



SFP28-25GB-SR-NF-OPC

MSA and TAA 25GBase-SR SFP28 Transceiver (MMF, 850nm, 40m, LC, DOM, No FEC)

Features

- Up to 25.78Gbps Bi-Directional Data Links
- Built-In CDR with 25.78Gbps Operation
- Electrical Interface Specifications Per SFF-8431
- SFP28 MSA Package with Duplex LC Connector
- Uncooled 850nm VCSEL Laser
- 3.3V Power Supply Lines
- Class 1 Laser Safety Certified
- Metal Enclosure for Lower EMI
- Up to 40M on OM4 MMF with No FEC
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



Applications:

- 25GBase Ethernet
- Access and Enterprise

Product Description

This MSA compliant SFP28 transceiver provides 25GBase-SR throughput up to 40m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It can operate at temperatures between 0 and 70C. It is built to MSA standards and is uniquely serialized, and data-traffic and application tested to ensure that they will integrate into your network seamlessly. 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.

OptioConnect's transceivers are RoHS compliant and lead-free.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	V _{CC}	-0.5		4	V	1
Storage Temperature	T _{stg}	-40		85	°C	
Operating Case Temperature	T _c	0	25	70	°C	
Relative Humidity	RH	5		85	%	
Data Rate	DR		25.78		Gbps	

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Module Supply Voltage		V _{CC}	3.135	3.3	3.465	V	
Module Supply Current		I _{CC}			290	mA	
Power Dissipation		P _{DISS}			1000	W	
Transmitter							
Input Differential Impedance		Z _{IN}		100		Ω	
Differential Data Input Swing		V _{IN,pp}	180		700	mVp-p	
Tx_Fault	Transmitter Fault	VOH	2		V _{CC}	V	
	Normal Operation	VOL	0		0.8	V	
Tx_Disable	Transmitter Disable	VIH	2		V _{CC}	V	
	Transmitter Enable	VIL	0		0.8	V	
Receiver							
Output Differential Impedance		Z _{OUT}		100		Ω	
Differential Data Output Swing		V _{OUT,pp}	300		850	mVp-p	1
Data Output Rise/Fall Time		T _r /T _f		30		ps	2
Rx_LOS	Loss of Signal (LOS)	VOH	2.0		Host_V _{CC}	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	-2.5		2.4	dBm	1
Extinction Ratio	ER	2			dB	
Center Wavelength Range	λ_C	840	850	860	nm	
Transmitter and Dispersion Eye Closure	TDEC			4.3	dB	
Spectral Width	$\Delta\lambda$			0.6	nm	
Optical Return Loss Tolerance	ORLT			12	dB	
POUT @Tx_Disable Asserted	Poff			-20	dBm	1
Receiver						
Center Wavelength	λ_C	840		860	nm	
Receiver Sensitivity (Pavg)	RxSens			-7	dBm	2
Receiver Sensitivity (OMA)				-7	dBm	2
Receiver Overload (Pavg)	POL	2.4			dBm	
Optical Return Loss	ORL	12			dB	
LOS De-Assert	LOSD			-11	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. 50/125 μ m fiber with NA = 0.2.
2. Measured with PRBS 2³¹-1 with 1E⁻¹² BER @25.78Gbps.

