



SFP-25GB-DW-C-15-E-J-OPC

Juniper Networks® Compatible TAA 10/25GBase-DWDM SFP28 Transceiver Dual-Rate 100GHz (SMF, Tunable, 15km, LC, DOM, -20 to 85C)

Features

- SFF-8432 and SFF-8472 Compliant
- Duplex LC Connector
- 100GHz Channel Spacing
- Supports 24.33024G, 25.78125Gbps (with FEC); 9.8304G, 10.1376G, 10.3125Gbps
- Extended Temperature -20 to 85 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



Applications:

- 25GBase
- Access, Metro and Enterprise

Product Description

This Juniper Networks® compatible dual-rate SFP28 transceiver provides 10/25GBase-DWDM throughput up to 15km over single-mode fiber (SMF) using a tunable wavelength via an LC connector. It can operate at temperatures between -20 and 85C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Juniper Networks®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4.
- ESD to the LC Receptacle: compatible with IEC 61000-4-3.
- EMI/EMC: compatible with FCC Part 15 Subpart B Rules, EN55022:2010.
- Laser Eye Safety: compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1, 2.
- RoHS: compliant with EU RoHS 2.0 directive 2015/863/EU.

DWDM Wavelength ITU Channels - 100 GHz Spacing

ITU Channel	Center Wavelength (nm)	Frequency (THz)	ITU Channel	Center Wavelength (nm)	Frequency (THz)
14	1566.31	191.4	38	1546.92	193.8
15	1565.50	191.5	39	1546.12	193.9
16	1564.68	191.6	40	1545.32	194.0
17	1563.86	191.7	41	1544.53	194.1
18	1563.05	191.8	42	1543.73	194.2
19	1562.23	191.9	43	1542.94	194.3
20	1561.42	192.0	44	1542.14	194.4
21	1560.61	192.1	45	1541.35	194.5
22	1559.79	192.2	46	1540.56	194.6
23	1558.98	192.3	47	1539.77	194.7
24	1558.17	192.4	48	1538.98	194.8
25	1557.36	192.5	49	1538.19	194.9
26	1556.55	192.6	50	1537.4	195.0
27	1555.75	192.7	51	1536.61	195.1
28	1554.94	192.8	52	1535.82	195.2
29	1554.13	192.9	53	1535.04	195.3
30	1553.33	193.0	54	1534.25	195.4
31	1552.52	193.1	55	1533.47	195.5
32	1551.72	193.2	56	1532.68	195.6
33	1550.92	193.3	57	1531.9	195.7
34	1550.12	193.4	58	1531.12	195.8
35	1549.32	193.5	59	1530.33	195.9
36	1548.51	193.6	60	1529.55	196.0
37	1547.72	193.7	61	1528.77	196.1

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	V _{CC}	0	3.3	3.6	V
Storage Temperature	T _{stg}	-40		85	°C
Operating Case Temperature	T _c	-20		85	°C
Operating Humidity	RH	0		85	%
Data Rate	DR	24.33024 9.8304		25.78125 10.3125	Gbps
Data Rate Accuracy		-100		100	ppm
9/125μm G.652 SMF				15	km

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	V _{CC}	3.135	3.30	3.465	V	
Power Dissipation	P _{DISS}			2.5	W	1
Power Supply Current	I _{CC}			0.76	A	
Transmitter						
Data Rate	DR	24.33024 9.8304		25.78125 10.3125	Gbps	CDR Bypass
Differential Voltage pk-pk	V _{IN,pp}	180		900	mV	
Tx Differential Input Impedence	Z _{IN}		100		Ω	
Transmitter Disable Voltage	V _D	2		V _{ee} + 0.3	V	
Transmitter Enable Voltage	V _{EN}	0		0.8	V	
Receiver						
Data Rate	DR	24.33024 9.8304		25.78125 10.3125	Gbps	CDR Bypass
Differential Voltage pk-pk	V _{IN,pp}	450	600	900	mV	
Rx Differential Output Impedence	Z _{OUT}		100		Ω	
LOS Assert Voltage	V _{LOSA}	2.4		V _{CC}	V	
LOS De-Assert Voltage	V _{LOSD}	V _{ee}		V _{ee} +0.4	V	
Eye Height	EH ₁₅	228			mV	
Eye Width	EW ₁₅	0.57			UI	
Vertical Eye Closure	VEC			5.5	dB	

