

## XTDxx5-10Lx

25 Gbps SFP28 DWDM 10 km  
Optical Transceiver



### Applications

- High speed storage area networks
- 25G high speed interconnection
- 25G DWDM Network
- CPRI/eCPRI

### Features

- Up to 25.78 Gbps bi-directional data links
- Electrical interface specifications per SFF-8431
- Management interface specifications per SFF-8432 and SFF-8472
- Build-in dual CDR with bypass function
- SFP28 MSA package with duplex LC connector
- DWDM-rated EML Transmitter
- APD receiver
- 100 GHz ITU Grid, C-Band
- Up to 10 km on 9/125  $\mu$ m SMF
- Class 1 laser safety certified
- 1.8 W maximum power consumption
- Single 3.3 V power supply
- RoHS compatible
- Operating case temperature 0 °C to +70 °C (Standard)

### Description

XTDxx5-10Lx SFP28 transceivers, according to 25 Gigabit Small Form Factor Pluggable "SFP28" Multi-Sourcing Agreement (MSA) SFF-8431 Rev. 4.1 and SFF-8472, are designed for use up to 10 km length at 25.78 Gb/s DWDM application. They are compatible with SFF-8432. XTDxx5-10Lx are compliant with RoHS.

### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	TS	-40	85	°C
Relative Humidity	RH	5	95	%
Supply Voltage	VCC	-0.5	4.0	V

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

### Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Temperature	Tc	0	25	70	°C
Supply Voltage	VCC	3.135	3.3	3.465	V
Data Rate	-	-	25.78	-	Gb/s

### Transceiver Electrical Specifications

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes	
Module Supply Current	I <sub>CC</sub>	-		545	mA		
Power Dissipation	P <sub>D</sub>	-	-	1800	mW		
<b>Transmitter</b>							
Input Differential Impedance	Z <sub>IN</sub>	-	100	-	Ω		
Differential Data Input Swing	V <sub>IN, P-P</sub>	180	-	700	mV <sub>P-P</sub>		
TX_FAULT	Transmitter Fault	V <sub>OH</sub>	2.0	-	V <sub>CCHOST</sub>	V	
	Normal Operation	V <sub>OL</sub>	0	-	0.8	V	
TX_DISABLE	Transmitter Disable	V <sub>IH</sub>	2.0	-	V <sub>CCHOST</sub>	V	
	Transmitter Enable	V <sub>IL</sub>	0	-	0.8	V	
<b>Receiver</b>							
Output Differential Impedance	Z <sub>O</sub>	-	100	-	Ω		
Differential Data Output Swing	V <sub>OUT, P-P</sub>	300	-	850	mV <sub>P-P</sub>	1	
Data Output Rise Time, Fall Time	t <sub>r</sub> , t <sub>f</sub>	15	-	-	ps	2	
RX_LOS	Loss of signal (LOS)	V <sub>OH</sub>	2.0	-	V <sub>CCHOST</sub>	V	3
	Normal Operation	V <sub>OL</sub>	0	-	0.8	V	3

#### Notes

- Internally AC coupled, but requires a external 100 Ω differential load termination.
- 20 – 80 %.
- LOS is an open collector output. Should be pulled up with 4.7 kΩ on the host board.

### Transmitter Optical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Launch Optical Power	P <sub>o</sub>	+0	-	+5	dBm	1
Extinction Ratio	ER	4.5	-	-	dB	-
Center Wavelength Range	$\lambda_c$	1528.77	-	1563.05	nm	-
Transmitter and Dispersion Penalty	TDP	-	-	4	dB	-
Spectral Width	$\Delta\lambda$	-	-	1	nm	2
Optical Return Loss Tolerance	ORLT	-	-	21	dB	-
P <sub>out</sub> @TX-Disable Asserted	P <sub>off</sub>	-	-	-30	dBm	-

#### Notes

1. Class 1 Laser Safety per FDA/CDRH and EN (IEC) 60825 regulations
2. 20 dB spectral width

### Receiver Optical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Center Wavelength	$\lambda_c$	1528	-	1565	nm	-
Receiver Sensitivity (Avg)	RxSENS1	-	-	-19	dBm	1
Receiver Overload	POL	-4	-	-	dBm	-
Optical Return Loss	ORL	26	-	-	dB	-
LOS De-Assert	LOSD	-	-	-19	dBm	-
LOS Assert	LOSA	-35	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	-

#### Notes

1. Measured with PRBS 2<sup>31</sup>-1 at 5×10<sup>-5</sup> BER

### Ordering information<sup>1</sup>

Part number	Product Description
XTDxx5-10Lx	SFP28 DWDM C-band 25 Gbps Transceiver, 10 km, LC, 0-70°C, x: Y (DDM), N (no DDM) xx: 18 – Ch. 18, 19 – Ch. 19, 20 – Ch. 20, ..., 61 – Ch. 61 (see description <a href="#">here</a> )

**Notes**

<sup>1</sup> For accurate order specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice. XenOpt does not guarantee errorless or outdated information.

Please specify any compatibility requirements at time of ordering. Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

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