TITLE	DOC No. RFD-20240129008-001	
10G SFP+ SR Transceiver	REVISION：02	AUTHORIZED BY：Andy Yang
	DATE：2025.08.20	CLASSIFICATION：Optical Transceiver

1. PRODUCT FEATURES

- Up to 11.1Gbps Data Links
- 850nm VCSEL transmitter and GaAs PIN PD receiver
- Maximum link length of 300m via OM3 multimode Fiber (MMF)
- Compliant with IEEE 802.3ae 10GBASE-SR/SW
- Hermetic TOs package， high reliability
- Operating temperature range:

  Commercial: 0°C to +70°C

  Industrial: -40°C to +85°C

2. PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

10G SFP+ transceiver

JPC P/N	Wavelength (nm)	Optical Power	Sensitivity	Connector	Distance	Temp.
P58**0BRCAS3-1	850	-1~-8.2 dBm	-9.9dBm	LC	300m	C
P58**0BRIAS3-1	850	-1~-8.2 dBm	-9.9dBm	LC	300m	I

Note-1：** Indicates the customer code.

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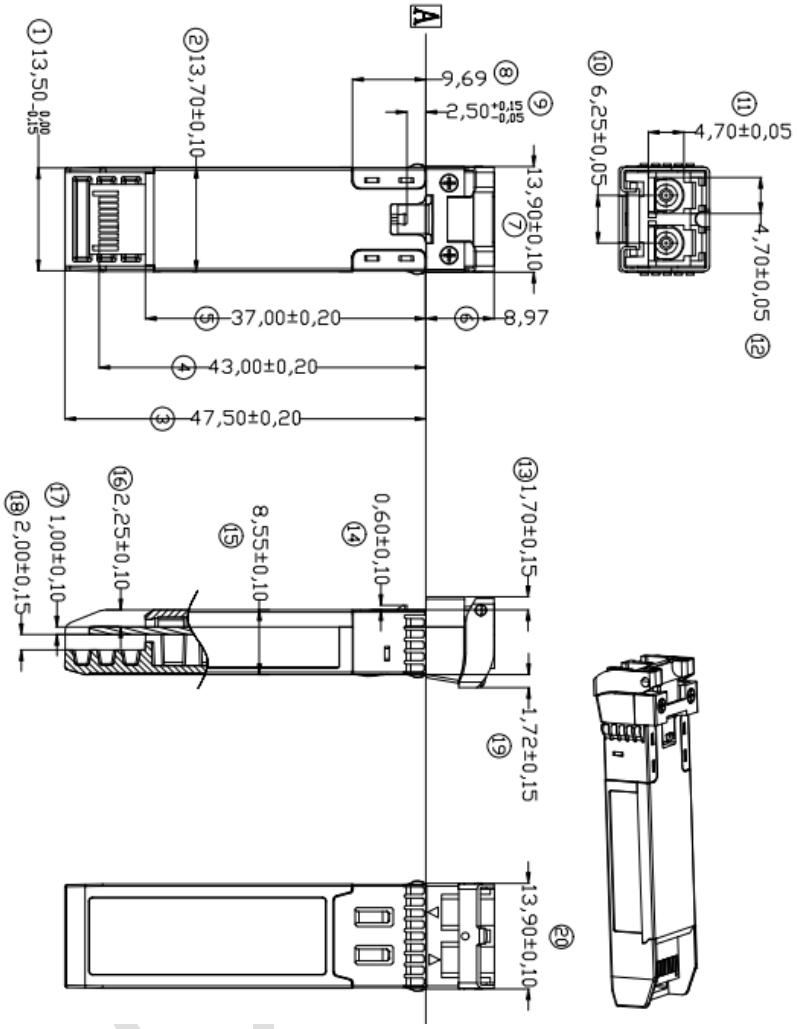
2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKING



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

3. APPLICABLE DOCUMENTS AND SPECIFICATIONS

- Inter Rack Connection
- High-speed Servers

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- 10GBASE-SW at 9.953Gbps/10GBASE-SR at 10.3125Gbps
- High-performance Computing Clusters
- SAN, Routers, Hubs, Load Balancer

4. Absolute Maximum Ratings & Recommended Operating Conditions

4.1 ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	T_s	-40	-	85	ºC	
Relative Humidity	R_H	5	-	95	%	
Power Supply Voltage	V_{CC}	-0.3	-	4	V	
Signal Input Voltage	V_{SI}	Vcc-0.3	-	Vcc+0.3	V	

4.2 RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0		70	ºC	
		-40		85	ºC	
Power Supply Voltage	V_{CC}	3.14	3.3	3.47	V	
Power Supply Current	I_{CC}	-		300	mA	
Data Rate	BR		10.3125		Gbps	TX Rate/RX Rate
Transmission Distance	TD			300	m	OM3

4.3 TRANSMITTER CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Center wavelength	λ	840		860	nm	
RMS spectral width	Pm			0.45	nm	
Average optical power	Pavg	-8.2		-1	dBm	
Average launch power of OFF transmitter	Poff			-30	dBm	
Extinction ratio	ER	3			dB	
Transmitter Dispersion Penalty	TDP			3.9	dB	
Output Optical Eye		IEEE 802.3-2005 Compliant				

