

# SV-QSFP-100G-LR

Starview QSFP28 100GBase DR Single Lambda SM (LC) with DDM, distance up to 10km



## Features

- Supports 100Gbps
- 100G Lambda MSA 100G-LR Specification compliant
- Single 3.3V Power Supply
- Power dissipation < 4W
- Up to 10km over SMF with FEC
- QSFP28 MSA 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 Ethernet
- Data center

## Ordering Information

Part number	Description
<b>SV-QSFP-100G-LR</b>	Starview QSFP28 100Gbps module 100GBase LR Single Lambda SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 10km

## 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>			4	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	
Stressed input parameters						
Eye width		0.57			UI	@TP4, all 3 PAM4 eyes, 1E-5
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>	9.5			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
Transmitter					
Signaling speed			53.125		Gbaud
Modulation format			PAM 4		
Center wavelength	$\lambda_C$	1304.5	1310	1317.5	nm
Side-mode Suppression Ratio	SMSR	30			dB
Extinction Ratio	ER	3.5			dB
Transmit OMA	TxOMA	0.7		4.7	dBm
Transmit average*(note4)	TxAVG	-1.4		4.5	dBm
Launch Power in OMAouter minus TDECQ*(note5)		-0.7			dBm
Launch Power in OMAouter minus TDECQ*(note6)		-0.6			dBm
Transmitter and dispersion eye closure	TDECQ			3.4	dB
Optical return loss tolerance*(note7)				15.6	dB
Receiver					
Signaling speed			53.125		Gbaud
Center wavelength	$\lambda_C$	1304.5	1310	1317.5	nm
Damage threshold		5.5			dBm
Receive Power (OMAouter)	RxOMA			4.7	dBm
Average receive power	RxAVG	-7.7		4.5	dBm
Receiver sensitivity(OMAouter)*(note8)	SenOMA			-6.1	dBm
Receiver reflectance				-26	dB
LOS Assert	LOSA	-30			dBm
LOS De-Assert	LOSD			-15	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  $ER \geq 4.5$ dB

Note6: for  $ER < 4.5$ dB

Note7: Transmitter reflectance is defined looking into the transmitter.

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