

TITLE 200G QSFP-DD Active Optical Cable	DOC No. RFD-20241226001-001	
	REVISION: 02	AUTHORIZED BY: Hawk Rong
	DATE: 2025.09.18	CLASSIFICATION: Active Optical Cable

1. Features and Benefits

- Hot-pluggable QSFP-DD form factor
- Case temperature range of 0°C to +70°C
- +3.3V single power supply
- Power dissipation < 3.5W per terminal with CDR OFF
- Supports up to 8x25.78125Gb/s bit rate with CDR ON
- Supports 8x10.3125Gb/s bit rate with CDR Bypass
- RoHS compliant

2. Product Applications

- 8x25GAUI C2M
- 2xCAUI-4 C2M
- Data center
- Other optical links

3. Product Description

3.1 Product Name

200G QSFP-DD Active Optical Cable

JPC P/N	Bit Rate	Laser(nm)	Distance	Fiber Type	DDMI	Connector
P64**KC00**M-1	8x25G	850nm	0.5~50m	MMF	YES	N/A

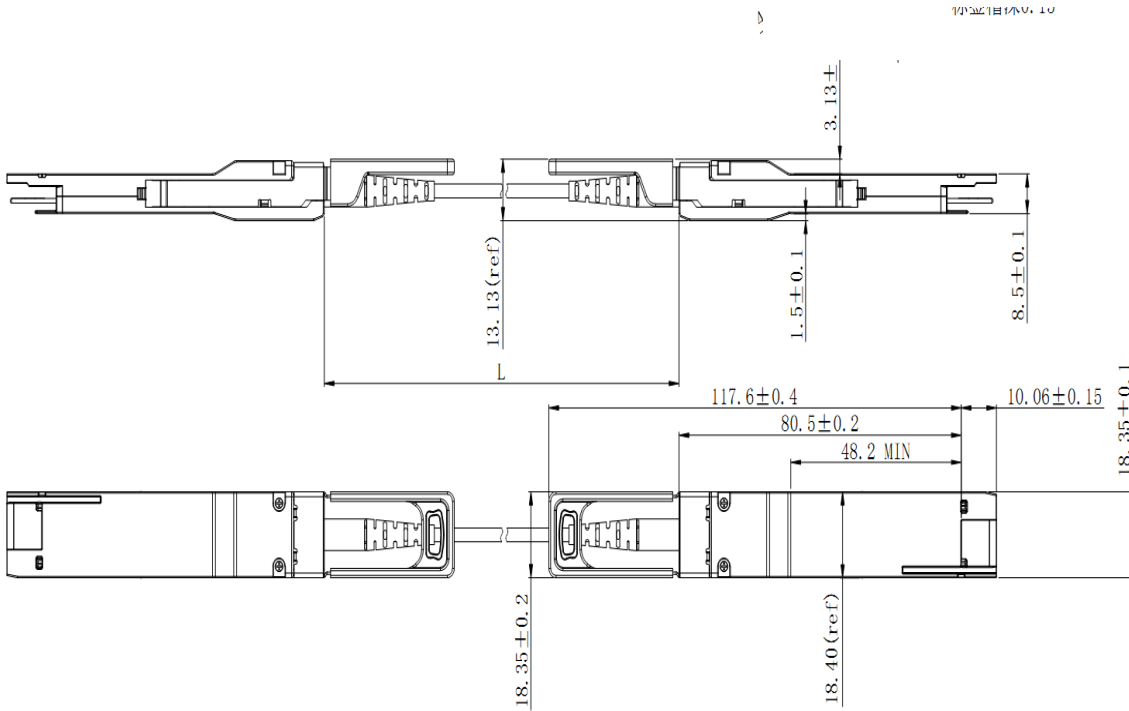
Note-1 : ** Indicates the customer code.

Note-2 : ** Indicates the length.

