

100G QSFP28 Active Optical Cables

TSQS-851HG-xxxC

Features

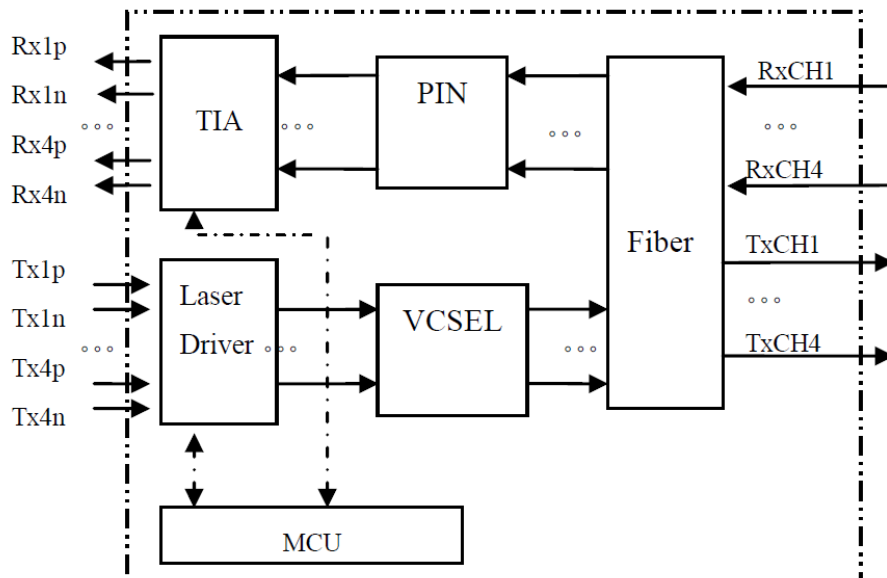
- Four-channel full-duplex active optical cable with QSFP28 plugs
- Multi-rate capability: 10Gb/s and 25Gb/s per channel
- Reliable VCSEL array technology using MMF
- Hot Pluggable
- Power dissipation: <3.5W
- Operating case temperature 0°C to 70°C
- RoHS compliant



Applications

- IEEE 802.3bm 100GBASE SR4 and 40GBASE SR4 28G Fiber Channel
- Infiniband FDR/EDR

Module Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	T _S	-20	85	°C
Case Operating Temperature	T _{Case}	0	70	°C
Relative Humidity	RH	0	85	%
Supply Voltage	V _{CC}	-0.5	3.6	V

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Case Operating Temperature	T _{Case}	0	-	70	°C
Humidity	RH	5	-	85	-
Supply Voltage	V _{CC}	3.13	3.3	3.47	V
Data Rate Per Lane	DR	-	25.78125	-	Gbit/s
Fiber Bend Radius	R _b	3	-	-	cm

Electrical Characteristics

NOTE: The EDR module requires an electrical connector compliant with SFF-8662 or SFF-8672 be used on the host board to guarantee its electrical interface specification. Please check with your connector supplier

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	V _{CC}	3.15	-	3.45	V
Supply Current	I _{CC}	-	-	1010	mA
Total Power Dissipation ^{1,2}	P	-	-	3.5	W
Transmitter					
Differential Input Voltage	V _{in}	-	-	900	mVp-p
Differential Termination Resistance Mismatch	-	-	-	10	%
Transition Time, 20 to 80%	T _r , T _f	10	-	-	ps
Receiver					
Differential Output Voltage	V _{out}	-	-	900	mVp-p
Differential Termination Resistance Mismatch	-	-	-	10	%
Transition Time, 20 to 80%	T _r , T _f	9.5	-	-	ps
Bit Error Rate ³	BER	-	-	10 ⁻¹²	-