Notes:

1. Power dissipation is less than 2.5W when supply voltage is 3.3V.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Output Average Power	PO	0		4	dBm	
Wavelength Range	λC	1528.77		1566.31	nm	
Wavelength Accuracy		-12.5		12.5	GHz	
Frequency Range		191.3		196.0	THz	
Channel Spacing			100		GHz	
Extinction Ratio	ER	3.5			dB	
Side-Mode Suppression Ratio	SMSR	30			dB	
Transmitter Eye Mask Definition {X1, X2, X3, Y1, Y2, Y3}	{0.31, 0.4, 0.45, 0.34, 0.38, 0.4} Hit ratio 5×10 ⁻⁵ hits per sample					
Receiver						
Frequency Range		191.3		196.0	THz	
Saturation Power		-2		-23	dBm	
Receiver Sensitivity	S			-14 (5e ⁻⁵ FEC)	dBm	
Receiver Sensitivity (After 15km)	S			-14 (5e ⁻⁵ FEC)	dBm	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-16	dBm	
LOS Hysteresis		0.5			dB	
SRS Eye Mask Definition {X1, X2, X3, Y1, Y2, Y3}	{0.31, 0.4, 0.45, 0.34, 0.38, 0.4}					

Pin Descriptions

Pin	Symbol	Name	Ref.
1	VeeT	Transmitter Ground.	1
2	Tx_Fault	Transmitter Fault Indication.	
3	Tx_Disable	Disables the transmitter or laser output.	2
4	SDA	2-Wire Serial Interface Data.	2
5	SCL	2-Wire Serial Interface Clock.	2
6	Mod_ABS	Indicates the module online state. This pin is connected to the VeeT or VeeR pin.	
7	RS0	Selects a rate for the module. This pin is connected to the 33k Ω resistor.	
8	LOS	Indicates a loss of received signals.	2
9	RS1	Selects a rate for the module. This pin is connected to the 33k Ω resistor.	
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground 1.	1
12	RD-	Inverse Received Data Output.	
13	RD+	Received Data Output.	
14	VeeR	Receiver Ground.	1
15	VccR	+3.3V Receiver Power.	1
16	VccT	+3.3V Transmitter Power.	1
17	VeeT	Transmitter Ground.	1
18	TD+	Transmit Data Input.	
19	TD-	Inverse Transmit Data Input.	
20	VeeT	Transmitter Ground.	1

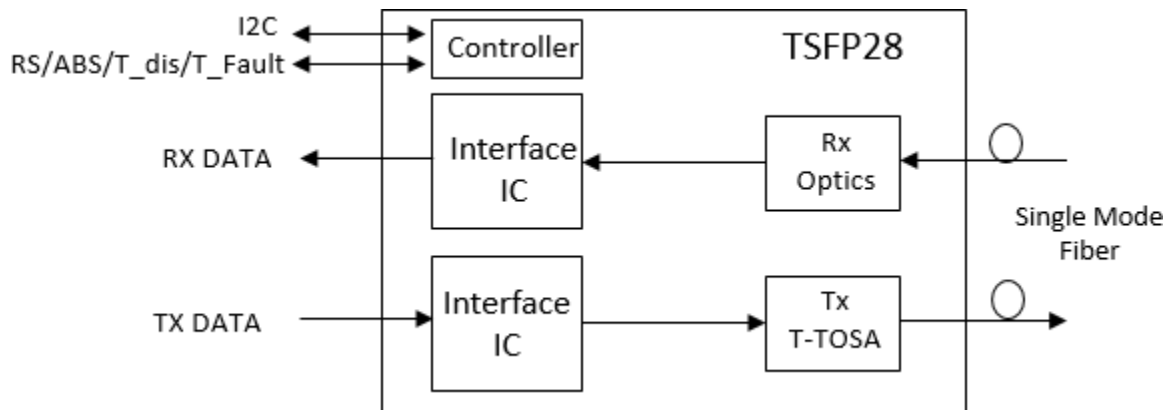
Notes:

1. The ground of the module (operating module ground) and that of the module shell are separate from each other.
2. 4.7k Ω –10k Ω resistor is used on the module to pull the output up to 3.15–3.45V.



