

## 25 Gb/s 850 nm Multi-Mode SFP28 300m Transceiver

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### 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 300m via OM3 multimode Fiber (MMF)
- Maximum link length of 400m 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.

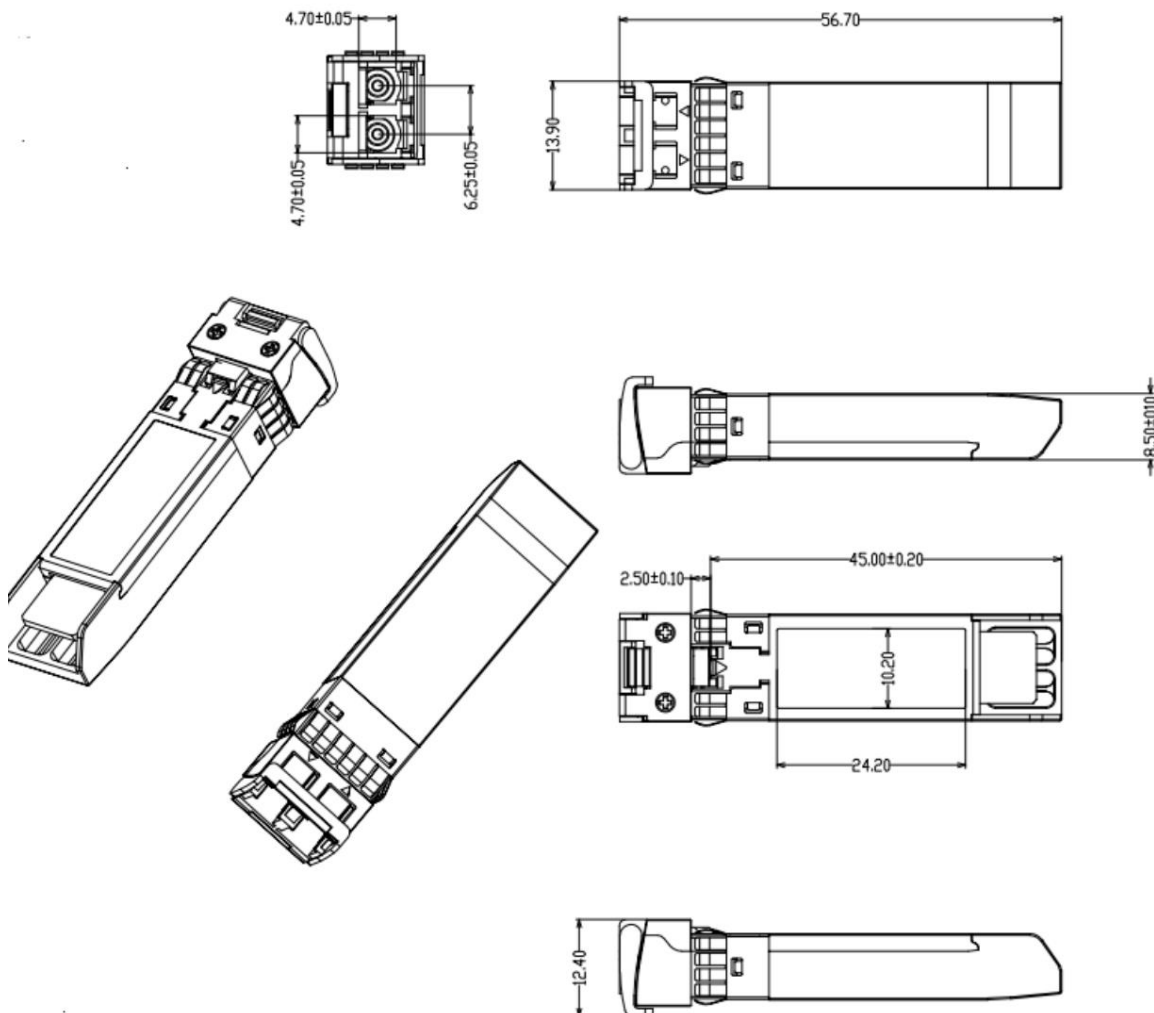
This module is designed to operate over multimode fiber systems using a nominal wavelength of 850nm. It has a transmission distance of up to 300 m on OM3 and 400 m on OM4 multi-mode fibers. The optical interface uses duplex LC receptacle. This module incorporates proven circuit and VCSEL technology to provide reliable long life, high performance, and consistent service.

