WTQ28QSP10C0CN1 QSFP28 Transceiver

100Gb/s SWDM4 MMF 100m with Dual LC / Product Overview 3

Part Number	Temperature
WTQ28QSP10C0CN1	0°C~+70°C



1. Product Overview

The 100G QSFP28 SWDM4 transceiver modules are designed for use in 100G Ethernet links over duplex multimode fiber. Four channels/lanes in the 850-940nm region @ 25.78Gbps to transport the Ethernet signal. Digital diagnostics functions are available via an I2C interface, as specified by the QSFP28 MSA.

Features

- Compliant with QSFP28 MSA
- Compliant with SWDM MSA
- Compliant with IEEE802.3bm CAUI-4
- Hot-pluggable QSFP28 form factor
- 4x25Gb/s SWDM 850/880/910/940nm VCSEL-based transmitter
- Supports 103.1Gbps aggregate bit rate
- Power dissipation<3.5W
- Maximum link length of 100m on OM4 multimode Fiber
- Case temperature range of 0°C to 70°C
- Duplex LC receptacles
- CAUI-4 electrical interface
- RoHS compliant

Applications

- 100G Ethernet over Duplex MMF

2. Ordering Information

Part Number	Data Rate (Gbps)	Wavelength (nm)	Transmission Distance(m)	Temperature (oC) (Operating Case)
WTQ28QSP10C0CN1	103.1Gb/s	850	100m MMF	0°C~+70°C

3. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units
Storage Temp Range	Ts	-40	+85	℃
Supply Voltage	Vcc	-0.5	3.6	V
Relative Humidity	RH	15%	85%	

4. Recommended Operating Conditions

Parameter	Symbol	Min	Max	Units
Case Temp-Operating	Tcase	0	70	℃
Supply Voltage	Vcc	3.14	3.46	V
Power Consumption	P		3.5	W
Link Distance on OM3 Fiber			75	M
Link Distance on OM4 Fiber			100	M
Link Distance on OM5 Fiber			150	M

5. Optical Parameters

Parameter	Lane	Min	Typical	Typical	Max	Units	Notes
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Signaling rate, each lane		25.78125±100ppm	25.78125±100ppm	25.78125±100ppm	25.78125±100ppm	Gb/s	
Lane Wavelength Range	Lane0 Lane1 Lane2 Lane3	844 874 904 934	844 874 904 934		858 888 918 948	nm	
Modulation Format		NRZ	NRZ	NRZ	NRZ		
Difference in launch power between any two lanes					4.5	dB	
RMS Spectral width					0.59	nm	1
Optical Modulation Amplitude (OMA), each lane		-5.5	-5.5		3	dBm	2
Average Launch Power per Lane @ TX Off State					-30	dBm	
Launch Power in OMA minus TDEC	Lane0 Lane1 Lane2 Lane3	-7 -7 -7.4 -7.7	-7 -7 -7.4 -7.7			dBm	
Transmitter and Dispersion Eye Closure	Lane0 Lane1 Lane2 Lane3				4 4 4.4 4.8	dB	3
Extinction Ratio		2	2			dB	
Optical Return Loss Tolerance					12	dB	
Encircled Flux		≥86% at 19 um ≤30% at 4.5 um	≥86% at 19 um ≤30% at 4.5 um	≥86% at 19 um ≤30% at 4.5 um	≥86% at 19 um ≤30% at 4.5 um	≥86% at 19 um ≤30% at 4.5 um	4
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3} Hit ratio 1.5x10-3 hits per sample		{0.3,0.38,0.45,0.35,0.41,0.5}	{0.3,0.38,0.45,0.35,0.41,0.5}	{0.3,0.38,0.45,0.35,0.41,0.5}	{0.3,0.38,0.45,0.35,0.41,0.5}	{0.3,0.38,0.45,0.35,0.41,0.5}	

