

SFP28-W23/W32-40-25GD

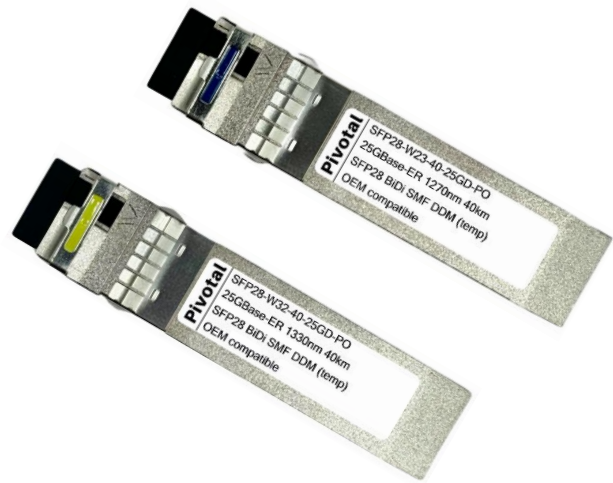
25GBASE, SFP28, ER, BiDi, SMF TRANSCEIVER (BXU)1270/1330nm,
(BXD)1330/1270nm, 40km REACH, SIMPLEX LC CONNECTOR

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Product Features

- Up to 25.78Gbp/s Data Links
- Up to 40km transmission on SMF
- 1270nm/1330nm DFB Laser & PIN receiver
- 1330nm/1270nm DFB Laser & PIN receiver
- Support Digital Monitoring interface
- BiDi LC optical connector
- Single +3.3V power supply
- RoHS-10 compliant and lead-free
- Compliant with SFF+MSA and SFF-8472
- Maximum power consumption 1.5W
- Metal enclosure, for lower EMI
- Meet ESD requirements
- Available operating temperature ranges:
 - Commercial: 0°C to 70°C
 - Industrial: -40°C to 85°C



Product Applications

- 25GBASE-ER
- OTN / CPRI

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	-0.5		3.6	V
Relative Humidity (non-condensation)	RH	5		95	%
Damage Threshold	THd	-3			dBm

II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	TC	0		+70	°C	Commercial
		-40		+85	°C	Industrial
Power Supply Voltage	VCC	3.1	3.3	3.47	V	
Data Rate	BR		25.78		Gbps	
Control Input Voltage High		2		Vcc	V	
Control Input Voltage Low		0		0.8	V	
Link Distance	D			40	km	9/125um

III. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Consumption	P			1.75	W	
Supply Current	Icc			520	mA	
Transmitter						
Single-ended Input Voltage Tolerance	Vcc	-0.3		4.0	V	
Common Mode Voltage Tolerance		15			mV	
Differential Input Voltage Swing	Vin,pp	180		700	mVpp	
Differential Input Impedance	Zin	90	100	110	Ohm	1
Transmit Disable Assert Time				10	us	
Transmit Disable Voltage	Vdis	Vcc-1.3		Vcc	V	
Transmit Enable Voltage	Ven	Vee		Vee+0.8	V	2
Receiver						
Single-ended Input Voltage Tolerance	Vcc	-0.3		4.0	V	
Differential Output Voltage Swing	Vout,pp	300		900	mVpp	
Differential Output Impedance	Zout	90	100	110	ohms	3
Data output rise/fall time	Tr/Tf	9.5			ps	4
LOS Assert Voltage	VloSH	Vcc-1.3		Vcc	V	5
LOS De-assert Voltage	VloSL	Vee-0.3		0.8	V	5

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.

IV. Optical Characteristics

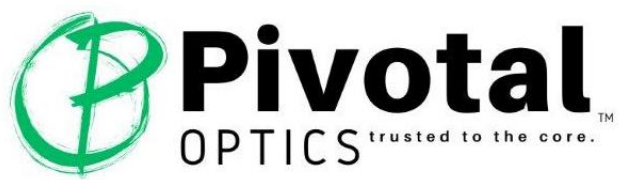
Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Centre Wavelength	λ_C	1260	1270	1280	nm	BXU
		1320	1330	1340		BXD
Optical Spectral Width	$\Delta\lambda$			1	nm	
Average Optical Power	P_{avg}	-3		6	dBm	1
Side Mode Suppression Ratio	SMSR	20			dB	
Optical Extinction Ratio	ER	3.5			dB	
Transmitter OFF Output Power	P_{Off}			-30	dBm	
Transmitter and Dispersion Penalty	TDP			2.7	dB	
Optical Return Loss	ORLT			20	dB	
Transmitter Eye Mask	Compliant with IEEE802.3ae					
Receiver						
Center Wavelength	λ_c	1320	1330	1340	nm	BXU
		1260	1270	1280		BXD
Receiver Sensitivity (AVG Power)	PIN			-14	dBm	2
Stressed Receiver Sensitivity (OMA)	sen			-11.5	dBm	2
Average Receive Power		-20		-4	dBm	
Input Saturation Power (overload)	P_{sat}	-8			dBm	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-21	dBm	
LOS Hysteresis	LOSH	0.5			dBm	
Damage Threshold	THd	-3			dB	

Notes:

1. Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
2. Measured with Light source 1270@1330nm, ER=3.5dB; BER≤1E-12 @10.3125Gbps, PRBS=2³¹-1 NRZ.

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V. Ordering Information

Pivotal Part Number	Description
SFP28-W23-40-25GD	SFP28, WDM BiDi 1270TX/1330RX, ER SMF 40km, 25G DDM, C-Temp
SFP28-W23-40-25GDI	SFP28, WDM BiDi 1270TX/1330RX, ER SMF 40km, 25G DDM, I-Temp
SFP28-W32-40-25GD	SFP28, WDM BiDi 1330TX/1270RX, ER SMF 40km, 25G DDM, C-Temp
SFP28-W32-40-25GDI	SFP28, WDM BiDi 1330TX/1270RX, ER SMF 40km, 25G 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.