

25 Gb/s 850 nm Multi-Mode SFP28 Transceiver

SFP+ Series

- **25Gbps serial optical interface**
- **850nm VCSEL transmitter and GaAs PIN PD receiver**
- **Rate Adaptation**
- **Operating temperature:**
Commercial (0°C to 70°C)
Industrial (-40°C to 85°C)
- **Maximum link length of 70m via OM3 multimode Fiber (MMF)**
- **Maximum link length of 100m via OM4 multimode Fiber (MMF)**



Ascent's SFP28 25Gb/s transceiver is an integrated fiber optic transceiver that provides a high-speed serial link at signaling rates up to 25.78 Gb/s. It is a single-channel, pluggable, fiber-optic module for short-range data communication and interconnect Ethernet applications.

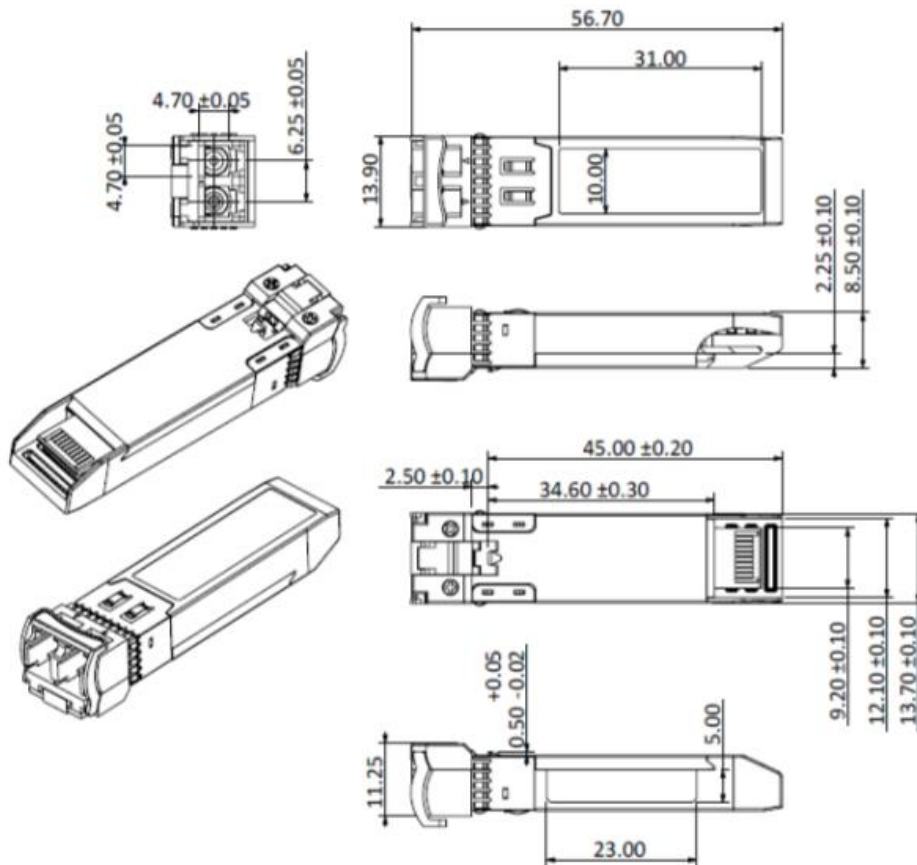
This module is designed to operate over multimode fiber systems using a nominal wavelength of 850nm. It has a transmission distance of up to 70 m on OM3 and 100 m on OM4 multi-mode fibers. The optical interface uses duplex LC receptacle. This module incorporates proven circuit and VCSEL technology to provide reliable long life, high performance, and consistent service.

The SFP28-25LP-85-01 module complies with SFF-8431 and SFF 8472 standards. It features a metal enclosure for lower EMI and utilizes a 2-wire interface that is compliant with the serial communication protocol as defined in the SFP+ MSA. It also provides a unique integrated digital diagnostic monitoring interface, allowing for real-time access to device operating parameters. This module is hot-pluggable.

