

TITLE 200G QSFP56 100m SR4 Transceivers	DOC No. RFD-20250121007-001	
	REVISION: 01	AUTHORIZED BY: Hawk Rong
	DATE: 2024.12.26	CLASSIFICATION: Optical Transceiver

1. Features and Benefits

- Compliant with 200G-SR4 optical specifications
- 4x53.125Gb/s electrical interface (200GAUI-4)
- Reach up to 70m on MMF(OM3)
- Reach up to 100m on MMF(OM4)
- Single +3.3V power supply
- Case temperature range: 0 ~ +70°C
- Maximum power consumption 4.5W
- Single MPO12 connector,UPC
- RoHS complaint
- Hot pluggable

2. Product Applications

- 200G BASE-SR4 Ethernet links
- Data centers

3. Product Description

- IEEE 802.3cd
- SFF 8679
- SFF8636

4. Product Description

The 200G QSFP56 SR4 is a 4x 53.125Gbps multi mode fiber, hot pluggable optical transceiver. The module integrates four parallel lanes with baud rate at 26.5625GBd each lane. It can transmit up to 70m on fiber OM3 fiber or 100m on OM4 fiber with FEC.

4.1 Product Name

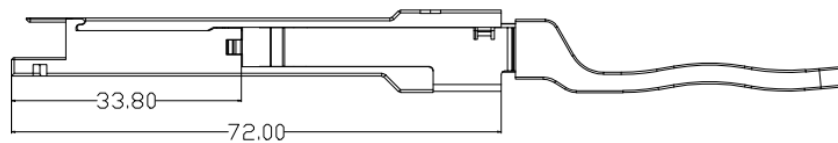
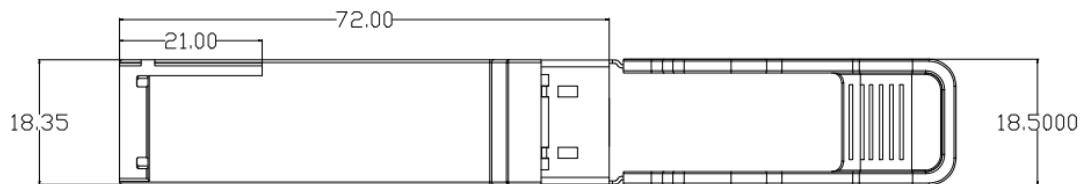
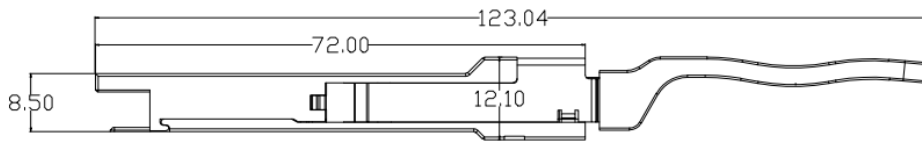
200G QSFP56 100m SR4 Transceivers

JPC P/N	Bit Rate	Laser(nm)	Distance	Fiber Type	DDMI	Connector
P59**0GRCA01-1	4x50	850nm	100m	MMF	YES	MPO

Note-1 : ** Indicates the customer code.

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4.2 Mechanical Specifications



TITLE 200G QSFP56 100m SR4 Transceivers	DOC No. RFD-20221201011-002	
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5. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Power Supply Voltage	Vcc	-0.3	3.6	V
Input Voltage	Vin	-0.3	Vcc+0.3	V
Storage Temperature	Tst	-40	85	°C
Case Operating Temperature	Top	0	70	°C
Humidity(non-condensing)	RH	10	85	%
Receiver Damage Threshold, each lane	Pin	5		dBm
Maximum Power Consumption	Pmax		4.5	W

6. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Case Operating Temperature	Tcase	0	-	70	°C
Power Supply Voltage	VCC	3.135	3.3	3.465	V

