

# Technical Datasheet

## AOC-QSFP56-200G-50M-AT

Universally Coded MSA Compliant 200Gb/s, QSFP56,  
Active Optical Cable, Copper, Passive, 50M

### FEATURES

- Hot-pluggable QSFP56 footprint
- Support 212.5Gbps aggregate bit rate
- 4x56Gpbs PAM4 electrical interface
- Available in lengths up to 100m
- Power Dissipation <5.5W per cable end
- Single +3.3V power supply
- Operating Case temperature range 0°C to 70°C
- RoHS-6 compliant
- Compliant with SFF-8679

### APPLICATIONS

- 200GBASE-SR4 Ethernet
- Data Center
- Other Optical Links

### DESCRIPTION

ATGBICS QSFP56 active optical cables are designed for use in 200G-Ethernet links. They are compliant with SFF-8679, and the mechanical QSFP56 plug is compatible with SFF-8661

### Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Power Supply Voltage	VCC	0		3.6	V	
Storage Temperature	Ts	-40		+85	°C	
Relative Humidity	RH	5		85	%	Non-condensing
Case Operating Temperature	Tc	0		+70	°C	

# Technical Datasheet

## Electrical Characteristics

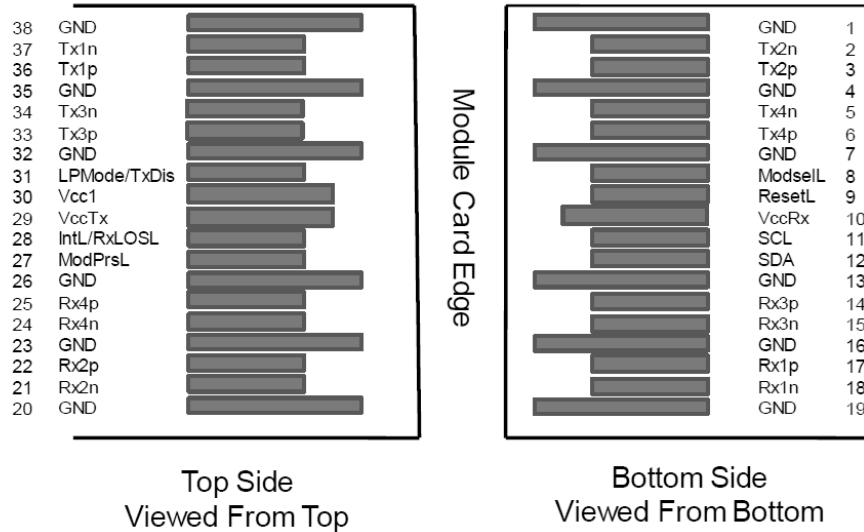
Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Power Supply Voltage	VCC	3.135	3.3	3.465	V	
Power Dissipation	PD			5.5	W	
Power Supply Current	Icc			1.75	A	
Aggregate Data Rate			212.5		Gbps	PAM4
Signaling rate per lane			56.125		Gbps	PAM4
Clock Rate-I2C				400	kHz	
Transmitter						
Input Differential impedance	ZIN		100		ohm	
Differential data input swing	VIN	180		900	mV	
Single-ended voltage tolerance		-0.3		3.3	V	
Receiver						
Output Differential impedance	Zout		100		ohm	
Differential data Output Swing	Vout	300		850	mV	

## General Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Aggregate Data Rate			212.5		Gbps	
Signaling rate per lane			56.125		Gbps	
Bit Error Ratio (pre-FEC)	BER			2.4E-4		PRBS31
Maximum Supported Distances						
Fiber Type	Bandwidth (850nm)					
50um	2000MHz*km			70	m	OM3
50um	4700MHz*km			100	m	OM4

# Technical Datasheet

## Pin Assignment:



## Pin Descriptions

PIN	Symbol	Name / Description	Note
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	2
9	ResetL	Module Reset	
10	Vcc Rx	3.3V Power Supply Receiver	
11	SCL	2-wire serial interface clock	3
12	SDA	2-wire serial interface data	3
13	GND	Ground	1
14	Rx3p	Receiver Non-Inverted Data Output	

# Technical Datasheet

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	3
28	IntL	Interrupt	3
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

Note1: Module ground pins GND are isolated from the module case.

Note2: ModSelL is an input signal. When held low by the host, the module responds to two-wire serial communication commands. The ModSelL signal allows the use of multiple modules on a single two-wire interface. When ModSelL is high, the module shall not respond to or acknowledge any two-wire interface communication from the host.

# Technical Datasheet

Note3: Shall be pulled up with 4.7K-10Kohms to a voltage between 3.15V and 3.45V on the host board.

## Mechanical Dimensions

