

TITLE 100G QSFP28 2km CWDM4 Transceivers	DOC No. RFD-20251010100-001	
	REVISION : 01	AUTHORIZED BY : Hawk Rong
	DATE : 2025.10.10	CLASSIFICATION : Optical Transceivers

1. Product Features

- Compliant with 100G CWDM4 MSA Specification
- Uncooled 4x25Gb/s CWDM transmitter
- Wide Operating Temperature(0°C~70°C)
- Maximum link length of 2km via Single Mode Fiber (SMF)

2. Product Applications

- Data Center Backbone
- Ethernet Switches
- High-speed Servers
- High-performance Computing Clusters
- SAN, Routers, Hubs, Load Balancer

3. Product Description

3.1 PRODUCT NAME

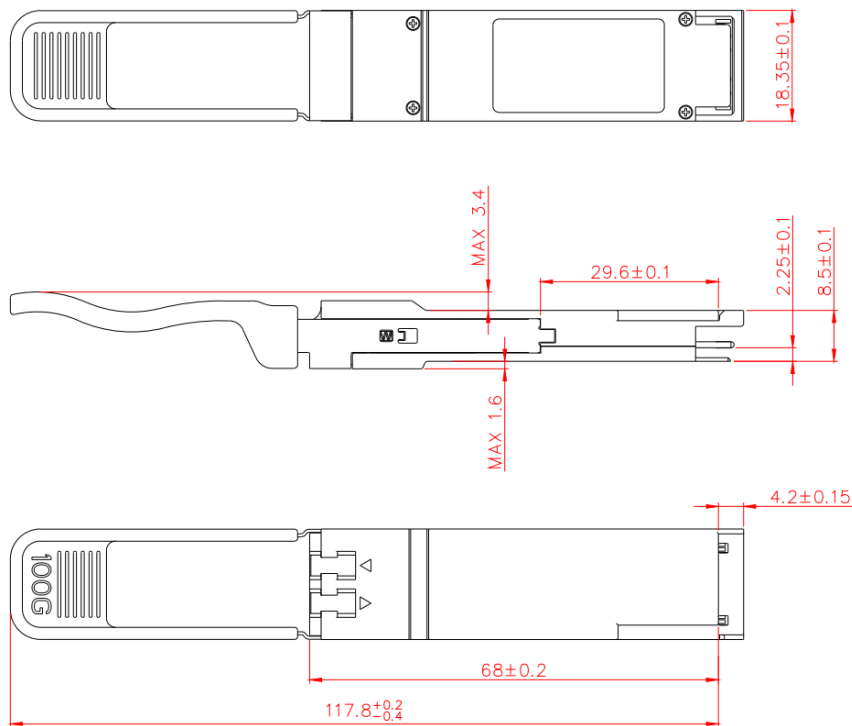
100G QSFP28 2km CWDM4 Transceivers

JPC P/N	Laser(nm)	Distance	Fiber Type	Connector	Tem.
P58**0ERCK02-1	1310nm	2KM	SMF	LC	C

Note-1: ** Indicates the customer code.

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3.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKING



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

4. AbsoluteMaximum Ratings

Parameter	Symbol	Conditions	Min.	Max.	Unit
Storage Temperature	T _{Storage}		-40	+85	°C
Relative Humidity	RH		0	+85	%

5. Recommended Operating Conditions (T=25°C, unless noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Case Temperature	T _c		0		70	°C

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Power Supply Voltage	V _{cc}		3.135	3.3	3.465	V
Signaling Rate each Channel				25.78125		Gbps
Supply Noise Rejection			---	---	100	mV
Receiver Differential Data Output			---	100		Ohm
Operating Distance	D		---	---	2	km

6. Electrical Characteristics (T=25°C, unless noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power Consumption					3.5	W
Supply Current	I _{cc}				1050	mA

7. Transmitter Characteristics (T=25°C, unless noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Signaling rate, each lane (range)	GBb			25.78125		GBb
Center Wavelength	λ ₀		1264.5		1277.5	nm
	λ ₁		1284.5		1297.5	nm
	λ ₂		1304.5		1317.5	nm
	λ ₃		1324.5		1337.5	nm
Side-mode suppression ratio	SMSR		30			dB
Total average launch power					8.5	dBm
Average launch power, each lane	P _f		-6.5		2.5	dBm
Optical Modulation Amplitude (OMA), each lane	TxOMA		-5		2.5	dBm
Transmitter and Dispersion Penalty	TDP				3	dB
Launch power in OMA minus TDP, each lane	Tx-TDP		-5			dBm
Average launch power of OFF transmitter, each lane					-30	dBm
Extinction ratio	ER		3.5			dB

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Optical return loss tolerance					20	dB
Transmitter reflectance					-12	dB

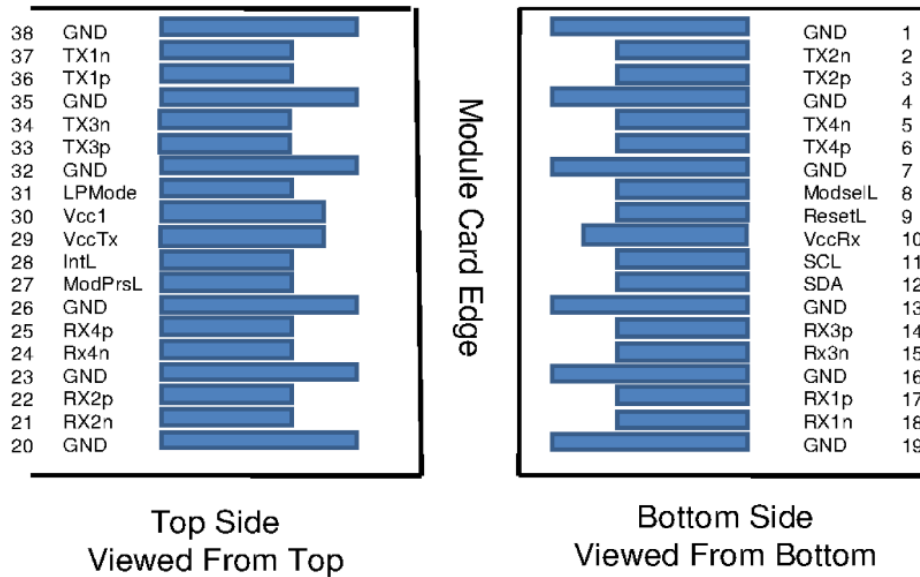
8. Receiver Characteristics (T=25°C, unless noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Signaling rate, each lane (range)	GBb			25.78125		GBb
Center Wavelength	λ_0		1264.5		1277.5	nm
	λ_1		1284.5		1297.5	nm
	λ_2		1304.5		1317.5	nm
	λ_3		1324.5		1337.5	nm
Damage threshold			3.5			dBm
Average power at receiver input, each lane			-10		2.5	dBm
Receive power, each lane (OMA)					2.5	dBm
Receiver reflectance					-26	dB
Receiver sensitivity (OMA)	S _{OMA}	BER@5e-5			-10	dBm
LOS Assert	LOS _A		-24			dBm
LOS De-Assert	LOS _D				-11.6	dBm
LOS Hysteresis			0.5		6	dB

9. Applications Note:

Pin Definitions

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Pin Function Definitions

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	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock	
12	LVCMOS-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	

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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	

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

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Measured Rx received average optical power	+/-3	dB
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11. Modification History

Rev.	Comments	Date	Originator	Approval
01	Initial	2025.10.10	Hawk Rong	Mike Sun