

# SV-QSFP-100G-ZXD8Dxx

Starview QSFP28 100GBase DWDM Single Lambda SM (LC) with DDM, distance up to 80km



## Features

- Supports 100Gbps
- Available in all C-Band Wavelengths on the 100GHz DWDM ITU Grid
- Single 3.3V Power Supply
- Power dissipation < 5.5W
- 80km reach over SMF with EDFA & DCM(dispersion compensation modules)
- QSFP28 MSA Compliant
- SFF-8636 Rev 2.10a Compliant
- 4x25G electrical interface
- LC duplex connector
- Commercial case temperature range of 0°C to 70°C
- I2C interface with integrated Digital Diagnostic Monitoring
- Safety Certification: TUV/UL/FDA
- RoHS Compliant

## Applications

- 100G Amplified DWDM networks
- Data center interconnects

## Ordering Information

Part number	Description
<b>SV-QSFP-100G-ZXD8Dxx</b>	Starview QSFP28 100Gbps module 100GBase Single Lambda with Digital Diagnostic Monitoring (DDM), DWDM #####nm SM (LC), distance up to 80km. where ## denotes *[see DWDM Wavelength Guide]

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	Ts	-40	+85	°C
Supply Voltage	Vcc	-0.5	3.6	V
Damage threshold	Rxdmg	5.5		dBm

## Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	Tc	0		70	°C
Power Supply Voltage	Vcc	3.135	3.3	3.465	V
Operating Relative Humidity	RH	5		85	%
Power Dissipation	P <sub>D</sub>			5.5	W

\* Power Supply specifications, Instantaneous, sustained and steady state current compliant with QSFP28 MSA Power Classification.

## Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Transmitter						
Differential data input swing per lane		900			mV <sub>p-p</sub>	
Differential input impedance	Z <sub>in</sub>	90	100	110	ohm	
DC common mode voltage(V <sub>cm</sub> )		-350		2850	mV	
Receiver						
Differential output amplitude				900	mV <sub>p-p</sub>	
Differential output impedance	Z <sub>out</sub>	90	100	110	ohm	
Output Rise/Fall Time	t <sub>r</sub> /t <sub>f</sub>	12			ps	20%~80%
Eye width		0.57			UI	
Eye height differential		228			mV	@TP4, all 3 PAM4 eyes, 1E-5
DC common mode voltage(V <sub>cm</sub> )		-350		2850	mV	1

Notes:

1.V<sub>cm</sub> is generated by the host. Specification includes effects of ground offset voltage

## Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
<b>Transmitter</b>					
Signaling speed			53.125		Gbaud
Center Wavelength Spacing			100		GHz
			0.8		nm
Spectral Width (-20dB)	$\Delta\lambda$			0.3	nm
Modulation format			PAM4		
Deviation From Central Frequency@EOL		-12.5		12.5	GHz
Side-mode suppression ratio	SMSR	30			dB
Extinction ratio	ER	3.5			dB
Transmit OMA	TxOMA	-0.2		4.2	dBm
Transmit average*(note4)	TxAVG	-2.4		4	dBm
Launch Power in OMA <sub>outer</sub> minus TDECQ*(note5)		-1.6			dBm
Launch Power in OMA <sub>outer</sub> minus TDECQ*(note6)		-1.5			dBm
Transmitter and dispersion eye closure	TDECQ			3.4	dB
Dispersion Tolerance	DT		40		ps/nm
Optical return loss tolerance*(note7)				17.1	dB
<b>Receiver</b>					
Signaling speed			53.125		Gbaud
Center wavelength	$\lambda_C$	1528		1566	nm
Damage threshold		5.5			dBm
Receive power (OMA <sub>outer</sub> )	RxOMA			4.7	dBm
Average receive power	RxAVG	-6.4		4.5	dBm
Receiver sensitivity (OMA <sub>outer</sub> )* <sup>(note8)</sup>	SenOMA			Max (-4.5, SECQ-5.9)	dBm
Receiver reflectance				-26	dB
LOS Assert	LOSA	-15			dBm
LOS De-Assert	LOSD			-12	dBm
LOS Hysteresis		0.5			dB

Note4: Average launch power (min) is informative and not the principal indicator of signal strength. A transmitter with launch power below this value cannot be compliant; however, a value above this does not ensure compliance.

Note5: for ER $\geq$ 4.5dB.

Note6: for ER $<$ 4.5dB.

Note7: Transmitter reflectance is defined looking into the transmitter

Note8: Sensitivity is specified at  $2.4 \times 10^{-4}$  BER.

## 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			