

## 50DW-SFP10G-39.77-AO

Cisco® 50DW-SFP10G-39.77 Compatible TAA 10GBase-DWDM SFP+ Transceiver 100GHz (SMF, 1539.77nm, 80km, LC, DOM)

### Features

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



### Applications

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

### Product Description

This Cisco® 50DW-SFP10G-39.77 compatible SFP+ transceiver provides 10GBase-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1539.77nm 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.

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."



## 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.	Typ.	Max.	Unit	Notes
Storage Temperature	Tstg	-40		85	°C	
Operating Temperature	Tc	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.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.14	3.3	3.46	V	
<b>Transmitter</b>						
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	
<b>Receiver</b>						
Differential Data Output Swing	VOOUT,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.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Output Optical Power	Ptx	0		4	dBm	1
Optical Center Wavelength	$\lambda_C$	$\lambda_C-0.05$	$\lambda_C$	$\lambda_C+0.05$		2
Extinction Ratio	ER	9			dB	
Spectral Width (-20dB)	$\Delta\lambda$			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
<b>Receiver</b>						
Optical Center Wavelength	$\lambda_C$	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.
2.  $\lambda$  = specified ITU grid wavelength.
3. Measured with the PRBS 2<sup>31</sup>-1 test mode and BER<10<sup>-12</sup>.

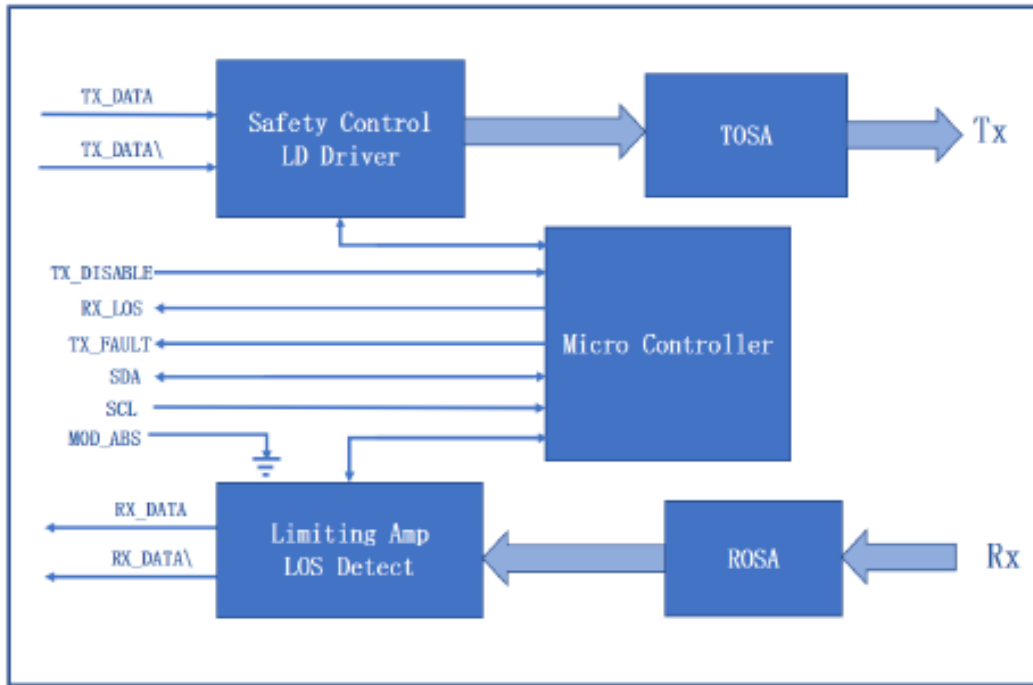
## Pin Descriptions

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	RS0	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

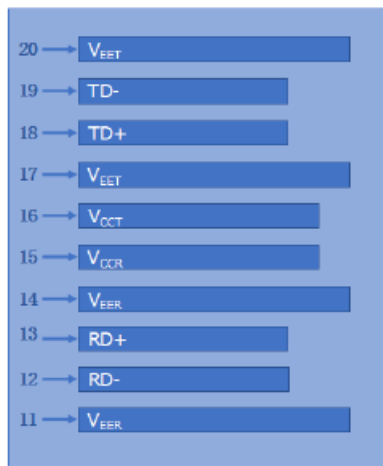
### Notes:

1. Circuit ground is isolated from the chassis ground.
2. Disabled:  $T_{dis} > 2V$  or open. Enabled:  $T_{dis} < 0.8V$ .
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.

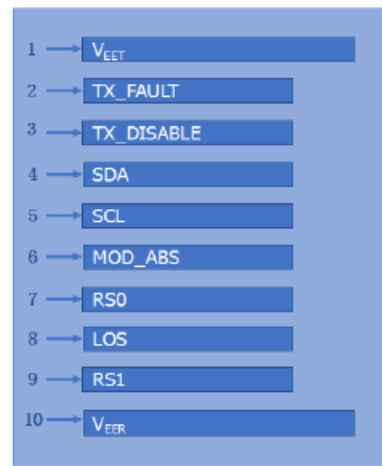
## Block Diagram of Transceiver



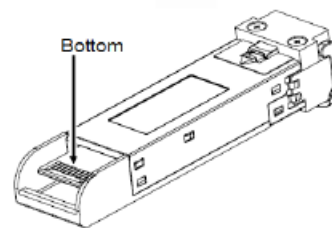
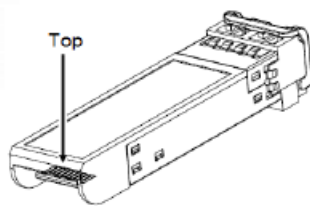
## Electrical Pad Layout



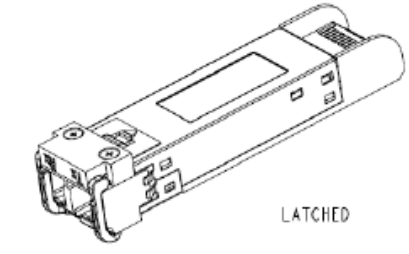
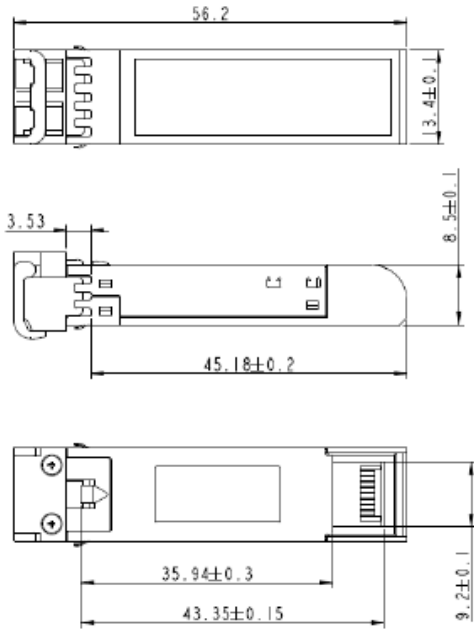
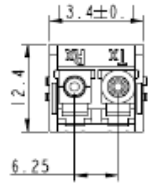
Top of Board



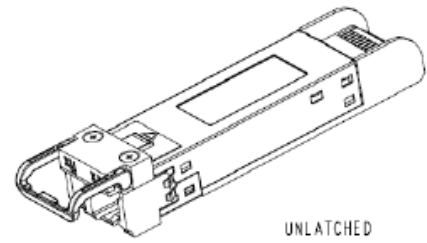
Bottom of Board



# Mechanical Specifications



LATCHED



UNLATCHED

## 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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