SFP28-25GB-CLR-MX-AO

NVIDIA® Compatible TAA 25GBase-CLR SFP28 Transceiver (SMF, 1310nm, 2km, LC, DOM, No FEC)

Features:

- Up to 25.78125Gbd Bi-Directional Data Links
- Electrical Interface Specifications Per SFF-8431
- Built-In Dual CDR with Bypass Control
- 1.5W Maximum Power Consumption with Established Link
- Class 1 Laser Safety Certified
- SFP28 MSA Package with Duplex Connector
- Up to 2km on 9/125um SMF with No FEC
- Uncooled 1310 DFB Laser
- Operating Temperature: 0 to 70 Celsius
- Power Supply Lines: 3.3V
- RoHS Compliant and Lead-Free



Applications:

- 25GBase Ethernet

Product Description

This NVIDIA® compatible SFP28 transceiver provides 25GBase-CLR throughput up to 2km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with NVIDIA®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows 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.

AddOn's 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

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	-0.5		4	V	1
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	0	25	70	°C	
Relative Humidity	RH	5		95	%	
Signaling Rate			25.78125		GBd	
Signaling Rate Variation		-100		100	ppm	

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Module Supply Voltage		Vcc	3.14	3.3	3.47	V	
Module Supply Current		Icc			478	mA	
Power Dissipation		P_{DISS}			1500	W	
Transmitter							
Input Differential Impedance		ZIN		100		Ω	
Differential Data Input Swing		VIN,pp	180		700	mVp-p	
Tx_Fault	**Transmitter Fault**	VOH	2		Host_Vcc	V	
	Normal Operation	VOL	0		0.8	V	
Tx_Disable	**Transmitter Disable**	VIH	2		Host_Vcc	V	
	Transmitter Enable	VIL	0		0.8	V	
Receiver							
Output Differential Impedance		ZOUT		100		Ω	
AC Common-Mode Output Voltage		VOUT,rms			17.5	mV	
Differential Output Voltage		VOUT,pp	300		900	mVp-p	1
Eye Width			0.57			UI	
Differential Eye Hight			228			mV	
Data Output Rise/Fall Time		Tr/Tf	12			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	-5		2	dBm	1
Extinction Ratio	ER	3.5			dB	
Optical Modulation Amplitude	OMA	-4		2.2	dB	
Center Wavelength Range	λC	1295	1310	1325	nm	
Side-Mode Suppression Ratio	SMSR	30			dB	
Spectral Width	Δλ			1	nm	2
Launch Power in OMA Minus TDP		-5			dBm	
Transmitter and Dispersion Penalty	TDP			2.7	dB	
Optical Return Loss Tolerance	ORLT			20	dB	
Transmitter Reflectance				-26	dB	
POUT @Tx_Disable Asserted	Poff			-20	dBm	
Receiver						
Center Wavelength	λC	1260	1310	1370	nm	
Receiver Sensitivity	RxSens			-8	dBm	3
Damage Threshold		3			dBm	
Receiver Overload (Pavg)	POL	2			dBm	
Optical Return Loss	ORL	26			dB	
LOS De-Assert	LOSD			-16	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5			dB	
Receiver Reflectance				-26	dBm	

Notes:

1. Class 1 Laser Safety per FDA/CDRH and EN (IEC) 60825 regulations.
2. 20dB spectral width.
3. Measured with PRBS31 at $1E^{-12}$ BER.

