SFP-25GB-DW-C-15-MX-AO

NVIDIA® Compatible TAA 10/25GBase-DWDM SFP28 Transceiver Dual-Rate 100GHz (SMF, Tunable, 15km, LC, DOM)

Features:

- Operating Data Rate: 9.8 to 25.78Gbps
- C-Band 100GHz Tunable Tx(MZM-DBR)/Rx(APD)
- Compliant with SFF-8402 and SFF-8690
- Supports ASP (Automated Self-Pairing) Functions
- Supports ROD (Remote DDM) Functions
- Supports Optical and Electrical Loopback Functions
- Hot-Pluggable Electrical Interface
- Class 1 Laser Safety
- Operating Temperature: 0 to 70 Celsius
- Single 3.3V Power Supply
- RoHS Compliant and Lead-Free



Applications:

- 25GBase
- Access, Metro and Enterprise

Product Description

This NVIDIA® 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. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with NVIDIA®. 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.

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

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S.-made or designated country end products."

TAA COMPLIANT

ITU Channel Wavelength Guide

ITU Channel	Frequency (THz)	Center Wavelength (nm)	ITU Channel	Frequency (THz)	Center Wavelength (nm)
14	191.40	1566.31	**38**	193.80	1546.92
15	191.50	1565.50	**39**	193.90	1546.12
16	191.60	1564.68	**40**	194.00	1545.32
17	191.70	1563.86	**41**	194.10	1544.53
18	191.80	1563.05	**42**	194.20	1543.73
19	191.90	1562.23	**43**	194.30	1542.94
20	192.00	1561.42	**44**	194.40	1542.14
21	192.10	1560.61	**45**	194.50	1541.35
22	192.20	1559.79	**46**	194.60	1540.56
23	192.30	1558.98	**47**	194.70	1539.77
24	192.40	1558.17	**48**	194.80	1538.98
25	192.50	1557.36	**49**	194.90	1538.19
26	192.60	1556.56	**50**	195.00	1537.40
27	192.70	1555.75	**51**	195.10	1536.61
28	192.80	1554.94	**52**	195.20	1535.82
29	192.90	1554.13	**53**	195.30	1535.04
30	193.00	1553.33	**54**	195.40	1534.25
31	193.10	1552.52	**55**	195.50	1533.47
32	193.20	1551.72	**56**	195.60	1532.68
33	193.30	1550.92	**57**	195.70	1531.90
34	193.40	1550.12	**58**	195.80	1531.12
35	193.50	1549.32	**59**	195.90	1530.33
36	193.60	1548.52	**60**	196.00	1529.55
37	193.70	1547.72	**61**	196.10	1528.77

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Relative Humidity (Non-Condensing)	%	5		95		
Operating Case Temperature	Tc	0		70	°C	
Storage Temperature	Tstg	-40		85	°C	
Supply Voltage	V	0		4		
Data Rate	DR_{25}	24.3		25.78	Gbps	1
	DR_{10}	9.8	10.3	12.5		2

Notes :

1. RS high logic.
2. RS low logic.

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage			3.135	3.3	3.465	Vcc	
Power Dissipation		PC			3.5	W	@3.3V
Power Supply Noise Tolerance		PSNT			66	mVp-p	1
Transmitter							
Differential Input Voltage		VIN	190		700	mV	AC coupled
Differential Input Impedance		ZIN	90	100	110	Ω	
Tx_Disable	**Input Low**	VIL	-0.3		0.8	V	2
	Input High	VIH	2.0		Vcc+0.3	V	
	Assert Time	tOFF			100	us	High
	Negate Time	tON			2.0	ms	Low
Tx_Disable to Start Reset		treset	10			us	High
Time to Initialize		tInit			90	s	3
Tx_Fault	**Output Low**	VFOL	-0.3		0.4	V	LVTTL, low is normal
	Output High	IFOH	-50		37.5	uA	
RS1 (Rate Select for Tx)		VIL	-0.3		0.8	V	Internally pulled down
		VIH	2.0		Vcc+0.3	V	
Receiver							
Differential Output Voltage		VOUT	300		850	mV	AC coupled
Differential Output Impedance		ZOUT	90	100	110	Ω	
Rx_LOS (Loss of Signal)	**Output Low**	VLOSL	-0.3		0.4	V	LVTTL, low is normal
	Output High	ILOSH	-50		37.5	uA	
	Assert time	tLOS-ON			100	us	High @S
	De-Assert time	tLOS-OFF			100	us	Low @S
RS0 (Rate Select for Rx)		VIL	-0.3		0.8	V	Internally pulled down
		VIH	2		Vcc+0.3	V	

