

SV-SFP28-LRD4xxH

25GbE 1270nm TX/ 1310nm RX (1310nm TX/ 1270nm) SM (LC) with DDM, distance up to 40km



Features

- Operating Data Rate Support 24.33Gbps and 25.78Gbps
- Two Types:
 - A: 1270nm Cooled DFB Transmitter / 1310nm APD Receiver
 - B: 1310nm Cooled DFB Transmitter / 1270nm APD Receiver
- Distance up to 40km(ER)
- Single 3.3V Power Supply
- Power Dissipation < 1.8W
- LC Connector Interface, Hot Pluggable
- Built-in Dual CDR
- Compliant with Specification SFF-8402
- Build-in Digital Diagnostic Functions
- Operating Case Temperature: Industrial: -40°C~+85°C
- Safety Certification: TUV/UL/FDA
- RoHS Compliant

Applications

- CPRI Option 10
- 25GbE

Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
SV-SFP28-LRD41H	Starview SFP28 Single Fiber Bi-Directional module supporting 25GbE 1270nm TX/ 1310nm RX single fiber SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 40km, Industrial temperature range	-1 to +6	-19 to -4	18	40	Yes
SV-SFP28-LRD42H	Starview SFP28 Single Fiber Bi-Directional module supporting 25GbE 1310nm TX/ 1270nm RX single fiber SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 40km, Industrial temperature range	-1 to +6	-19 to -4	18	40	Yes

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	+85	°C
Supply Voltage	VCC	-0.5	+4.0	V
Operating Relative Humidity	RH	0	85	%

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	TC	-40		85	°C
Power Supply Voltage	VCC	3.135		3.465	V
Power Supply Current	ICC			520	mA

Performance Specifications – Electrical

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Transmitter						
CML Inputs (Differential)	Vin	200		900	mVpp	AC coupled inputs
Input Impedance (Differential)	Zin		100		ohms	Connected directly to TX pins
Tx_DISABLE Input Voltage – High		2		Vcc+0.3	V	
Tx_DISABLE Input Voltage – Low		-0.3		0.8	V	
Receiver						
CML Outputs (Differential)	Vout	300		1000	mVpp	AC coupled outputs
Rx_LOS Output Voltage – High		2.4		Vcc+0.3	V	
Rx_LOS Output Voltage – Low		-0.3		0.8	V	

Optical and Electrical Characteristics-1270nm Cooled DFB & 1310nm

Parameter	Symbol	Min.	Typ.	Max.	Unit
Transmission Distance@9um				40	km
Core Diameter SMF					
Data Rate	DR			25.78	Gbps
Transmitter					
Optical Center Wavelength	λ	1260	1270	1280	nm
Spectral Width (-20dB)	$\Delta\lambda$			1	nm
Side Mode Suppression Ratio	SMSR	30			dB
Average Output Power @25.78Gbps	PAVG	-1		+6.0	dBm
Optical Modulation Amplitude(OMA)	POMA	0		6	dBm
ER		4.0			dB
Transmitter Dispersion Penalty	TDP			2.7	dB
OMA minus TDP		-1			dBm
Transmitter Reflectance				-26	dB
Return Loss tolerance				20	dB
Relative Intensity Noise	RIN			-130	dB/Hz
Average Launch Power of OFF	POFF			-30	dBm
Transmitter					
Transmitter Eye Mask Definition		{0.31,0.40,0.45,0.34,0.38,0.4}			
{X1、 X2、 X3、 Y1、 Y2、 Y3}					
Hit Ratio 5E-5 Hits per Sample					
Receiver					
Center Wavelength	λ_C	1300		1320	nm
Average Receive Power	Rpow	-21		-4	dBm
Receiver Sensitivity*Note6	Pmin			-19	dBm
APD/TIA					
Receiver Sensitivity(OMA)*Note6	Pmin			-19.0	dBm
Stressed Receiver Sensitivity*Note6	RxSRS			-16.5	dBm
Receiver Overload*Note7	Pmax	-4			dBm
Receiver Overload(OMA)*Note7	Pmax	-4			dBm
Damage threshold		3			dBm

Receiver Reflectance		-26	dB
LOS De-Assert	LOSD	-23	dBm
LOS Assert	LOSA	-35	dBm
LOS Hysteresis	HY	0.5	dB

Note6: Measured with data rate at 25.78Gbps, BER less than 5E-5 with PRBS 2³¹-1. Link attenuation needs to be less than the worst case specified for IEC 60793-2-50 type B1.1, type B1.3, or type B6_a single-mode fiber.

Note7: Targeted for long reach application with high power transmitter. Please ensure at least 10dB optical attenuation for optical loopback test.

Optical and Electrical Characteristics-1310nm Cooled DFB & 1270nm APD/TIA

Parameter	Symbol	Min.	Typ.	Max.	Unit
Transmission Distance@9um				40	Km
Core Diameter SMF					
Data Rate	DR			25.78	Gbps
Transmitter					
Optical Center Wavelength	λ	1300	1310	1320	nm
Spectral Width (-20dB)	$\Delta\lambda$			1	nm
Side Mode Suppression Ratio	SMSR	30			dB
Average Output Power @25.78Gbps	PAVG	-1		+6.0	dBm
Optical Modulation Amplitude(OMA)	POMA	0		6	dBm
ER		4.0			dB
Transmitter Dispersion Penalty	TDP			2.7	dB
OMA minus TDP		-1			dBm
Transmitter Reflectance				-26	dB
Return Loss tolerance				20	dB
Relative Intensity Noise	RIN			-130	dB/Hz
Average Launch Power of OFF Transmitter	POFF			-30	dBm
Transmitter Eye Mask Definition {X1、 X2、 X3、 Y1、 Y2、 Y3}					{0.31,0.40,0.45,0.34,0.38,0.4}
Hit Ratio 5E-5 Hits per Sample					
Receiver					
Center Wavelength	λ_C	1260		1280	nm
Average Receive Power	Rpow	-21		-4	dBm
Receiver Sensitivity*Note8	Pmin			-19	dBm
Receiver Sensitivity(OMA)*Note8	Pmin			-19.0	dBm
Stressed Receiver Sensitivity*Note8	RxSRS			-16.5	dBm

Receiver Overload*Note9	Pmax	-4	dBm
Receiver Overload(OMA)*Note9	Pmax	-4	dBm
Damage threshold		3	dBm
Receiver Reflectance			-26 dB
LOS De-Assert	LOSD		-23 dBm
LOS Assert	LOSA	-35	dBm
LOS Hysteresis	HY	0.5	dB

Note8: Measured with data rate at 25.78Gbps, BER less than $5E-5$ with PRBS $2^{31}-1$. Link attenuation needs to be less than the worst case specified for IEC 60793-2-50 type B1.1, type B1.3, or type B6_a single-mode fiber.

Note9: Targeted for long reach application with high power transmitter. Please ensure at least 10dB optical attenuation for optical loopback test.