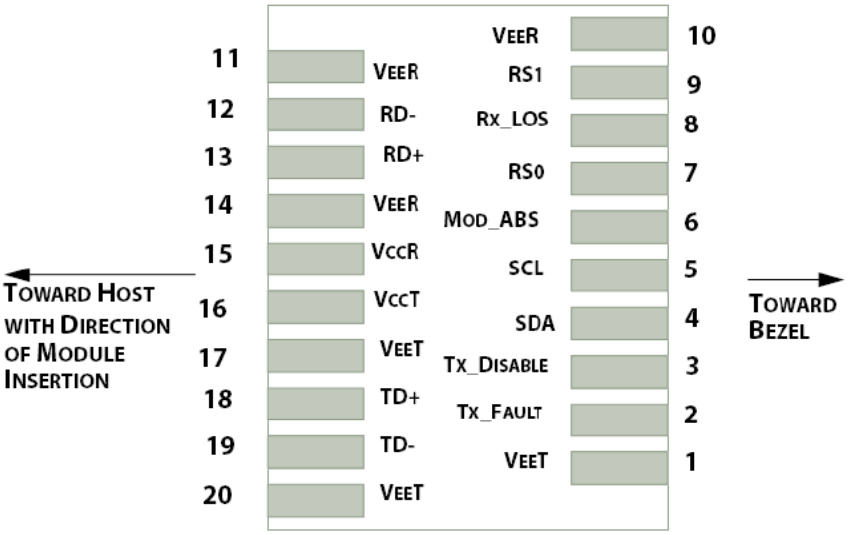
Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground.	1
2	Tx_Fault	Transmitter Fault. LVTTL-O. “High” indicates a fault condition.	2
3	Tx_Disable	Transmitter Disable. LVTTL-I. “High” or “open” disables the transmitter.	3
4	SDA	2-Wire Serial Interface Data. LVCMOS-I/O. MOD-DEF2.	4
5	SCL	2-Wire Serial Interface Clock. LVCMOS-I/O. MOD-DEF1.	4
6	MOD_ABS	Module Absent (Output). Connected to the VeeT or VeeR in the module.	5
7	RS0	N/A.	6
8	Rx_LOS	Receiver Loss of Signal. LVTTL-O.	2
9	RS1	N/A.	6
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Receiver Inverted Data Out. CML-O.	
13	RD+	Receiver Data Out. CML-O.	
14	VeeR	Receiver Ground.	
15	VccR	+3.3V Receiver Power Supply.	
16	VccT	+3.3V Transmitter Power Supply.	
17	VeeT	Transmitter Ground.	1
18	TD+	Transmitter Data In. CML-I.	
19	TD-	Transmitter Inverted Data In. CML-I.	
20	VeeT	Transmitter Ground.	1

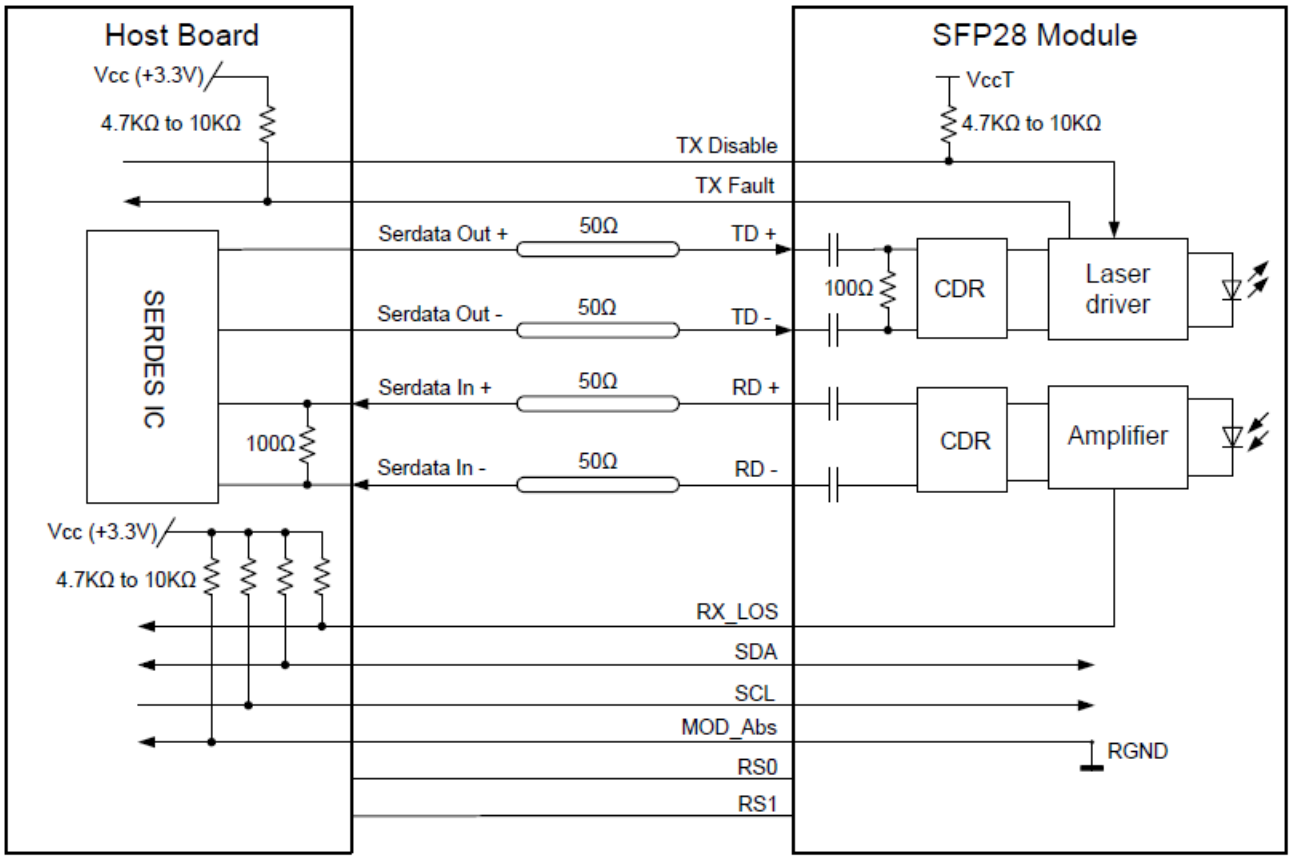
Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that, on the host board, requires a 4.7kΩ to 10kΩ pull-up resistor to the Host_Vcc.
3. This input is internally biased “high” with a 4.7kΩ to 10kΩ pull-up resistor to the VccT.
4. 2-Wire Serial Interface Clock and Data lines require an external pull-up resistor dependent on the capacitance load.
5. This is a ground return that, on the host board, requires a 4.7kΩ to 10kΩ pull-up resistor to the Host_Vcc.
6. Rate Select can also be set through the 2-wire bus in accordance with SFF-8472 v.12.1m. Rx Rate Select is set at Bit 3, Byte 110, and Address A2h. Tx Rate Select is set at Bit 3, Byte 118, and Address A2h.

