WTOS800-SR8-50C

OSFP 800Gb/s SR8 50m Transceiver / PRODUCT FEATURES

Part Number
WTOS800-SR8-50C



1. Product Overview

Features

- Hot-pluggable OSFP 800G SR8 multimode transceiver
- Compliant with OSFP MSA Type2 flat top with dual MPO-12 connector
- Compliant with CMIS Rev 5.0 and above revision
- Maximum power consumption 17W
- Dual MPO-12 APC receptacles
- Up to 30m reach on OM3 and 50m on OM4
- Case operating temperature 0°C to 70°C

Applications

- InfiniBand NDR
- 800G SR8 applications with FEC
- 8 x 100GbE breakout application

2. Ordering Information

Part No.	Description
WTOS800-SR8-50C	800G-SR8 OSFP 850nm 50m MMF Transceiver, 0 to 70 ºC

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Notes
Storage Temperature	TS	-40	85	ºC	
Supply Voltage	VCC	-0.5	3.6	V	
Relative Humidity (non-condensing)	RH	5	95	%	
Control Input Voltage	VI	-0.3	VCC+0.5	V	

4. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	TOPR	0	-	70	ºC	
Power Supply Voltage	VCC	3.135	3.3	3.465	V	
Instantaneous peak current at hot plug	ICC_IP	-	-	6800	mA	
Sustained peak current at hot plug	ICC_SP	-	-	5670	mA	

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Maximum Power Dissipation(800G)	PD	-	-	17	W	
Maximum Power Dissipation, Low Power Mode	PDLP	-	-	1.5	W	
Signaling Rate per Lane	SRL	-	53.125	-	GBd	PAM4
I2C Clock Rate	-	100	-	1000	kHz	
Power Supply Noise Tolerance (10Hz - 10MHz)	-	-	-	166	mV	
Rx Differential Data Output Load	-	-	100	-	Ohm	
Operating Distance (OM3)	-	2	-	30	m	
Operating Distance (OM4)	-	2	-	50	m	

5. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Wavelength	λC	844	850	863	nm	
RMS spectral width	Δλrms			0.6	nm	
Average Launch Power, each lane	AOPL	-1.0	-	3.0	dBm	1
Outer Optical Modulation Amplitude (OMAouter), each lane	TOMA	-2.1		3.5	dBm	2
Transmitter and Dispersion Eye Closure for PAM4 (TDECQ), each lane	TDECQ	-	-	4.4	dB	
Average Launch Power of OFF Transmitter, each lane	TOFF	-	-	-30	dBm	
Extinction Ratio, each lane	ER	2.5	3.5	-	dB	
RIN21.4OMA	RIN	-	-	-148	dB/Hz	
Optical Return Loss Tolerance	ORL		-	14	dB	
Transmitter Reflectance	TR	-	-	-26	dB	3
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Wavelength	λC	842	850	863	nm	
Damage Threshold, average optical power, each lane	AOPD	5	-	-	dBm	
Average Receive Power, each lane	AOPR	-6.3	-	4.0	dBm	

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Receive Power (OMAouter), each lane	OMAR	-	-	3.5	dBm	
Receiver Reflectance	RR	-	-	-20	dB	
Receiver Sensitivity (OMAouter), each lane	SOMA	-	-	-4.6	dBm	4
Stressed Receiver Sensitivity (OMAouter), each lane	SRS	-	-	-2.0	dBm	5
Conditions of stressed receiver sensitivity test	Conditions of stressed receiver sensitivity test	Conditions of stressed receiver sensitivity test	Conditions of stressed receiver sensitivity test	Conditions of stressed receiver sensitivity test	Conditions of stressed receiver sensitivity test	Conditions of stressed receiver sensitivity test
Stressed eye closure for PAM4	SECQ		4.4		dB	
OMAouter of each aggressor lane	OMAouter		3.5		dBm	