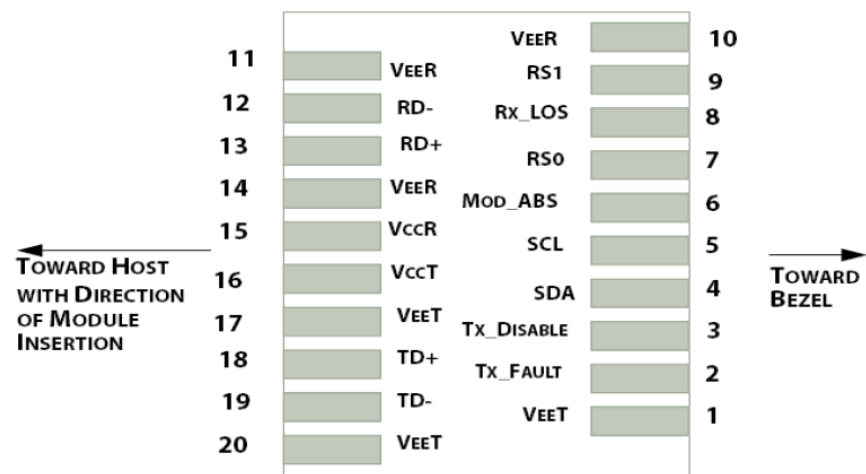
Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground.	1
2	Tx_Fault	Transmitter Fault. LVTTTL-O. "High" indicates a fault condition.	2
3	Tx_Disable	Transmitter Disable. LVTTTL-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	Rate Select 0. Not Used. Presents high input impedance.	
8	Rx_LOS	Receiver Loss of Signal. LVTTTL-O.	2
9	RS1	Rate Select 1. Not Used. Presents high input impedance.	
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Inverse Received Data Out. CML-O. AC Coupled.	
13	RD+	Received Data Out. CML-O. AC Coupled.	
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. AC Coupled.	
19	TD-	Inverse Transmitter Data In. CML-I. AC Coupled.	
20	VeeT	Transmitter Ground.	1

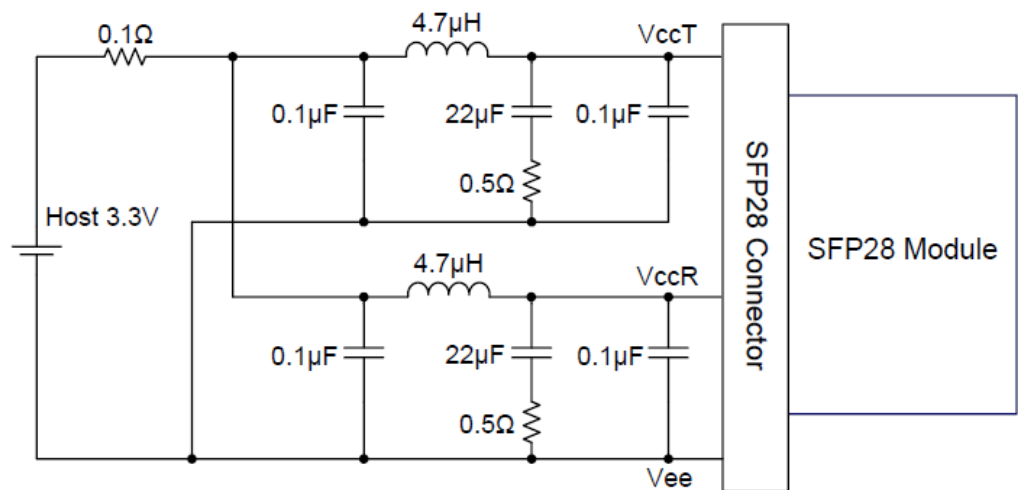
Notes:

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 4.7k Ω to 10k Ω pull-up resistor to the Host_Vcc.
3. This input is internally biased "high" with a 4.7k Ω to 10k Ω 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 4.7k Ω to 10k Ω pull-up resistor to the Host_Vcc.