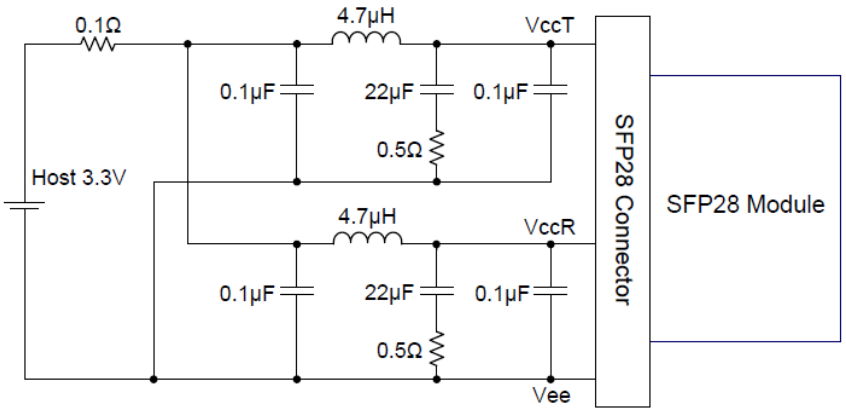
Pin Assignments



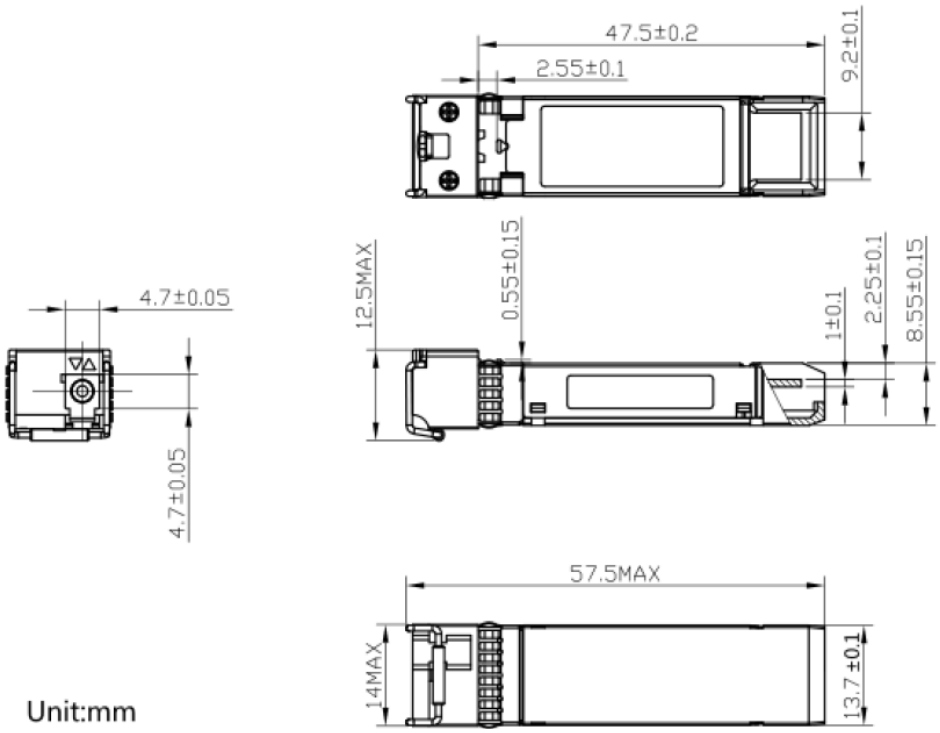
Block Diagram of Transceiver



Power Supply Filter Network



Mechanical Specifications



About ProLabs

Our experience comes as standard; for over 15 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with over 90 optical switching and transport platforms.

Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 400G while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.

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