

**Multi-Mode 100GBASE-SR4 Active Optical Cable  
AOC QSFP28 Transceiver  
RoHS6 Compliant**

**Features**

- ✓ Compliant to the IEEE 802.3bm(100GBASE-SR4)
- ✓ Compliant to the SFF-8665 Specification
- ✓ Active Optical Cables Length up to 70m
- ✓ VCSEL array transmitter and PIN array receiver
- ✓ Low Power dissipation <2.5W
- ✓ Operating Case Temperature: 0° C to 70° C

**Applications**

- ✓ 00G\_BASE\_SR4 Ethernet interconnects



**Absolute Maximum Ratings**

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	Ts	-40	+85	°C
Supply Voltage	Vcc	-0.5	3.6	V
Operating Relative Humidity	RH	5	85	%

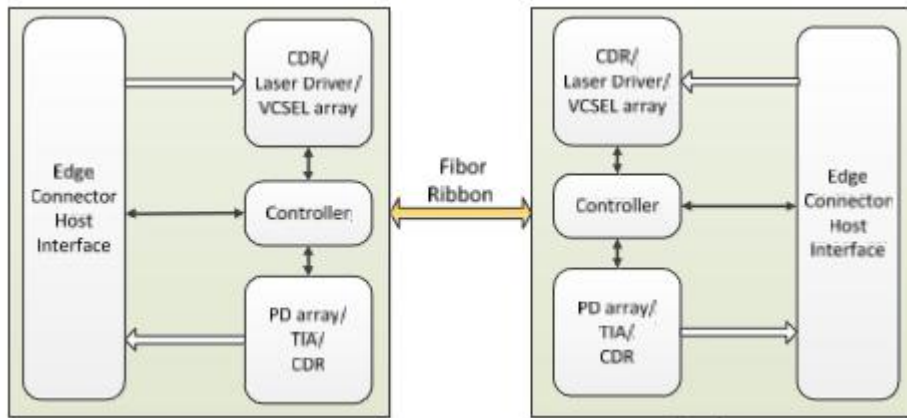
Exceeding any one of these values may destroy the device immediately

**Recommended Operating Conditions**

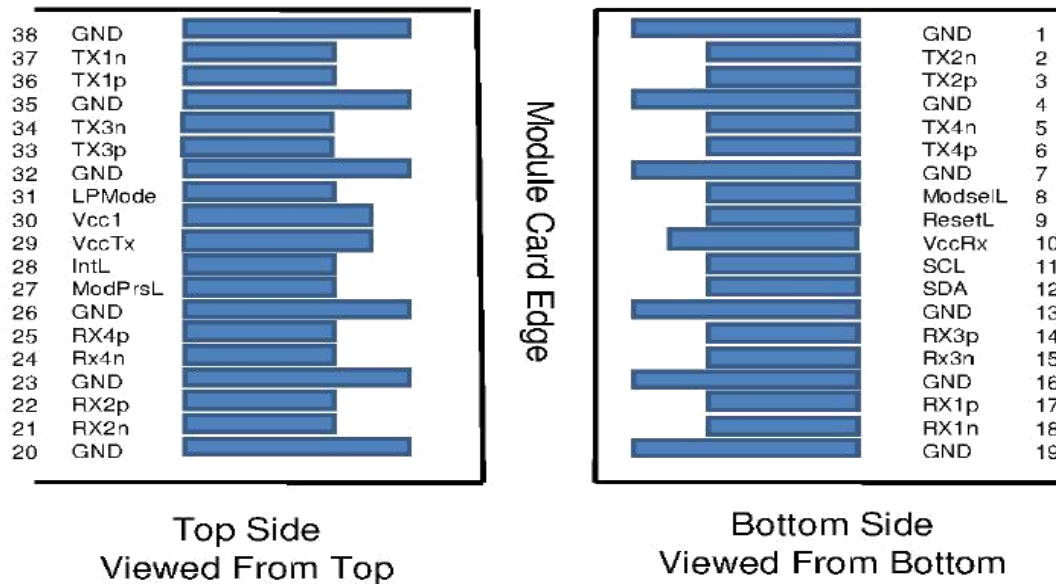
Parameter	Symbol		Min.	Typical	Max.	Unit
Operating Case Temperature	T <sub>c</sub>	YQ21H-AO85XXM	0		+70	°C
Power Supply Voltage	<u>Vcc</u>		3.15	3.3	3.45	V
Aggregate Bit Rate	BR <sub>AVE</sub>		40*(note1)	103.125		<u>Gbps</u>
Lane Bit Rate	BR <sub>LANE</sub>		10*(note1)	25.78		<u>Gbps</u>
Input Amplitude (Differential)	<u>Vin</u>		150		1050	<u>mV</u>
Output Amplitude (Differential)	<u>Vout</u>		200		1100	<u>mV</u>

