

SV-SFP28-LRD1

25Gbps 1310nm SM (LC) with DDM, distance up to 10km



Features

- Up to 25.78Gb/s data links
- 1310nm DFB laser and PIN receiver
- Up to 10km on 9/125um SMF
- Hot-pluggable SFP footprint
- Support Digital Monitoring interface
- Class 1 laser safety certified
- Cost effective SFP28 solution, enables higher port densities and greater bandwidth
- RoHS-10 compliant and lead-free
- Single +3.3V power supply
- 2-wire interface for management specifications compliant with SFF-8472 digital diagnostic monitoring interface for optical transceivers
- All-metal housing for superior EMI performance
- Case operating temperature:
 - Commercial: 0 °C ~ +70 °C
 - Industrial: -40 °C ~ +85 °C

Applications

- High-speed storage area networks
- Computer cluster cross-connect
- Custom high-speed data pipes
- Inter Rack Connection

Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
SV-SFP28-LRD1	Starview SFP28 module supporting dual rate 10Gbps and 25Gbps 1310nm SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 10km	-7 to 2	-12 to 2	5	10	Yes
SV-SFP28-LRD1H	Starview SFP28 module supporting dual rate 10Gbps and 25Gbps 1310nm SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 10km, Industrial temperature range	-7 to 2	-12 to 2	5	10	Yes

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Storage Temperature	T _s	-40	85	°C	
Power Supply Voltage	V _{cc}	-0.5	3.6	V	
Relative Humidity (non-condensation)	RH	5	95	%	
Damage Threshold	TH _d	3		dBm	

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	T _{OP}	0		70	°C	commercial
		-40		85	°C	Industrial
Power Supply Voltage	V _{cc}	3.135	3.3	3.465	V	
Data Rate			25.78		Gb/s	
Control Input Voltage High		2		V _{cc}	V	
Control Input Voltage Low		0		0.8	V	
Link Distance (SMF)	D			10	km	9/125um

Performance Specifications – Electrical

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Power Consumption	p			1.75	W	
Supply Current	I _{cc}			520	mA	
Transmitter						
Single-ended Input Voltage Tolerance	V _{cc}	-0.3		4.0	V	
Common mode voltage tolerance		15			mV	
Differential Input Voltage Swing	V _{in,pp}	180		700	mVpp	
Differential Input Impedance	Z _{in}	90	100	110	Ohm	1

Transmit Disable Assert Time			10	us	
Transmit Disable Voltage	Vdis	Vcc-1.3	Vcc	V	
Transmit Enable Voltage	Ven	Vee	Vee +0.8	V	2
Receiver					
Single-ended Input Voltage Tolerance	Vcc	-0.3	4.0	V	
Differential Output Voltage Swing	Vout,pp	300	900	mVpp	
Differential Output Impedance	Zout	90	100	110	Ohm 3
Data output rise/fall time	Tr/Tf	9.5		ps	4
LOS Assert Voltage	VlosH	Vcc-1.3	Vcc	V	5
LOS De-assert Voltage	VlosL	Vee	Vee +0.8	V	5

Notes:

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Or open circuit.
3. Input 100 ohms differential termination.
4. These are unfiltered 20-80% values.
5. Loss of Signal is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

Optical Characteristics

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength	λ_c	1295	1310	1325	nm	
Optical Spectral Width	$\Delta\lambda$			1	nm	
Average Optical Power	P _{AVG}	-7		2	dBm	1
Side Mode Suppression Ratio	SMSR	20			dB	
Optical Extinction Ratio	ER	3.5			dB	
Transmitter OFF Output Power	P _{off}			-30	dBm	
Transmitter and Dispersion Penalty	TDP			2.7	dB	
Optical Return Loss Tolerance	ORLT			20	dB	

Transmitter Eye Mask

Compliant with IEEE802.3ae

Receiver						
Center Wavelength	λ_c	1295	1310	1325	nm	
Receiver Sensitivity (OMA)	Sen.			-12	dBm	2
Stressed Receiver Sensitivity (OMA)				-9.5	dBm	2
Average Receive Power		-14		2	dBm	
Input Saturation Power (overload)	Psat	0.5			dBm	
LOS Assert	LOSA	-30			dBm	
LOS De-assert	LOSD			-15	dBm	
Damage Threshold	TH _d	3			dBm	
LOS Hysteresis	LOSH	0.5			dB	

Notes:

1. Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
2. Measured with Light source 1310nm, ER=3.5dB; BER =10^{-12} @ PRBS=2³¹-1 NRZ.