100G QSFP28 to QSFP28 AOC

This product is designed for fiber-communication based on optical-electrical technology. The product is an integrated module containing a micro-optic component and semiconductor material. The module could implement optical-electrical conversion and electrical-optical conversion function. It could be used at key locations in optical networks like 100GBASE Ethernet .

DESCRIPTION

Features

- Up to 25.78Gb/s data rate per channel
- 4 duplex channels transmitters and receivers
- Single +3.3V power supply
- Low power consumption
- Hot-pluggable
- Operating temperature range: 0℃ ~ +70℃
- Compliant with RoHS6

Applications

- 100GBASE-SR4 Ethernet

Standards

- Compliant with SFF-8636 (V2.6)
- Compliant with IEEE Std 802.3bm 2015
- Compliant with SFF-8665 (V1.9),SFF-8661(V2.3)and SFF-8679(V1.7)

SPECIFICATION

Recommended Operating Conditions

Parameter	Units	MIN.	TYP.	MAX.	Notes
Recommended Operating Conditions					
Operating Case Temperature	°C	0		+70	
Power Supply Voltage	V	3.135	3.3	3.465	
Data Rate, each Lane	Gbps		25.78125		
Control Input Voltage High	V	2		Vcc	
Control Input Voltage Low	V	0		0.8	
Link Distance with OM3	M			50	

Electrical Specification

Parameter	Units	MIN.	TYP.	MAX.	Notes
Power Consumption (100G QSFP28)	W			2.0	per end
Supply Current	A			0.6	per end
Transceiver Power-on Initialization Time	ms			2000	

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Electrical Specification – Transmitter (EACH LANE)

Parameter	Units	MIN.	TYP.	MAX.	Notes
Single-ended Input Voltage Tolerance	V	-0.3		4	Referred to signal common
AC Common Mode Input Voltage Tolerance	mV	15			RMS
Differential Input Voltage Swing	mVpp	160		1200	
Differential Input Impedance	Ω	80	100	120	

Electrical Specification – Receiver (each Lane)

Parameter	Units	MIN.	TYP.	MAX.	Notes
Single-ended Output Voltage	V			0.2	
AC Common Mode Output Voltage	mV			7.5	RMS
Differential Output Voltage Swing	mVpp	320		800	
Differential Output Impedance	Ω	80	100	120	

Note:

1. Power‐on Initialization Time is the time from when the power supply voltages reach and remain above the minimum recommended operating supply voltages to the time when the module is fully functional.

2. The single ended input voltage tolerance is the allowable range of the instantaneous input signals.

ABSOLUTE MAXIMUM RATINGS

	Parameter	Units	MIN.	MAX.	Notes
1	Storage Ambient Temperature Range	°C	-40	+85	
2	Powered case Temperature Range	°C	0	+70	

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3	Supply Voltage Range @ 3.3V	V	-0.5	3.6	
4	Relative Humidity (non-condensation)	%	0	85	

QSFP28 END Electric Ports Definition

NO	PIN	DEFINITION	DESCRIPTION	NOTE
1	1	GND	Ground	1
2	2	Tx2n	Transmitter Inverted Data Input	
3	3	Tx2p	Transmitter Non-Inverted Data output	
4	4	GND	Ground	1
5	5	Tx4n	Transmitter Inverted Data Input	
6	6	Tx4p	Transmitter Non-Inverted Data output	
7	7	GND	Ground	1
8	8	ModSelL	Module Select	
9	9	ResetL	Module Select	
10	10	VccRx	+3.3V Power Supply Receiver	2
11	11	SCL	2-Wire Serial Interface Clock	
12	12	SDA	2-Wire Serial Interface Data	
13	13	GND	Ground	1
14	14	Rx3p	Receiver Non-Inverted Data Output	
15	15	Rx3n	Receiver Inverted Data Output	
16	16	GND	Ground	1
17	17	Rx1p	Receiver Non-Inverted Data Output	
18	18	Rx1n	Receiver Inverted Data Output	
19	19	GND	Ground	1
20	20	GND	Ground	1
21	21	Rx2n	Receiver Inverted Data Output	
22	22	Rx2p	Receiver Non-Inverted Data Output	
23	23	GND	Ground	1
24	24	Rx4n	Receiver Inverted Data Output	
25	25	Rx4p	Receiver Non-Inverted Data Output	
26	26	GND	Ground	1
27	27	ModPrsL	Module Present	
28	28	IntL	Interrupt	
29	29	VccTx	+3.3 V Power Supply transmitter	2

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NO	PIN	DEFINITION	DESCRIPTION	NOTE
30	30	Vcc1	+3.3 V Power Supply	2
31	31	LPMode	Low Power Mode	
32	32	GND	Ground	1
33	33	Tx3n	Transmitter Inverted Data Input	
34	34	Tx3p	Transmitter Non-Inverted Data output	
35	35	GND	Ground	1
36	36	Tx1n	Transmitter Inverted Data Input	
37	37	Tx1p	Transmitter Non-Inverted Data output	
38	38	GND	Ground	1

NOTE:

1.   GND is the symbol for signal and supply (power) common for the QSFP28 module. All are common within the module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal common ground plane.

