

## SFP-25GB-CW-29-40-AU-AO

Aruba Networks® Compatible TAA 25Gbase-CWDM SFP28 Transceiver (SMF, 1290nm, 40km, LC, DOM)

### Features

- Up to 25.78Gbps Data Links
- CWDM DFB Laser and APD receiver
- Up to 40km transmission on SMF
- Hot-pluggable SFP28 footprint
- Specifications compliant with SFF 8472
- Metal enclosure, for lower EMI
- Compliant with SFF-8402 with LC connector
- Dual CDR with bypass function
- Power dissipation: 2.0W
- Single 3.3V power supply
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



### Applications

- 25x Gigabit Ethernet over CWDM
- Access, Metro and Enterprise
- Mobile Fronthaul CPRI/OBSAI

### Product Description

This Aruba Networks® compatible SFP28 transceiver provides 25GBase-CWDM throughput up to 40km over single-mode fiber (SMF) using a wavelength of 1290nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Cisco® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow 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.

### CWDM Available Wavelengths

Wavelengths	Min.	Typ.	Max.
27	1264.5	1271	1277.5
29	1284.5	1291	1297.5
31	1304.5	1311	1317.5

### Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	-0.3		4	V	
Storage Temperature	TS	-40		85	°C	
Operating Case Temperature	Tc	0		70	°C	
Relative Humidity (non-condensing)	RH	0		85	%	
Data Rate	BR		25.78		Gbps	1
Transmission Distance	TD		40		km	
Coupled fiber		Single mode fiber				2

### Notes:

1. TX Rate/RX Rate
2. 9/125um SMF

## Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Power Supply Voltage</b>	Vcc	3.14	3.3	3.47	V	
<b>Power Supply Current</b>	Icc			550	mA	
	Icc			600	mA	
<b>Signal Input Voltage</b>	VSI	Vcc-0.3		Vcc+0.3	V	
<b>Transmitter</b>						
<b>Input differential impedance</b>	Rin		100		$\Omega$	1
<b>Single ended data input swing</b>	Vin,pp	180		700	mV	
<b>Transmitter Fault Output-High</b>	VFaultH	2		Vcc+0.3	V	
<b>Transmitter Fault Output-Low</b>	VFaultL	0		0.8	V	
<b>Transmitter Disable Voltage- High</b>	VDisH	2		Vcc+0.3	V	
<b>Transmitter Disable Voltage- low</b>	VDisL	0		0.8	V	
<b>Receiver</b>						
<b>Differential data output swing</b>	Vout,pp	300		850	mV	2
<b>LOS Output Voltage-High</b>	VLOSH	2		Vcc+0.3	V	
<b>LOS Output Voltage-Low</b>	VLOSL	0		0.8	V	

### Notes:

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Into 100 ohms differential termination.

## Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
<b>Average Launched Power</b>	P <sub>O</sub>	0		+6.0	dBm	
<b>Center Wavelength Range</b>	λC	λ-6.5		λ+6.5	nm	1
<b>Spectrum Bandwidth (-20dB)</b>	Δλ			1	nm	
<b>Side-Mode Suppression Ratio</b>	SMSR	30			dB	
<b>Extinction Ratio</b>	ER	3.5			dB	2
<b>Relative Intensity Noise</b>	RIN <sub>20OMA</sub>			-130	dB/Hz	
<b>Average Launched Power (Laser Off)</b>	P <sub>off</sub>			-30		
<b>Optical return loss tolerance</b>				20	dB	
<b>Transmitter reflectance</b>				-12	dB	
<b>Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3}</b> <b>Hit ratio 5x10<sup>-5</sup> hits per sample</b>		{0.31, 0.4, 0.45, 0.34, 0.38, 0.4}				3
<b>Receiver</b>						
<b>Input Optical Wavelength</b>	λ <sub>IN</sub>	1270		1610	nm	
<b>Damage threshold</b>		-3			dBm	
<b>Receiver Sensitivity</b>	P <sub>sen1</sub>			-19	dBm	4
<b>Input Saturation Power (Overload)</b>	PSAT	-6			dBm	4
<b>Los Of Signal Assert</b>	P <sub>A</sub>	-35			dBm	
<b>Los Of Signal De-assert</b>	P <sub>D</sub>			-20	dBm	
<b>LOS -Hysteresis</b>	P <sub>Phys</sub>	0.5		6	dB	

