

# SV-SFP-LXD1x

1.25Gb/s, 1310nm TX/ 1490nm  
 RX(1490nm TX/ 1310nm RX), SM,10km.



## Features

- Up to 1.25Gb/s data links
- FP laser transmitter for SV-SFP-LXD13
- DFB laser transmitter for SV-SFP-LXD14
- PIN photo-detector
- Up to 10KM on 9/125μm SMF
- Hot-pluggable SFP footprint
- BIDI LC/UPC type pluggable optical interface
- Low power dissipation
- Metal enclosure, for lower EMI
- RoHS compliant and lead-free
- Single +3.3V power supply
- Support Digital Diagnostic Monitoring interface
- Compliant with SFF-8472
- Case operating temperature  
 Commercial: 0°C to +70°C  
 Industrial: -40°C to +85°C

## Applications

- Switch to Switch Interface
- Gigabit Ethernet
- Switched Backplane Applications
- Router/Server Interface
- Other Optical Links

## Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
<b>SV-SFP-LXD13</b>	Starview Single Fiber Bi-Directional SFP module with Digital Diagnostic Monitoring (DDM), 1000Base-LX 1310nm TX/ 1490nm RX single fiber SM (LC), distance up to 10km	-9 to -3	-20 to -3	11	10	YES
<b>SV-SFP-LXD14</b>	Starview Single Fiber Bi-Directional SFP module with Digital Diagnostic Monitoring (DDM), 1000Base-LX 1490nm TX/ 1310nm RX single fiber SM (LC), distance up to 10km	-9 to -3	-20 to -3	11	10	YES

<b>SV-SFP-LXD13H</b>	Starview Single Fiber Bi-Directional SFP module with Digital Diagnostic Monitoring (DDM), 1000Base-LX 1310nm TX/ 1490nm RX single fiber SM (LC), Industrial temperature range,distance up to 10km	-9 to -3	-20 to -3	11	10	YES
<b>SV-SFP-LXD14H</b>	Starview Single Fiber Bi-Directional SFP module with Digital Diagnostic Monitoring (DDM), 1000Base-LX 1490nm TX/ 1310nm RX single fiber SM (LC), Industrial temperature range,distance up to 10km	-9 to -3	-20 to -3	11	10	YES

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	Ts	-40		85	°C
Storage Ambient Humidity	HA	5		95	%
Power Supply Voltage	VCC	-0.5		4	V
Signal Input Voltage		-0.3		Vcc+0.3	V
Receiver Damage Threshold		5			dBm

## Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0		70	°C	SV-SFP-LXD1x
		-10		80		
		-40		85		SV-SFP-LXD1xH
Ambient Humidity	HA	5		70	%	Non-condensing
Power Supply Voltage	VCC	3.13	3.3	3.47	V	
Power Supply Current	ICC			280	mA	
Power Supply Noise Rejection				100	mVp-p	100Hz to 1MHz
Data Rate			1.25/1.25		Gbps	TX Rate/RX Rate
Transmission Distance				10	KM	
Coupled Fiber			Single mode fiber			9/125um SMF

## Specification of Transmitter

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Average Output Power	POUT	-9		-3	dBm	
Extinction Ratio	ER	9			dB	
Center Wavelength	$\lambda_C$	1290	1310	1330	nm	SV-SFP-LXD13
		1470	1490	1510		SV-SFP-LXD14
Spectrum Width (RMS)	$\sigma$			3.5	nm	FP Laser (TX:1310nm)
Side Mode Suppression Ratio	SMSR	30			dB	DFB Laser
Spectrum Bandwidth(-20dB)	$\sigma$			1	nm	(TX:1490nm)
Transmitter OFF Output Power	POff			-45	dBm	
Differential Line Input Impedance	RIN	90	100	110	Ohm	
Jitter P-P	t <sub>J</sub>			0.1	UI	Note (1)
Output Eye Mask	Compliant with IEEE802.3 z (class 1 laser safety)					

Note 1: Measure at 2<sup>23</sup>-1 NRZ PRBS pattern

## Specification of Receiver

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Input Optical Wavelength	$\lambda_{IN}$	1470	1490	1510	nm	SV-SFP-LXD13
		1290	1310	1330		SV-SFP-LXD14
Receiver Sensitivity	PIN			-20	dBm	Note (1)
Input Saturation Power (Overload)	PSAT	-3			dBm	
Los Of Signal Assert	PA	-35			dBm	
Los Of Signal De-assert	PD			-21	dBm	Note (2)
LOS Hysteresis	PA-PD	0.5	2	6	dB	

Note (1): Measured with Light source 1490nm(1310nm), ER=9dB; BER = <10<sup>-12</sup> @PRBS=2<sup>17</sup>-1 NRZ.

Note (2): When LOS de-asserted, the RX data+/- output is signal output.

## Electrical Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Total Supply Current	ICC			A	mA	Note 1
Transmitter Disable Input-High	VDISH	2		V <sub>CC</sub> +0.3	V	
Transmitter Disable Input-Low	VDISL	0		0.8	V	
Transmitter Fault Input-High	VTxFH	2		V <sub>CC</sub> +0.3	V	
Transmitter Fault Input-Low	VTxFL	0		0.8	V	
Receiver						
Total Supply Current	ICC			B	mA	Note 1
LOSS Output Voltage-High	VLOSH	2		V <sub>CC</sub> +0.3	V	LVTTTL
LOSS Output Voltage-Low	VLOSL	0		0.8	V	

Note 1: A (TX) + B (RX) = 280mA (Not include termination circuit)