

40GBASE-SR4 QSFP+ Active Optical Cables

AOC-Q1Q1-xxx

Features

- 4 channels 850nm VCSEL and PIN
- Electrical interface compliant to SFF-8436
- Support 40GE data rate
- Hot Pluggable QSFP form factor
- Built-in digital diagnostic functions
- Operating case temperature 0°C to +70°C
- Power dissipation < 1.5W
- 3.3V power supply voltage
- Round OFNR-rated cable
- UL certification cables (optional)



Module Block Diagram

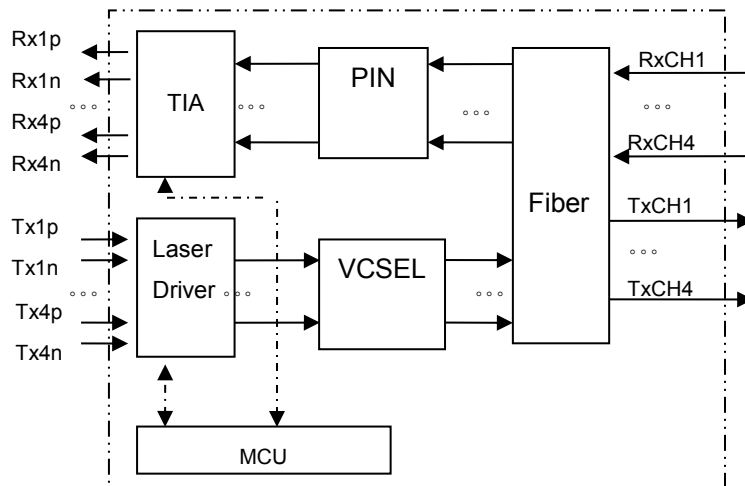


Figure1. Module Block Diagram

Absolute Maximum Ratings

Parameter	Symbol	Min	Type	Max	Unit
Storage Temperature	T _{STG}	-20		85	°C
Case Operating Temperature	T _{Case}	0		70	°C
Supply Voltage	V _{CC}	-0.5	3.3	3.6	V
Input Voltage	V _{ilvttl}	-0.5		V _{CC} +0.5	V

Recommended Operating Conditions

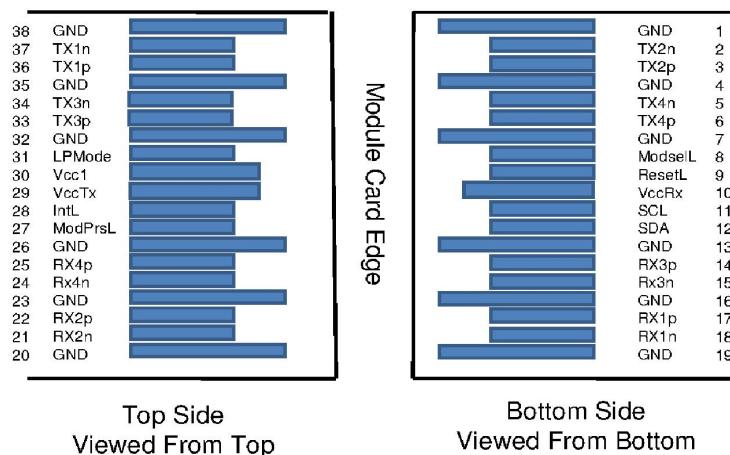
Parameter	Symbol	Min	Type	Max	Unit
Case Operating Temperature	T _{Case}	0		70	°C
Supply Voltage	V _{CC}	3.15	3.3	3.45	V
Differential data input voltage per lane	V _{din}	200		1200	mV
Signaling rate per lane	Dr	2.5	10.3125		Gbit/s
Differential Termination Resistance				10%	

Electrical Characteristics

Parameter	Symbol	Min	Type	Max	Unit
Bit Error Ratio	BER			10 ⁻¹²	
Differential data output voltage per lane	V _{OUTpp}	320	450		mV
Differential Termination Resistance	Z _{out}	80	100	120	Ω
Module total power	P			1.5	W
Transmit turn-on time		2000			ms

Note: Tested with a PRBS31 test pattern.