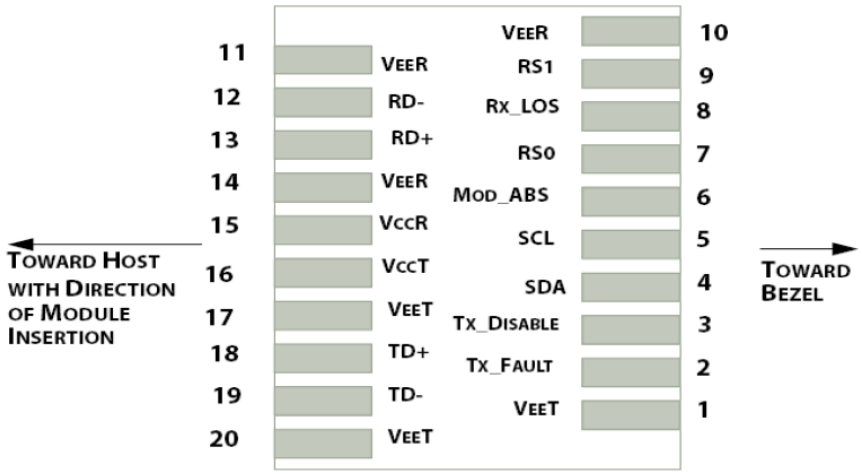
Pin Descriptions

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	Hardware Tx Rate Select Pin.	6
8	Rx_LOS	Receiver Loss of Signal. LVTTL-O.	2
9	RS1	Hardware Rx Rate Select Pin.	6
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Inverse Received Data Out. CML-O.	
13	RD+	Received Data Out. CML-O.	
14	VeeR	Receiver Ground.	
15	VccR	+3.3V Receiver Power.	
16	VccT	+3.3V Transmitter Power.	
17	VeeT	Transmitter Ground.	1
18	TD+	Transmitter Data In. CML-I.	
19	TD-	Inverse Transmitter Data In. CML-I.	
20	VeeT	Transmitter Ground.	1

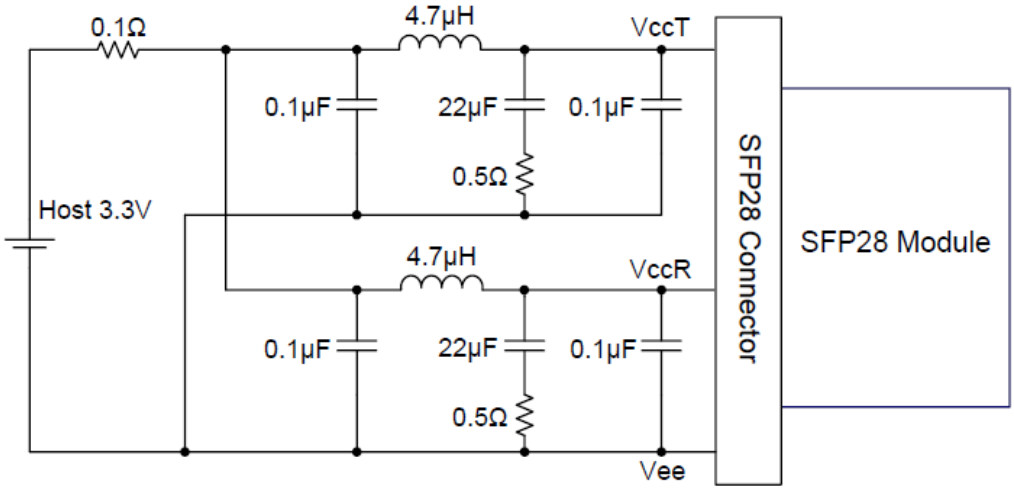
Notes:

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. 12.1. Rx Rate Select is set at Bit 3, Byte 110, and Address A2h, and Tx Rate Select is set at Bit 3, Byte 118, and Address A2h. **Note:** Writing a “1” selects maximum bandwidth operation. Rate Select is the logic OR of the input state of the Rate Select Pin and 2-wire bus.