### Notes:

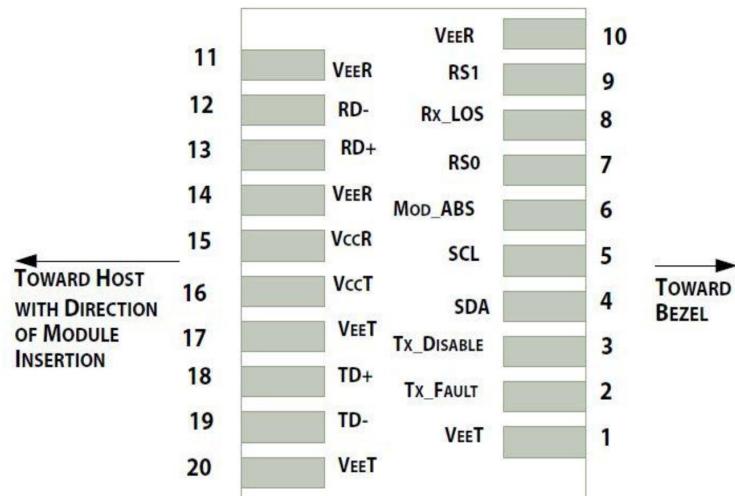
1. λis: 1271~1311 (nm)
2. Measured with a PRBS 231-1 test pattern, @25.78Gb/s.
3. Transmitter eye mask definition, Compliant with IEEE 802.3cc.
4. Measured with Light source 1310nm, ER=3.5dB; BER =<5X10<sup>-5</sup> @PRBS=231-1 NRZ.

### Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX Fault	Transmitter Fault. LVTTL-O	2
3	TX Disable	Transmitter Disable. Laser output disabled on high or open. LVTT-I.	3
4	SDA	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTL-I/O.	
5	SCL	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTL-I.	
6	MOD_ABS	Module Absent, Connect to VeeT or VeeR in Module.	4
7	RS0	Rate Select 0. Not used	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation. LVTTL-O.	2
9	RS1	Rate Select 1. Not used	5
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted DATA out. AC Coupled. CML-O.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled. CML-O.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled. CML-I.	
19	TD-	Transmitter Inverted DATA in. AC Coupled. CML-O.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

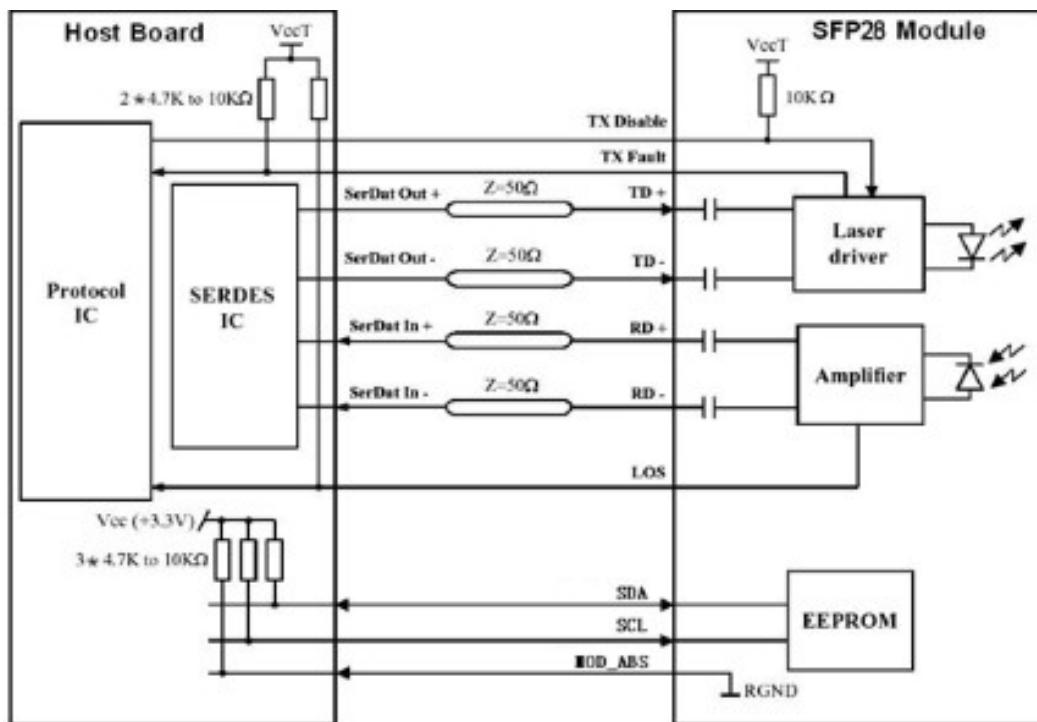
### Notes:

1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. This contact is an open collector/drain output and should be pulled up to the Vcc\_Host with resistor in the range 4.7KΩ to 10KΩ. Pull ups can be connected to one or several power supplies, however the host board design shall ensure that no module contact has voltage exceeding module VccT/R +0.5.V.
3. Tx\_Disable is an input contact with a 4.7KΩ to 10KΩ pull-up resistor to VccT inside module.
4. Mod\_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull the contact up to Vcc\_Host with a resistor in the range from 4.7KΩ to 10KΩ. Mod\_ABS is asserted “High” when the SFP+ module is physically absent from a host slot.
5. Internally pulled down per SFF-8431



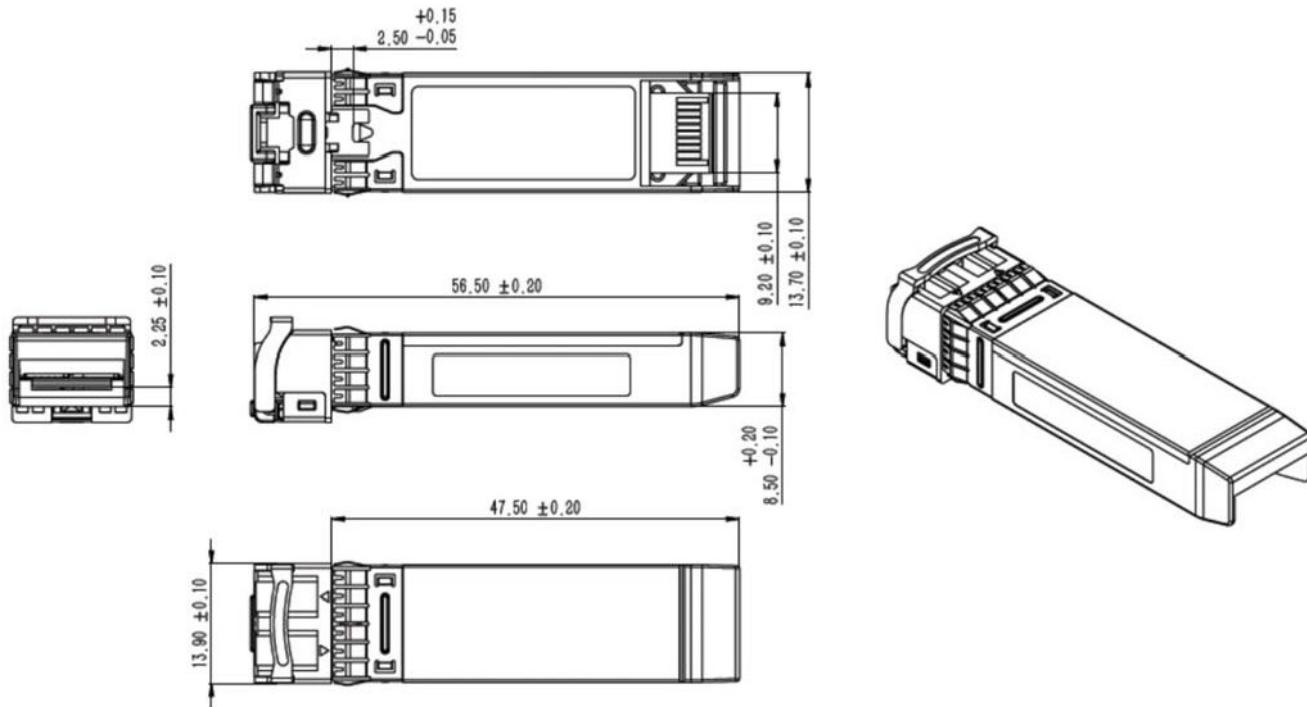
Pin-out of connector Block on Host board

### Recommended Interface Circuit Schematic



## Mechanical Specifications

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



## 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 engrained 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 from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



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