WTQ112400-SR4-50C

400G QSFP112 SR4 MPO Transceiver /
Hot-pluggable QSFP112 form factor

Part Number WTQ112400-SR4-50C	Data Rate 425.0	Wavelength 850



1. Product Overview

Features

- Hot-pluggable QSFP112 form factor
- Maximum link length of 50m on OM4 fiber with FEC
- +3.3V single power supply
- Power dissipation < 9W
- Operating case temp Commercial: 0°C to +70 °C
- MPO-12 APC connector
- RoHS compliant

Applications

- 400GBASE-SR4 per IEEE 802.3db
- 400GAUI-4
- Order Information
- Note1: 50M for OM4 fiber, 30m for OM3 fiber, with FEC
  Note2: Case Temperature
- Absolute Maximum Ratings
- Note:1 No condensation
- Recommended Operating Conditions
- Electrical Characteristics
- Optical Characteristics
- Note:
- Minimum value is informative only and not the principal indicator of signal strength.
- Transmitter reflectance is defined looking into the transmitter.

2. Ordering Information

Part No.	Bit Rate (Gbps)	Laser (nm)	Distance note1	Fiber Type	DDMI	Connector	Tempnote2
WTQ112400-SR4-50C	425.0	850	50m	MMF	YES	MPO 1x12 APC	0℃~+70℃

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	Vcc3	-0.5	-	+3.6	V	
Storage Temperature	Ts	-40	-	+85	°C	
Operating Humidity	RH	+5	-	+85	%	1
Control Input Voltage	VI	-0.3	-	VCC+0.5	V	1

4. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	TC	0	-	+70	°C	
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Power Dissipation	Pd	-	-	9	W	

5. Electrical Characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Notes
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Signaling Rate per Lane	SR	GBd	53.125 ± 100 ppm	53.125 ± 100 ppm	53.125 ± 100 ppm	
Modulation format	-	-	PAM4	PAM4	PAM4	
Differential pk-pk input Voltage tolerance	Vin,pp,diff	mV	750	-	-	
Differential termination mismatchal	-	%	-	-	10	
Single-ended voltage tolerance range	-	V	-0.4	-	3.3	
DC common mode voltage	-	mV	-350	-	2850	
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Signaling Rate per Lane	SR	GBd	53.125 ± 100 ppm	53.125 ± 100 ppm	53.125 ± 100 ppm	
Modulation format	-	-	PAM4	PAM4	PAM4	
Differential output Voltage (Long mode)	-	mV	-	-	845	
Differential output Voltage (Short mode)	-	mV	-	-	600	
Near-end Eye height, differential	-	mV	70	-	-	
Far-end Eye height, differential	-	mV	30	-	-	
Far end pre-cursor ratio	-	%	-4.5	-	2.5	
Differential Termination Mismatch	-	%	-	-	10	
Transition Time (min, 20% to 80%)	-	ps	9.5	-	-	
DC common mode Voltage	-	mV	-350	-	2850	

6. Electrical Characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Notes
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Center wavelength	CW	nm	844	850	863	
RMS Spectral Width	SW	nm	-	-	0.6	
Average Launch Power per Lane	AOP	dBm	-4.6	-	4.0	1
Outer Optical Modulation Amplitude (OMAouter), each lane (min)	TxOMA	dBm	-2.6	-	3.5	
Transmitter and Dispersion Eye Closure for PAM4 (TDECQ), each lane	TDECQ	dB	-	-	4.4	
Average Launch Power of OFF Transmitter, each lane	TOFF	dBm	-	-	-30	
Extinction Ratio, each lane	ER	dB	2.5	-	-	
Optical Return Loss Tolerance	ORL	dB	-	-	12	
Transmitter Reflectance	TR	dB	-	-	-26	2

7. Electrical Characteristics

Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Wavelength	W	nm	842	-	865	
Damage Threshold, average optical power, each lane	DT	dBm	5	-	-	
Average Receive Power, each lane	RXPx	dBm	-6.3	-	4	
Receive Power (OMA) per Lane	RxOMA	dBm	-	-	3.5	
Receiver Reflectance	Rfl	dB	-	-	-26	
Receiver Sensitivity (OMAouter), each lane	SOMA	dBm	-4.4	-	-	3

