

100G QSFP28 Active Optical Cables specification

1 Description

100G QSFP28 active optical cable is a high-performance, low-power, long-distance interconnection solution that supports 100G.

100G QSFP is a combination of 4 full-duplex channels, each of which can transmit data at a rate of up to 25.78125GB/s, providing an aggregation rate of 100GB/s.

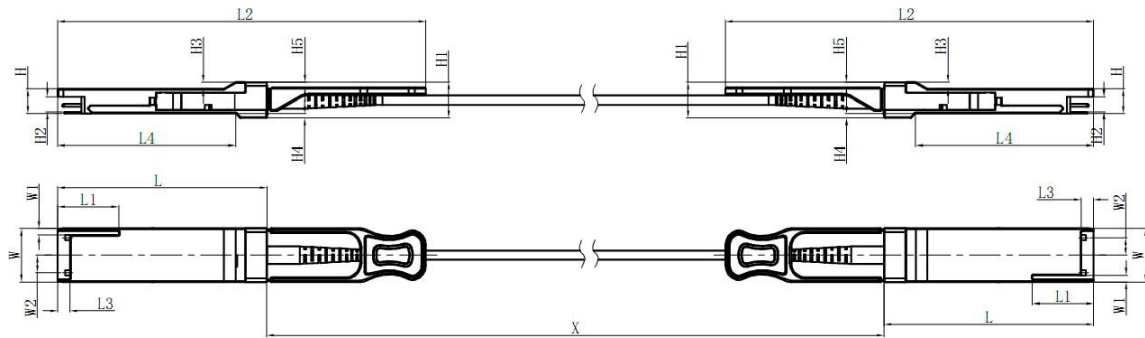
2 Features

- Support 100GBASE-SR4/EDR application
- Compliant to QSFP28 Electrical MSA SFF-8636
- Rate of up to 25.78125Gbps per channel
- +3.3V single power supply
- Low power consumption
- Operating case temp Commercial: 0° to +70 °
- RoHS 6 compliant

3 Applications :

- 100GBASE-SR4 at 25.78125Gbps per lane
- InfiniBand QDR, EDR
- Servers, switches, storage and host card adap

4 Outline drawing



QSFP28	L	L1	L2	L3	L4	W	W1	W2	H	H1	H2	H3	H4	H5	H6
Max	72.2	-	128	4.35	61.4	18.45	-	6.2	8.6	12.4	5.35	2.5	1.6	2.0	-
Type	72.0	-	-	4.20	61.2	18.35	-	-	8.5	12.2	5.2	2.3	1.5	1.8	6.55
Min	68.8	16.5	124	4.05	61.0	18.25	2.2	5.8	8.4	12.0	5.05	2.1	1.3	1.6	-

5 Electrical Performance:

5.1 Absolute maximum rating

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

5.2 Recommended operating conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T _c	0	-	+70	°C	
Power Supply Voltage	V _{cc}	3.14	3.3	3.47	V	
Power Dissipation	P _d	-	-	2.5	W	1
Bit Rate	BR	10.312 5	25.7812 5	-	Gbps	

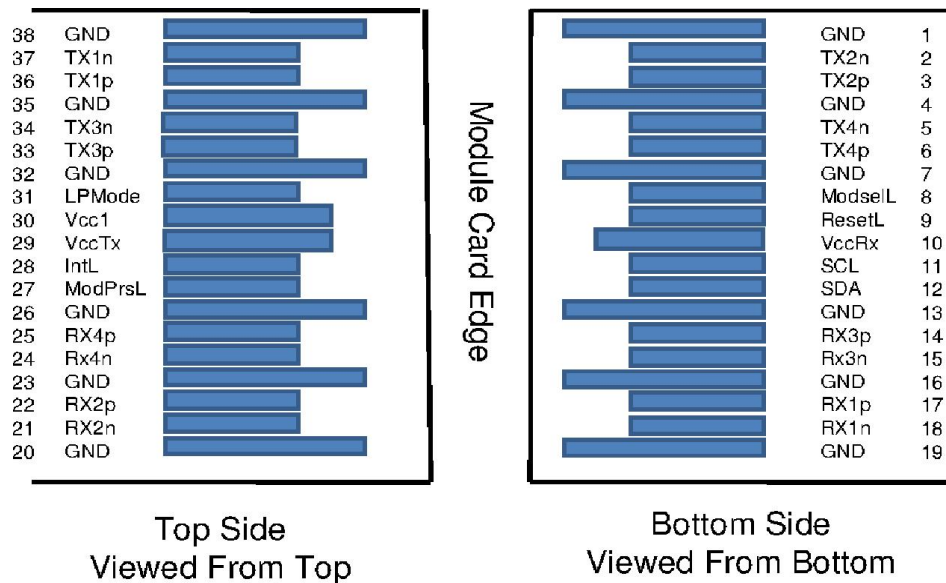
5.3 Electrical characteristics

Parameter		Symbol	Min.	Typ.	Max.	Units	Notes
ModSelL	Module Select	V _{OL}	0	-	0.8	V	
	Module Unselect	V _{OH}	2.5	-	V _{CC}	V	
LPMode	Low Power Mode	V _{IL}	0	-	0.8	V	
	Normal Operation	V _{IH}	2.5	-	V _{CC} +0.3	V	
ResetL	Reset	V _{IL}	0	-	0.8	V	
	Normal Operation	V _{IH}	2.5	-	V _{CC} +0.3	V	
ModPrsL	Normal Operation	V _{OL}	0	-	0.4	V	
IntL	Interrupt	V _{OL}	0	-	0.4	V	
	Normal Operation	V _{OH}	2.4	-	V _{CC}	V	
Electrical transmitter Characteristics							
Differential Data Input Swing		V _{out}	200	-	1600	mV	
Output Differential Impedance		Z _D	90	100	110	Ω	
Electrical Receiver Characteristics							
Differential Data Output Swing		V _{in,P-P}	200	-	800	mV _{PP}	
Bit Error Rate		BER			E-12		1
Input Differential Impedance		Z _{IN}	90	100	110	Ω	

Note: 1 prbs2^31-1@25.78125Gbps

6 Connector Pin

6.1 Pin diagram



6.2 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	+3.3V 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	ModPrs L	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+3.3V Power supply transmitter	
30	Vcc1	+3.3V Power supply	
31	LPMMode	Low Power Mode	
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