2.   VccRx, Vcc1 and VccTx are the receiving and transmission power suppliers and shall be applied concurrently. Recommended host board power supply filtering is shown in Figure 3 below. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the module in any combination. The connector pins are each rated for a maximum current of 1000mA.

38	GND
37	TX1n
36	TX1p
35	GND
34	TX3n
33	TX3p
32	GND
31	LPMode
30	Vcc1
29	VccTx
28	IntL
27	ModPrsL
26	GND
25	RX4p
24	RX4n
23	GND
22	RX2p
21	RX2n
20	GND

Card Edge

GND	1
TX2n	2
TX2p	3
GND	4
TX4n	5
TX4p	6
GND	7
ModSelL	8
ResetL	9
VccRx	10
SCL	11
SDA	12
GND	13
RX3p	14
RX3n	15
GND	16
RX1p	17
RX1n	18
GND	19

Top Side
Viewed from Top

Bottom Side
Viewed from Bottom
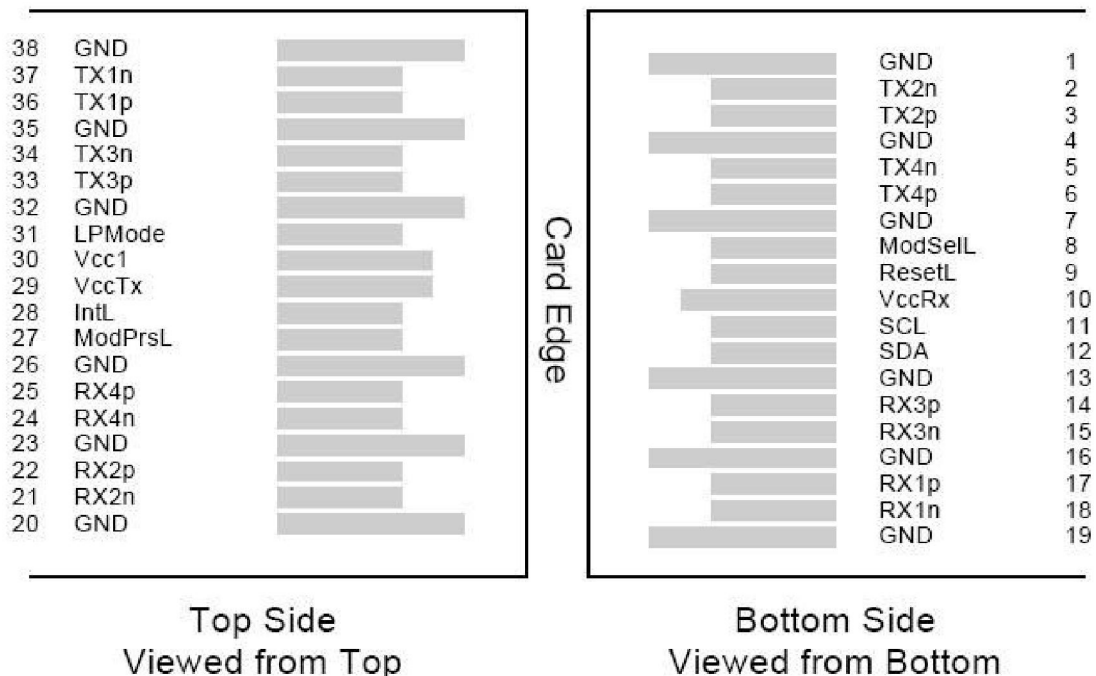
Required Host Board Components

Any voltage drop across a filter network on the host is counted against the host DC set

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point accuracy specification. Inductors with DC Resistance of less than 0.1 Ohm should be used in order to maintain the required voltage at the Host Edge Card Connector. Figure is the suggested transceiver/host interface.

Ordering Information

Part No	Product Description	Data Rate	Temp (℃)	(m)
RTXM420-0XX	QSFP28 to QSFP28	4*25G	0~70	xx m(Note)

Note:01 means 0.5m, 10 means 5m, etc.