

QSFP-100G-LR4L

100GBase-LR4L QSFP28 Transceiver

Hot Pluggable, +3.3V, Duplex LC, 1310nm, up to 2km, Commercial Temperature

FEATURES

- 4 Independent LAN-WDM channels
- Low Power Consumption <4.5W
- Maximum link length of 2km over Single Mode Fibre (SMF)
- Commercial Operating Temperature Range: 0 to 70°C

APPLICATIONS

- 100GBASE LR4 100G Ethernet
- High performance computing, data com and sever data links
- High speed access

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _o	-40	85	°C
Relative Humidity (non-condensing)	RH	0	85	%

RECOMMENDED OPERATING ENVIRONMENT

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	T _o	0	-	70	°C
Power Supply Voltage	V _{cc}	3.135	3.3	3.465	V
Signaling Rate each Channel		-	25.78125	-	Gbps
Supply Noise Rejection		-	-	100	mV
Receiver Differential Data Output		-	100	-	Ohm
Operating Distance	D	-	-	2	km

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min	Typical	Max	Unit	Note
Power Consumption		-	-	4.5	W	
Supply Current	I _{cc}	-	-	1360	mA	
TRANSMITTER						
Signalling rate, each lane (range)		-	25.78125	-	GBb	
Centre Wavelength	λ ₀	1294.53	-	1296.59	nm	
	λ ₁	1299.02	-	1301.09	nm	
	λ ₂	1303.54	-	1305.63	nm	
	λ ₃	1308.09	-	1310.19	nm	
Side-mode suppression ratio	SMSR	30	-	-	dB	
Total average launch power		-	-	10.5	dBm	
Average launch power, each lane	P _f	-4.3	-	4.5	dBm	
Optical Modulation Amplitude (OMA), each lane	TxOMA	-1.3	-	4.5	dBm	
Transmitter and Dispersion Penalty	TDP	-	-	2.2	dB	
Average launch power of OFF transmitter, each lane		-	-	-30	dBm	
Extinction ratio	ER	4	-	-	dB	
Optical return loss tolerance		-	-	20	dB	
Transmitter reflectance		-	-	-12	dB	
RECEIVER						
Signalling rate, each lane (range)		-	25.78125	-	GBb	
Centre Wavelength	λ ₀	1294.53	-	1296.59	nm	
	λ ₁	1299.02	-	1301.09	nm	
	λ ₂	1303.54	-	1305.63	nm	
	λ ₃	1308.09	-	1310.19	nm	
Damage threshold		5.5	-	-	dBm	
Average power at receiver input, each lane		-10.6	-	4.5	dBm	
Receive power, each lane (OMA)		-	-	4.5	dBm	
Return Loss	RL	-26	-	-	dB	
Receiver sensitivity (OMA)	S _{OMA}	-	-	-8.6	dBm	1
LOS Assert	LOS _A	-24	-	-	dBm	
LOS De-Assert	LOS _D	-	-	-10.8	dBm	
LOS Hysteresis		0.5	-	-	dB	

Note:

1. BER@10e-12

PIN ASSIGNMENT

38	GND	
37	TX1n	
36	TX1p	
35	GND	
34	TX3n	
33	TX3p	
32	GND	
31	LPMode	
30	Vcc1	
29	VccTx	
28	IntL	
27	ModPrsL	
26	GND	
25	RX4p	
24	Rx4n	
23	GND	
22	RX2p	
21	RX2n	
20	GND	

