TITLE	DOC No. RFD-20260323101-001	
25Gb/s SFP28 Active Optical Cable	REVISION : 01	AUTHORIZED BY : Hawk Rong
	DATE : 2026.05.29	CLASSIFICATION : Active Optical Cable

1. Product Features

- 25Gbps serial optical interface
- 850nm VCSEL transmitter and GaAs PIN PD receiver
- Case operating temperature range: -40°C to 85°C
- Power dissipation < 1.0W per cable end

2. Product Applications

- Inter Rack Connection
- High-speed Servers
- High-performance Computing Clusters
- SAN, Routers, Hubs, Load Balancer

3. Product Description

The AOC Cable is intended for short reach service 25.78Gb/s 850nm Multi-mode high-speed communications equipment where low-cost, extraordinary performance and reliability are essential. It consumes low power, operates base on 3.3V DC power supply and is offered in the industrial temperature range. They are compliant with SFP28 MSA, SFF-8431 and SFF-8432.

The low jitter and low bit error rate optical assembly features a VCSEL laser transmitter and PIN/TIA receiver. It utilizes internal clock and data recovery (CDR) units on transmitter and the receiver chains for low jitter compliance. The differential AC coupled Tx and Rx data interfaces are CML compatible. The device is Class I laser safety compliant.

Product Name And Series Number(s)

25Gb/s SFP28 Active Optical Cable

Bit Rate	Laser(nm)	Distance	Fiber Type	Connector	Tem.
25G SFP28	VCSEL	1~100m	MMF	NA	I

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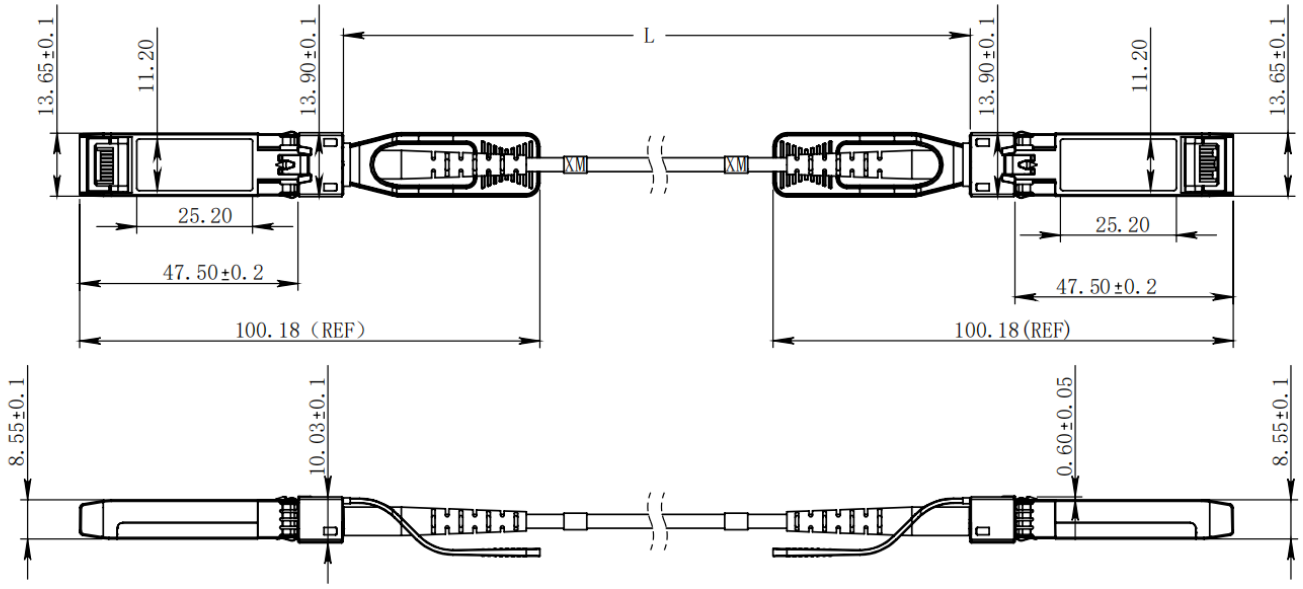
3.1 DIMENSIONS, MATERIALS, PLATINGS AND MARKING



表一：产品长度公差表		
产品长度（L）	主缆长度（L1）	产品长度公差
L＜7M	L＜7M	L+100/-0MM
L≥7M	L≥7M	L+2%L/-0 MM

Unit is millimeter. All dimensions are ±0.1mm unless otherwise specified

4. AbsoluteMaximum Ratings

Parameter	Symbol	Conditions	Min.	Max.	Unit
Storage Temperature	$T_{Storage}$		-40	+85	℃
Relative Humidity	RH		0	+85	%

5. Recommended Operating Conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Case Temperature	T_C		-40		85	℃
Power Supply Voltage	V_{CC}		3.15	3.3	3.45	V
Data Rate				25.78125		Gbps