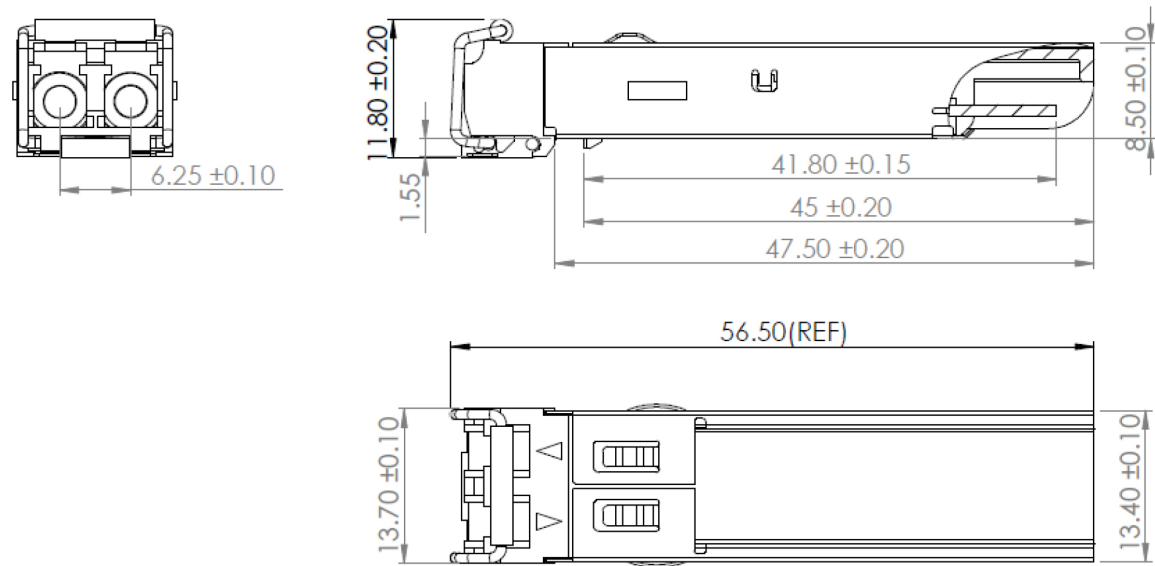
Pin-Out of Connector Block on Host Board

Transceiver Block Diagram



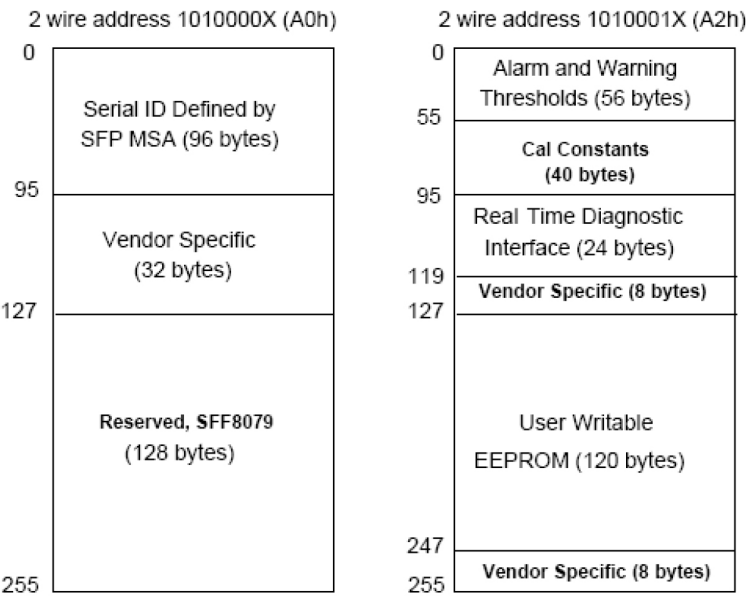
Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map-specific data field description is as below:



OptioConnect

Innovation for the Future of High-Speed Networking

Who We Are

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

Let's Connect

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.

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