Top Side
Viewed From Top

Module Card Edge

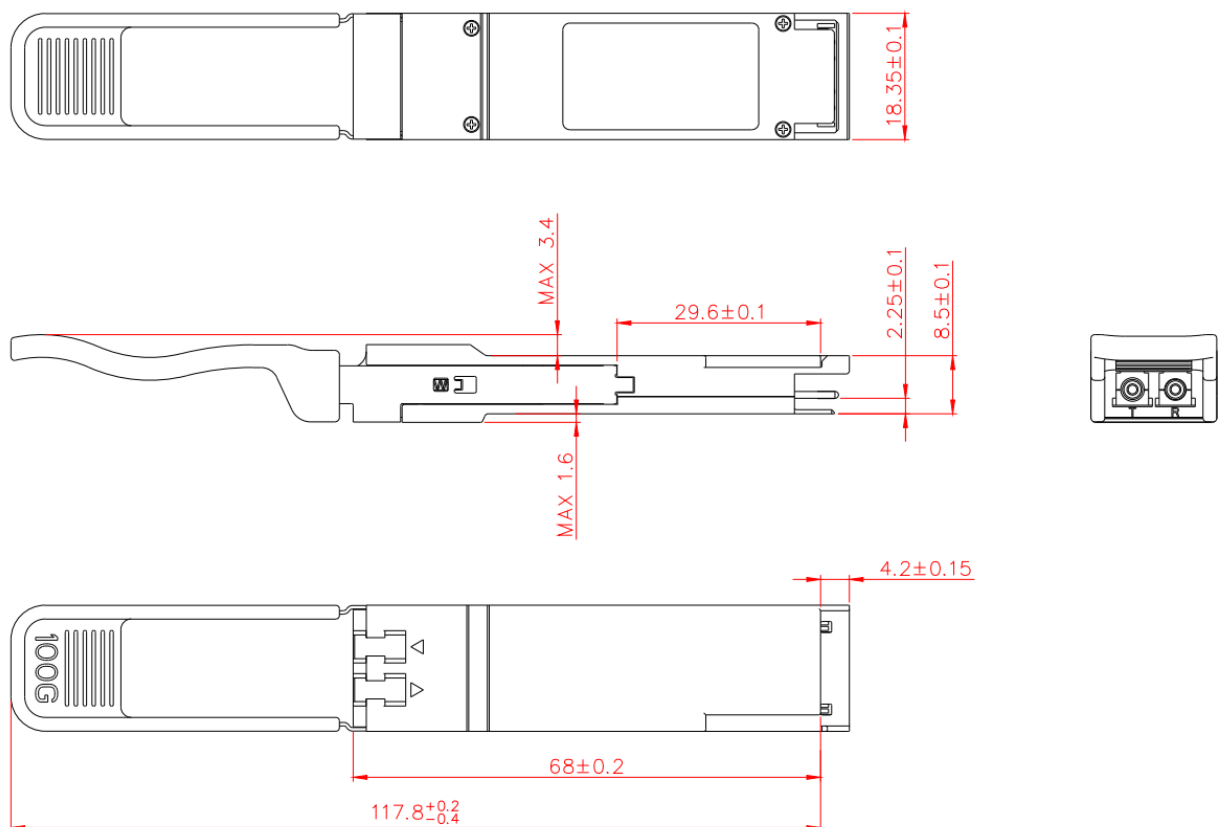
	GND	1
	TX2n	2
	TX2p	3
	GND	4
	TX4n	5
	TX4p	6
	GND	7
	ModselL	8
	ResetL	9
	VccRx	10
	SCL	11
	SDA	12
	GND	13
	RX3p	14
	Rx3n	15
	GND	16
	RX1p	17
	RX1n	18
	GND	19

Bottom Side
Viewed From Bottom

PIN DESCRIPTION

Pin	Logic	Symbol	Name/Description
1		GND	Ground
2	CML-I	Tx2n	Transmitter Inverted Data Input
3	CML-I	Tx2p	Transmitter Non-Inverted Data output
4		GND	Ground
5	CML-I	Tx4n	Transmitter Inverted Data Input
6	CML-I	Tx4p	Transmitter Non-Inverted Data output
7		GND	Ground
8	LVTTL-I	ModSelL	Module Select
9	LVTTL-I	ResetL	Module Reset
10		VccRx	+3.3V Power Supply Receiver
11	LVC MOS-I/O	SCL	2-Wire Serial Interface Clock
12	LVC MOS-I/O	SDA	2-Wire Serial Interface Data
13		GND	Ground
14	CML-O	Rx3p	Receiver Non-Inverted Data Output
15	CML-O	Rx3n	Receiver Inverted Data Output
16		GND	Ground
17	CML-O	Rx1p	Receiver Non-Inverted Data Output
18	CML-O	Rx1n	Receiver Inverted Data Output
19		GND	Ground
20		GND	Ground
21	CML-O	Rx2n	Receiver Inverted Data Output
22	CML-O	Rx2p	Receiver Non-Inverted Data Output
23		GND	Ground
24	CML-O	Rx4n	Receiver Inverted Data Output
25	CML-O	Rx4p	Receiver Non-Inverted Data Output
26		GND	Ground
27	LVTTL-O	ModPrsL	Module Present
28	LVTTL-O	IntL	Interrupt
29		VccTx	+3.3V Power Supply transmitter
30		Vcc1	+3.3V Power Supply
31	LVTTL-I	LPMODE	Low Power Mode
32		GND	Ground
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input
34	CML-I	Tx3n	Transmitter Inverted Data Output
35		GND	Ground
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input
37	CML-I	Tx1n	Transmitter Inverted Data Output
38		GND	Ground

MECHANICAL DIMENSIONS (UNIT: mm)



DIGITAL DIAGNOSTIC MONITOR ACCURACY

The following characteristics are defined over recommended operating conditions

Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	°C
Internally measured transceiver supply voltage	+/-3	%
Measured Tx bias current	+/-10	%
Measured Tx output power	+/-3	dB
Measured Rx received average optical power	+/-3	dB