6. Pin Descriptions

Pin#	Logic	Symbol	Description	Direction	Plug Sequence
1		GND	Ground		1
2	CML-I	TX2p	Transmitter Data Non-Inverted	Input from Host	3
3	CML-I	TX2n	Transmitter Data Inverted	Input from Host	3
4		GND	Ground		1
5	CML-I	TX4p	Transmitter Data Non-Inverted	Input from Host	3
6	CML-I	TX4n	Transmitter Data Inverted	Input from Host	3
7		GND	Ground		1
8	CML-I	TX6p	Transmitter Data Non-Inverted	Input from Host	3
9	CML-I	TX6n	Transmitter Data Inverted	Input from Host	3
10		GND	Ground		1
11	CML-I	TX8p	Transmitter Data Non-Inverted	Input from Host	3
12	CML-I	TX8n	Transmitter Data Inverted	Input from Host	3
13		GND	Ground		1
14	LVCMOS-I/O	SCL	2-wire Serial interface clock	Bi-directional	3
15		VCC	+3.3V Power	Power from Host	2
16		VCC	+3.3V Power	Power from Host	2
17	Multi-Level	LPWn/PRSn	Low-Power Mode / Module Present	Bi-directional	3

Pin#	Logic	Symbol	Description	Direction	Plug Sequence
18		GND	Ground		1
19	CML-O	RX7n	Receiver Data Inverted	Output to Host	3
20	CML-O	RX7p	Receiver Data Non-Inverted	Output to Host	3
21		GND	Ground		1
22	CML-O	RX5n	Receiver Data Inverted	Output to Host	3
23	CML-O	RX5p	Receiver Data Non-Inverted	Output to Host	3
24		GND	Ground		1
25	CML-O	RX3n	Receiver Data Inverted	Output to Host	3
26	CML-O	RX3p	Receiver Data Non-Inverted	Output to Host	3
27		GND	Ground		1
28	CML-O	RX1n	Receiver Data Inverted	Output to Host	3
29	CML-O	RX1p	Receiver Data Non-Inverted	Output to Host	3
30		GND	Ground		1
31		GND	Ground		1
32	CML-O	RX2p	Receiver Data Non-Inverted	Output to Host	3
33	CML-O	RX2n	Receiver Data Inverted	Output to Host	3
34		GND	Ground		1
35	CML-O	RX4p	Receiver Data Non-Inverted	Output to Host	3
36	CML-O	RX4n	Receiver Data Inverted	Output to Host	3
37		GND	Ground		1
38	CML-O	RX6p	Receiver Data Non-Inverted	Output to Host	3
39	CML-O	RX6n	Receiver Data Inverted	Output to Host	3
40		GND	Ground		1
41	CML-O	RX8p	Receiver Data Non-Inverted	Output to Host	3
42	CML-O	RX8n	Receiver Data Inverted	Output to Host	3
43		GND	Ground		1
44	Multi-Level	INT/RSTn	Module Interrupt / Module Reset	Bi-directional	3
45		VCC	+3.3V Power	4Power from Host	2
46		VCC	+3.3V Power	Power from Host	2

Pin#	Logic	Symbol	Description	Direction	Plug Sequence
47	LVCMOS-I/O	SDA	2-wire Serial interface data	Bi-directional	3
48		GND	Ground		1
49	CML-I	TX7n	Transmitter Data Inverted	Input from Host	3
50	CML-I	TX7p	Transmitter Data Non-Inverted	Input from Host	3
51		GND	Ground		1
52	CML-I	TX5n	Transmitter Data Inverted	Input from Host	3
53	CML-I	TX5p	Transmitter Data Non-Inverted	Input from Host	3
54		GND	Ground		1
55	CML-I	TX3n	Transmitter Data Inverted	Input from Host	3
56	CML-I	TX3p	Transmitter Data Non-Inverted	Input from Host	3
57		GND	Ground		1
58	CML-I	TX1n	Transmitter Data Inverted	Input from Host	3
59	CML-I	TX1p	Transmitter Data Non-Inverted	Input from Host	3
60		GND	Ground		1

7. Pin Descriptions

Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	deg.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

8. Pin Descriptions

Version No.	Date	Description
1.0	May 17, 2024	Specification datasheet

9. Additional Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
AC common-mode output Voltage (RMS)		-	-	25	mV	

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Differential output Voltage (Long mode)		-	-	845	mV	
Differential output Voltage (Short mode)		-	-	600	mV	
Near-end Eye height, differential		70	-	-	mV	
Far-end Eye height, differential		30	-	-	mV	
Far end pre-cursor ratio		-4.5	-	2.5	%	
Differential Termination Mismatch		-	-	10	%	
Transition Time (min, 20% to 80%)		8.5	-	-	ps	
DC common mode Voltage		-350	-	2850	mV	