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3.2 Mechanical Specifications

Unit mm



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4. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	V _{CC3}	-0.5	-	+3.6	V	
Storage Temperature	T _s	-10	-	+70	°C	
Operating Humidity	RH	+5	-	+85	%	1

Note:1 No condensation

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

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T _c	0	-	+70	°C	
Power Supply Voltage	V _{CC}	3.135	3.3	3.465	V	
Power Dissipation	P _d	-	-	3.5	W	1
Bit Rate	BR	-	25.78125	-	Gpbs	Per lane

Note: 1 with CDR OFF

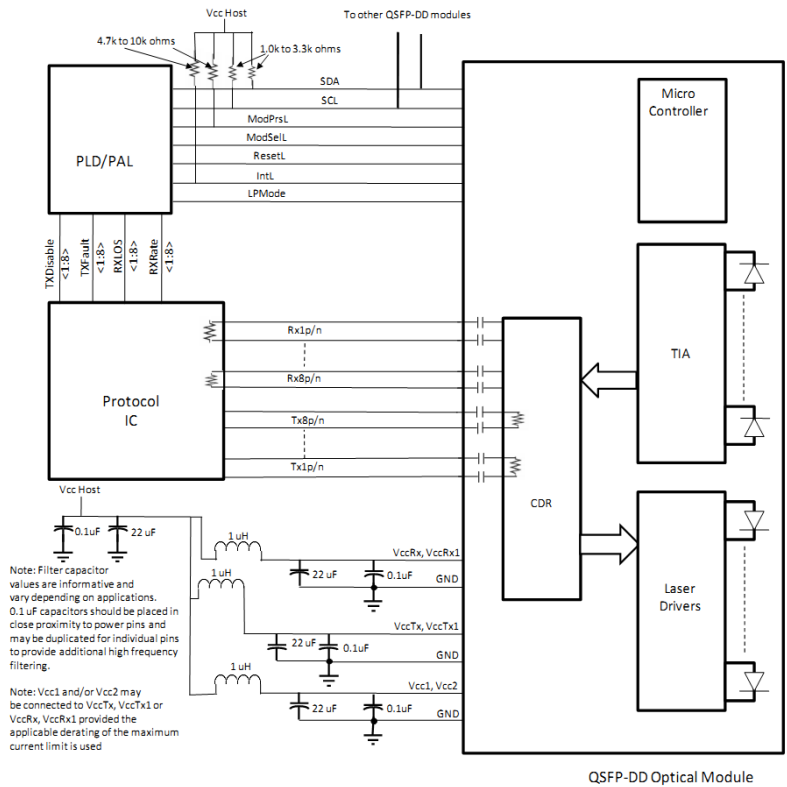
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6. Electrical Characteristics (T=25°C, unless noted)

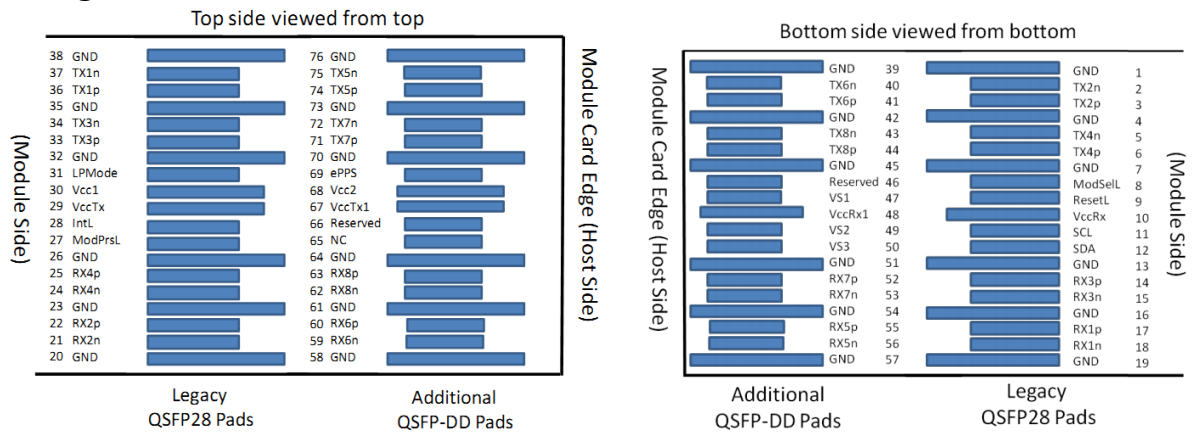
Parameter	Symbol	Unit	Min	Typ	Max	Notes
Transmitter						
Signaling rate (each lane)	SR	Gbps	25.78125 ± 100 ppm			
Modulation format	-	-	NRZ			
Differential pk-pk input voltage tolerance	V _{in,pp,diff}	mV	900	-	-	
Differential termination mismatch	-	%	-	-	10	
Single-ended voltage tolerance range	-	V	-0.4	-	3.3	
DC common mode voltage	-	mV	-350	-	2850	
Receiver						
Signaling rate (each lane)	SR	Gbps	25.78125 ± 100 ppm			
Modulation format	-	-	NRZ			
Peak-to-peak differential output voltage	-	mV	-	-	900	
Eye width	-	UI	0.57	-	-	
Eye height, differential	-	mV	228	-	-	
Transition time (20% to 80%)	t _r , t _f	ps	12	-	-	

