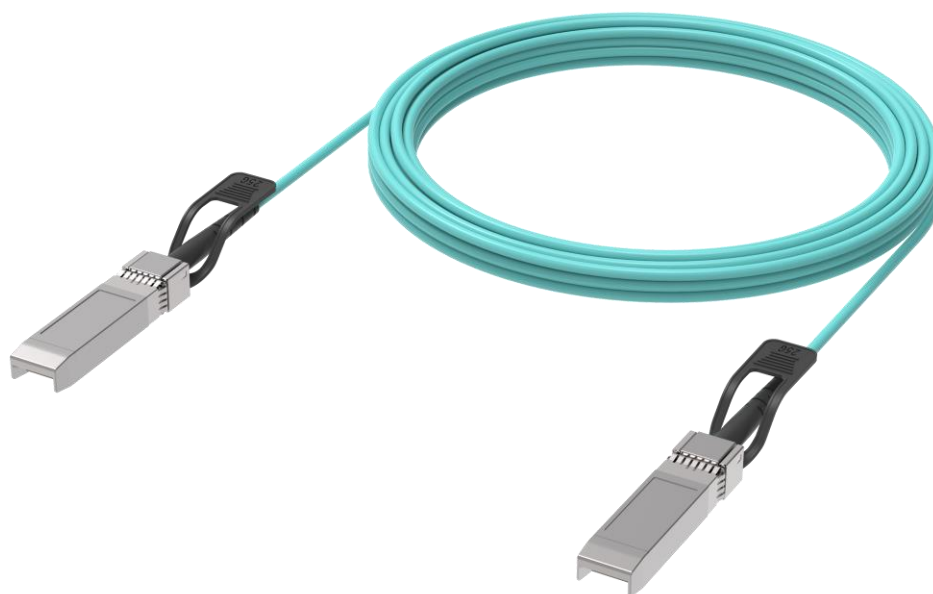


Product Datasheet

25G SFP28 Active Optical Cable



Application

- Data center & Networking Equipment
- Servers/Storage Devices
- High Performance Computing (HPC)
- Switches/Routers
- Telecom Central Offices (CO)
- Test and Measurement Equipment

Features

- 25Gbps serial optical interface
- 850nm VCSEL transmitter and GaAs PIN PD receiver
- Case operating temperature range: 0°C to 70°C
- Power dissipation < 1.0W per cable end

1.0 Product Specification

1.1 Absolute Maximum Ratings (TC=25°C, unless otherwise noted)

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings will cause permanent damage and/or adversely affect device reliability.

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Storage Temperature	TS	-40	-	+85	°C	
Operating Relative Humidity	RH	0	-	+85	%	

1.2 General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature		0		70	°C	
Power Supply Voltage	V _{CC}	3.14	3.3	3.47	V	
Power Supply Current	I _{CC}	-	180	300	mA	
Data Rate	BR		25.78125		Gbps	TX Rate/RX Rate
Pre-FEC Bit Error Ratio				5E-5		
Post-FEC Bit Error Ratio				1E-12		
Power Consumption				1	W	

Notes: FEC provided by host system.

