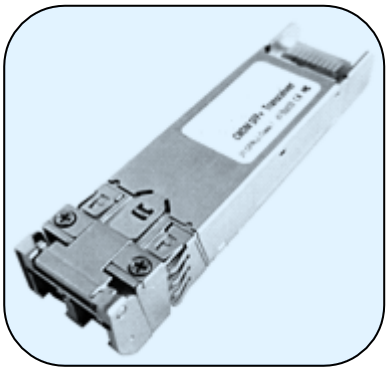
XTCxxA-xxLY

10 Gbps 70-80 km CWDM SFP+ Transceiver



Product Highlights

- Compliant with SFF-8431 and IEE802.3ae
- Data rate selectable ≤ 4.25 Gbps or 9.95 Gbps to 10.3 Gbps bit rates
- Wavelength selectable to ITU-T standards covering CWDM grid wavelengths
- Cooled EML transmitter and APD receiver
- 1470 nm ~ 1570 nm link length up to 80 km (1600 ps/nm)
- 1590 nm ~ 1610 nm link length up to 70 km (1400 ps/nm)
- Low Power Dissipation 2 W Maximum
- -5ºC to 70ºC Operating Case Temperature
- Single 3.3 V power supply
- Diagnostic Performance Monitoring of module temperature, supply Voltages, laser bias current, transmit optical power, receive optical power
- RoHS compliant and lead free

Applications

- 10GBASE-ZR

Description

XenOpt SFP+ZR CWDM Transceiver is designed for 10GBASE-ZR applications.

The transceiver consists of two sections: The transmitter section incorporates a cooled EML laser. The receiver section consists of an APD photodiode integrated with a TIA. All modules satisfy class I laser safety requirements. Digital diagnostics functions are available via a 2-wire serial interface, as specified in SFF-8472, which allows real-time access to device operating parameters such as transceiver temperature, laser bias current, transmitted optical power, received optical power and transceiver supply voltage.

Absolute maximum rating

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	V_{CC}	-0.5	3.8	V
Storage Temperature	Tst	-40	85	°C
Relative Humidity	R_h	0	85	%

Operating Conditions

Parameters	Symbol	Min	Typical	Max	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Supply Current	Icc		420	610	mA
Operating Case temperature	Tca	-5		70	°C
Module Power Dissipation	Pm	-	1.4	2	W

Notes:
[1] Supply current is shared between VCCTX and VCCRX.
[2] In-rush is defined as current level above steady state current requirements.

Transmitter Specifications - Optical

Parameter	Symbol	Min	Typical	Max	Unit
Center Wavelength	λ_c	1464.5		1617.5	nm
Center wavelength stability	$\Delta\lambda_D$	-6.5	λ_c	6.5	nm
Optical Average Power	Po	0	-	+4	dBm
Optical OMA Power	Pom	-2.1			dBm
Side Mode Suppression Ratio	SMSR	30	-	-	dB
Optical Transmit Power (disabled)	PTX_DISABLE	-	-	-30	dBm
Extinction Ratio	ER	8.2	-	-	dB
RIN21OMA[1]				-128	dB/Hz
Optical Return Loss Tolerance	Orl	-	-	21	dB

Note
[1] RIN measurement is made with a return loss at 21 dB

Receiver Specifications – Optical

Parameter	Symbol	Min	Typical	Max	Unit
Input Operating Wavelength	λ	1260	-	1610	nm
Average receive power		-	-	-1.0	dBm
Receiver sensitivity in OMA		-	-	-24	dBm
Maximum Input Power	RX-overload	-	-	-7	dBm
Reflectance	Rrx	-	-	-27	dB
Loss of Signal Asserted		-25	-	-	dBm
LOS De-Asserted		-	-	-30	dBm
LOS Hysteresis		0.5	-	-	dB

Transmitter Specifications – Electrical

Parameters	Symbol	Min.	Typical	Max.	Unit
Data Rate	Mra	-	10.3	11.3	Gbps
Input differential impedance	Rim	-	100	-	Ω
Differential data Input	VtxDIFF	120	-	850	mV
Transmit Disable Voltage	VD	2.0	-	Vcc3+0.3	V
Transmit Enable Voltage	Ven	0	-	+0.8	V
Transmit Disable Assert Time	Vn	-	-	100	us

Receiver Specifications – Electrical

Parameters	Symbol	Min.	Typical	Max.	Unit
Data Rate	Mra	-	10.3	11.3	Gbps
Differential Output Swing	Vout P-P	350	-	850	mV
Rise/Fall Time	Tr/Tf	24	-	-	ps
Loss of Signal –Asserted	VOH	2	-	Vcc3+0.3-	V
Loss of Signal –Negated	VOL	0	-	+0.4	V

Ordering information

Part Number	Product Description
XTC47A-80LY	SFP+ CWDM, 10 Gbps, 1470 nm SFP+ZR 80 km, LC, DDMI, -5°C ~ +70°C
XTC49A-80LY	SFP+ CWDM, 10 Gbps, 1490 nm SFP+ZR 80 km, LC, DDMI, -5°C ~ +70°C
XTC51A-80LY	SFP+ CWDM, 10 Gbps, 1510 nm SFP+ZR 80 km, LC, DDMI, -5°C ~ +70°C
XTC53A-80LY	SFP+ CWDM, 10 Gbps, 1530 nm SFP+ZR 80 km, LC, DDMI, -5°C ~ +70°C
XTC55A-80LY	SFP+ CWDM, 10 Gbps, 1550 nm SFP+ZR 80 km, LC, DDMI, -5°C ~ +70°C
XTC57A-80LY	SFP+ CWDM, 10 Gbps, 1570 nm SFP+ZR 80 km, LC, DDMI, -5°C ~ +70°C
XTC59A-70LY	SFP+ CWDM, 10 Gbps, 1590 nm SFP+ZR 70 km, LC, DDMI, -5°C ~ +70°C
XTC61A-70LY	SFP+ CWDM, 10 Gbps, 1610 nm SFP+ZR 70 km, LC, DDMI, -5°C ~ +70°C

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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