Note1:CDR by pass

## Functional Description of Transceiver



## QSFP28 Transceiver Electrical Pad Layout



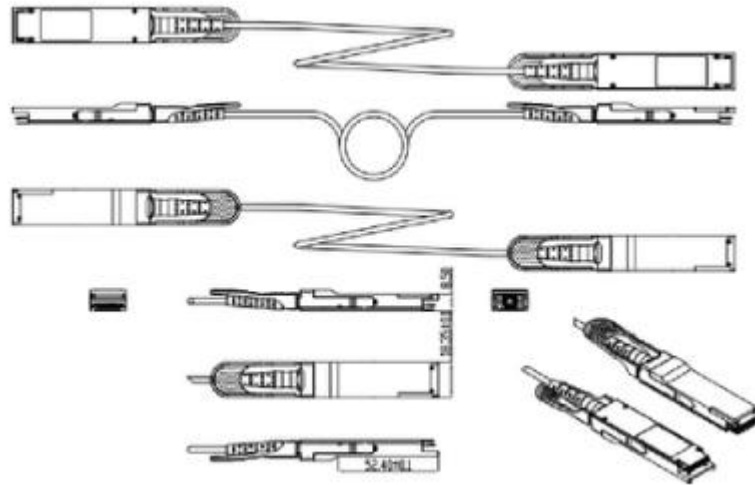
## Pin Arrangement and Definition

Pin	Logic	Symbol	Description	Plug Sequence	Notes
1		GND	Ground	1	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	3	
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input	3	
4		GND	Ground	1	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	3	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input	3	
7		GND	Ground	1	1
8	LVTTL-I	ModSelL	Module Select	3	
9	LVTTL-I	ResetL	Module Reset	3	

10		VccRx	+3.3V Power Supply Receiver	2	2
11	LVC MOS- I/O	SCL	2-wire serial interface clock	3	
12	LVC MOS- I/O	SDA	2-wire serial interface data	3	
13		GND	Ground	1	1
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	3	
15	CML-O	Rx3n	Receiver Inverted Data Output	3	
16		GND	Ground	1	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	3	
18	CML-O	Rx1n	Receiver Inverted Data Output	3	
19		GND	Ground	1	1
20		GND	Ground	1	1
21	CML-O	Rx2n	Receiver Inverted Data Output	3	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	3	
23		GND	Ground	1	1
24	CML-O	Rx4n	Receiver Inverted Data Output	3	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	3	
26		GND	Ground	1	1
27	LVTTL-O	ModPrsL	Module Present	3	
28	LVTTL-O	IntL	Interrupt	3	
29		VccTx	+3.3V Power supply transmitter	2	2
30		Vcc1	+3.3V Power supply	2	2
31	LVTTL-I	LPMode	Low Power Mode	3	
32		GND	Ground	1	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	3	
34	CML-I	Tx3n	Transmitter Inverted Data Input	3	
35		GND	Ground	1	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	3	
37	CML-I	Tx1n	Transmitter Inverted Data Input	3	
38		GND	Ground	1	1

1. GND is the symbol for signal and supply (power) common for the QSFP28 module. All are common within the QSFP28 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. Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently. Requirements defined for the host side of the Host Edge Card Connector are listed in Table 6. Recommended host board power supply filtering is shown in Figures 3 and 4. Vcc Rx Vcc1 and Vcc Tx may be internally connected within the QSFP28 Module in any combination. The connector pins are each rated for a maximum current of 500mA.

## Mechanical Dimensions



## Ordering information

Part Number	Data Rate	AOC	Length <sup>*(note2)</sup>	Temp	DDMI
YQ21H-AO85XXM <sup>*(note1)</sup>	40Gbps		1-70m	0 to +70°C	Yes

### Notes

1: Standard version.

2: Length measured OM3 fiber. XX denotes the AOC length with unit meter. For example, 01 denotes 1m, 02 denote 2m ... 70 denote 70m .

## Important Notice

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## Contact Information

SHENZHEN YOUTHTON TECHNOLOGY CO., LTD.

ADD: F4, JINMA BUILDING, JINMA INDUSTRIAL PARK, SHIHUAN ROAD NO.4, SHIYAN STREET, BAOAN DISTRICT, SHENZHEN, CHINA

EMAIL: info@youthton.com