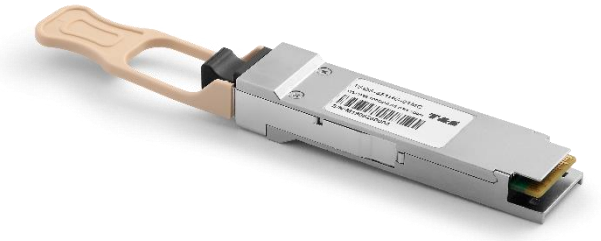
TSQS-851HG-01MC Optical Transceiver

QSFP28+ 100G SR4 100m Transceiver, With Diagnostic Monitoring

Features



- 4 channels full-duplex transceiver modules
- Transmission data rate up to 25Gbps per channel
- 4 channels 850nm VCSEL array
- 4 channels PIN photo detector array
- Hot-pluggable QSFP28 form factor
- Maximum link length of 70m on OM3 Multimode Fiber(MMF) and 100m on OM4 MMF
- Single 1X12 MPO connector receptacle Hot-pluggable electrical interface
- 0–70°C operating temp
- Low power consumption < 2.5W
- RoHS6 compliant (lead free)

Applications

- 100GBASE-SR4 100G Ethernet

Description

The QSFP28 100G-SR4-100m module is a highly integrated 4x25G transceiver focused on reach, bandwidth, density and cost for high port-count 100G systems, and client-side 100G interfaces. Each lane can operate at 25Gbps up to 70m using OM3 fiber or 100m using OM4 fiber. These modules are designed to operate over multimode fiber systems using a nominal wavelength of 850nm. The electrical interface uses a 38-contact edge type connector. The optical interface uses a 12-fiber MTP/MPO connector.

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Optical Transmitter Performance

Parameter	Symbol	Min	Typical	Max	Unit
Signaling Speed per Lane	-	25.78125 ± 100ppm			-
Center Wavelength	λC	840	850	860	nm
RMS spectral width	Δλ	-	-	0.6	nm
Average Launch Power per Lane	TXPx	-8.5	-	2.4	dBm
Transmit OMA per Lane	TxOMA	-6.4	-	3	dBm
Launch Power [OMA] minus TDEC per Lane	P-TDEC	-7.3	-	-	dBm
Extinction Ratio	ER	2	-	-	dB
Optical Return Loss Tolerance	ORL	-	-	12	dB
Encircled Flux	FLX	> 86% at 19 um < 30% at 4.5 um			dBm
Average launch power of OFF transmitter, each lane	-	-	-	-30	dBm
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3}	{0.3, 0.38, 0.45, 0.35, 0.41, 0.5}				

Optical Receiver Performance

Parameter	Symbol	Min	Typical	Max	Unit
Signaling Speed per Lane	-	25.78125 ± 100ppm			-
Center Wavelength	λC	840	850	860	nm
Damage Threshold	DT	3.4	-	-	dBm
Average receive power, each lane	RXPx	-10.3	-	2.4	dbm
Unstressed Sensitivity (OMA) at 10 x 10-12BER	RxOMA	-	-	3	dBm
Stressed Receiver Sensitivity (OMA) per Lane	SRS	-	-	-5.2	dBm
Vertical eye closure penalty, each lane	VECP	-	-	1.9	dB
Stressed eye J2 jitter, per Lane	-	-	-	0.39	UI
Stressed eye J4 jitter, per Lane	-	-	-	0.53	UI
OMA of each aggressor lane	-	-	3	-	dBm

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	V_{CC}	3.135	3.300	3.465	V
Operating Case Temperature	T_C	0	25	70	°C

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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

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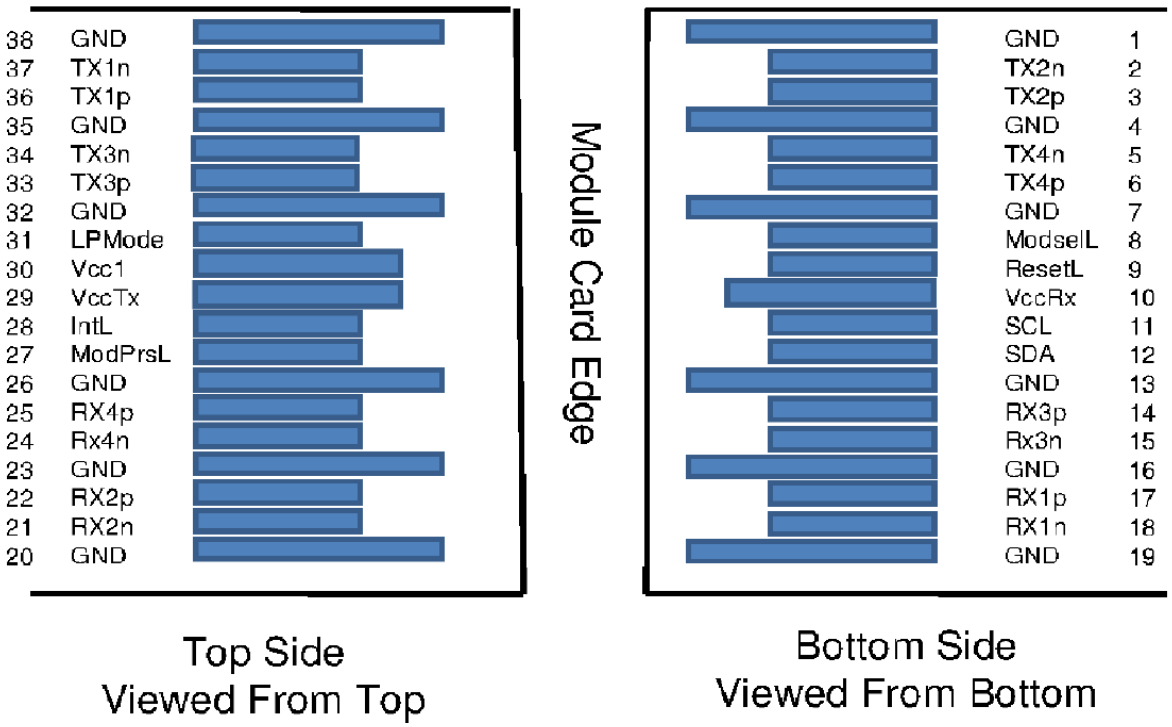
Pin Descriptions



Ordering Information

Part Number	Product Description
TSQS-851HG-01MC	QSFP28 100G SR4 100m@OM4 0ºC ~ +70ºC

Important Notice

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