Parameter	Lane	Min	Typical	Typical	Max	Units	Notes
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Signaling rate, each lane		25.78125±100ppm	25.78125±100ppm	25.78125±100ppm	25.78125±100ppm	Gb/s	
Lane Wavelength Range	Lane0	844	844		858	nm	
Lane Wavelength Range	Lane1	874	874		888	nm	
Lane Wavelength Range	Lane2	904	904		918	nm	
Lane Wavelength Range	Lane3	934	934		948	nm	
Modulation Format		NRZ	NRZ	NRZ	NRZ		
Damage Threshold		4.4	4.4			dBm	
Average Receive Power, each lane	Lane0	-9.5	-9.5		3.4	dBm	
Average Receive Power, each lane	Lane1	-9.4	-9.4		3.4	dBm	
Average Receive Power, each lane	Lane2	-9.4	-9.4		3.4	dBm	
Average Receive Power, each lane	Lane3	-9.4	-9.4		3.4	dBm	
Receiver Power, each lane (OMA)					3	dBm	
Receiver Reflectance					-12	dB	
unStressed Receiver Sensitivity (OMA)	Lane0 Lane1 Lane2 Lane3				-8.2 -8.4 -8.6 -8.8	dBm	5
RX_Los_Assert		-30	-30			dBm	
RX_Los_De-ASSERT					-12	dBm	
RX_Los_Hysteresis		0.5	0.5			dB	

6. Electrical Characteristics

Transmitter electrical input signal characteristics (TP1)	Min	Typical	Typical	Typical	Max	Units
Signaling rate per lane (range)	25.78125 ± 100 ppm	25.78125 ± 100 ppm	25.78125 ± 100 ppm	25.78125 ± 100 ppm	25.78125 ± 100 ppm	GBd
Differential input return loss	Equation (83E–5)	Equation (83E–5)	Equation (83E–5)			dB
Differential to common mode input return loss	Equation (83E–6)	Equation (83E–6)	Equation (83E–6)			dB

Transmitter electrical input signal characteristics (TP1)	Min	Typical	Typical	Typical	Max	Units
Differential termination mismatch					10	%
Module stressed input test	See 83E3.4.1	See 83E3.4.1	See 83E3.4.1			
Differential pk-pk input voltage tolerance	900	900	900			mV
DC common mode voltage	-350	-350	-350		2850	mV
Single ended voltage tolerance range	-0.4	-0.4	-0.4		3.3	V
Receiver electrical output signal characteristics (TP4)	Min	Typical	Typical	Typical	Max	Units
Signaling rate per lane (range)	25.78125 ± 100 ppm	25.78125 ± 100 ppm	25.78125 ± 100 ppm	25.78125 ± 100 ppm	25.78125 ± 100 ppm	GBd
AC common-mode output voltage (RMS)					17.5	mV
Differential output voltage					900	mV
Eye width	0.57	0.57				UI
Eye height, differential	228	228				mV
Vertical eye closure					5.5	dB
Differential output return loss	Equation (83E–2)	Equation (83E–2)				dB
Common to differential mode conversion return loss	Equation (83E–3)	Equation (83E–3)				dB
Differential termination mismatch					10	%
Transition time (20% to 80%)	12	12				ps
DC common mode voltage	-350	-350			2850	mV

7. Digital Diagnostics

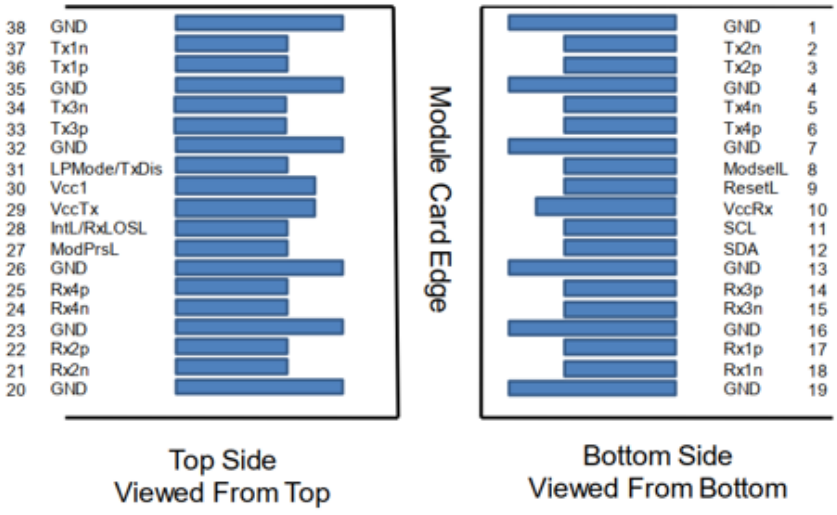
Parameters	Unit	Specification
Temperature Monitor	°C	± 3
Voltage Monitor	V	± 5 %
I_bias Monitor	mA	± 10 %
Received Power (Rx) Monitor	dB	± 3.0
Transmit Power (Tx) Monitor	dB	± 3.0