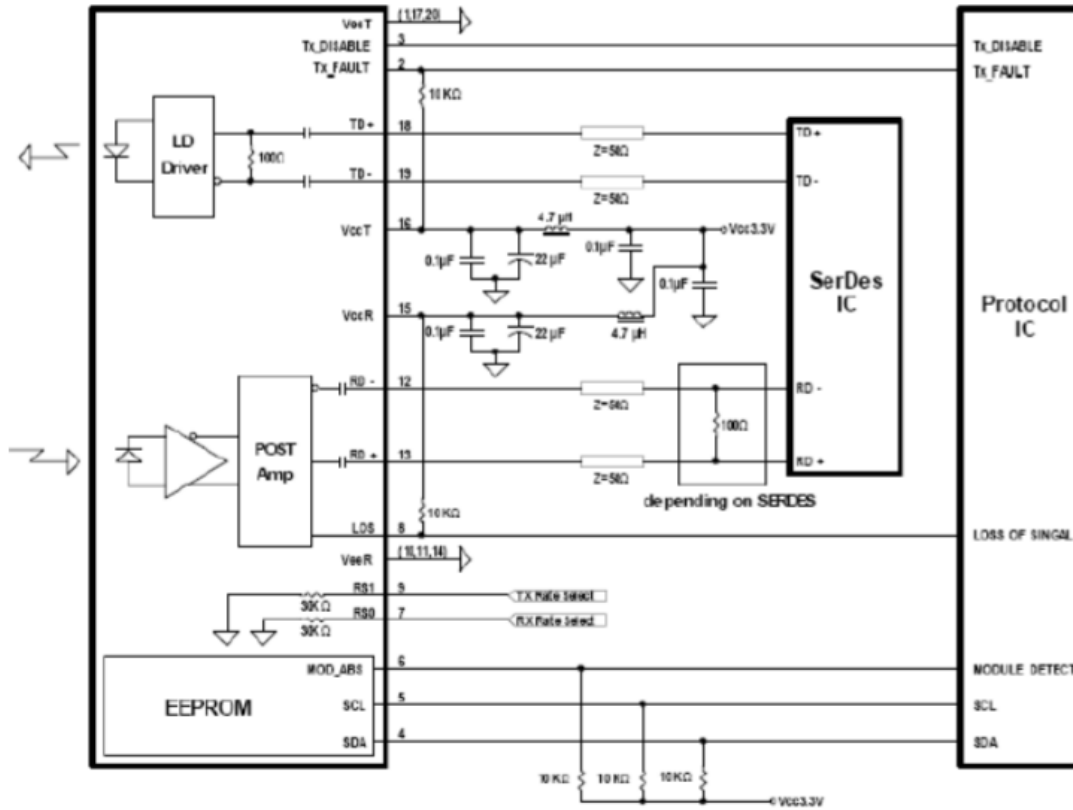
Key Features

- 25Gbps serial optical interface
- 850nm VCSEL transmitter and GaAs PIN PD receiver
- Rate Adaptation
- Operating Temperature Range:
Commercial: 0°C to +70°C
Industrial: -40°C to +85°C
- Maximum link length of 70m via OM3 multimode Fiber (MMF)
- Maximum link length of 100m via OM4 multimode Fiber (MMF)

