100G QSFP28 to 4×25G SFP28 Active Optical Cable
TSQSS-851HG-xxxC

Features

- Electrical interface compliant to SFF-8436 and SFF-8431
- 850nm VCSEL laser and PIN photo-detector
- Built-in digital diagnostic functions
- Operating case temperature 0°C to 70°C
- Hot Pluggable
- RoHS compliant

Applications

- 100GbE and 25GbE break-out applications for Datacom switch and router connections
- 100G to 4×25G density applications for Datacom and Proprietary protocol applications
- Data centers/InfiniBand EDR systems

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	TS	-20	85	°C
Relative Humidity	RH	0	85	%
Case Operating Temperature	T_{Case}	0	70	°C
Supply Voltage	VCC	-0.3	3.6	V

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Case Operating Temperature	T_{Case}	0	-	70	°C
Supply Voltage	VCC	3.13	3.3	3.47	V
Supply Current (QSFP28)	ICC	-	-	1000	mA
Supply Current (SFP28)	ICC	-	-	300	mA
Data Rate Per Lane	DR	-	25.78125	-	Gbit/s

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Transmitter Specifications

Parameter	Symbol	Min	Typical	Max	Unit
QSFP28					
Center wavelength	λc	840	850	860	nm
Differential Input Impedance	Zin	90	100	110	Ohm
Differential Input Voltage	Vin	300	-	1100	mVp-p
SFP28					
Center wavelength	λc	840	850	860	nm
Differential Input Impedance	Zin	90	100	110	Ohm
Differential Input Voltage	Vin	300	-	1100	mVp-p

Receiver Specifications

Parameter	Symbol	Min	Typical	Max	Unit
QSFP28					
Center wavelength	λc	840	850	860	nm
Differential Output Impedance	Zout	90	100	110	Ohm
Differential Output Voltage	Vout	500	-	800	mVp-p
SFP28					
Center wavelength	λc	840	850	860	nm
Differential Output Impedance	Zout	90	100	110	Ohm
Differential Output Voltage	Vout	500	-	800	mVp-p
Bit Error Rate	BER	-	-	10-12	-

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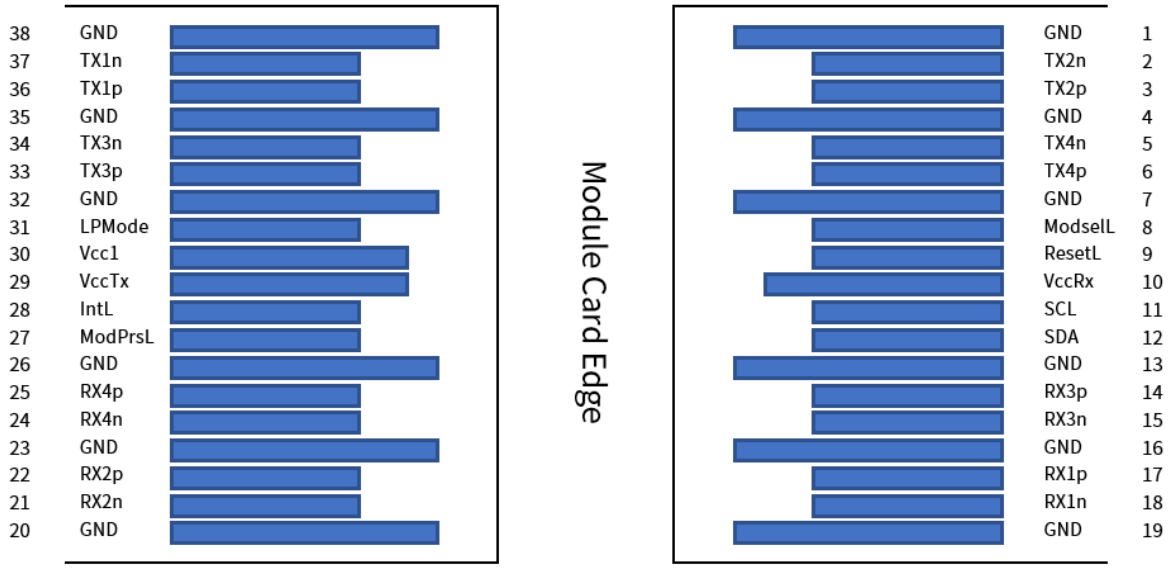
QSFP28 Pin Descriptions