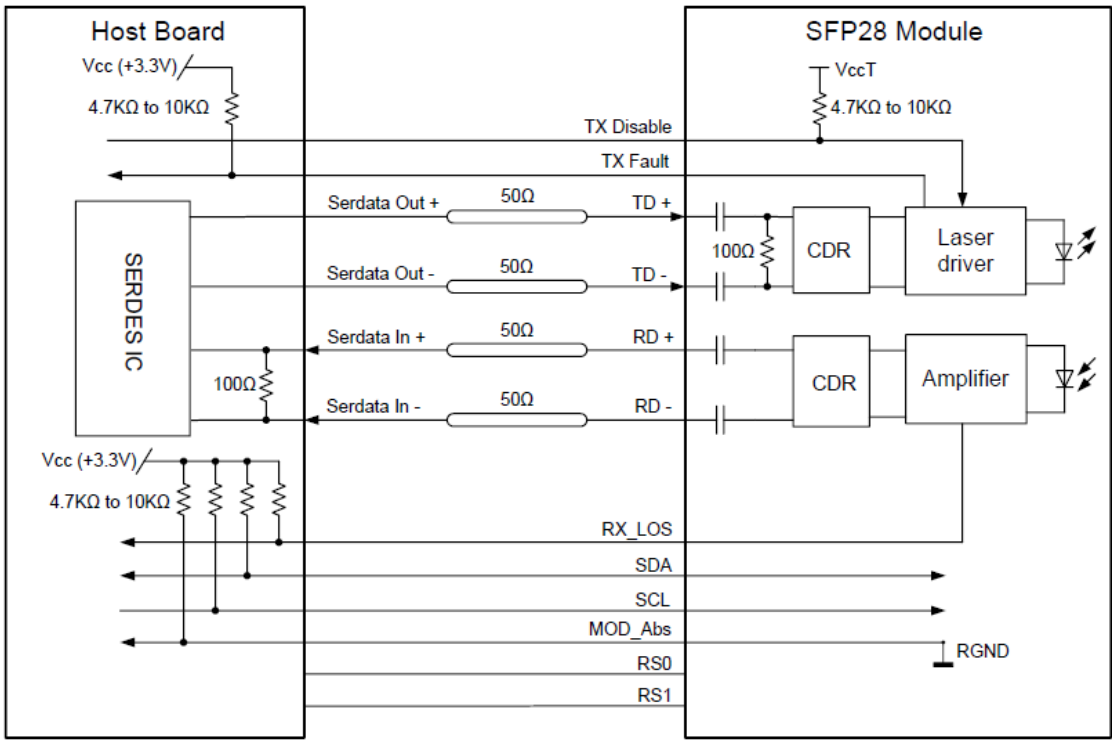
Electrical Pin-Out Details



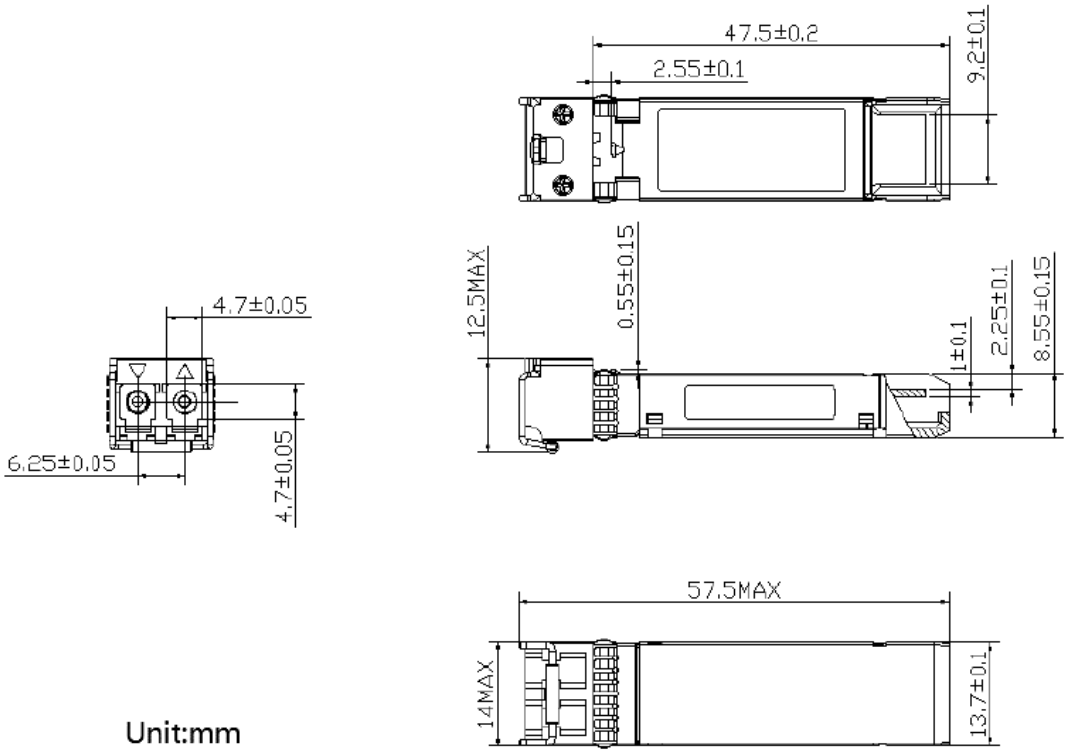
Host Board Power Supply Filter Network



Block Diagram



Mechanical Specifications



Unit:mm

About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is ingrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications ranging from NEBS Level 3 to ISO 9001:2015 with every new development while maintaining the signature reliability of its products.



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