1.3 PIN Descriptions

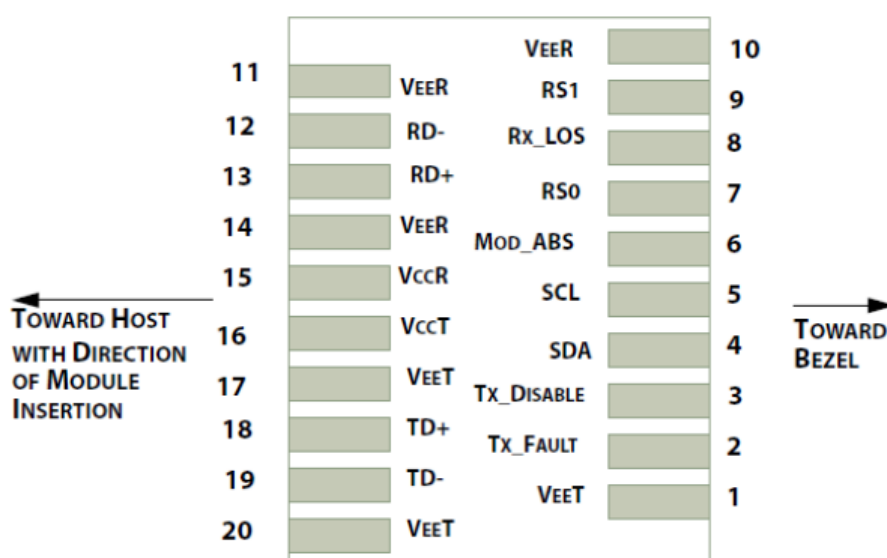


Figure 1 – Pin Definitions

Pin	Symbol	Name/Description	Ref.
1	VeeT	Module Transmitter Ground (Common with Receiver Ground)	
2	TX_Fault	Module Transmitter Fault.	
3	TX_Dis	Transmitter Disable; Turns off transmitter Laser output	
4	SDA	2-wire Serial Interface Data Line	
5	SCL	2-wire Serial Interface Clock	
6	MOD_DEF0	Module Definition. Grounded in the module	
7	RS0	Receiver Rate Select	
8	RX_LOS	Receiver Loss of Signal Indication Active LOW	
9	RS1	Transmitter Rate Select (not used)	
10	VeeR	Module Receiver Ground	
11	VeeR	Module Receiver Ground	
12	RD-	Receiver Inverted Data Output	
13	RD+	Receiver Data Output	
14	VeeR	Module Receiver Ground	
15	VccR	Module Receiver Power Supply	
16	VccT	Module Transmitter Power Supply	
17	VeeT	Module Transmitter Ground	
18	TD+	Transmitter Non-Inverted Data Input	
19	TD-	Transmitter Inverted Data Input	
20	VeeT	Module Transmitter Ground	

1.4 Recommended Interface Circuit

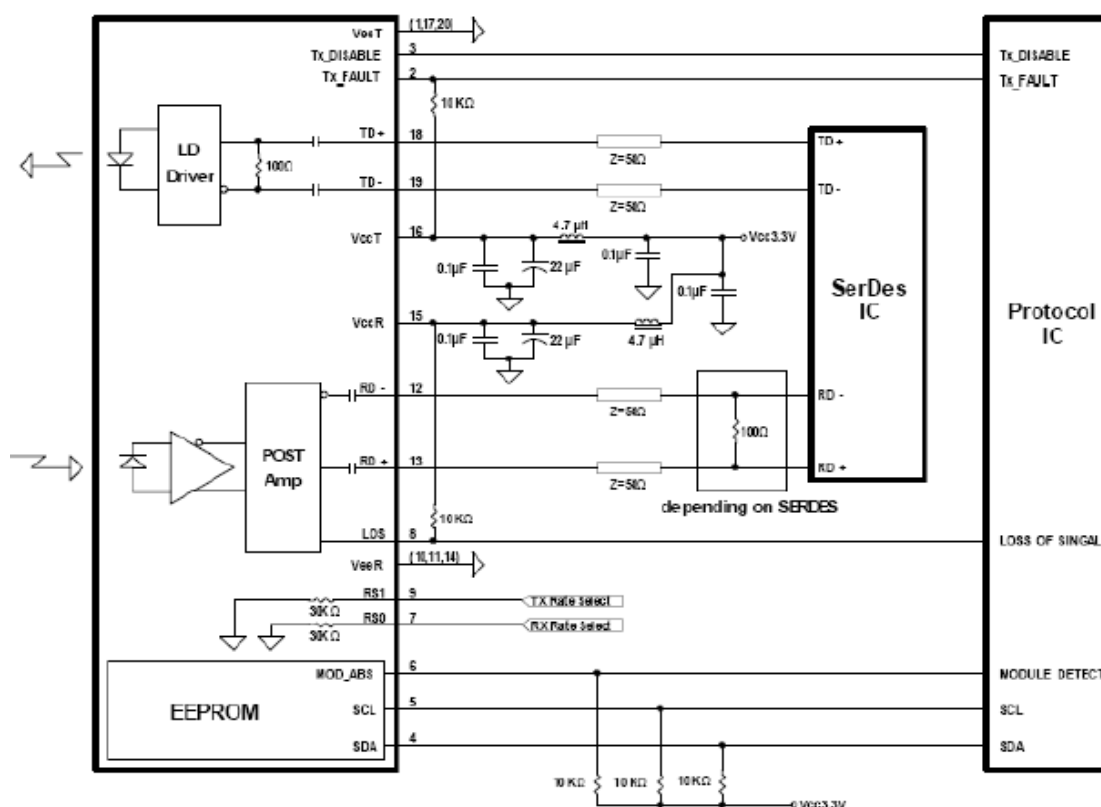


Figure 2. Typical application circuit

1.5 Digital Diagnostics Functions

As defined by the SFF-8472, Our SFP28 transceivers provide digital diagnostic functions via a 2-wire serial interface, which allows real-time access to the following operating parameters:

- Transceiver temperature
- Laser bias current
- Transmitted optical power
- Received optical power
- Transceiver supply voltage

It also provides a sophisticated system of alarm and warning flags, which may be used to alert end-users when particular operating parameters are outside of a factory-set normal range. The operating and diagnostics information is monitored and reported by a Digital Diagnostics Transceiver Controller (DDTC) inside the transceiver, which is accessed through the 2-wire serial interface. The memories are organized as a series of 8-bit data words that can be addressed individually or sequentially. The 2-wire serial interface provides sequential or random access to the 8 bit parameters, addressed from 0x00h to the maximum address of the memory. For more detailed information, including memory map definitions, please refer the SFF-8472 documentation.

1.6 Digital Diagnostic Specification

Parameter	Symbol	Accuracy	Units	Notes
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Transceiver Case Temperature	DMI_TEMP	±5	°C	Over operating temp
Supply voltage monitor absolute error	DMI_VCC	±3	%	Full operating range
Channel Bias current monitor	DMI_IBIAS	±10	%	Per channel
Channel RX power monitor absolute error	DMI_RX	±3	dB	Per channel
Channel TX power monitor absolute error	DMI_TX	±3	dB	Per channel

1.7 Mechanical Specifications

Unit: mm

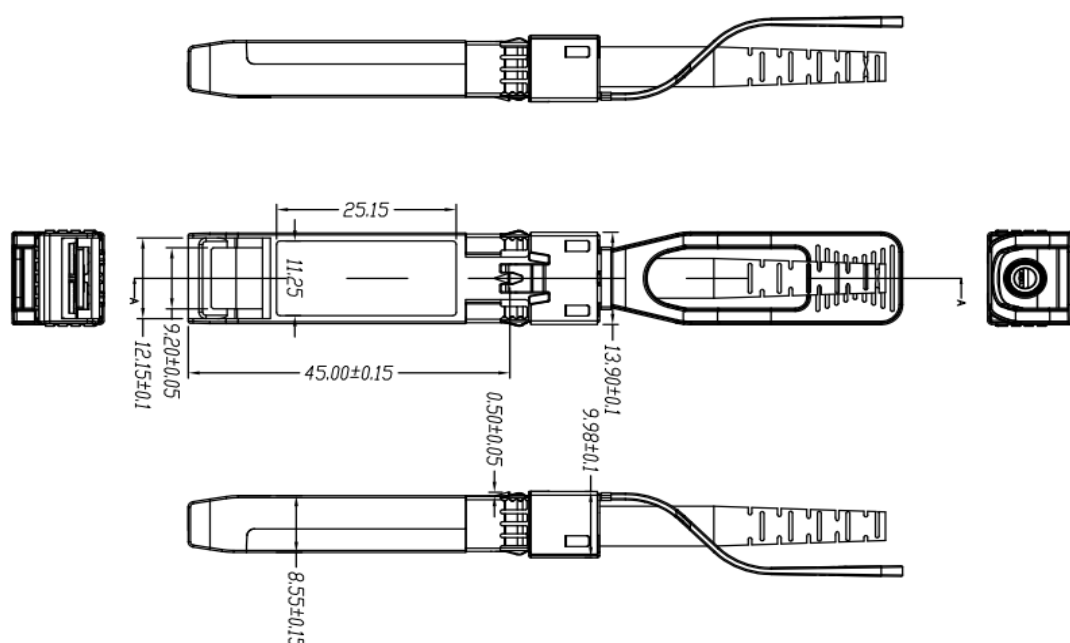


Figure 3 – Mechanical Specifications

2.0 Product Information

Data Rate	Factor		Optical	Wavelength	Reach
25G	SFP28 to SFP28	AOC	N/A	850nm	1m~100m

ESD Safety Cautions

This transceiver is specified as ESD threshold 1KV for high speed data pins and 2KV for all others electrical input pins, tested per MIL-STD-883, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module. This transceiver is shipped in ESD protective packaging. It should be removed from the packaging and handled only in an ESD protected environment.

Important Notice

The performance figures, data, and any illustrative material presented in this datasheet are typical and must be explicitly confirmed in writing by ZHAOLONG before they are deemed applicable to any specific order or contract.

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3.0 Revision Record

Rev.	Comments	Author	Date
A01	Initial Release	Koko Sun	10/01/2023