

Módulo Óptico 100G QSFP28 10km C-temp

TQ13L2L-CN

Módulo óptico (gbics) 100G QSFP28 , realiza conexão de até 10km.



Observações

Somente remova a tampa quando for realizar a conexão do cordão/cabo, evitando assim sujeiras indesejadas no conector. Nunca olhe diretamente no interior do módulo óptico. A radiação óptica pode ser prejudicial aos olhos.

TQ13L2L-CN

100G QSFP28 LR4 10km Transceiver

FEATURES

- Up to 10km reach for G.652 SMF
- Cooled 4x25Gb/s LAN WDM DML TOSA with optical MUX
- 4x25G Electrical Interface
- Single +3.3V power supply
- DDM function implemented
- 2 Wire Serial Interface for module management
- Maximum power dissipation<4.5W
- Operating temperature range: 0°C ~ 70°C
- Compliant with RoHS6

Applications

- IEEE 802.3ba 100GBASE-LR4

ORDERING INFORMATION

Part Number	Form Factor	Data Rate (Gbps)	Media	Distance (km)	Wavelength (nm)	Temperature (°C)
TQ13L2L-CN	QSFP28	103.125	SMF	10	1310	0~70

1. ABSOLUTE MAXIMUM PARAMETERS

Exceeding the limits below may damage the active optical cable permanently.

Parameter	Symbol	Min.	Max.	Unit.
Storage Temperature Range	Ts	-40	+85	°C
Relative Humidity	RH	0	+95	%
Maximum Supply Voltage	Vcc3	-0.5	4.0	V

2. RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit.
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Operating Case Temperature Range	Tc	0		+70	°C
Power Supply Voltage	Vcc	3.14	3.3	3.46	V
Bit Rate	BR			103.1	GBd
Bit Error Ratio	BER			1E-12	
Max Supported Link Length	L			10	Km

3. OPTICAL CHARACTERISTICS

Optical transmitter Characteristics						
Parameter	Symbol	Min.	Typ.	Max.	Unit.	Notes
Signaling Speed per Channel			25.78125		GBd	
Lane Wavelength (range)	L0	1294.53	/	1296.59	nm	
	L1	1299.02	/	1301.09		
	L2	1303.54	/	1305.63		
	L3	1308.09	/	1310.19		
Total Average Launch Power	Pout			10.5	dBm	
Transmit OMA per Lane	Tx _{OMA}	-5		5	dBm	
Average Launch Power per Lane	TXP _x	-4.3		4.5	dBm	
Optical Extinction Ratio	ER	3.5			dB	
Side-Mode Suppression Ratio (SMSR)	SMSR	30			dB	
Average launch power of OFF transmitter, per lane				-30	dBm	
Relative Intensity Noise	RIN			-128	dB/Hz	
Optical Return Loss Tolerance				20	dB	
Transmitter Reflectance				-12	dB	
Transmitter Eye mask definition {X1,X2,X3, Y1,Y2,Y3}		{0.25,0.4,0.45,0.25,0.28,0.4}				
Optical Receiver Characteristics						
Parameter	Symbol	Min.	Typ.	Max.	Unit.	Notes

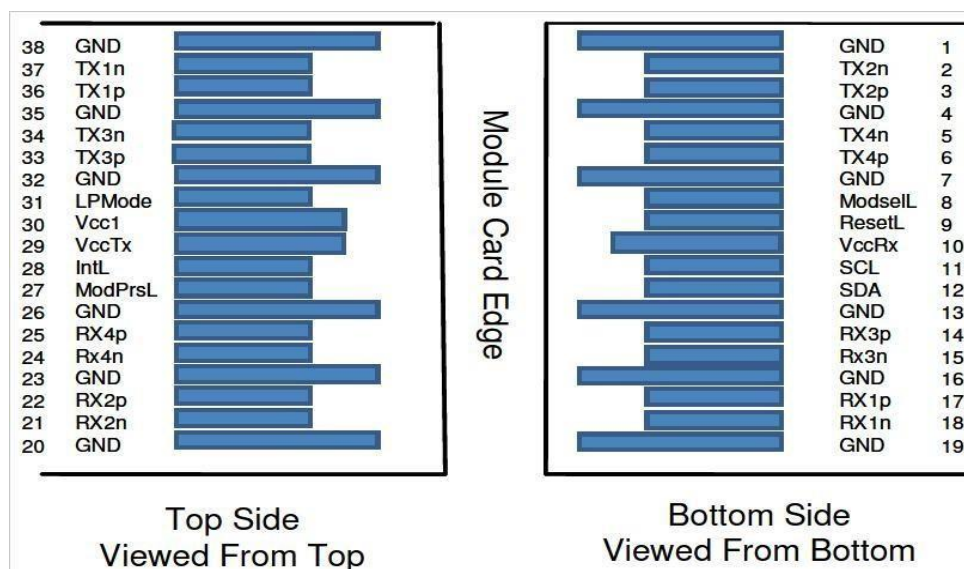
Average Receiver Sensitivity per Lane	Sen.			-8.6	dBm	
Average Received Power per Lane	RXPx	-11		3.4	dBm	
Damage Threshold Per Lane	Pmax			3.4	dBm	
Return Loss	RL			-26		
Vertical eye closure penalty, per lane				1.9	dB	
Receiver electrical 3dB upper cutoff frequency, per lane				31	GHz	
LOS De-Assert	LOS_D			-13	dBm	
LOS Assert	LOS_A	-30			dBm	
LOS Hysteresis	LOS_H	0.5	1.5	5	dB	

4. PIN DESCRIPTIONS

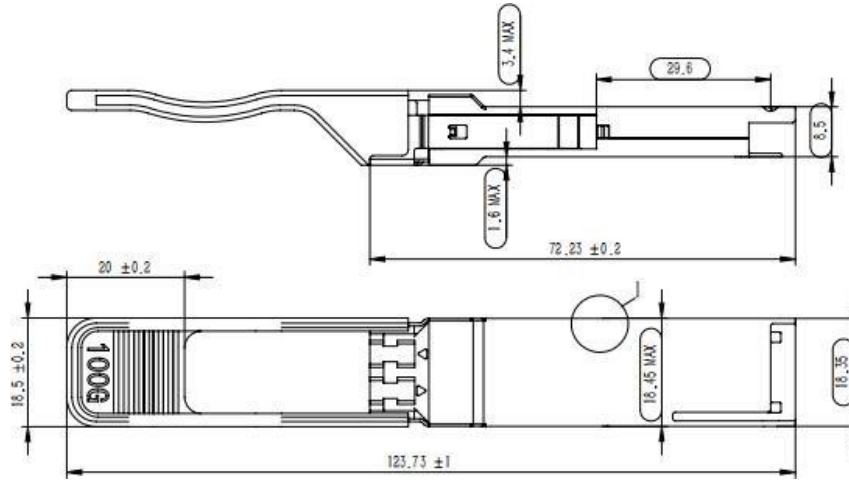
Pin	Symbol	Description	Notes
1	GND	Ground	
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	Vcc Rx	+3.3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

5. PIN DIAGRAM



6. Mechanical Design Diagram (mm)





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