

SV-QSFP-100G-LRD8X

100GBase QSFP28 Single Fiber Bi-Directional module supporting 100Gbps 1271nm / 1311nm SM LC, distance up to 80km



Features

- Supports 103.125Gb/s aggregate bit rate
- Built-in 4-channel Clock and Data Recovery (CDR) in TX and RX
- LAN WDM EML laser and PIN receiver with SOA
- Up to 80km reach for G.652 SMF
- Hot pluggable 38 pin electrical interface
- QSFP28 MSA compliant
- BIDI LC optical receptacle
- RoHS-10 compliant and lead-free
- Excellent EMI performance
- Single +3.3V power supply
- Maximum power consumption 5.5W
- Case operating temperature 0 ~ 70°C

Applications

- 100GBASE-ZR4 Ethernet Links
- Infiniband QDR and DDR interconnects
- Telecom networking

Part number	Description
SV-QSFP-100G-LRD85	Starview QSFP28 Single Fiber Bi-Directional module supporting 100Gbps 1271nm TX/ 1311nm RX single fiber PAM4 SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 80km
SV-QSFP-100G-LRD86	Starview QSFP28 Single Fiber Bi-Directional module supporting 100Gbps 1311nm TX/ 1271nm RX single fiber PAM4 SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 80km

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Storage Temperature	T _S	-40	85	°C	
Power Supply Voltage	V _{CC}	-0.3	4.0	V	
Relative Humidity (non-condensation)	RH	15	85	%	
Damage Threshold	TH _d	6.5		dBm	

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	T _{OP}	0		70	°C
Power Supply Voltage	V _{CC}	3.135	3.3	3.465	V
Data Rate, each Lane			25.78125		Gb/s
Control Input Voltage High		2		V _{CC}	V
Control Input Voltage Low		0		0.8	V
Link Distance (SMF)	D			80	km

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Power Consumption	p			5.5	W	
Supply Current	I _{CC}			1585	mA	
Transmitter (each Lane)						
Input differential impedance	R _{in}		100		Ω	
Differential Termination Mismatch				10	%	
Differential Data Input Amplitude	V _{in, PP}	180		1000	mV	
LPMode, Reset and ModSelL	V _{IL}	-0.3		0.8	V	
	V _{IH}	2		V _{CC} +0.3	V	
Receiver						

Differential Data Output Amplitude	Vout, PP	350	900	mV
Differential Termination Mismatch			10	%
Transition Time, 20 to 80%		9.5		ps
ModPrsL and IntL	VOL	0	0.4	v
	VOH	Vcc-0.5	Vcc+0.3	v

Optical Characteristics

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Transmitter						
Center wavelength	L0	1272.55	1273.55	1274.54	nm	
	L1	1276.89	1277.89	1278.89	nm	
	L2	1281.25	1282.26	1283.27	nm	
	L3	1285.65	1286.66	1287.68	nm	
	L0	1294.53	1295.56	1296.59	nm	
	L1	1299.02	1300.05	1301.09	nm	
	L2	1303.54	1304.58	1305.63	nm	
	L3	1308.09	1309.14	1310.09	nm	
Signaling rate, each lane			25.78125		Gb/s	
Side-mode suppression ratio	SMSR	30				
Total launch power	PT	8.0			dBm	
Average launch power, each lane	Pavg	2.0		6.0	dBm	
Extinction Ratio	ER	6.0			dB	
Difference in Launch Power between any Two Lanes (OMA)	Ptx,diff			3.6	dB	
Average launch power of OFF transmitter, each lane	Poff			-30	dBm	

Transmitter reflectance	RT	-12	dB		
RIN _{20OMA}	RIN	-130	dB/Hz		
Optical Return Loss Tolerance	TOL	20	dB		
Transmitter eye mask {X1, X2, X3, Y1, Y2, Y3}	{0.25, 0.4, 0.45, 0.25, 0.28, 0.4}				
Receiver					
Center wavelength	L0	1294.53	1295.56	1296.59	nm
	L1	1299.02	1300.05	1301.09	nm
	L2	1303.54	1304.58	1305.63	nm
	L3	1308.09	1309.14	1310.09	nm
	L0	1272.55	1273.55	1274.54	nm
	L1	1276.89	1277.89	1278.89	nm
	L2	1281.25	1282.26	1283.27	nm
	L3	1285.65	1286.66	1287.68	nm
Signaling rate, each lane		25.78125	Gb/s		
Average Receive Power, each Lane	-30	-7	dBm		
Input Saturation Power (overload), each Lane	Psat	-7	dBm		
Receiver reflectance		-26	dB		
Receiver sensitivity Average, each lane	SEN	-26	dBm	1	
LOS Assert	LOSA	-40	dBm		
LOS Deassert	LOSD	-27	dBm		
LOS Hysteresis	LOSH	0.5	dB		

Notes: Measured @25.78125Gbps, ER=8.2dB, BER=<5E-5, PRBS=2³¹-1 NRZ