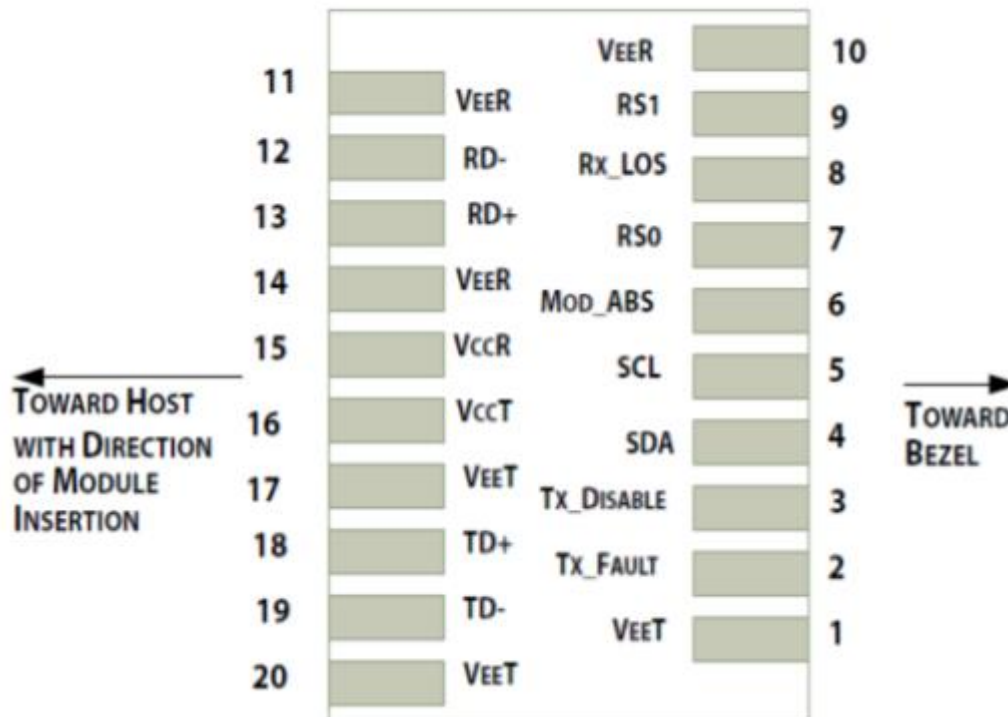
Mechanical Dimension



Recommended Interface Circuit



Pin Assignment



Pin	Logic	Symbol	Name/Description
1		VeeT	Transmitter Ground
2	LVTTTL-O	Tx_Fault	Transmitter Fault - High indicates a fault condition
3	LVTTTL-I	Tx_Dis	Transmitter Disable - High or open disables the transmitter
4	LVTTTL-I/O	SDA	2-wire Serial Interface Data Line (MOD-DEF2)
5	LVTTTL-I	SCL	2-wire Serial Interface Clock (MOD-DEF1)
6		MOD_DEF0	Module Absent, connected to VeeT or VeeR in the module
7	LVTTTL-I	RS0	Rate Select 0 - Not used, Presents high input impedance
8	LVTTTL-O	RX_LOS	Receiver Loss of Signal (LVTTTL-O). Logic 0 indicates normal operation
9	LVTTTL-I	RS1	Rate Select 1 - Not used, Presents high input impedance
10		VeeR	Module Receiver Ground
11		VeeR	Module Receiver Ground
12	CML-O	RD-	Receiver Inverted Data Output
13	CML-O	RD+	Receiver Data Output
14		VeeR	Module Receiver Ground
15		VccR	Module Receiver 3.3V Supply
16		VccT	Module Receiver 3.3V Supply
17		VeeT	Module Transmitter Ground
18	CML-I	TD+	Transmitter Non-Inverted DATA in. AC Coupled.
19	CML-I	TD-	Transmitter Inverted DATA in. AC Coupled.
20		VeeT	Transmitter Ground

Specifications

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	T _s	-40	-	85	°C
Relative Humidity	RH	0		85	%

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Case Temperature	T _c	0	-	70	°C	1
		-40	-	85		2
Power Supply Voltage	V _{CC}	3.15	3.3	3.45	V	
Bit Rate	BR		25.78125		Gbps	

Note1, 2: See order information

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λ	840		860	nm	
RMS Spectral Width	P _m			0.6	nm	
Average Optical Power	P _{avg}	-5		2.4	dBm	
Optical Modulation Amplitude	OMA	-5		3	dBm	
Average Launch Power of OFF Transmitter	P _{off}			0.6	nm	
Extinction Ratio	ER	3			dB	
Optical Return Loss Tolerance				12	dB	
Receiver						
Center Wavelength	λ	840	850	860	nm	
Damage Threshold		3.4			dBm	
Receive Power Overload		2.4			dBm	
Receiver Reflectance				-12	dBm	
Receiver Sensitivity	SENS			-5	dBm	1
Receiver Sensitivity	SENS			-10	dBm	2
LOS Assert	LOS _A	-30			dBm	
LOS De-assert	LOS _D			-13	dBm	
LOS Hysteresis	LOSH	0.5			dB	

Note:

1. Measured with a 25.78125G, PRBS-31 NRZ, ER>3.5dB, BER<1E-12.
2. Measured with a 25.78125G, PRBS-31 NRZ, ER>3.5dB, BER<5E-5.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Consumption				1	W	
Supply Current	I _{CC}		100	300	mA	

Digital Diagnostics

Parameter	Accuracy	Unit
Internally Measured Transceiver Temperature	+/-3	°C
Internally Measured Transceiver Supply Voltage	+/-3	%
Measured Tx bias Current	+/-10	%
Measured Tx Output Power	+/-3	dB
Measured Rx Received Average Optical Power	+/-3	dB

Ordering Information

Product Name	Product Description
SFP28-25LP-85-01	SFP28 Plug-in, 25Gbps, 100m, TX/RX 850nm, on two multimode fibres, LC/PC
S28-25LP-85-01A	SFP28 Plug-in, 25Gbps, 100m, TX/RX 850nm, on two multimode fibres, LC/PC, Industrial Temperature

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Specifications and product availability are subject to change without notice.

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