
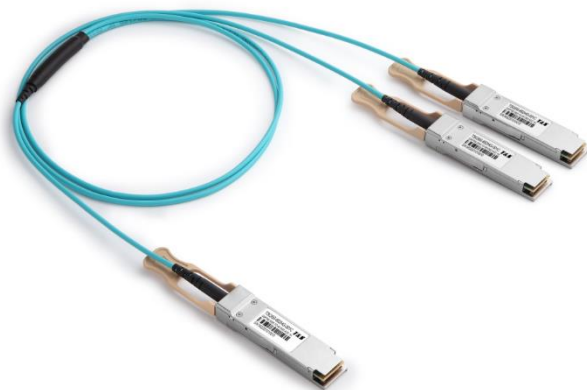


## 200G QSFP56 to 2×100G QSFP56 Active Optical Cable TSQSQ-852HG-xxxC

### Features

- SFF-8665 compliant QSFP56 form factor
- 200GbE to 2x100GbE data rate
- 4x 50Gb/s PAM4 modulation
- Supports 103.1Gb/s aggregate bit rates if required
- Maximum link length of 70m on OM3 MMF and 100m on OM4 & OM5 MMF
- Uncooled 4 channels 850nm VCSEL array (200G End)
- 4 channels PIN photo detector array (200G End)
- 200GBASE-SR4 and 100GBASE-SR2 compliant
- Single 3.3V power supply
- Low power dissipation < 5W (200G End)
- Built-in digital diagnostic functions
- Operating case temperature: 0°C~+70°C
- CMIS V4.0 compliant
- RoHS6 compliant (lead free) 



### Applications

- 200GBASE-SR4 Ethernet (PAM4)

### Description

The TSQSQ-852HG-XXXC MMF Active Optical Splitter Cable is used in 200 Gigabit Ethernet links over OM3/OM4/OM5 multimode fiber, which provides connectivity between system units with a 200GbE connector on one side and two separate 100GbE connectors on the other two sides. The cable connects data signals from each of the 4 MMF (Multi Mode Fiber) pairs on the single QSFP56 end to the dual pair of each of the QSFP56 multiport ends.

The TSQSQ-852HG-XXXC MMF Active Optical Splitter Cable is compliant with the QSFP-MSA and with 200GBASE-SR4 specification. Digital diagnostics functions are available via the I2C interface as specified by CMIS V4.0. The transceiver is RoHS 2.0 compliant and lead-free per Directive 2011/65/EU

## Absolute Maximum Ratings

These values represent the damage threshold of the module. Stress in excess of any of the individual Absolute Maximum Ratings can cause immediate catastrophic damage to the module even if all other parameters are within Recommended Operating Conditions.

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	VCC	-0.5	+3.6	V
Storage Temperature	Tc	-40	+85	°C
Relative Humidity <sup>1</sup>	RH	15	85	%

### Notes:

[1] Non-condensing.

## Recommended Operating Environment

Recommended Operating Environment specifies parameters for which the electrical and optical characteristics hold unless otherwise noted.

Parameter	Symbol	Min	Typical	Max	Unit
Power Supply Voltage	VCC	3.15	3.30	3.45	V
Supply current(200G End)	Icc	-	-	1449	mA
Operating Case Temperature	Tca	0	-	70	°C
Fiber Bend Radius	Rb	3	-	-	cm

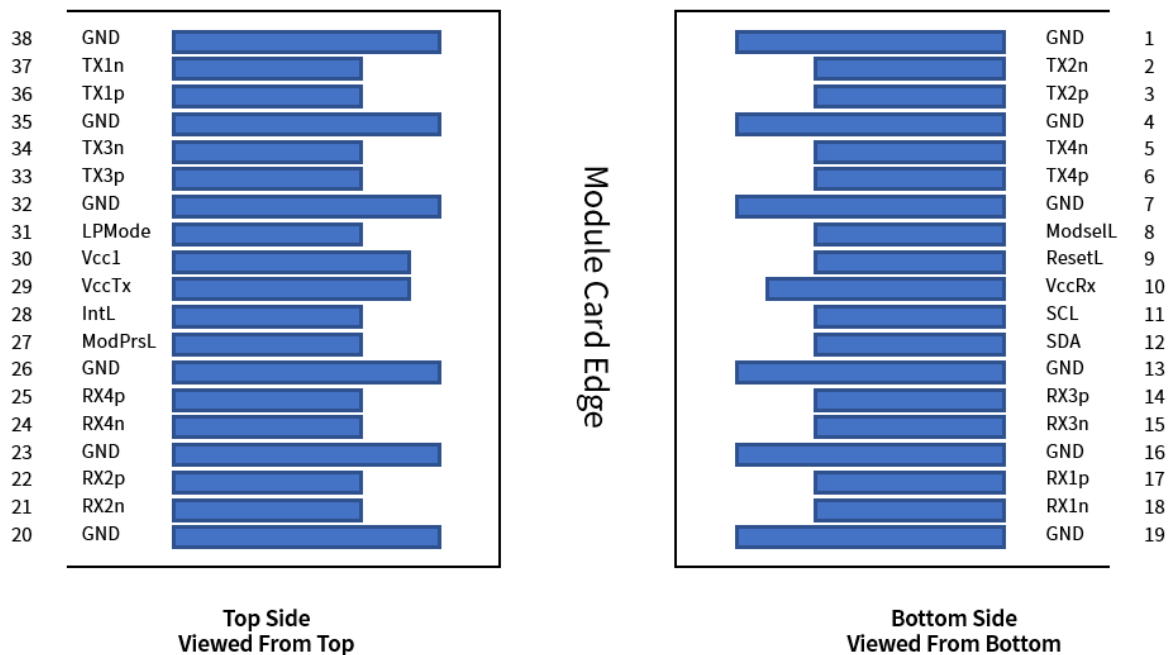
## Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max	Unit
Signaling rate per lane	-	26.5625 ± 100 ppm			Gbps
Differential Input Voltage Amplitude <sup>1</sup>	Vin	300	-	900	mV
Differential termination mismatch	-	-	-	10	%
Input Logic Level High	VIH	2.0	-	VCC	V
Input Logic Level Low	VIL	0	-	0.8	V
Output Logic Level High	VOH	VCC-0.5	-	VCC	V
Output Logic Level Low	VOL	0	-	0.4	V

### Notes:

[1] Differential input voltage amplitude is measured between TxnP and TxnN

## Qsfp56 Transceiver Electrical Pad Layout



## Pin Definition

Pin	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	+3.3 V 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

Information and specifications are subject to change without notice.  
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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	+3.3 V Power supply transmitter
30	VCC 1	+3.3 V 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

## Ordering Information

Part Number	Product Description
TSQSQ-852HG-XXXX	QSFP56 200G to 2xQSFP56 AOC 0°C ~ +70°C
XXX :001~070,1~70 Length in meters on OM3 MMF	
XXX :001~100,1~100 Length in meters on OM4/OM5 MMF	

## References

1. QSFP MSA Specification.
2. CMIS V4.0 Management Interface.
3. IEEE 802.3cd 200GBASE-SR4 specification.
4. OIF CEI-56G-VSR-PAM4

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