

200G QSFP-DD Direct Attach Cable (DAC) Datasheet

SOQDD-200G-1*1-DAC-XXM



QSFP-DD is short for QSFP Double Density, Sinovo's 200G QSFP-DD supports 8×25Gb / s, supports Ethernet and InfiniBand .Our QSFP-DD cable assemblies are developed and produced to the highest international standards. Designed for applications in the data center, networking and telecommunications markets that require

a high speed, reliable cable assembly.

Features

- Compliant with QSFP-DD&IEEE802.3cd&SFF-8636
- Up to 28.3125Gbps data rate per channel
- Up to 3m transmission
- Operating temperature: 0~70℃
- Single 3.3V power supply
- RoHS compliant

Benefits

- Cost-effective copper solution
- Lowest total system power solution
- Lowest total system EMI solution
- Optimized design for Signal Integrity

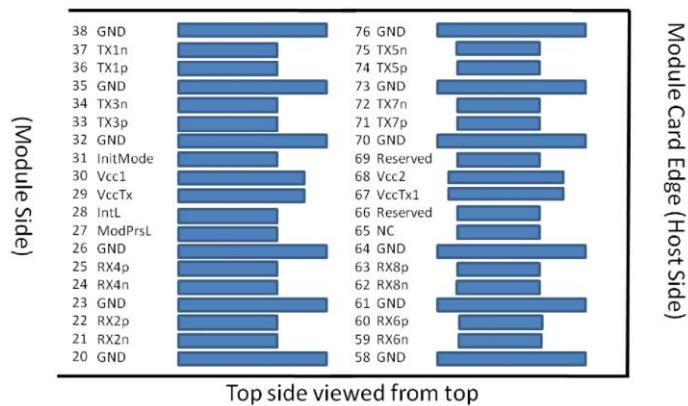
Applications

- 200G Ethernet&200G InfiniBand

Pin Function Definition

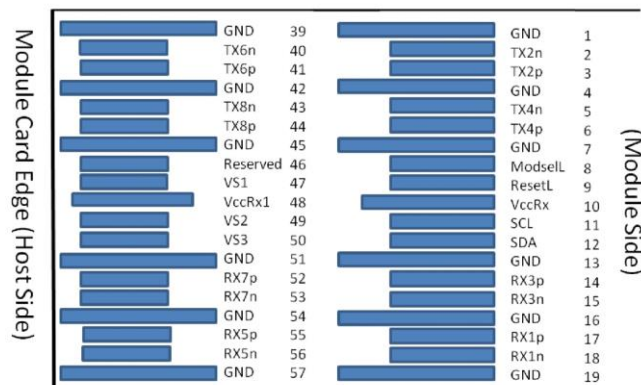
Pad	Logic	Symbol	Description
1		GND	Ground
2	CML-I	Tx2n	Transmitter Inverted Data Input
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input
4		GND	Ground
5	CML-I	Tx4n	Transmitter Inverted Data Input
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input
7		GND	Ground
8	LVTTL-I	ModSelL	Module Select
9	LVTTL-I	ResetL	Module Reset
10		VccRx	+3.3V Power Supply Receiver
11	LVCMS-I/O	SCL	2-wire serial interface clock
12	LVCMS-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	+3.3V Power supply transmitter
30		Vcc1	+3.3V Power supply
31	LVTTL-I	InitMode	Initialization mode; In legacy QSFP applications, the InitMode pad is called LPMODE
32		GND	Ground
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input
34	CML-I	Tx3n	Transmitter Inverted Data Input
35		GND	Ground
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input
37	CML-I	Tx1n	Transmitter Inverted Data Input
38		GND	Ground
39		GND	Ground
40	CML-I	Tx6n	Transmitter Inverted Data Input
41	CML-I	Tx6p	Transmitter Non-Inverted Data Input
42		GND	Ground
43	CML-I	Tx8n	Transmitter Inverted Data Input
44	CML-I	Tx8p	Transmitter Non-Inverted Data Input
45		GND	Ground
46		Reserved	For future use
47		VS1	Module Vendor Specific 1
48		VccRx1	3.3V Power Supply
49		VS2	Module Vendor Specific 2
50		VS3	Module Vendor Specific 3
51		GND	Ground
52	CML-O	Rx7p	Receiver Non-Inverted Data Output
53	CML-O	Rx7n	Receiver Inverted Data Output
54		GND	Ground
55	CML-O	Rx5p	Receiver Non-Inverted Data Output
56	CML-O	Rx5n	Receiver Inverted Data Output
57		GND	Ground

58		GND	Ground
59	CML-O	Rx6n	Receiver Inverted Data Output
60	CML-O	Rx6p	Receiver Non-Inverted Data Output
61		GND	Ground
62	CML-O	Rx8n	Receiver Inverted Data Output
63	CML-O	Rx8p	Receiver Non-Inverted Data Output
64		GND	Ground
65		NC	No Connect
66		Reserved	For future use
67		VccTx1	3.3V Power Supply
68		Vcc2	3.3V Power Supply
69		Reserved	For Future Use
70		GND	Ground
71	CML-I	Tx7p	Transmitter Non-Inverted Data Input
72	CML-I	Tx7n	Transmitter Inverted Data Input
73		GND	Ground
74	CML-I	Tx5p	Transmitter Non-Inverted Data Input
75	CML-I	Tx5n	Transmitter Inverted Data Input
76		GND	Ground