The SFP28-25LP-85-03 module has the rate adaptation and its operating temperature is ranging from 0°C to 70°C for commercial usage and -40°C to 85°C for industrial usage.

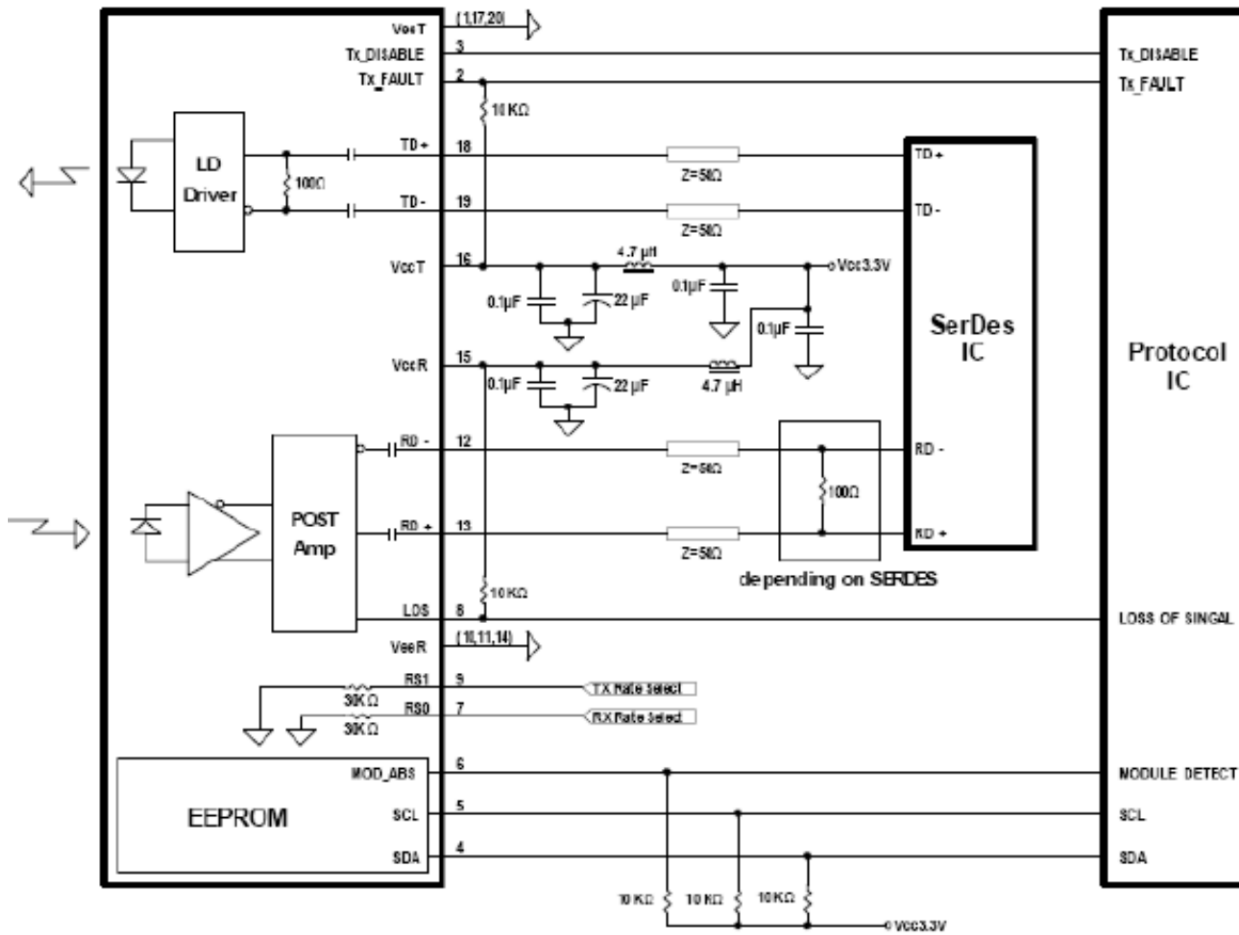
## Key Features

- 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 300m via OM3 multimode Fiber (MMF)
- Maximum link length of 400m via OM4 multimode Fiber (MMF)

