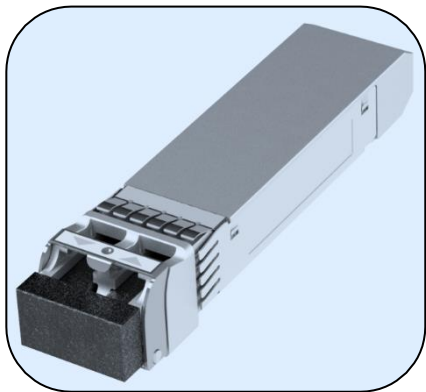


XTDxxA-A0Lx

SFP+ DWDM 10 Gbps 100 km Optical Transceiver Module



Applications

- 10GBASE-ZR/ZW & 10G Ethernet
- SDH STM64
- Other Optical Links

Features

- Up to 11.3Gb/s data links
- DWDM EML transmitter and APD receiver
- 100 GHz ITU channel spacing with integrated wavelength locker
- Up to 100 km on 9/125 μ m SMF
- Hot-pluggable SFP+ footprint
- Duplex LC/UPC type pluggable optical interface
- Support Digital Diagnostic Monitoring interface
- Compliant with SFF+MSA and SFF-8472
- Metal enclosure, for lower EMI
- Meet ESD requirements, resist 8KV direct contact voltage
- Operating case temperature:
Commercial: 0°C to 70°C
Extended: -10°C to 80°C
Military: -40°C to 85°C
- Single 3.3 V power supply
- RoHS compliant and lead free

Description

The module consists of DWDM EML Laser, APD and Preamplifier in a high-integrated optical sub-assembly. Digital diagnostics functions are available via a 2-wire serial interface, as specified in SFF-8472. This module is designed for single mode fiber and operates at a nominal wavelength of 100GHz ITU Grid, C Band DWDM wavelength.

Absolute Maximum Ratings

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	V _{CC}	-0.5	3.6	V
Storage Temperature	T _S	-40	85	°C
Relative Humidity (non-condensing)	R _H	5	95	%
Damage Threshold	T _D	0		dBm

Recommended operating conditions

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Power Supply Voltage	V _{CC}	3.135	3.3	3.465	V	
Operating Case Temperature	T _{OP}	0		70	°C	Commercial
		-10		80		Extended
		-40		85		Military
Data Rate			10.3125		Gbps	
Control Input Voltage High		2		V _{CC}	V	
Control Input Voltage Low		0		0.8	V	
Link Distance (SMF)	D			100	km	9/125μm

Electrical specifications

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Power Consumption	P			1.6	W	
Supply Current	I _{cc}			480	mA	
Transmitter						
Single-ended Input Voltage Tolerance	V _{cc}	-0.3		4.0	V	
AC Common Mode Input Voltage Tolerance (RMS)		15			mV	
Differential Input Voltage Swing	V _{in} , pp	120		820	mVpp	
Differential Input Impedance	Z _{in}	90	100	110	Ohm	1
Transmit Disable Assert Time				10	us	
Transmit Disable Voltage	V _{dis}	V _{cc} -1.3		V _{cc}	V	
Transmit Enable Voltage	V _{en}	V _{ee}		V _{ee} + 0.8	V	2
Receiver						
Differential Output Voltage Swing	V _{out} , pp	350		850	mVpp	
Differential Output Impedance	Z _{out}	90	100	110	Ohm	3
Data output rise/fall time	Tr/Tf	28			ps	4
LOS Assert Voltage	V _{losH}	V _{cc} -1.3		V _{cc}	V	5
LOS De-assert Voltage	V _{losL}	V _{ee}		V _{ee} + 0.8	V	5
Power Supply Rejection	PSR	100			mVpp	6

Notes

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Or open circuit.
3. Input 100 ohms differential termination.
4. These are unfiltered 20-80% values.
5. Loss of Signal is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
6. Receiver sensitivity is compliant with power supply sinusoidal modulation of 20 Hz to 1.5 MHz up to specified value applied through the recommended power supply filtering network.

Optical Characteristics

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Transmitter						
Optical Wavelength	λ_c	$\lambda_c - 0.1$		$\lambda_c + 0.1$	nm	1
Center Wavelength Spacing			100		GHz	
Optical Spectral Width	$\Delta\lambda$			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Optical Power	P_{AVG}	1		5	dBm	2
Optical Extinction Ratio	ER	8.2			dB	
Transmitter and Dispersion Penalty	TDP			3	dB	
Transmitter OFF Output Power	POff			-30	dBm	
Transmitter Eye Mask		Compliant with IEEE802.3ae				
Receiver						
Center Wavelength	λ_c	1270		1610	nm	
Receiver Sensitivity (Average Power)	Sen.			-25	dBm	3
Input Saturation Power (overload)	Psat	-8			dBm	
LOS Assert	LOSA	-35			dB	
LOS De-assert	LOSD			-27	dBm	
LOS Hysteresis	LOSH	0.5			dBm	

Notes

1. λ_c refer to wavelength selection, and corresponds to approximately 0.8 nm.
2. Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
3. Measured with Light source 1528.77~1563.86 nm, ER=8.2 dB; BER = $<10^{-12}$ @10.3125 Gbps, PRBS=2³¹-1 NRZ.

Ordering information¹

PN	Description
XTDxxA-A0LY	SFP+ DWDM, 10 Gbps, 100 km, 0°C ~ +70°C, DDM, xx = ITU grid 17 ~ 61
XTDxxA-A0LE	SFP+ DWDM, 10 Gbps, 100 km, -10°C ~ +80°C, DDM, xx = ITU grid 17 ~ 61
XTDxxA-A0LM	SFP+ DWDM, 10 Gbps, 100 km, -40°C ~ +85°C, DDM, xx = ITU grid 17 ~ 61

Notes:

¹ Specification may change without notice. For accurate specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice. 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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