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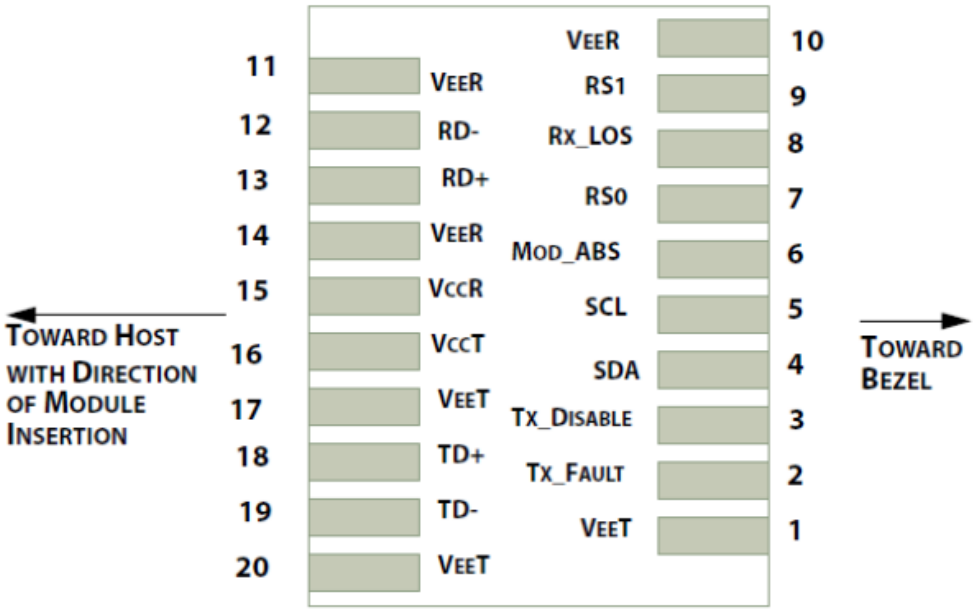
Optical return loss tolerance					12	dB

4.4 RECEIVER CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Center wavelength	λ	840	850	860	nm	
Damage threshold		3.4			dBm	
Receive power overload		-1			dBm	1
Receiver sensitivity				-9.9	dB	1
LOS Assert	LOS_A	-25			dBm	
LOS De-Assert	LOS_D			-11.5	dBm	
LOS Hysteresis	LOSH	0.5			dB	

1. Measured with a 10.3125G, PRBS-31 NRZ, ER>3dB, BER<10-12

5. Applications Note:



Pin Definitions

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Pin Assignment

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

RECOMMENDEDED HOST BOARD POWER SUPPLY CIRCUIT

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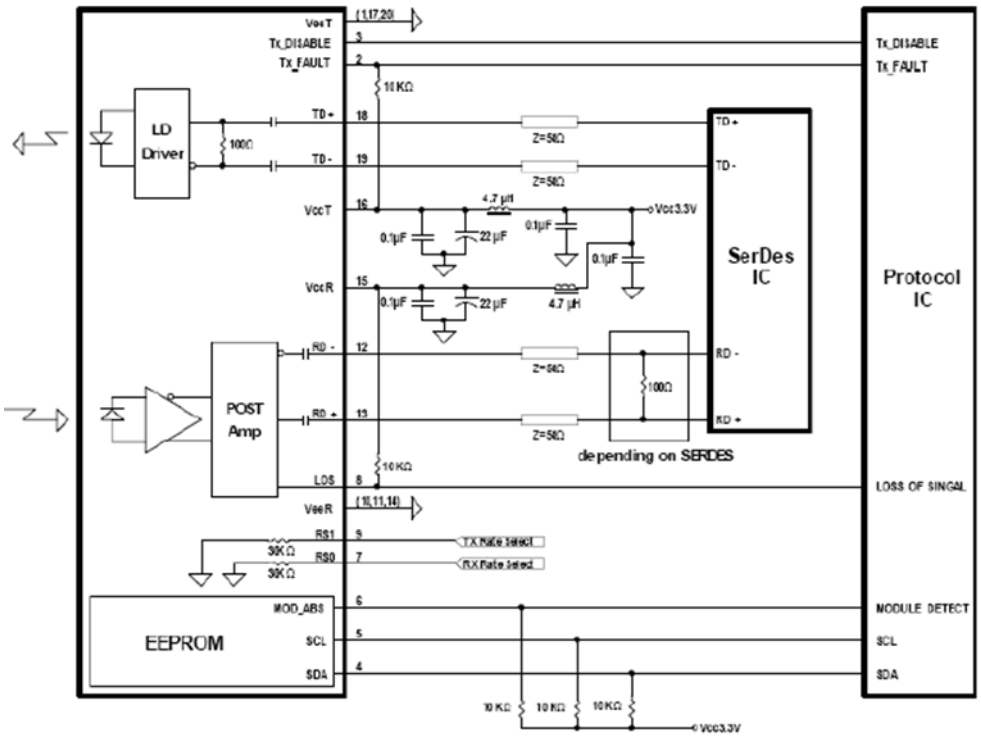

Digital Diagnostic Monitor Accuracy

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

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documentation.

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

6. Modification History

Rev.	Comments	Date	Originator	Approval
1	Initial	2024.02.26	Andy Yang	Mike Sun
2	Modify dimensions	2025.08.20	Andy Yang	Mike Sun