Top Side Viewed From Top

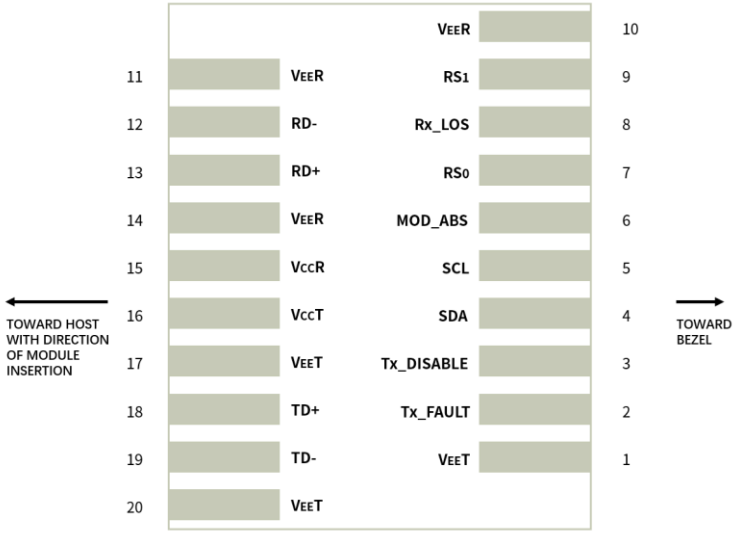
Bottom Side Viewed From Bottom

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
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

SFP28 Pin Descriptions



Pin Definitions

Pin	Symbol	Name/Description
1	VeeT	Transmitter Signal Ground
2	TX_FAULT	Transmitter Fault (LVTTL-O) – Not used. Grounded inside the module
3	TX_DISABLE	Transmitter Disable (LVTTL-I) – High or open disables the transmitter
4	SDA	Two Wire Serial Interface Data Line (LVCMOS – I/O)
5	SCL	Two Wire Serial Interface Clock Line (LVCMOS – I/O)
6	MOD_ABS	Module Absent (Output), connected to VeeT or VeeR in the module
7	RS0	Rate Select 0 - Not used, Presents high input impedance.
8	RX_LOS	Receiver Loss of Signal (LVTTL-O)
9	RS1	Rate Select 1 - Not used, Presents high input impedance.
10	VeeR	Receiver Signal Ground
11	VeeR	Receiver Signal Ground
12	RD-	Receiver Data Out Inverted (CML-O)
13	RD+	Receiver Data Out (CML-O)
14	VeeR	Receiver Signal Ground
15	VccR	Receiver Power + 3.3 V
16	VccT	Transmitter Power + 3.3 V
17	VeeT	Transmitter Signal Ground
18	TD+	Transmitter Data In (CML-I)
19	TD-	Transmitter Data In Inverted (CML-I)
20	VeeT	Transmitter Signal Ground

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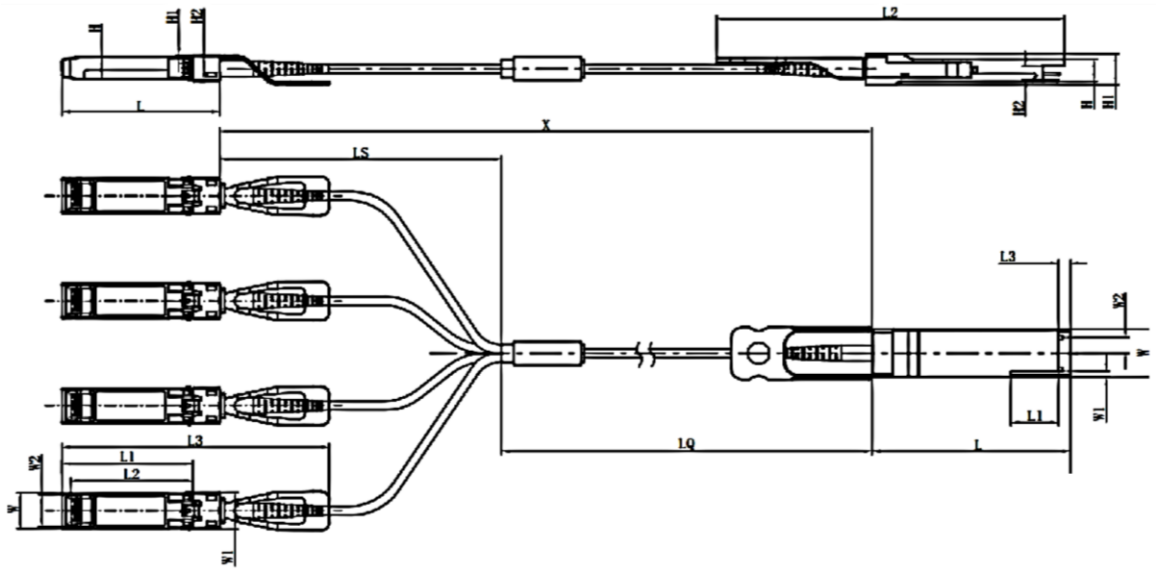
Mechanical Specifications



SFP28 **Unit: mm**

	L	L1	L2	L3	W	W1	W2	H	H1	H2
MAX	57.75	48.0	44.65	102.5	13.75	14.0	12.25	8.65	0.55	10.4
Typical	57.55	47.8	44.45	101.5	13.65	13.9	12.15	8.55	0.5	10.2
MIN	57.35	47.6	44.25	100.5	13.55	13.8	12.05	8.45	0.45	10.0

QSFP28 **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

Ordering Information

Part Number	Product Description
TSQSS-851HG-xxxC	100G QSFP28 to 4×25G SFP28 AOC 0°C ~ +70°C

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

Important Notice

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