Notes:

1. From 10Hz to 10MHz.
2. LVTTL, normal at low, high is shutdown (Poff).
3. Including reset of Tx_Fault.

Optical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter							
Average Launch Power		Pavg	-1.0		3.0	dBm	
Optical Power Flatness		ΔPO	-1.0		1.0	dB	All channels
Transmitter Disabled Power		Poff			-30	dBm	1
Optical Center Wavelength		λC	1528.77		1566.31	nm	2
Optical Center Frequency		FfC	191.40		196.10	THz	2
Center Wavelength Spacing				100		GHz	2
Wavelength Stability	**Beginning of Life**	λp_BOL	-1.7	λC	1.7	GHz	3
	End of Life	λp_EOL	-2.5	λC	2.5	GHz	3
Wavelength Tuning Speed		TTUNE			30	ms	4
Spectral Width					0.5	nm	@-20dB
Side-Mode Suppression Ratio		SMSR	30			dB	
Extinction Ratio		ER	8.0			dB	PRBS2^{31}-1
Relative Intensity Noise		$RIN_{20}OMA$			-130.0	dB/Hz	
Optical Return Loss tolerance		ORL			20.0	dB	
Transmitter Reflectance					-26.0	dB	
Optical Eye Mask		IEEE802.3cc 114.6 25GBASE-LR/ER {X1,X2,X3,Y1,Y2,Y3} = {0.31,0.40,0.45,0.34,0.38,0.40}					Hit ratio $5E^{-5}$
Receiver							
Optical Sensitivity	**25.78Gbps or 24.33Gbps**	S1			-19.0		5
	10.7Gbps, 10.3Gbps, 9.8Gbps	S2			-19.0		6
	11.3Gbps to 11.1Gbps	S3			-19.0		7
Optical Overload		OL	-4.0			dBm	8
Operating wavelength		λo	1525		1575	nm	
Rx_LOS (Loss of Signal)	**Assert**	LOSA	-30.0			dBm	9
	De-Assert	LOSD			-23.0	dBm	
	Hysteresis	LOSH	0.5		5.0	dB	
Return Loss of Receiver					-26.0	dB	
RSSI Calibration		RCAL	Internally Calibrated (The host side can be read by an external way)				
Auxiliary Management and Control Channel							
Bit Rate		BR_{AMCC}		1200		Gbps	
Modulation Depth		$AMCC_{MD}$	5		10	%	
Dynamic Range		DR_{AMCC}	-4		-24	dBm	10

Notes:

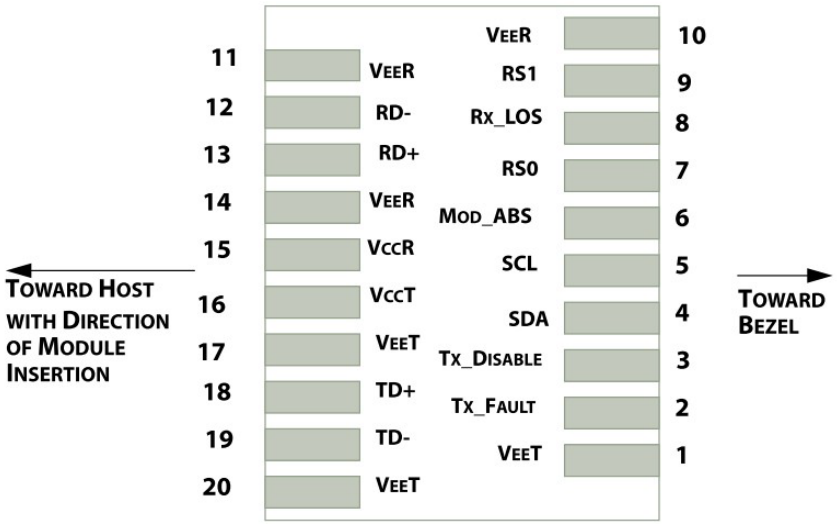
1. @Tx_Disable is high.

2. ITU-T 694.1 grid wavelength.
3. λC=ITU grid wavelength.
4. From any channel to and other channel. ASP disable.
5. $PRBS2^{31}$, BER $5x10^{-5}$, source ER=8.0dB, SMF 15km, G652.
6. $PRBS2^{31}$, BER $5x10^{-12}$, source ER=8.0dB, SMF 15km, G652.
7. $PRBS2^{31}$, BER $5x10^{-4}$, source ER=8.0dB, SMF 15km, G652.
8. $PRBS2^{31}$, source ER=8.0dB.
9. Rx squelch activated.
10. $AMCC_{MD}$: 5%, 1200bps.