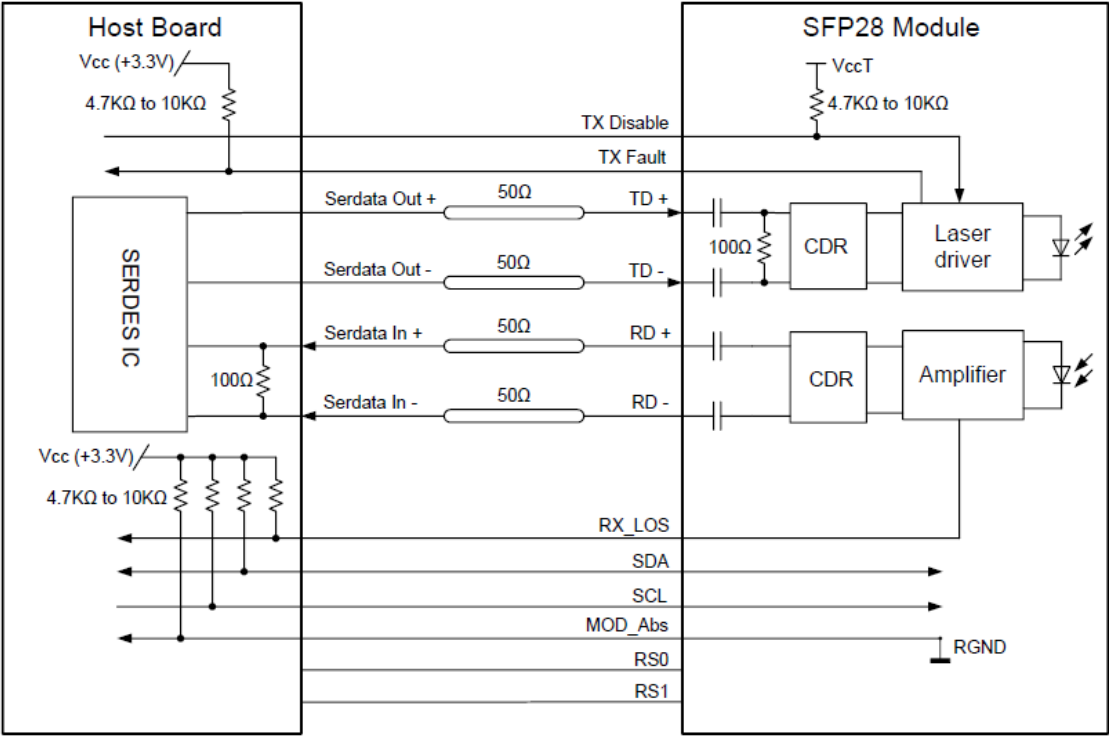
Electrical Pin-Out Details



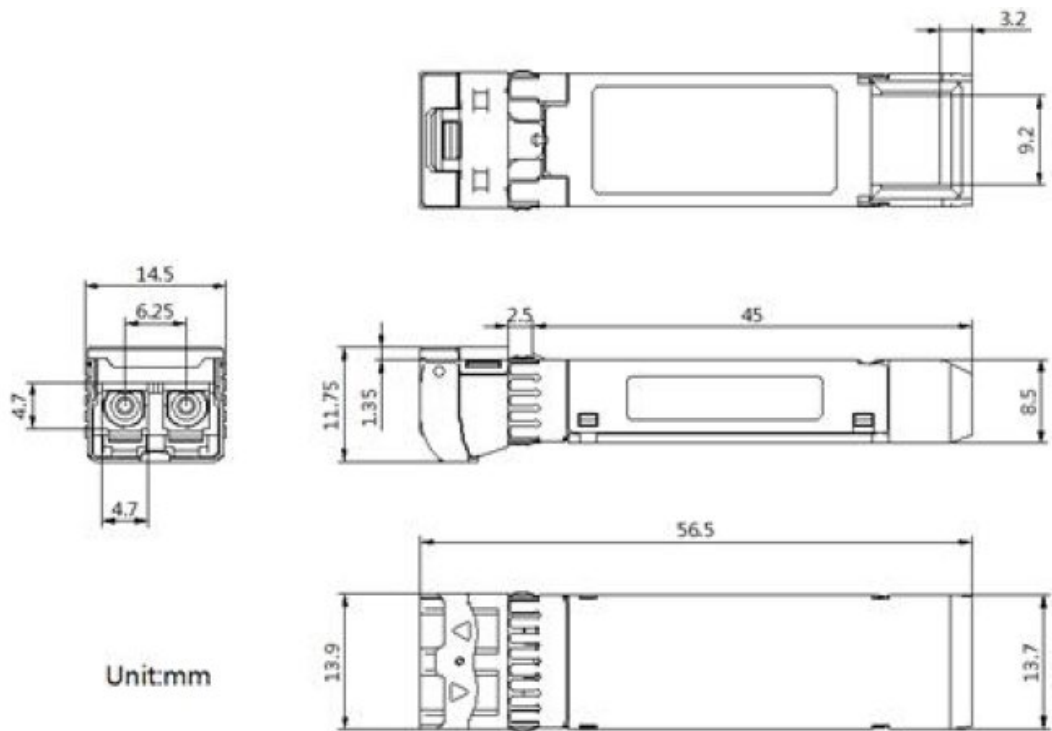
Host Board Power Supply Filter Network



Block Diagram



Mechanical Specifications



OptioConnect

Innovation for the Future of High-Speed Networking

Who We Are

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

Let's Connect

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.

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