8. Pin Descriptions

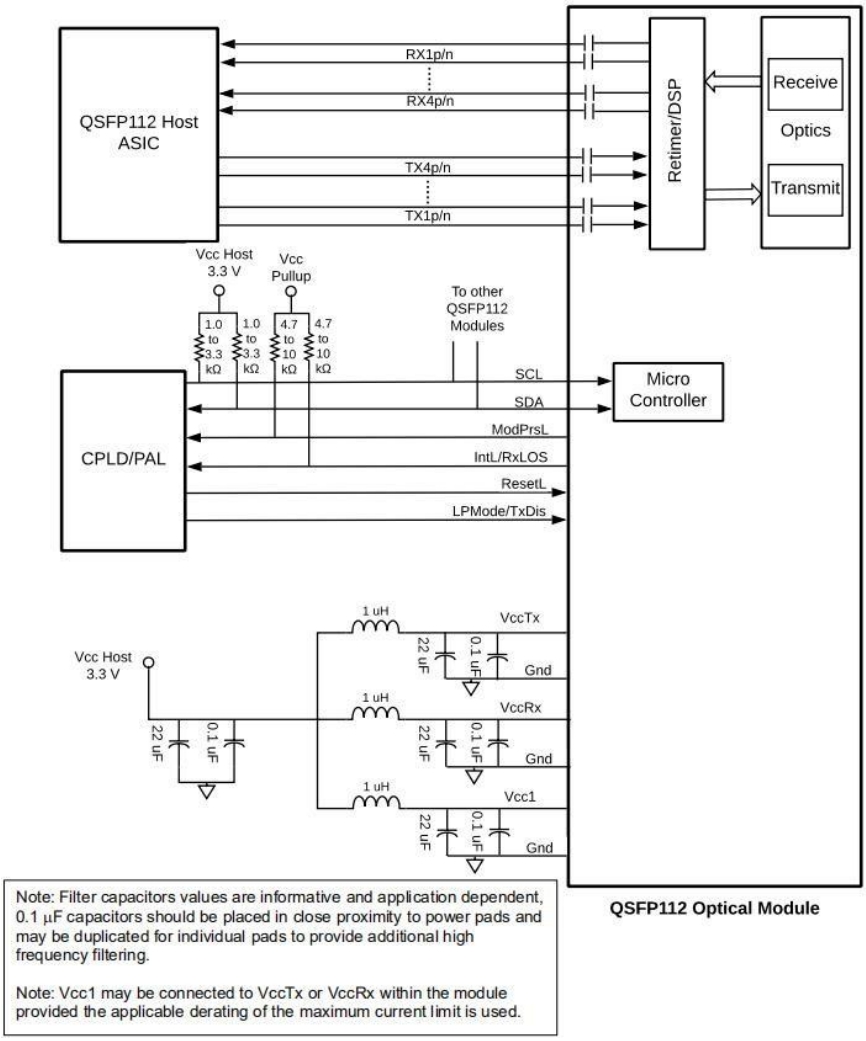
Pin	Symbol	Name/Description	Notes
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	

Pin	Symbol	Name/Description	Notes
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
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	1
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	1
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+3.3V Power supply transmitter	
30	Vcc1	+3.3V Power supply	
31	LPMode	Low Power Mode	
32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	1

9. Revision History

Version	Initiated	Reviewed	Revision	Release Date
A0	Lynn	Luke	New Release	2023-9-17

