100G QSFP28 Active Optical Cables

TSQS-851HG-xxxC

Features

- Four-channel full-duplex active optical cable with QSFP28 plugs
- Compliant to the IEEE 802.3bm
- Compliant to the SFF-8665 Specification
- VCSEL Array Transmitter and PIN Array Receiver
- Low power dissipation: <2.5W per end
- Operating case temperature 0°C to 70°C
- RoHS compliant



Applications

- IEEE 802.3bm 100GBASE SR4 Ethernet
- Data centers/InfiniBand EDR systems

Description

The TSQS-851HG-XXXC is a Four-Channel, Pluggable, Parallel, Fiber-Optic QSFP28 AOC for 100 Gigabit Ethernet, Infiniband EDR Applications. This transceiver is a high performance module for short-range multi-lane data communication and interconnect applications. It integrates four data lanes in each direction with 100Gbps bandwidth.

This module is designed to operate over multimode fiber systems using a nominal wavelength of 850nm. The electrical interface uses a 38 contact edge type connector.

Absolute maximum ratings

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	VCC	-0.5	+3.6	V
Storage Temperature	Tc	-40	+85	°C
Relative Humidity	RH	0	85	%

8 Jinxiu Middle Road, Pingshan, Shenzhen, Guangdong, 518118, P. R. China
+86 755 32983688 |info@china-tscom.com | www.china-tscom.com

Recommended operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	VCC	3.15	3.30	3.45	V
Supply current per end	Icc	-	-	725	mA
Case Operating Temperature	Tca	0	-	70	°C
Data Rate Per Lane	DR	-	25.78125	-	Gbps
Fiber Bend Radius	Rb	3	-	-	cm

Notes:

1. Supply current is shared between VCCTX and VCCRX.

2. In-rush is defined as current level above steady state current requirements.

Transmitter Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Center wavelength	λc	840	850	860	nm
Differential Input Impedance	Z_{in}	90	100	110	Ohm
Differential Input Voltage	V_{in}	300	-	1100	mVp-p

Receiver Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Center wavelength	λc	840	850	860	nm
Differential Output Impedance	Z_{out}	90	100	110	Ohm
Differential Output Voltage	V_{out}	500	-	800	mVp-p

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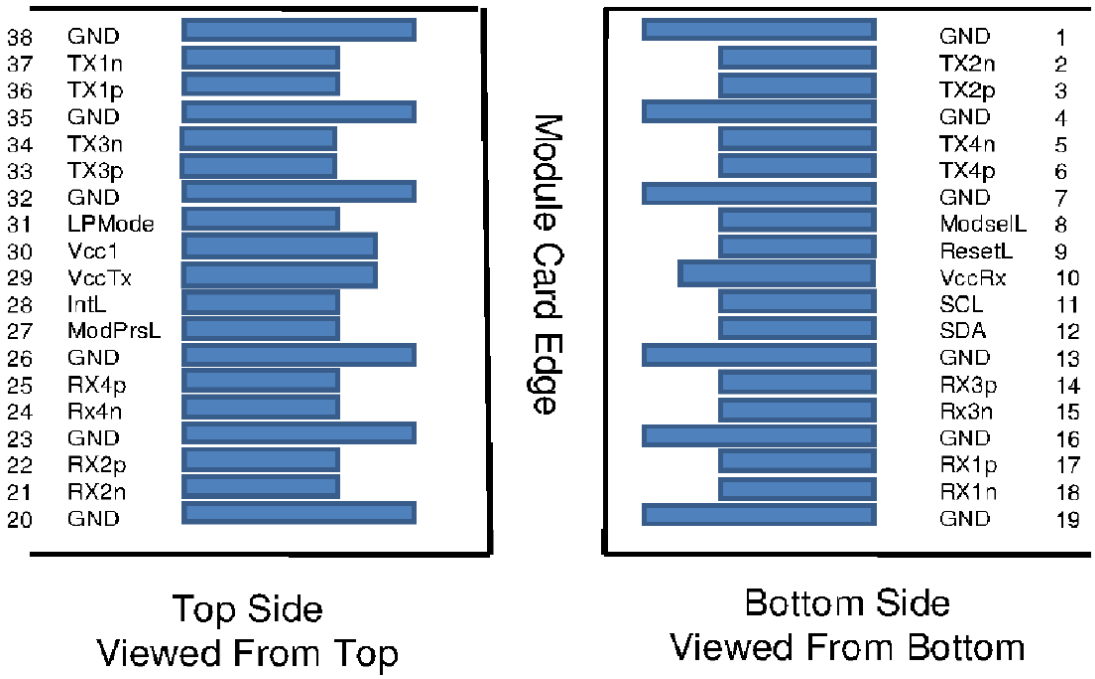
Electrical Pad Layout



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
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	VCC1	+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
TSQS-851HG-XXXC	QSFP28 100G 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 MMF	

References

1. SFF-8636 Specification for QSFP28.

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