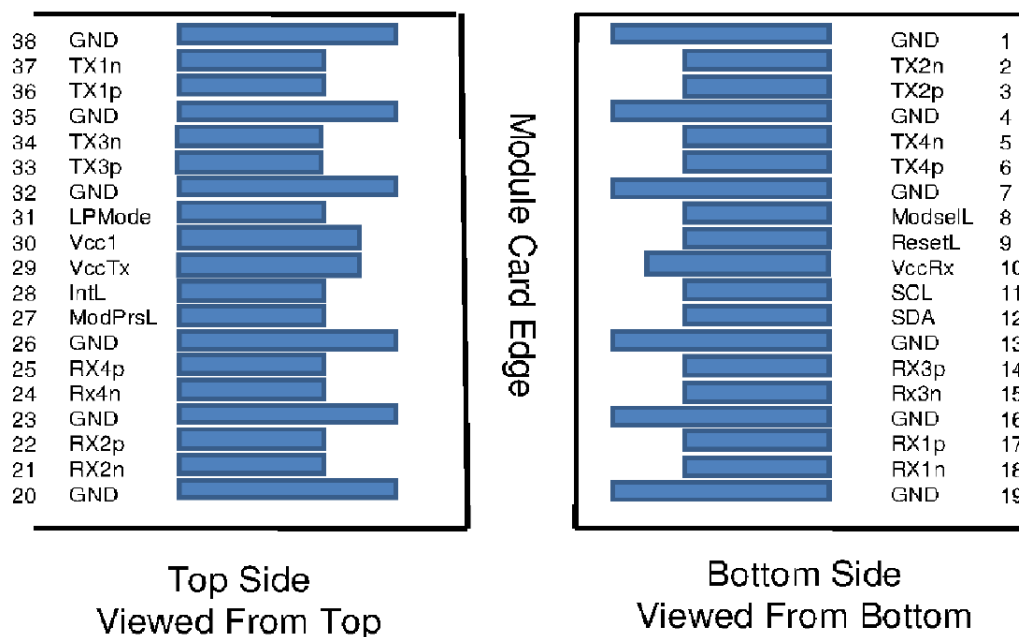
Note:

Maximum total power value is specified across the full temperature and voltage range

Settable in various discrete steps via the I2C interface

BER=10-12, PRBS 231-1@25.78125Gbps

Pin Descriptions



Pin Definitions

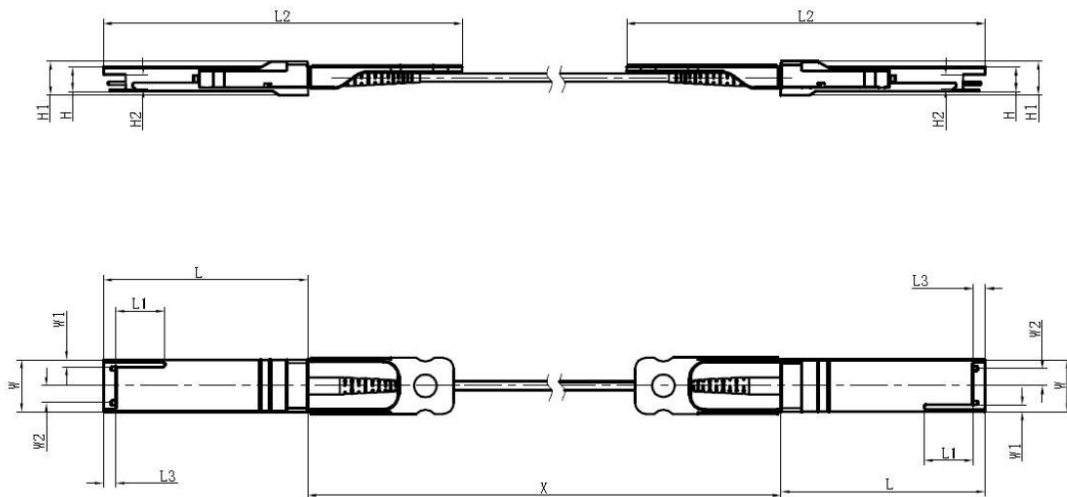
Pin	Symbol	Name/Description
1	GND	Ground
2	Tx2n	Transmitter Inverted Data Input
3	Tx2p	Transmitter Non-Inverted Data Input
4	GND	Ground
5	Tx4n	Transmitter Inverted Data Input
6	Tx4p	Transmitter Non-Inverted Data Input
7	GND	Ground
8	ModSelL	Module Select
9	ResetL	Module Reset
10	Vcc Rx	+3.3 V Power supply 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

Information and specifications are subject to change without notice.
Please visit www.china-tscom.com for more information.



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

Mechanical Specifications



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

Order Information

Part Number

TSQS-851HG-xxxC

xxx = denotes the AOC length with unit meter. For example,001 denote 1m, 002 denote 2m ... 099 denote 99m.