

SV-SFPP-10GERD4Dxx

10Gbps, DWDM,SM, 40km with DDM



Features

- Up to 11.1Gbps Data Links
- Up to 40km transmission on SMF
- DWDM EML Laser and PIN receiver
- Metal enclosure, for lower EMI
- 2-wire interface with integrated
- Digital Diagnostic monitoring
- Hot-pluggable SFP+ footprint
- Specifications compliant with SFF 8472
- Compliant with SFP+ MSA with LC connector
- Single 3.3V power supply
- Case operating temperature range:0°C to 70°C
- Power dissipation < 1.5W

Applications

- 10GBASE-ER/EW
- 40 km 10G Fiber Channel
- 10G Ethernet with FEC

Ordering Information

Part no	Description	TX Power (dbm)	RX Sense (dbm)	Fibre Budget (db)	Distance (km)	DDM
SV-SFPP-10GERD4D##	Starview SFP+ module with Digital Diagnostic Monitoring (DDM), 1G/10G LAN, 1/2/4/8/10G FC, OC-192/STM-64 DWDM ####nm SM (LC), 100GHz spacing, distance up to 40km, where ## denotes *[see DWDM Wavelength Guide]	-1 to 3	-15.8 to 0.5	14.8	40	YES

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	Ts	-40	-	85	°C
Storage Ambient Humidity	HA	5	-	95	%
Operating Relative Humidity	RH	-	-	85	%
Power Supply Voltage	VCC	-0.3	-	4	V
Signal Input Voltage		Vcc-0.3	-	Vcc+0.3	V

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0	-	70	°C	Without air flow
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Supply Current	ICC	-		450	mA	
Data Rate	BR		10.3125		Gbps	
Transmission Distance	TD		-	40	km	
Coupled fiber			Single mode fiber			9/125um SMF

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Average Optical Power	Pavg	-1		3	dBm	1
Optical Wavelength	λ_c	$\lambda_c - 0.1$		$\lambda_c + 0.1$	nm	
Center Wavelength Spacing			100		GHz	2
Optical Extinction Ratio	ER	3.5			dB	
Transmitter and Dispersion Peanlty	TDP			3.0	dB	
Side mode Supression ratio	SMSR	30			dB	
Average Launch Power(Laser Off)	Poff			-30	dBm	
Output Eye Mask		Compliant with IEEE 802.3ae				
Receiver						
Rx Sensitivity	RSENS			-15.8	dBm	3
Input Saturation Power (Overload)	Psat	0.5			dBm	
Wavelength Range	λ_c	1270		1610	nm	
LOS De -Assert	LOSD			-17	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5			dB	

Note(1):Output power is power coupled into a 9/125 mm single-mode fiber.

Note(2):Corresponds to approximately 0.8 nm.

Note(3):Measured with a PRBS 231-1 test pattern, @10.325Gb/s, BER<10-12 .

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Supply Voltage	Vcc	3.14	3.3	3.46	V	
Supply Current	Icc			450	mA	
Transmitter						
Input differential impedance	ohm		100		Ω	1
Differential data input swing	V _{in,pp}	120		850	mV	
Transmit Disable Voltage	VD	V _{cc} -1.3		V _{cc}	V	
Transmit Enable Voltage	VEN	V _{ee}		V _{ee} + 0.8	V	2
TX_FAULT Voltage-High		V _{cc} -1.3		V _{cc}	V	
TX_FAULT Voltage-Low		V _{ee}		V _{ee} + 0.8	V	
Receiver						
Differential data output swing	V _{out,pp}	350		850	mV	3
Data output rise time	t _r	30			ps	4
Data output fall time	t _f	30			ps	4
LOS Fault	VLOS fault	V _{cc} -1.3		V _{cc} HOST	V	5
LOS Normal	VLOS norm	V _{ee}		V _{ee} +0.8	V	5

Note(1): Connected directly to TX data input pins. AC coupled thereafter.

Note(2): Or open circuit.

Note(3): Input 100 ohms differential termination.

Note(4): These are unfiltered 20-80% values

Note(5): Loss Of Signal is LVTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

DWDM Wavelength Guide

Channel	Wavelength(nm)	Frequency(THZ)	Channel	Wavelength(nm)	Frequency(THZ)
17	191.7	1563.86	40	194.0	1545.32
18	191.8	1563.05	41	194.1	1544.53
19	191.9	1562.23	42	194.2	1543.73
20	192.0	1561.42	43	194.3	1542.94
21	192.1	1560.61	44	194.4	1542.14
22	192.2	1559.79	45	194.5	1541.35
23	192.3	1558.98	46	194.6	1540.56
24	192.4	1558.17	47	194.7	1539.77
25	192.5	1557.36	48	194.8	1538.98
26	192.6	1556.55	49	194.9	1538.19
27	192.7	1555.75	50	195.0	1537.40
28	192.8	1554.94	51	195.1	1536.61
29	192.9	1554.13	52	195.2	1535.82
30	193.0	1553.33	53	195.3	1535.04
31	193.1	1552.52	54	195.4	1534.25
32	193.2	1551.72	55	195.5	1533.47
33	193.3	1550.92	56	195.6	1532.68
34	193.4	1550.12	57	195.7	1531.90
35	193.5	1549.32	58	195.8	1531.12
36	193.6	1548.51	59	195.9	1530.33
37	193.7	1547.72	60	196.0	1529.55
38	193.8	1546.92	61	196.1	1528.77
39	193.9	1546.12			