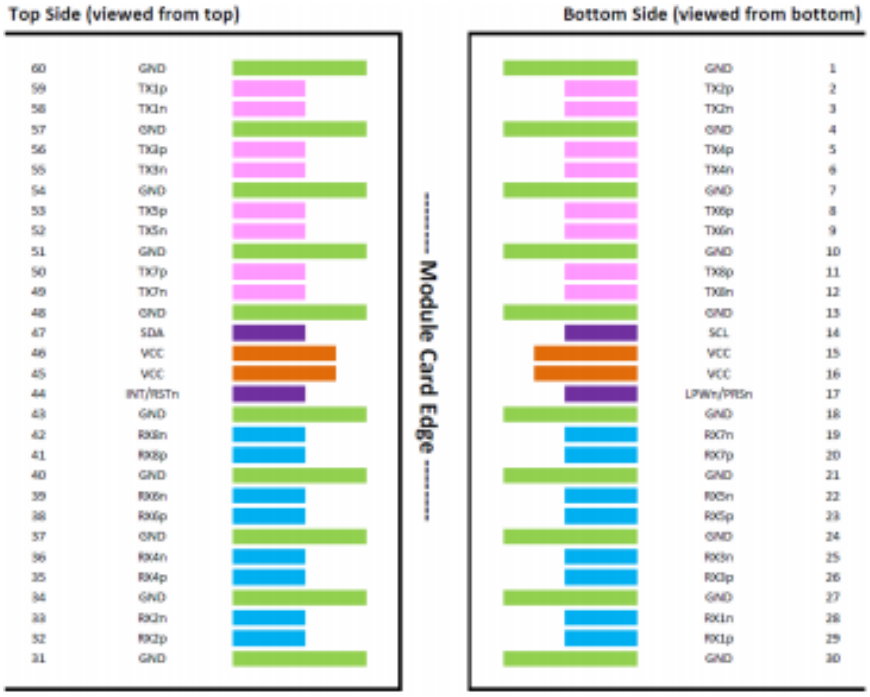
10. Additional Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Differential pk-pk input Voltage tolerance		750	-	-	mV	
Differential termination mismatch		-	-	10	%	
Single-ended voltage tolerance range		-0.4	-	3.3	V	
DC common mode Voltage		-350	-	2850	mV	

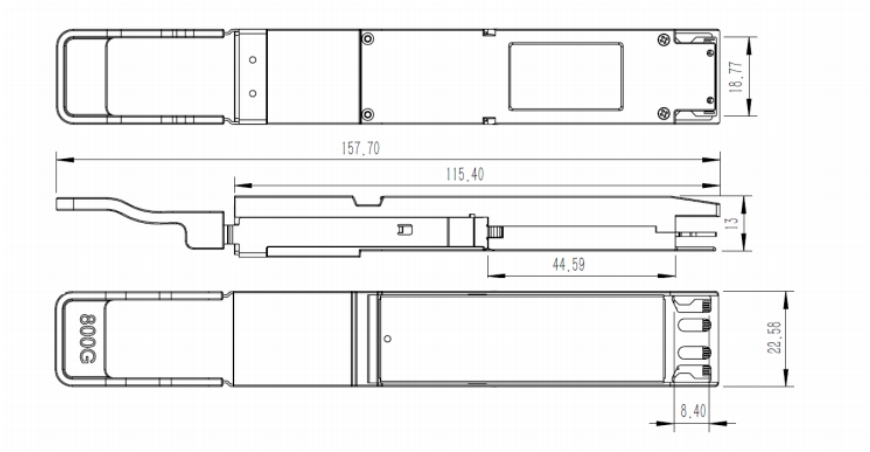
11. Management Interface Timing

Parameter	Symbo l	Min.	Max.	Unit	Notes
Module output SCL and SDA	VOL	0	0.4	V	
Module output SCL and SDA	VOH	VCC-0.5	VCC+0.3	V	
Module Input SCL and SDA	VIL	-0.3	VCC*0.3	V	
Module Input SCL and SDA	VIH	VCC*0.7	VCC+0.5	V	

12. Technical Figure 1



13. Technical Figure 2



14. Revision History

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