7. Transmitter Characteristics

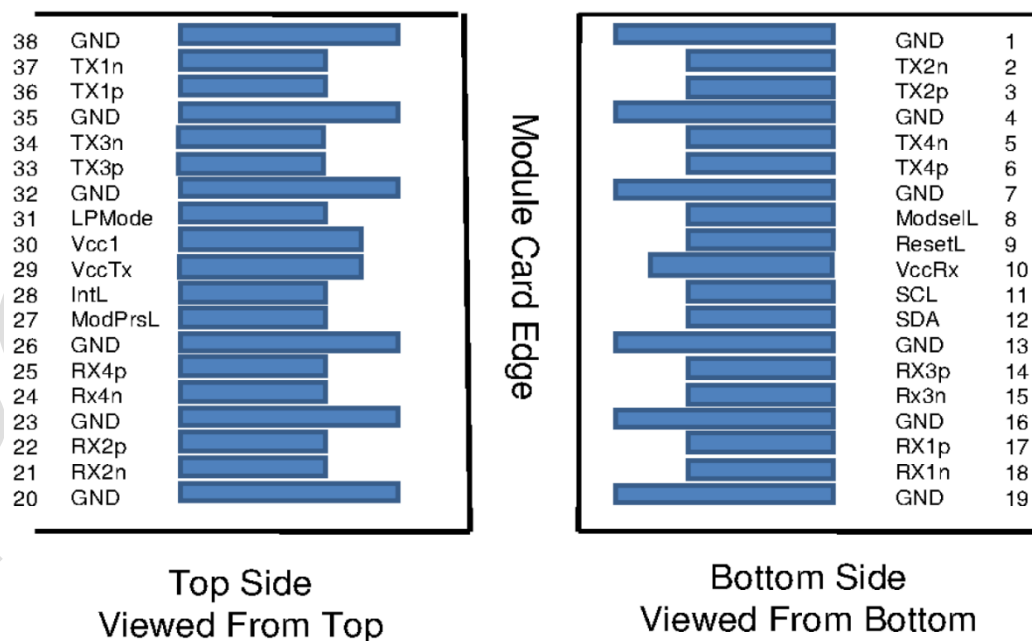
Parameter	Min	Typical	Max	Unit
Signaling Rate, each lane (range)	26.5625±100ppm			GBd
Center Wavelength Range	840		860	nm
Modulation Format	PAM4			
RMS spectral width			0.6	nm
Average launch power, each lane	-6.5		4	dBm
Outer Optical Modulation Amplitude (OMA _{outer}), each lane	-4.5		3	dBm
Launch power in OMA _{outer} minus TDECQ	-5.9			dBm
Transmitter and dispersion eye closure for PAM4 (TDECQ), each lane			4.5	dB
Extinction ratio, each lane	3			dB
Optical return loss tolerance			12	dB

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8. Receiver Characteris

Parameter	Min	Typical	Max	Unit
Signaling Rate, each lane (range)	26.5625±100ppm			GBd
Center Wavelength Range	840		860	nm
Modulation Format	PAM4			
Average receive power, each lane (Note1)	-8.4		4	dBm
Receive power, each lane (OMAouter)			3	dBm
Receiver reflectance			-12	dB
Stressed receiver sensitivity (OMAouter), each lane			-3.4	dBm
Receiver sensitivity (OMAouter), each lane (Note1)	Max(-6.5, SECQ-7.9)			dBm
Stressed eye closure for PAM4 (SECQ), lane under test		4.5		dB
SECQ – 10log10(Ceq) (max), lane under test			4.5	dB