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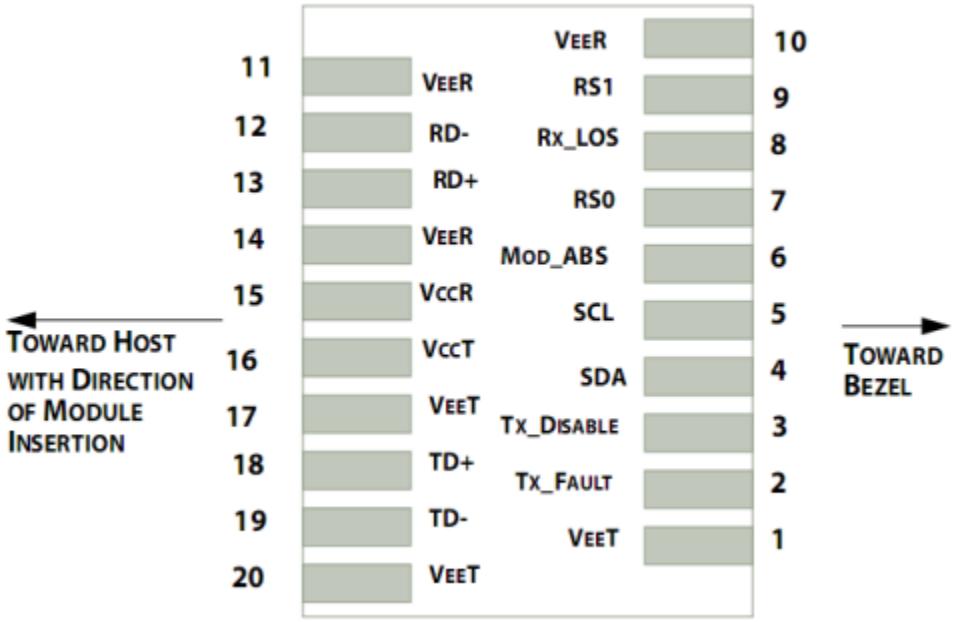
Data Rate Accuracy			-100		100	ppm
Pre-FEC Bit Error Ratio					5e-5	
Post-FEC Bit Error Ratio					1e-12	

6. Electrical Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power Consumption					1	W
Supply Current	Icc			180	300	mA

7. Applications Note:

Pin Definitions



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Pin Function Definitions

PIN	Logic	Symbol	Name / Description
1		VeeT	Module Transmitter Ground
2	LVTTL-O	TX_Fault	Module Transmitter Fault
3	LVTTL-I	TX_Dis	Transmitter Disable; Turns off transmitter laser output
4	LVTTL-I/O	SDA	2-Wire Serial Interface Data Line
5	LVTTL-I	SCL	2-Wire Serial Interface Clock
6		MOD_DEF0	Module Definition, Grounded in the module
7	LVTTL-I	RS0	Receiver Rate Select
8	LVTTL-O	RX_LOS	Receiver Loss of Signal Indication Active LOW
9	LVTTL-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 3.3 V Supply
16		VccT	Module Receiver 3.3 V Supply
17		VeeT	Module Transmitter Ground
18	CML-I	TD+	Transmitter Non-Inverted Data Input
19	CML-I	TD-	Transmitter Inverted Data Input
20		VeeT	Module Transmitter Ground

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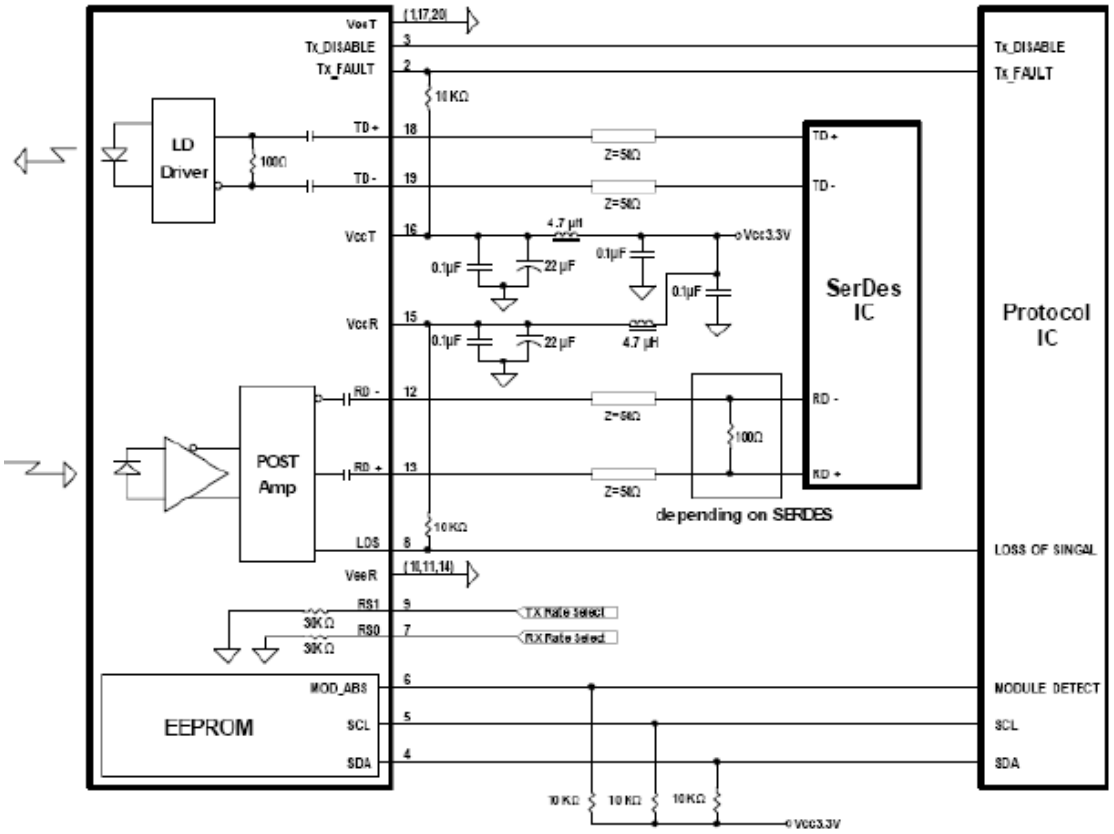
8. Recommended Interface Circuit



9. 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

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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.

10. Digital Diagnostic Monitor Accuracy

The following characteristics are defined over recommended operating conditions

Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	deg.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

11. Modification History

Rev.	Comments	Date	Originator	Approval
01	Initial	2026.05.29	Hawk Rong	Mike Sun