

XFP-W45/W54-80-D

10GBASE, XFP, BiDi, SMF TRANSCEIVER 1490/1550nm & 1550/1490nm, 80km REACH, SIMPLEX LC CONNECTOR

Product Features

- Supports 9.95Gb/s to 11.3Gb/s data rates
- Hot-pluggable XFP footprint
- XFP-W45-80-D: 1490nm Transmitter/
1550nm Receiver
- XFP-W54-80-D: 1550nm Transmitter/
1490nm Receiver
- XFI Loopback Mode
- RoHS-6 Compliant (lead-free)
- Up to 80km transmission on SMF
- EEPROM with Serial ID Functionality
- Compliant with XFP MSA with LC connector
- 2-wire interface with integrated Digital
Diagnostic monitoring
- Power dissipation<2.5W
- Available operating temperature ranges:
 - Commercial: 0°C to 70°C
 - Industrial: -40°C to 85°C



Product Applications

- 10GBASE-BX 10.3125Gb/s Ethernet
- 10GBASE-BX 9.953Gb/s Ethernet
- SONET OC-192 SR-1

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

Parameter	Symbol	Min.	Typ.	Max.	Units
Storage Temperature	TS	-40		85	°C
Power Supply Voltage	Vcc	-0.3		4.0	V
Signal Input Voltage	Vcc	Vcc-0.3		Vcc+0.3	V
Relative Humidity	RH	5		95	%

II. Operating/Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	TC	0		+70	°C	Commercial
		-40		+85	°C	Industrial
Supply Voltage – 1.8V supply	Vcc2	1.71		1.89	V	
Supply Voltage – 3.3V supply	Vcc3	3.13		3.47	V	
Supply Current – 1.8V supply	Icc2			200	mA	
Supply Current – 3.3V supply	Icc3			650	mA	
Transmission Distance	TD	2		80	km	

III. Optical Characteristics

Parameter			Symbol	Min.	Typ.	Max.	Unit	Notes
Center Wavelength	XFP-W45-80-D	Tx	λ_c	1480	1490	1500	nm	
		Rx		1540	1550	1560		
	XFP-W54-80-D	Tx		1540	1550	1560		
		Rx		1480	1490	1500		
Data Rate				9.95	10.3125	11.3	Gbps	
Transmitter								
Average Launched Power	XFP-W45-80-D		PO	0		4	dBm	
	XFP-W54-80-D			-1		3	dBm	
Average Launch power of OFF transmitter			Poff			-45	dBm	1
Side mode suppression ratio			SMSR	30			dB	
Spectrum Bandwidth(-20dB)			σ			1	nm	
Extinction Ratio			ER	6			dB	2
Output Eye Mask			Compliant with IEEE 802.3ae					2
Receiver								
Input Saturation Power (Overload)			Psat	-6			dBm	3
Receiver Sensitivity in average			Psen			-24	dBm	3
LOS De-Assert			LOSD			-25	dBm	
LOS Assert			LOSA	-38			dBm	
LOS Hysteresis			LOSH	0.5		4	dB	

Notes:

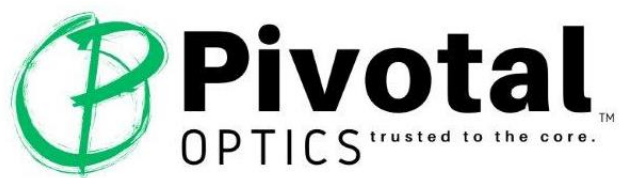
1. The optical power is launched into SMF
2. Measured with RPBS 2³¹-1 test pattern @10.3125Gbs
3. Measured with RPBS 2³¹-1 test pattern @10.3125Gbs BER=<10⁻¹².

IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage – 1.8V supply	Vcc2	1.71		1.89	V	
Supply Voltage – 3.3V supply	Vcc3	3.13		3.47	V	
Supply Current – 1.8V supply	Icc2			200	mA	
Supply Current – 3.3V supply	Icc3			650	mA	
Module total power	P			2.5	W	1
XFP Interrupt, Mod_NR	Vol	0		0.4	V	
	Voh	V _{CCHOST} -0.5		V _{CCHOST} +0.3	V	
P_Down/RST	Vil	-0.3		0.8	V	
	Vih	2.0		Vcc3+0.3	V	
Interrupt Assert Delay				200	ms	
Interrupt Negate Delay				500	us	
Mod_NR Assert / Negate Delay				1	ms	
P-Down reset time		10			us	
Transmitter						
Input differential impedance	Rin	80	100	120	Ω	2
Differential data input swing	Vin,pp	120		820	mV	
Transmit Disable Voltage	VD	2.0		Vcc	V	3
Transmit Enable Voltage	VEN	GND		GND+0.8	V	

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Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Receiver						
Differential Output Impedance	Rout	80	100	120	Ω	
Differential data output swing	Vout,pp			850	mV	4
Data output rise time	tr			38	ps	5
Data output fall time	tf			38	ps	5
LOS Fault	VLOS fault	V _{CCHOST} -0.5		V _{CCHOST}	V	6
LOS Normal	VLOS norm	GND		GND+0.5	V	6

Notes:

1. Maximum total power value is specified across the full temperature and voltage range.
2. After internal AC coupling.
3. Or open circuit.
4. Into 100 ohms differential termination.
5. These are unfiltered 20-80% values
6. Loss Of Signal is open collector to be pulled up with a 4.7k – 10kohm resistor to 3.15 – 3.6V. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

v. Ordering Information

Pivotal Part Number	Description
XFP-W45-80-D	XFP, BiDi, 1490TX/1550RX, ZR SMF 80km 10G/OC-192 DDM, C-Temp
XFP-W45-80-DI	XFP, BiDi, 1490TX/1550RX, ZR SMF 80km 10G/OC-192 DDM, I-Temp
XFP-W54-80-D	XFP, BiDi, 1550TX/1490RX, ZR SMF 80km 10G/OC-192 DDM, C-Temp
XFP-W54-80-DI	XFP, BiDi, 1550TX/1490RX, ZR SMF 80km 10G/OC-192 DDM, I-Temp

Notes:

1. Please contact sales for specific OEM Platform part numbers to fit your network.

Warranty

<https://pivotaloptics.com/warranty/>

Disclaimer

External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.