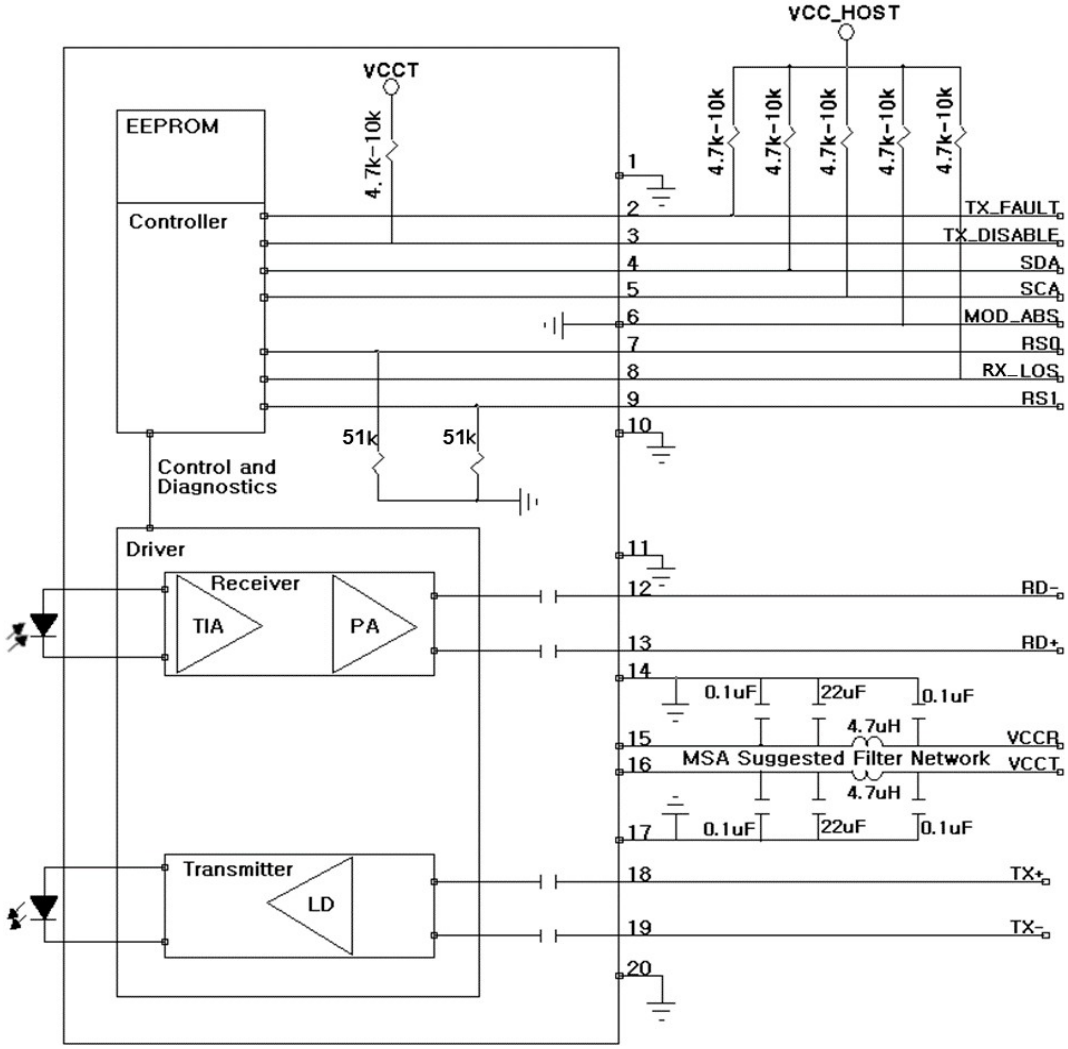
Pin Descriptions

Pin	Symbol	Name/Description	Plug Seq.	Notes
1	VeeT	Transmitter Ground.	1	
2	Tx_Fault	Transmitter Fault Status Output.	3	
3	Tx_Disable	Transmitter Disable Control Input.	3	
4	SDA	I^2C Data (Input/Output).	3	
5	SCL	I^2C Clock (Input/Output).	3	
6	MOD_ABS	Indicates that the module is present. Grounded internally.	3	
7	RS0	Rate Select 0. Internally pulled down. 51kΩ.	3	
8	Rx_LOS	Receiver Loss of Signal Status Output.	3	
9	RS1	Rate Select 1. Internally pulled down. 51kΩ.	3	
10	VeeR	Receiver Ground.	1	
11	VeeR	Receiver Ground.	1	
12	RD-	Receiver Inverted Data Output.	3	
13	RD+	Receiver Non-Inverted Data Output.	3	
