

SV-QSFP-50G-ER4

Starview QSFP28 50GBase ER Single Lambda SM (LC) with DDM, distance up to 40km



Features

- QSFP28 MSA compliant
- Supports 26.56Gbaud
- Up to 40km transmission on single mode fiber (SMF) with FEC
- Operating case temperature: 0°C to 70°C
- 50GAUI-2 electrical interface (OIF CEI- 28G-VSR)
- Maximum power consumption 4.5W
- LC duplex connector
- RoHS compliant

Applications

- Wireless application
- 50G Ethernet
- Enterprise networking

Ordering Information

Part number	Description
SV-QSFP-50G-ER4	Starview QSFP28 50Gbps module 50GBase ER Single Lambda SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 40km

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units
Storage Temperature	T _S	-40	85	degC
Operating Case Temperature	T _{OP}	0	70	degC
Power Supply Voltage	V _{CC}	-0.5	3.6	V
Relative Humidity (non-condensation)	RH	0	85	%
Damage Threshold, each Lane	TH _d	5.2		dBm

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Units	Notes
Operating Case Temperature	T _{OP}	0		70	degC	
Power Supply Voltage	V _{CC}	3.135	3.3	3.465	V	
Electrical Data Rate, each Lane (NRZ)			26.562 5		Gb/s	
Optical Data Rate (PAM4)			26.562 5		GBd	
Data Rate Accuracy		-100		100	ppm	
Pre-FEC Bit Error Ratio				2.4x10 ⁻⁴		
Post-FEC Bit Error Ratio				1x10 ⁻¹²		1
Control Input Voltage High		2		V _{cc}	V	
Control Input Voltage Low		0		0.8	V	
Link Distance with G.652	D	0.002		40	km	

Notes:

1. FEC is provided by host.

Electrical Characteristics

Parameter	Test Point	Min	Typical	Max	Units	Notes
Power Consumption				4.5	W	
Supply Current	I _{cc}			1.36	A	
Transmitter (each Lane)						
Overload Differential Voltage pk-pk	TP1a	900			mV	
Common Mode Voltage (V _{cm})	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 Common Mode conversion (SDC11, SCD11)	TP1		See CEI-28G-VSR Equation 13-20	dB	
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	1.5		8	dBm	1
Outer Optical Modulation Amplitude (OMA _{outer})	POMA	4.5		9	dBm	
Launch Power in OMA _{outer} minus Transmitter and Dispersion Eye Closure (TDECQ)		2.5			dBm	
Extinction Ratio	ER	6			dB	
RIN _{15,6OMA}	RIN			-132	dB/Hz	
Optical Return Loss Tolerance	TOL			15.6	dB	
Transmitter Reflectance	RT			-26	dB	
Average Launch Power OFF Transmitter	Poff			-30	dBm	
Receiver						
Center Wavelength	λ_r	1304.5		1317.5	nm	
Damage Threshold	THd	0			dBm	2
Average Receive Power		-15		-3	dBm	
Receive Power (OMA _{outer})				-2.2	dBm	
Receiver Sensitivity (OMA _{outer})	SEN			-13.5	dBm	For BER=2.4E-4
Stressed Receiver Sensitivity (OMA _{outer})	SRS			TBD	dBm	
Receiver Reflectance	RR			-26	dB	
LOS Assert	LOSA	-30			dBm	

LOS Deassert	LOSD	-20	dBm
LOS Hysteresis	LOSH	0.5	dB
Conditions of Stress Receiver Sensitivity Test (Note3)			
Stressed Eye Closure for PAM4 (SECQ)		3.2	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.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.
- 3.Stressed eye closure definition is test condition for measuring stressed receiver sensitivity. It is not a characteristic of the receiver