Módulo Óptico
100G QSFP28 80km C-temp

TQ13L2Z-CN

Módulo óptico (gbics) 100G QSFP28 , realiza conexão de até 80km.

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.

100G ZR4 QSFP28 80km Transceiver

FEATURES

- 4 channels full-duplex transceiver modules
- Internal CDR circuits on both receiver and transmitter channels
- 4 X PIN+SOA Receivers
- Transmission data rate up to 27.95Gbps per channel
- 4 X 25 LAN-WDM EML Integrated TOSA Cooling transmitter
- Power consumption < 6W
- Hot Pluggable QSFP form factor
- Up to 80km transmission on single mode fiber
- Duplex LC receptacles
- Built-in digital diagnostic functions
- Operating case temperature 0°C to +70°C
- 3.3V power supply voltage
- RoHS compliant(lead free)

Applications

- 100GBASE-ZR4 Ethernet

ORDERING INFORMATION

Part Number	Form Factor	Data Rate (Gbps)	Media	Distance (km)	Wavelength (nm)	Temperature (℃)
TQ13L2Z-CN	QSFP28	103.125	SMF	80	1310	0~70

1. ABSOLUTE MAXIMUM PARAMETERS

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

Parameter	Symbol	Min.	Max.	Unit.
Supply Voltage	VCC	-0.3	3.6	V
Storage Temperature	Tst	-20	+85	ºC
Humidity(non-condensing)	Rh	+5	+85	%

2. RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit.
Supply Voltage	Vcc	3.13	3.3	3.47	V
Operating Case temperature	Tca	0		+70	ºC
Data Rate Per Lane			25.78125		GBd
Power Dissipation	P			6	W
Link Distance with G.652	D			80	km

3. ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit.	Notes
Power Consumption	P			6	W	
Supply Current	Icc			1.9	A	
Electrical Transmitter Characteristics						
Differential Input Voltage Swing	Vin			900	mVpp	
Differential Input Impedance	Zin	90	100	110	Ohm	
Electrical Receiver Characteristics						
Differential Output Voltage Swing	Vout	300		900	mVpp	
Differential Output Impedance	Zout	90	100	110	Ohm	

4. OPTICAL CHARACTERISTICS

Optical Transmitter Characteristics						
Parameter	**Symbol**	**Min.**	**Typ.**	**Max.**	**Unit.**	**Notes**
Signaling Speed per Lane			25.78125 ±		GBd	
			100 ppm			
Lane Wavelength (range)	L0	1294.53		1296.59	nm	
	L1	1299.02		1301.09		

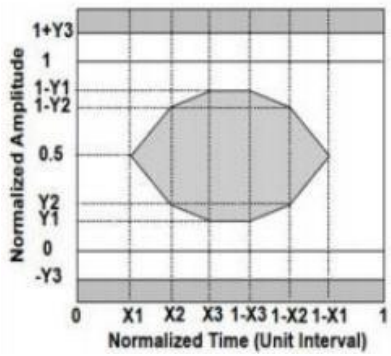
	L2	1303.54		1305.63		
	L3	1308.09		1310.19		
Total Average Launch Power	Pout			12.5	dBm	
Average Launch Power per Lane	TXPx	2		6	dBm	
Optical Extinction Ratio	ER	8			dB	
Side-Mode Suppression Ratio (SMSR)	SMSR	30			dB	
Difference in launch power between any two lanes(Average and OMA) between any Two Lanes (OMA)	Ptx,diff			3.6	dB	
Average launch power of OFF transmitter, per lane				-30	dBm	
Relative Intensity Noise	RIN			-130	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}				1
Optical Receiver Characteristics						
Parameter	**Symbol**	**Min.**	**Typ.**	**Max.**	**Unit.**	**Notes**
Signaling Speed per Lane			25.78125 ± 100 ppm		GBd	
Average Receiver Sensitivity per Lane(100GE)	Sen.			-28	dBm	2
Average Received Power per Lane(100GE)	RXPx	-28		-3.5	dBm	
Vertical eye closure penalty, per lane				1.9	dB	
Overload		2			dBm	
LOS De-Assert	LOS_D			-29	dBm	

LOS Assert	LOS_A	-38			dBm	
LOS Hysteresis	LOS_H	0.5			dB	

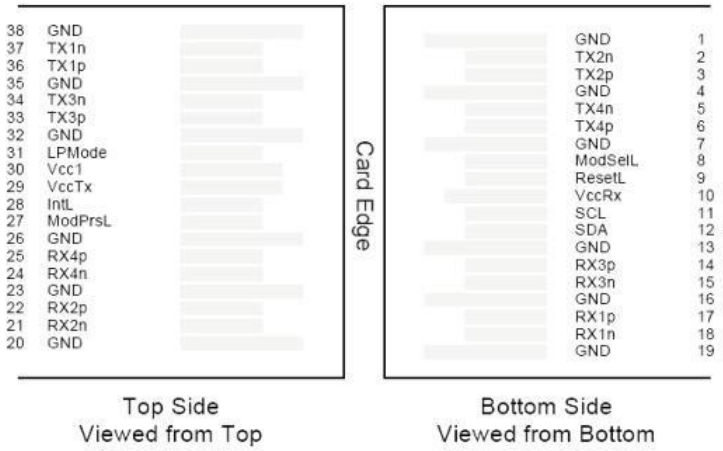
Note:

1、See Figure below.

2、Sensitivity is specified at BER@5E-5 with FEC.



5. PIN DIAGRAM



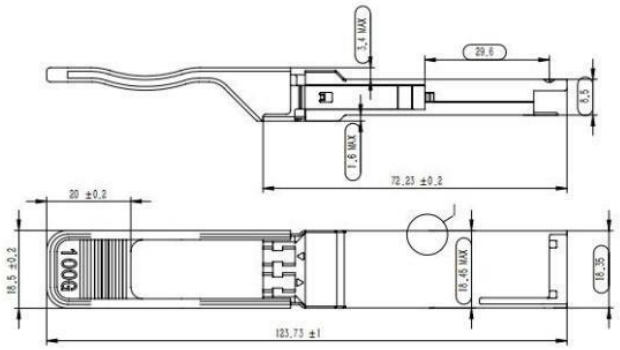
6. PIN DESCRIPTIONS

Pin	Symbol	Name/Description	Notes
1	GND	Ground	
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data output	
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	+ 3.3V 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 Non-Inverted Data Output	
25	Rx4p	Receiver Inverted Data Output	
26	GND	Ground	
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	VccTx	+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 Output	
38	GND	Ground	

7. Mechanical Design Diagram



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