

## OPL-AOC-100G Series

### 100Gbps QSFP28 Active High Speed Cable



#### Description

QSFP28 Active Optical Cable is equipped with a photoelectric conversion device, and the transmission distance can reach 150 meters. The product has four channels, each with a transmission rate of up to 25.3125Gb/s, and an aggregate rate of up to 100Gb/s.

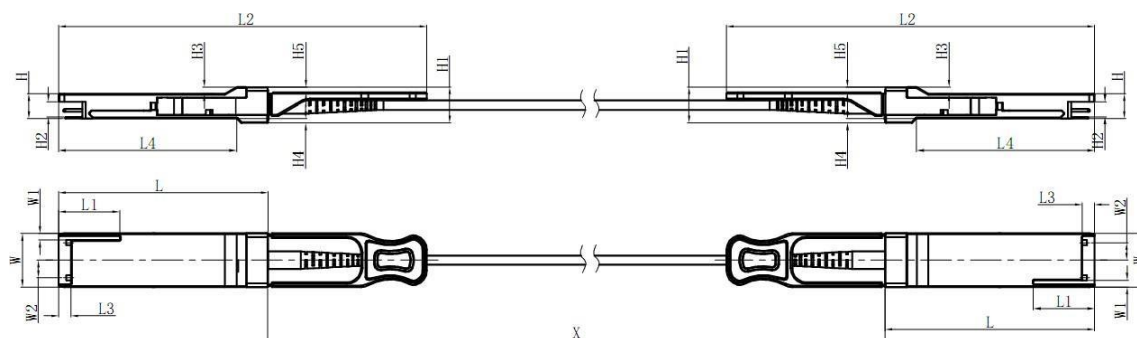
#### Features

- Support 100GBASE-SR4/EDR application
- Compliant to QSFP28 Electrical MSA SFF-8636
- Multi rate of up to 25.78125Gbps
- +3.3V single power supply
- Low power consumption
- UL certification cables (optional)
- Operating case temp  
Commercial: 0°C to +70 °C
- RoHS 6/6 compliant

#### Applications

- 100GBASE-SR4 at 25.78125Gbps per lane
- InfiniBand QDR, EDR
- Other optical links

## 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	-

## Electrical Performance

### 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

### 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	10.3125	25.78125	-	Gbps	

### 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 <sub>IL</sub>	0	-	0.8	V	
	Normal Operation	V <sub>IH</sub>	2.5	-	V <sub>CC</sub> +0.3	V	
ResetL	Reset	V <sub>IL</sub>	0	-	0.8	V	
	Normal Operation	V <sub>IH</sub>	2.5	-	V <sub>CC</sub> +0.3	V	
ModPrsL	Normal Operation	V <sub>OL</sub>	0	-	0.4	V	
IntL	Interrupt	V <sub>OL</sub>	0	-	0.4	V	
	Normal Operation	V <sub>oH</sub>	2.4	-	V <sub>CC</sub>	V	

**Electrical transmitter Characteristics**

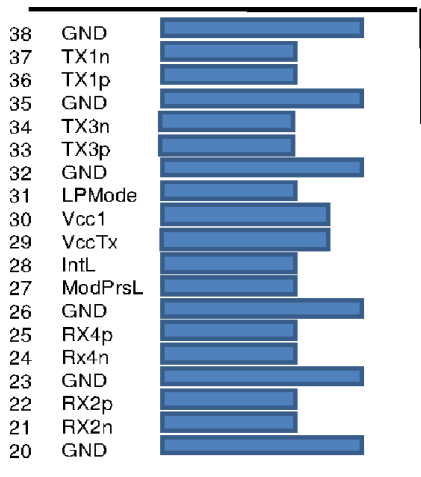
Differential Data Input Swing	V <sub>out</sub>	200	-	1600	mV	
Output Differential Impedance	Z <sub>D</sub>	90	100	110	Ω	

**Electrical Receiver Characteristics**

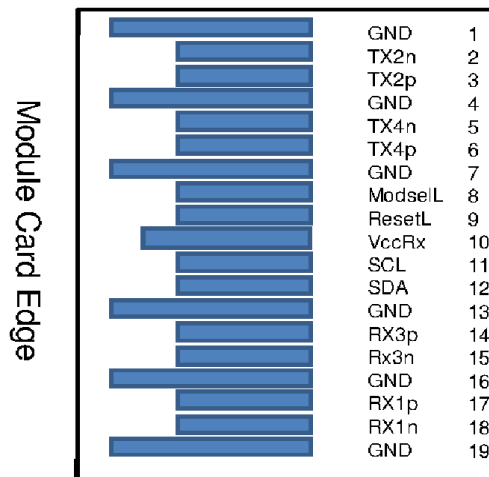
Differential Data Output Swing	V <sub>in,P-P</sub>	200	-	800	mV <sub>PP</sub>	
Bit Error Rate	BER			E-12		1
Input Differential Impedance	Z <sub>IN</sub>	90	100	110	Ω	

Remark: 1 prbs2^31-1@25.78125Gbps

**Connector Pin out**



Top Side  
Viewed From Top



Bottom Side  
Viewed From Bottom

## 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	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+3.3V Power supply transmitter	
30	Vcc1	+3.3V Power supply	
31	LPMode	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

Remark: 1 Circuit ground and chassis ground are internally separated