14	VeeR	Receiver Ground.	1	
15	VccR	Receiver 3.3V Power Supply.	2	
16	VccT	Transmitter 3.3V Power Supply.	2	
17	VeeT	Transmitter Ground.	1	
18	TD+	Transmitter Non-Inverted Data Input.	3	
19	TD-	Transmitter Inverted Data Input.	3	
20	VeeT	Transmitter Ground.	1	

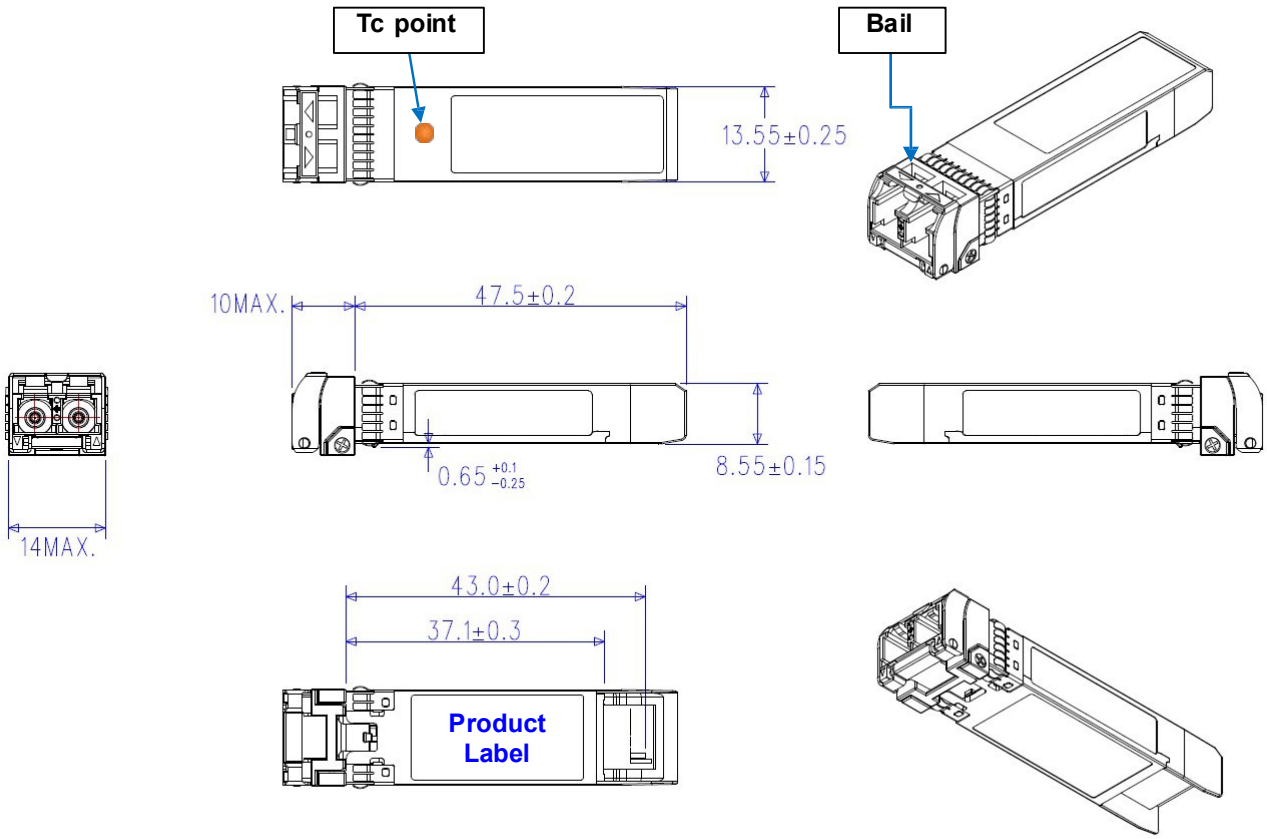
Pin-Out Details



Recommended Interface Circuit



Mechanical Specifications



About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is ingrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications ranging from NEBS Level 3 to ISO 9001:2015 with every new development while maintaining the signature reliability of its products.



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