9. Pin Assignment



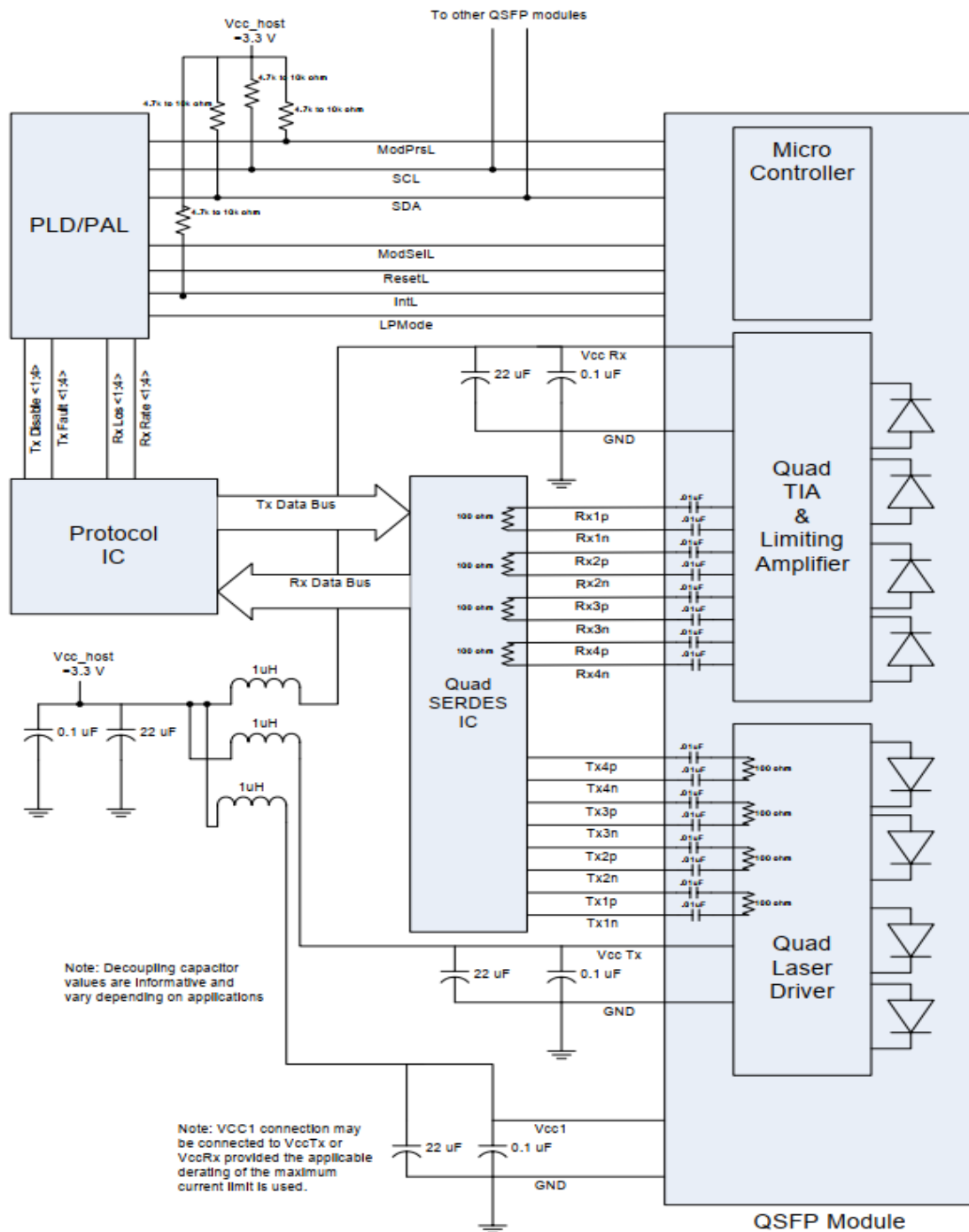
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Pin Description

PIN	Logic	Symbol	Name/Description	Note
1		GND	Ground	
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data output	
4		GND	Ground	
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data output	
7		GND	Ground	
8	LVTTL-I	ModSelL	Module Select	
9	LVTTL-I	ResetL	Module Reset	
10		VccRx	+ 3.3V Power Supply Receiver	
11	LVC MOS-I/O	SCL	2-Wire Serial Interface Clock	
12	LVC MOS-I/O	SDA	2-Wire Serial Interface Data	
13		GND	Ground	
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	
15	CML-O	Rx3n	Receiver Inverted Data Output	
16		GND	Ground	
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19		GND	Ground	
20		GND	Ground	
21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	
23		GND	Ground	
24	CML-O	Rx4n	Receiver Inverted Data Output	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	
26		GND	Ground	
27	LVTTL-O	ModPrsL	Module Present	
28	LVTTL-O	IntL	Interrupt	
29		VccTx	+3.3 V Power Supply transmitter	
30		Vcc1	+3.3 V Power Supply	
31	LVTTL-I	LPMode	Low Power Mode	
32		GND	Ground	
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	
34	CML-I	Tx3n	Transmitter Inverted Data Output	
35		GND	Ground	
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	
37	CML-I	Tx1n	Transmitter Inverted Data Output	
38		GND	Ground	

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10. Electrical Interface



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11. Digital Diagnostic Specification

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

12. Modification History

Rev.	Comments	Date	Originator	Approval
01	Preliminary Draft	2022.11.30	Albert Lin	Mike Sun
02	Modify 4.2 Mechanical	2025.01.20	Hawk Rong	Mike Sun