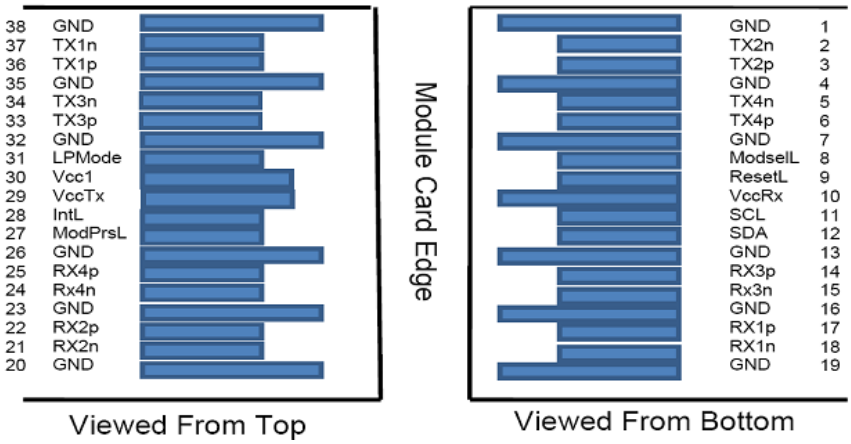
10. Recommended Host Interface Circuit



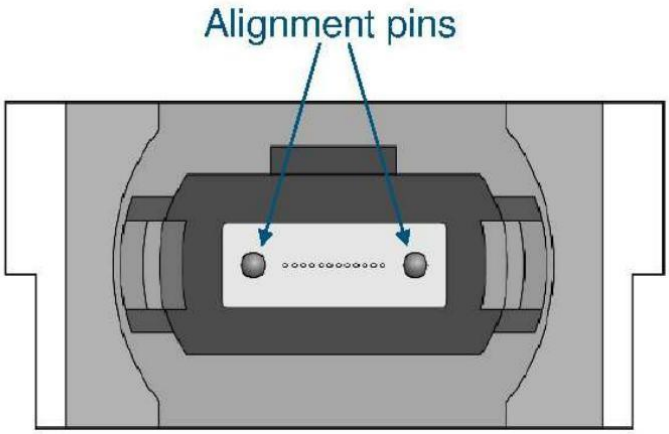
Note: Filter capacitors values are informative and application dependent, 0.1 µF capacitors should be placed in close proximity to power pads and may be duplicated for individual pads to provide additional high frequency filtering.

Note: Vcc1 may be connected to VccTx or VccRx within the module provided the applicable derating of the maximum current limit is used.

11. Pin Assignment

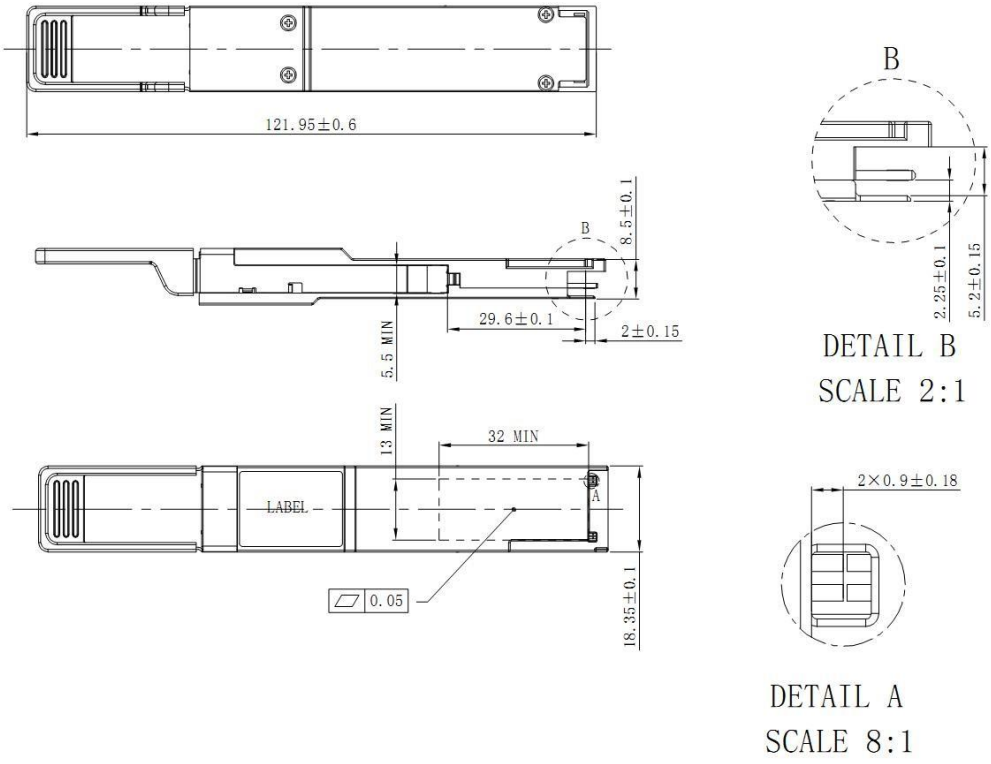


12. Optical Lane Assignment



Transmit Channels: 1 2 3 4
Unused positions: x x x x
Receive Channels: 4 3 2 1

13. Mechanical Specifications



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