8. Pin Descriptions

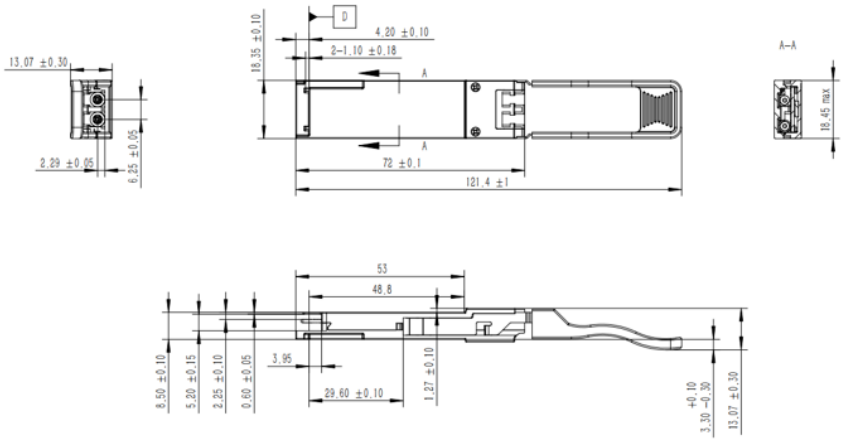
PIN	Logic	Symbol	Name/Description	Notes
1	GND	Transmitter Ground (Common with Receiver Ground)	1	
2	Tx2n	Transmitter Inverted Data Input		
3	Tx2p	Transmitter Non-Inverted Data output		
4	GND	Transmitter Ground (Common with Receiver Ground)	1	
5	Tx4n	Transmitter Inverted Data Input		
6	Tx4p	Transmitter Non-Inverted Data output		
7	GND	Transmitter Ground (Common with Receiver Ground)	1	
8	ModSelL	Module Select		
9	ResetL	Module Reset		
10	VccRx	3.3V Power Supply Receiver	2	
11	SCL	2-Wire serial Interface Clock		
12	SDA	2-Wire serial Interface Data		
13	GND	Transmitter Ground (Common with Receiver Ground)		
14	Rx3p	Receiver Non-Inverted Data Output		
15	Rx3n	Receiver Inverted Data Output		
16	GND	Transmitter Ground (Common with Receiver Ground)	1	
17	Rx1p	Receiver Non-Inverted Data Output		
18	Rx1n	Receiver Inverted Data Output		
19	GND	Transmitter Ground (Common with Receiver Ground)	1	
20	GND	Transmitter Ground (Common with Receiver Ground)	1	
21	Rx2n	Receiver Inverted Data Output		
22	Rx2p	Receiver Non-Inverted Data Output		
23	GND	Transmitter Ground (Common with Receiver Ground)	1	

PIN	Logic	Symbol	Name/Description	Notes
24	Rx4n	Receiver Inverted Data Output	1	
25	Rx4p	Receiver Non-Inverted Data Output		
26	GND	Transmitter Ground (Common with Receiver Ground)	1	
27	ModPrsl	Module Present		
28	IntL	Interrupt		
29	VccTx	3.3V power supply transmitter	2	
30	Vcc1	3.3V power supply	2	
31	LPMode	Low Power Mode，not connect		
32	GND	Transmitter Ground (Common with Receiver Ground)	1	
33	Tx3p	Transmitter Non-Inverted Data Input		
34	Tx3n	Transmitter Inverted Data Output		
35	GND	Transmitter Ground (Common with Receiver Ground)	1	
36	Tx1p	Transmitter Non-Inverted Data Input		
37	Tx1n	Transmitter Inverted Data Output		
38	GND	Transmitter Ground (Common with Receiver Ground)	1	

9. Technical Figure 1



10. Technical Figure 2



11. Revision History

Version	Date	Description	Prepared by
V6	2025	Unified WincoTek datasheet format	WincoTek
V6.1	2026-10-23	Engineering and format review	WincoTek