WTXP-L31-10D(I)

SFP 10Gb/s 1310nm Single-mode 10km DDM / PRODUCT FEATURES

Temperature 0～70°C



1. Product Overview

The WTXP-L31-10D(I) Small Form Factor Pluggable (SFP) transceivers are compatible with the Small Form Factor Pluggable Multi-Sourcing Agreement (MSA). The transceiver consists of four sections: the LD driver, the limiting amplifier, the DFB laser and the PIN photo-detector. The module data link up to 10KM in 9/125um single mode fiber. The optical output can be disabled by a TTL logic high-level input of Tx Disable. Tx Fault is provided to indicate that degradation of the laser. Loss of signal (LOS) output is provided to indicate the loss of an input optical signal of receiver or the link status with partner.

Features

- Up to 11.1Gbps Data Links
- Up to 10km transmission on SMF
- DFB Laser and PIN receiver
- Metal enclosure, for lower EMI
- 2-wire interface with integrated Digital Diagnostic monitoring
- Hot-pluggable SFP+ footprint
- Specifications compliant with SFF
- Compliant with SFP+ MSA with LC connector
- Single 3.3V power supply
- Power dissipation < 1.2 W
- Operating temperature range:
- Commercial: 0°C to +70°C

Applications

- 10GBASE-LR/LW & 10G Ethernet
- Switched Backplane Applications
- Router/Server Interface
- Other Optical Links

2. Ordering Information

Part No	package	Data rate	Interface	Temp	Reach	other
WTXP-L31-10D	SFP+	11.1Gbps	LC	0～70°C	10km	DDM
WTXP-L31-10DI	SFP+	11.1Gbps	LC	-40～85°C	10km	DDM

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-40	-	85	ºC	
Relative Humidity	RH	5	-	95	%	
Power Supply Voltage	VCC	-0.3	-	4	V	
Signal Input Voltage	VSI	Vcc-0.3	-	Vcc+0.3	V	

4. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Supply Current	ICC	-		360	mA	
Data Rate	BR		10.3125		Gbps	TX Rate/RX Rate
Transmission Distance	TD		10		km	
Coupled fiber	Single mode fiber	Single mode fiber	Single mode fiber	Single mode fiber	Single mode fiber	9/125um SMF

5. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Average Launched Power	PO	-8.2		0.5	dBm	
Average Launched Power(Laser Off)	Poff	-	-	-30	dBm	
Center Wavelength Range	λC	1260	1310	1355	nm	
Spectrum Bandwidth(-20dB)		-	-	1	nm	
Side-Mode Suppression Ratio	SMSR	30	-	-	dB	
Transmitter and Dispersion Penalty	TDP			3.2	dB	
Extinction Ratio	ER	3.5		-	dB	1
Output Eye Mask	Compliant with IEEE 802.3ae	Compliant with IEEE 802.3ae	Compliant with IEEE 802.3ae	Compliant with IEEE 802.3ae		2
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Input Optical Wavelength	λIN	1270	-	1610	nm	
Receiver Sensitivity	Psen	-	-	-14.4	dBm	3
Input Saturation Power (Overload)	PSAT	0.5	-	-	dBm	3
Los Of Signal Assert	PA	-30	-	-	dBm	
Los Of Signal De-assert	PD	-	-	-17	dBm	
LOS -Hysteresis	PHys	0.5	2	6	dB	

6. Recommended Operating Conditions

Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	deg.C
Internally measured transceiver supply voltage	+/-3	%
Measured Tx bias current	+/-10	%

Parameter	Accuracy	Unit
Measured Tx output power	+/-3	dB
Measured Rx received average optical power	+/-3	dB

7. Optical Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Differential line input Impedance	RIN	85	100	115	Ohm	
Differential Data Input Voltage	VDT	100	-	1000	mVp-p	
Transmitter Fault Output-High	VFaultH	2	-	Vcc+0.3	V	
Transmitter Fault Output-Low	VFaultL	0	-	0.8	V	
Transmitter Disable Voltage- High	VDisH	2	-	Vcc+0.3	V	
Transmitter Disable Voltage- low	VDisL	0	-	0.8	V	
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Differential line Output Impedance	ROUT	80	100	120	Ohm	
Differential Data Output Voltage	VDR	300	-	850	mVp-p	
Data Output Rise/Fall time	tr/tf		-	38	ps	
LOS Output Voltage-High	VLOSH	2	-	Vcc+0.3	V	
LOS Output Voltage-Low	VLOSL	0	-	0.8	V	

8. Pin Descriptions

Pin	Symbol	Name/Description	NOTE
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault.	2
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	Rate Select 0	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	6
9	RS1	No connection required	1

Pin	Symbol	Name/Description	NOTE
10	VEER	Receiver Ground (Common with Transmitter Ground)	1
11	VEER	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled	
13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	VEER	Receiver Ground (Common with Transmitter Ground)	1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	1

9. Revision History

Version No.	Date	Description
1.0	June 24, 2021	Specification datasheet

10. Revision History

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