#### SFP-10GB-50DW27-80-AV-OPC

ADVA® Compatible TAA 10GBase-DWDM SFP+ Transceiver C-Band 50GHz (SMF, 1555.75nm, 80km, LC, DOM)

#### **Features**

- SFF-8432 and SFF-8472 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



#### **Applications:**

- 10x Gigabit Ethernet over DWDM
- 8x/10x Fibre Channel
- Access and Enterprise

#### **Product Description**

This ADVA® compatible SFP+ transceiver provides 10GBase-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1555.75nm via an LC connector. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Arista 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.

# **Wavelength Guide**

Channel#	Center Wavelength (nm)	Channel#	Center Wavelength (nm)
18	1563.05	40	1545.32
19	1562.23	41	1544.53
20	1561.42	42	1543.73
21	1560.61	43	1542.94
22	1559.79	44	1542.14
23	1558.98	45	1541.35
24	1558.17	46	1540.56
25	1557.36	47	1539.77
26	1556.55	48	1538.98
27	1555.75	49	1538.19
28	1554.94	50	1537.40
29	1554.13	51	1536.61
30	1553.33	52	1535.82
31	1552.52	53	1535.04
32	1551.72	54	1534.25
33	1550.92	55	1533.47
34	1550.12	56	1532.68
35	1549.32	57	1531.90
36	1548.51	58	1531.12
37	1547.72	59	1530.33
38	1546.92	60	1529.55
39	1546.12	61	1528.77

# **Absolute Maximum Ratings**

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes
Storage Temperature	Tstg	-40		85	°C	
Operating Temperature	Тс	0		70	°C	
Supply Current	Icc		450	500	mA	1
Data Rate	DR	1.2	10.3125	11.3	Gbps	2
Maximum Supply Voltage	Vcc	-0.5		4.0	V	1
Bit Error Rate	BER			10 <sup>-12</sup>		

#### Notes:

- 1. For electrical power interface.
- 2. IEEE 802.3ae.

## **Electrical Characteristics**

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes		
Power Supply Voltage	Vcc	3.14	3.3	3.46	V			
Transmitter								
Input Differential Impedance	RIN		100					
Differential Data Input Swing	VIN,pp	300		850	mV			
Transmit Disable Voltage	VD	2		Vcc	V			
Transmit Enable Voltage	VEN	Vee		Vee+0.8	V			
Receiver								
Differential Data Output Swing	VOUT,pp	300		850	mV			
Data Output Rise/Fall Time (20-80%)	Tr/Tf	28			ps			
LOS Fault	Vlosa	2		Host_Vcc	V			
LOS Normal	Vlosd	Vee		Vee+0.5	V			

## **Optical Characteristics**

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes		
Transmitter								
Output Optical Power	Ptx	0		4	dBm	1		
Optical Center Wavelength	λC	λC-0.05	λC	λC+0.05		2		
Extinction Ratio	ER	9			dB			
Spectral Width (-20dB)	Δλ			0.6	nm			
Side Mode Suppression Ratio	SMSR	30			dB			
Relative Intensity Noise	RIN			-128	dB/Hz			
Transmitter Dispersion Penalty	TDP			3.2	dB			
Launch Power of Off Transmitter	Poff			-30	dBm	1		
Receiver								
Optical Center Wavelength	λC	1260		1620	nm			
Average Receive Power	Prx	-24		-7	dBm			
Receiver Sensitivity @10.3Gbps	S			-24	dBm	3		
Receiver Reflectance	RR			-27	dB			
LOS Assert	LOSA	-35			dBm			
LOS De-Assert	LOSD			-27	dBm			
LOS Hysteresis	LOSH	0.5			dB			

## Notes:

- 1. Average.
- λ = specified ITU grid wavelength.
  Measured with the PRBS 2<sup>31</sup>-1 test mode and BER<10<sup>-12</sup>.

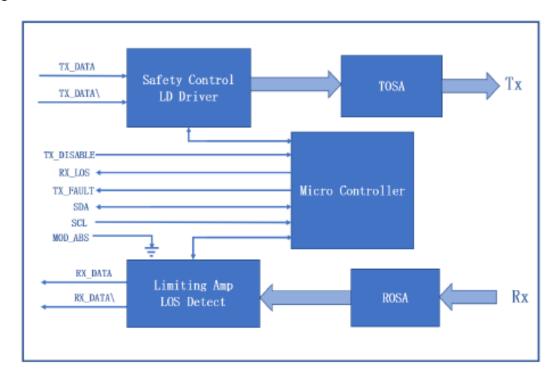
## **Pin Descriptions**

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground. Common with Receiver Ground.	1
2	Tx_Fault	Transmitter Fault.	
3	Tx_Disable	Transmitter Disable. Laser output disables on "high" or "open."	2
4	SDA	2-Wire Serial ID Interface Data Line.	3
5	SCL	2-Wire Serial ID Interface Clock Line.	3
6	MOD_ABS	Module Absent. Grounded within the module.	3
7	RSO	Rate Select 0. Not used.	
8	LOS	Loss of Signal Indication. "Logic 0" indicates normal operation.	4
9	RS1	Rate Select 1. Not used.	1
10	VeeR	Receiver Signal Ground. Common with Transmitter Ground.	1
11	VeeR	Receiver Signal Ground. Common with Transmitter Ground.	1
12	RD-	Inverse Received Data Out. AC Coupled.	
13	RD+	Non-Inverted Receiver Data Out. AC Coupled.	
14	VeeR	Receiver Signal Ground. Common with Transmitter Ground.	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Signal Ground. Common with Receiver Ground.	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Signal Ground.	1

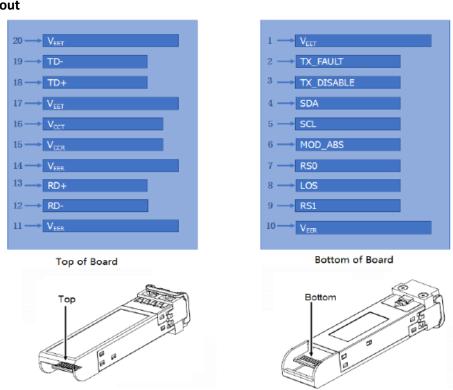
#### Notes:

- 1. Circuit ground is isolated from the chassis ground.
- 2. Disabled: Tdis>2V or open. Enabled: Tdis<0.8V.
- 3. Should be pulled up with  $4.7k\Omega$  to  $10k\Omega$  on the host board to a voltage between 2V and 3.46V.
- 4. LOS is open collector output.

## **Block Diagram of Transceiver**



## **Electrical Pad Layout**



# **Mechanical Specifications**

