SFP-10G-59DWD80-PRO

Alcatel-Lucent Nokia® SFP-10G-59DWD80 Compatible TAA Compliant 10GBase-DWDM 100GHz SFP+ Transceiver (SMF, 1530.33nm, 80km, 0 to 70C, LC)

Features

- SFF-8432 and SFF-8472 Compliance
- Temperature-stabilized EML transmitter and APD receiver
- 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:

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

Product Description

This Alcatel-Lucent Nokia® SFP-10G-59DWD80 compatible SFP+ transceiver provides 10GBase-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1530.33nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Alcatel-Lucent Nokia® 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.

Proline'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.

Rev. 030124

Wavelength Guide (100GHz ITU-T Channel)

ITU Channel #	Frequency (THZ)	Center Wavelength (nm)
61	196.1	1528.77
60	196.0	1529.55
59	195.9	1530.33
58	195.8	1531.12
57	195.7	1531.90
56	195.6	1532.68
55	195.5	1533.47
54	195.4	1534.25
53	195.3	1535.04
52	195.2	1535.82
51	195.1	1536.61
50	195.0	1537.40
49	194.9	1538.19
48	194.8	1538.98
47	194.7	1539.77
46	194.6	1540.56
45	194.5	1541.35
44	194.4	1542.14
43	194.3	1542.94
42	194.2	1543.73
41	194.1	1544.53
40	194.0	1545.32
39	193.9	1546.12
38	193.8	1546.92
37	193.7	1547.72
36	193.6	1548.51
35	193.5	1549.32
34	193.4	1550.12
33	193.3	1550.92
32	193.2	1551.72
31	193.1	1552.52
30	193.0	1553.33
29	192.9	1554.13
28	192.8	1554.94
27	192.7	1555.75
26	192.6	1556.55
25	192.5	1557.36
24	192.4	1558.17
23	192.3	1558.98
22	192.2	1559.79
21	192.1	1560.61
20	192.0	1561.42

19	191.9	1562.23
18	191.8	1563.05
17	191.7	1563.86

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	0.5		4.0	V	
Storage Temperature	Tstg	-40		+85	°C	1
Operating Case Temperature	Tc	0		70	°C	
Data Rate	BR	1.2	10.3125	11.3	Gbps	2
Bit Error Rate	BER			10^{-12}		
Supply Current	Icc		450	500	mA	3

Notes:

1. Ambient temperature.
2. IEEE 802.3ae.
3. For electrical power interface.

Electrical Characteristics Vcc=3.4 to 3.46V, Tc

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Input Voltage	Vcc	3.14	3.3	3.46	V	
Power Consumption	P_D			1.5	W	
Transmitter						
Differential Input Impedance	ZIN		100		Ω	
Differential Data Input Swing	VIN,pp	300		850	mV	
Transmit Enable voltage	V_D	2		Vcc	V	
Transmit Enable voltage	V_{EN}	VeeT		VeeT + 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 Asserted	LOSA	2		Host_Vcc	V	
LOS De-Asserted	LOSD	VeeR		VeeR+ 0.5	V	

Notes:

1. For electrical power interface.

Optical Characteristics

Parameter	Symbol	Min	Typ.	Max	Unit	Notes
Transmitter						
Optical Power	PTX	0		4	dBm	1
Optical Wavelength	λ	λ-0.1	λ	λ+0.1	nm	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	P_{RX}	-24		-7	dBm	
Receiver Sensitivity @ 10.3 GBps	PX_SEN			-24	dBm	3
Receiver Reflectance	TR_{RX}			-27	dB	
LOS Assert	LOSA	-35			dB	
LOS De-assert	LOSD			-27	dB	
LOS Hysteresis	LOSH	0.5			dB	

Notes:

1. Average.
2. λ = specified ITU Grid wavelength.
3. Measured with PRBS $2^{31}-1$ test mode, BER<10^{-12}.

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX_Fault	Transmitter Fault.	
3	TX_Disable	Transmitter Disable. Laser output disabled on "high" or "open."	2
4	SDA	2-Wire Serial Interface Data.	3
5	SCL	2-Wire Serial Interface Clock.	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 Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted Data out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
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.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

Notes:

1. Circuit ground is isolated form chassis ground.
2. Disable TDIS>2Vor open. Enable TDIS<0.8V.
3. Should be pulled up with 4.7kΩ-10KΩ on host board to a voltage between 2V and 3.46V.
4. LOS is open collector output.

Typical eye Diagram

Block Diagram

Electrical Pad Layout

Top of Board		Bottom of Board	
20 → V_{EET}		1 → V_{EET}	
19 → TD-		2 → TX_FAULT	
18 → TD+		3 → TX_DISABLE	
17 → V_{EET}		4 → SDA	
16 → V_{CCT}		5 → SCL	
15 → V_{CCR}		6 → MOD_ABS	
14 → V_{EER}		7 → RS0	
13 → RD+		8 → LOS	
12 → RD-		9 → RS1	
11 → V_{EER}		10 → V_{EER}	

Top of Board   Bottom of Board

Top   Bottom

Mechanical Specifications

Module Weight: 16.5g

Dust Cap Weight: 0.95g

56.2

13.4±0.1

8.5±0.1

13.4±0.1

12.4

6.25

3.53

45.18±0.2

LATCHED

35.94±0.3

43.35±0.15

9.2±0.1

UNLATCHED

All Dimensions are ±0.2mm unless otherwise specified

About Us:

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.

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