Pin Descriptions



Pin Definition

Parameter	Symbol	Name/Description
1	GND	Ground
2	Tx2n	Transmitter Inverted Data Input
3	Tx2p	Transmitter Non-Inverted Data Input
4	GND	Ground
5	Tx4n	Transmitter Inverted Data Input
6	Tx4p	Transmitter Non-Inverted Data Input
7	GND	Ground
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
14	Rx3p	Receiver Non-Inverted Data Output
15	Rx3n	Receiver Inverted Data Output
16	GND	Ground
17	Rx1p	Receiver Non-Inverted Data Output
18	Rx1n	Receiver Inverted Data Output
19	GND	Ground
20	GND	Ground
21	Rx2n	Receiver Inverted Data Output
22	Rx2p	Receiver Non-Inverted Data Output
23	GND	Ground
24	Rx4n	Receiver Inverted Data Output
25	Rx4p	Receiver Non-Inverted Data Output
26	GND	Ground
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
33	Tx3p	Transmitter Non-Inverted Data Input
34	Tx3n	Transmitter Inverted Data Input
35	GND	Ground
36	Tx1p	Transmitter Non-Inverted Data Input

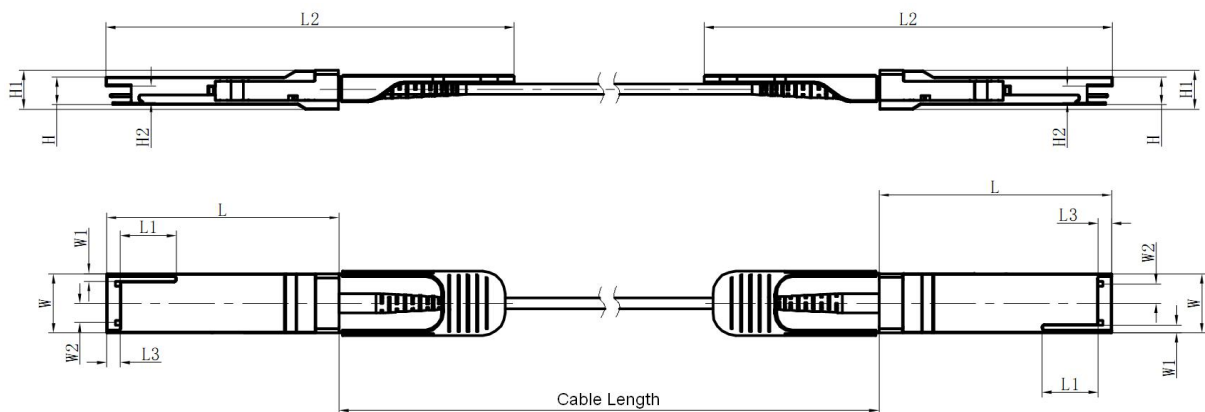
37	Tx1n	Transmitter Inverted Data Input
38	GND	Ground

Order Information

PN	Cable Information
AOC-Q1Q1-xxx	OM3 MMF with UL Certification

XXX	Cable (MMF) Length
001	001=1m
050	050=50m
100	100=100m

Mechanical Design Diagram



Unit: mm

	L	L1	L2	L3	W	W1	W2	H	H1	H2
MAX	72.2	—	122	4.35	18.45	—	6.2	8.6	12.0	5.35
Typical	72.0	—	—	4.20	18.35	—	—	8.5	11.8	5.2
MIN	68.8	16.5	118	4.05	18.25	2.2	5.8	8.4	11.6	5.05

Unit: mm

Cable Length Tolerant

Cable Length (Unit: m)	Tolerant (Unit: cm)
<1.0	+5/-0
1.0~4.5	+15/-0
5.0~14.5	+30/-0
≥15.0	+2%/-0

Revision History

Revision	Initiated	Approved	Content	Release Date
Ver1.0	QR.HUANG	NICKY.WEN	Released	May/2017

Further Information

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