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7. Recommended Interface



8. Pin Assignment



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Pin Description

Pin	Symbol	Name/Description	Notes
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	Vcc Rx	+3.3 V Power supply receiver	
11	SCL	2-wire serial interface clock	
12	SDA	2-wire serial interface data	
13	GND	Ground	1
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	1
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+3.3 V Power Supply Transmitter	
30	Vcc1	+3.3 V Power Supply	
31	LPMODE	Low Power Mode	

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32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	1
39	GND	Ground	1
40	Tx6n	Transmitter Inverted Data Input	
41	Tx6p	Transmitter Non-Inverted Data Input	
42	GND	Ground	1
43	Tx8n	Transmitter Inverted Data Input	
44	Tx8p	Transmitter Non-Inverted Data Input	
45	GND	Ground	1
46	Reserved	For Future Used	
47	VS1	Module Vendor Specific 1	
48	Vcc Rx1	+3.3 V Power supply receiver	
49	VS2	Module Vendor Specific 2	
50	VS3	Module Vendor Specific 3	
51	GND	Ground	1
52	Rx7p	Receiver Non-Inverted Data Output	
53	Rx7n	Receiver Inverted Data Output	
54	GND	Ground	1
55	Rx5p	Receiver Non-Inverted Data Output	
56	Rx5n	Receiver Inverted Data Output	
57	GND	Ground	1
58	GND	Ground	1
59	Rx6n	Receiver Inverted Data Output	
60	Rx6p	Receiver Non-Inverted Data Output	
61	GND	Ground	1
62	Rx8n	Receiver Inverted Data Output	
63	Rx8p	Receiver Non-Inverted Data Output	
64	GND	Ground	1

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65	NC	No Connect	
66	Reserved	For Future Used	
67	Vcc Tx1	+3.3 V Power supply transmitter	
68	Vcc2	+3.3 V Power Supply	
69	ePPS	Precision Time Protocol (PTP) reference clock input	
70	GND	Ground	1
71	Tx7p	Transmitter Non-Inverted Data Input	
72	Tx7n	Transmitter Inverted Data Input	
73	GND	Ground	1
74	Tx5p	Transmitter Non-Inverted Data Input	
75	Tx5n	Transmitter Inverted Data Input	
76	GND	Ground	1

9. Cable Length

Cable Length (Unit: m)	Tolerant (Unit: cm)
< 1.0	+5/-0
1.0~4.5	+15/-0
5.0~14.5	+30/-0
≥ 15.0	+2%/-0

References

1. QSFP-DD Hardware Specification for QSFP DOUBLE DENSITY 8X PLUGGABLE TRANSCEIVER Rev 5.0
2. Common Management Interface Specification (CMIS) Rev 5.1
3. IEEE 802.3bm, PMD Type 100GBASE-SR4 and CAUI-4.
4. IEEE 802.3bm 100GBASE-SR4 and CAUI-4

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10. 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

11. Modification History

Rev.	Comments	Date	Originator	Approval
01	Initial	2025.03.13	Hawk Rong	Mike Sun
02	Add Power dissipation < 3.5W per terminal with CDR OFF	2025.09.18	Hawk Rong	Mike Sun