Legacy QSFP28
Pads

Additional
QSFP-DD Pads



Additional
QSFP-DD Pads

Legacy QSFP28
Pads

General Product Characteristics

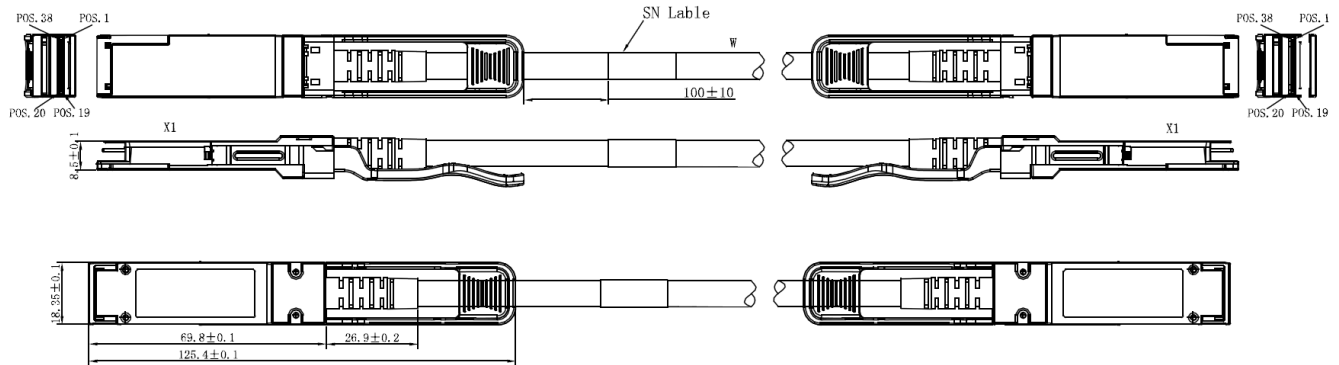
QSFP+ DAC Specifications	
Number of Lanes	Tx & Rx
Channel Data Rate	28.3125 Gbps
Operating Temperature	0 to + 70°C
Storage Temperature	-40 to + 85°C
Supply Voltage	3.3 V nominal
Electrical Interface	76 pins edge connector
Management Interface	Serial, I ² C

High Speed Characteristics

ITEM		REQUIREMENT	TEST CONDITION
Differential Impedance	Cable Absolute Impedance	100 $\pm$ 10V	Rise time of 30ps(20%-80%)
	Cable Assenbly Impedance	100 $\pm$ 15V	Rise time of 30ps(20%-80%)
Maximum Insertion LOSS		22.48dB@12.8906GHZ	0.05GHz-19GHz
Minimum Insertion LOSS		$\geq 0.7*\sqrt{f} + 0.3*f + 0.01*f^2$ dB	0.05GHz-19GHz
Insertion Loss Deviation(ILD)		$-0.7-0.176*f$ dB $\leq$ ILD $\leq 0.7+0.176*f$ dB	0.05GHz-13GHz
Return LOSS		$\geq 16.5-2*\sqrt{f}$ dB	0.05GHz-4.1GHz
		$\geq 10.66-14*\log_{10}(f/5.5)$ dB	4.1GHz-19GHz
Differential to common mode return loss		$\geq 22-(20/25.78)*f$ dB	0.01GHz-12.89GHz
		$\geq 15-(6/25.78)*f$ dB	12.89GHz-19GHz
Differential to common mode conversion Loss-Insertion Loss		≥ 10 dB	0.01GHz-12.89GHz
		$\geq 27-(29/22)*f$ dB	12.89GHz-15.7GHz
		≥ 6.3 dB	15.7GHz-19GHz
common mode to common mode return loss		≥ 2 dB	0.2 GHz-19GHz
COM		≥ 3 dB	0.05GHz-25.78125GHz
MDNEXT		≤ -35 dB	0.05GHz-13GHz
MDFEXT		≤ -35 dB	0.05GHz-13GHz

Mechanical Specifications

The connector is compatible with the QSFP-DD specification.



Length (m)	Cable AWG
0.5 +/-0.03	30
1 +/-0.03	30
2 +/-0.05	28
2.5 +/-0.05	28
3 +/-0.05	26

Regulatory Compliance

Feature	Test Method	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883C Method 3015.7	Class 1(>2000 Volts)
Electromagnetic Interference(EMI)	FCC Class B	Compliant with Standards
	CENELEC EN55022 Class B	
	CISPR22 ITE Class B	
RF Immunity(RFI)	IEC61000-4-3	Typically Show no Measurable Effect from a 10V/m Field Swept from 80 to 1000MHz
RoHS Compliance	RoHS Directive 2011/6/5/EU and it's Amendment Directives	RoHS 6/6 compliant

Ordering information

Part Number	Product Description
SOQDD-200G- 1*1-DAC-XXM	200G QSFP-DD Direct Attach Cable (DAC)
Further details are available from any Sinovo sales representative.	

Shenzhen SINOVO Telecom Co., Ltd