

SV-QSFP-100G-DR

Starview QSFP28 100GBase DR Single Lambda SM (LC) with DDM, distance up to 500m



Features

- QSFP28 MSA compliant
- Supports 53.125Gbaud
- IEEE802.3cd 100GBASE-DR Specification compliant
- Up to 500m transmission on single mode fiber (SMF) with FEC
- Operating case temperature: 0°C to 70°C
- 4x25G electrical interface (OIF CEI-28G- VSR)
- Maximum power consumption 4W
- LC duplex connector
- RoHS compliant

Applications

- Data Center Interconnect
- 100G Ethernet
- Enterprise networking

Ordering Information

Part number	Description
SV-QSFP-100G-DR	Starview QSFP28 100Gbps module 100GBase DR Single Lambda SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 500m

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units
Storage Temperature	TS	-40	85	degC
Power Supply Voltage	VCC	-0.5	3.6	V
Damage Threshold, each Lane	THd	6.5		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
Optical Data Rate (PAM4)			53.125		GBd
Data Rate Accuracy		-100		100	ppm

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

Electrical Characteristics

Parameter	Test Point	Min	Typical	Max	Units	Notes
Power Consumption				4.5	W	
Supply Current	Icc			1.36	A	
Transmitter (each Lane)						
Overload Differential Voltage pk-pk	TP1a	900			mV	
Common Mode Voltage (Vcm)	TP1	-350		2850	mV	1
Differential Termination Resistance Mismatch	TP1			10	%	At 1MHz
Differential Return Loss (SDD11)	TP1			See CEI- 28G-VSR Equation 13-19	dB	
Common Mode to Differential conversion and Differential to	TP1			See CEI- 28G-VSR	dB	
Common Mode conversion (SDC11, SCD11)				Equation 13-20		
Stressed Input Test	TP1a		See CEI- 28G-VSR Section 13.3.11.2.1			
Receiver (each Lane)						
Differential Voltage, pk-pk	TP4			900	mV	

Common Mode Voltage (Vcm)	TP4	-350	2850	mV	1
Common Mode Noise, RMS	TP4		17.5	mV	
Differential Termination Resistance Mismatch	TP4		10	%	At 1MHz
Differential Return Loss (SDD22)	TP4		See CEI-28G-VSR Equation 13-19	dB	
Common Mode to Differential conversion and Differential to Common Mode conversion (SDC22, SCD22)	TP4		See CEI-28G-VSR Equation 13-21	dB	
Common Mode Return Loss (SCC22)	TP4		-2	dB	2
Transition Time, 20 to 80%	TP4	9.5		ps	
Vertical Eye Closure (VEC)	TP4		5.5	dB	
Eye Width at 10 ⁻¹⁵ probability (EW15)	TP4	0.57		UI	
Eye Height at 10 ⁻¹⁵ probability (EH15)	TP4	228		mV	

Notes:

1.Vcm is generated by the host. Specification includes effects of ground offset voltage.

2.From 250MHz to 30GHz.

Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Units	Notes
Transmitter						
Center Wavelength	λ_t	1304.5		1317.5	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Launch Power	PAVG	-2.4		4	dBm	1
Outer Optical Modulation Amplitude (OMA _{outer})	POMA	-0.3		4.2	dBm	2
Launch Power in OMA _{outer} minus Transmitter and Dispersion Eye Closure (TDECQ)		-1.3			dBm	
Transmitter and Dispersion Eye Closure for PAM4 (TDECQ)	TDECQ			2.5	dB	
Extinction Ratio	ER	5			dB	
RIN _{15.5OMA}	RIN			-136	dB/Hz	
Optical Return Loss Tolerance	TOL			15.5	dB	

Transmitter Reflectance	RT		-26	dB	
Average Launch Power OFF Transmitter	Poff		-15	dBm	
Receiver					
Center Wavelength	λ_r	1304.5	1317.5	nm	
Damage Threshold	THd	6.5		dBm	3
Average Receive Power		-5.4	4	dBm	
Receive Power (OMA _{outer})			4.2	dBm	
Receiver Sensitivity (OMA _{outer})	SEN		-4.4	dBm	for BER= 2.4x10 ⁻⁴
Stressed Receiver Sensitivity (OMA _{outer})	SRS		-1.9	dBm	4
Receiver Reflectance	RR		-26	dB	
LOS Assert	LOSA	-30		dBm	
LOS Deassert	LOSD		-15	dBm	
LOS Hysteresis	LOSH	0.5		dB	
Conditions of Stress Receiver Sensitivity Test (Note 5)					
Stressed Eye Closure for PAM4 (SECQ)			2.5	dB	

Notes:

1. Average launch power, each lane 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

2. Even if the TDECQ < 1.4dB for an extinction ratio of ≥ 4.5 dB or TDECQ < 1.3dB for an extinction ratio of < 4.5dB, the OMA_{outer} (min) must exceed the minimum value specified here.

3. The receiver shall be able to tolerate, without damage, continuous exposure to a modulated optical input signal having this power level on one lane. The receiver does not have to operate correctly at this input power.

4. Measured with conformance test signal for BER = 2.4x10⁻⁴. A compliant receiver shall have stressed receiver sensitivity (OMA_{outer}) values below the mask of Figure 4, for SECQ values between 0.9 and 3.4 dB.

5. Stressed eye closure definition is test condition for measuring stressed receiver sensitivity. It is not a characteristic of the receive