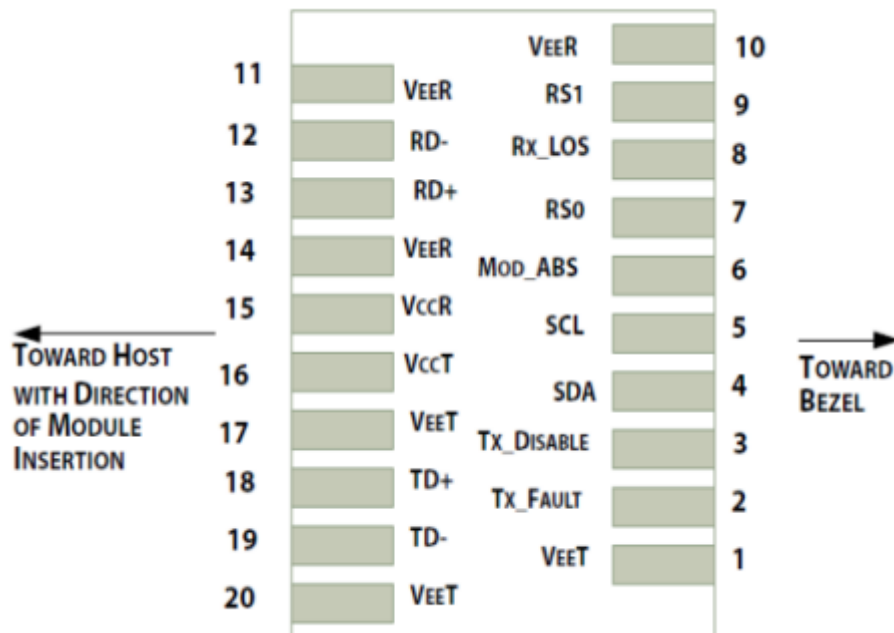
## Mechanical Dimension



## Recommended Interface Circuit



## Pin Assignment



Pin	Logic	Symbol	Name/Description
1		VeeT	Module Transmitter Ground
2	LVTTTL-O	Tx_Fault	Module Transmitter Fault
3	LVTTTL-I	Tx_Dis	Transmitter Disable; Turns off transmitter laser output
4	LVTTTL-I/O	SDA	2-wire Serial Interface Data Line
5	LVTTTL-I	SCL	2-wire Serial Interface Clock
6		MOD_DEFO	Module Definition, Grounded in the module
7	LVTTTL-I	RS0	Receiver Rate Select
8	LVTTTL-O	RX_LOS	Receiver Loss of Signal Indication Active LOW
9	LVTTTL-I	RS1	Transmitter Rate Select (not used)
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 Input
20		VeeT	Module Transmitter Ground

## Specifications

### Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	T <sub>s</sub>	-40		85	°C
Relative Humidity	RH	0		85	%

### Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Case Temperature	T <sub>c</sub>	0		70	°C	1
		-40		85		2
Power Supply Voltage	V <sub>CC</sub>	3.15	3.3	3.45	V	
Bit Rate	BR		10.3125G&25.78125		Gbps	

**Note1, 2:** See order information

### Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Center Wavelength	λ	840		860	nm	
RMS Spectral Width	P <sub>m</sub>			0.6	nm	
Average Optical Power	P <sub>avg</sub>	-5		2.4	dBm	
Optical Modulation Amplitude	OMA	-5		3	dBm	
Average Launch Power of OFF Transmitter	P <sub>off</sub>			-30	dBm	
Extinction Ratio	ER	3			dB	
Optical Return Loss Tolerance				12	dB	
<b>Receiver</b>						
Center Wavelength	λ	840	850	860	nm	
Damage Threshold		3.4			dBm	
Receive Power Overload		2.4			dBm	
Receiver Reflectance				-12	dB	
Receiver Sensitivity	SENS			-10.3	dBm	1
LOS Assert	LOS <sub>A</sub>	-30			dBm	
LOS De-assert	LOS <sub>D</sub>			-13	dBm	
LOS Hysteresis	LOSH	0.5			dB	

**Note:**

1. 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 <sub>CC</sub>			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-85-03	SFP28 Plug-in, 25Gbps, 300m, TX/RX 850nm, on two multimode fibres, LC/PC
S28-25LP-85-03A	SFP28 Plug-in, 25Gbps, 300m, TX/RX 850nm, on two multimode fibres, LC/PC, Industrial Temperature

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