

**Features**

- Up to 622Mb/s data links
- DFB laser transmitter and PIN photo-detector.
- Up to 40km on 9/125µm SMF
- Hot-pluggable SFP footprint
- Duplex LC/UPC type pluggable optical interface
- Low power dissipation
- Metal enclosure, for lower EMI
- RoHS compliant and lead-free
- Support Digital Diagnostic Monitoring interface
- Single +3.3V power supply
- Compliant with SFF-8472
- Case operating temperature  
Commercial: 0°C to +70°C  
Extended: -10°C to +80°C  
Industrial: -40°C to +85°C



**Applications**

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

**Absolute Maximum Ratings**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-40		85	°C	
Relative Humidity	RH	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-OC12SD4
		-10		80		
		-40		85		SV-SFP-OC12SD4H
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			622/622		Mbps	TX Rate/RX Rate

Transmission Distance				40	KM	
Coupled Fiber	Single mode fiber					9/125um SMF

### Specification of Transmitter

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Average Output Power	POUT	-5		0	dBm	
Extinction Ratio	ER	8.2			dB	
Center Wavelength	$\lambda_C$	1290	1310	1330	nm	DFB Laser
Side Mode Suppression Ratio	SMSR	30			dB	
Spectrum Bandwidth(-20dB)	$\sigma$			1	nm	
Transmitter OFF Output Power	POff			-45	dBm	
Differential Line Input Impedance	RIN	90	100	110	Ohm	
Output Eye Mask	Compliant with G.957(class 1 laser safety)					

### Specification of Receiver

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Input Optical Wavelength	$\lambda_{IN}$	1270		1610	nm	
Receiver Sensitivity	PIN			-28	dBm	Note (1)
Input Saturation Power (Overload)	PSAT	-8			dBm	
Los Of Signal Assert	PA			-28	dBm	
Los Of Signal De-assert	PD	-38			dBm	Note (2)
LOS Hysteresis	PA-PD	0.5	2	6	dB	

Note (1): Measured with Light source 1310nm, ER=8.2dB; BER =  $<10^{-12}$ @PRBS=2<sup>23</sup>-1 NRZ.

Note (2): When LOS de-asserted, the RX data+/- output is High-level (fixed)

### Electrical Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
<b>Transmitter</b>						
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	
<b>Receiver</b>						
Total Supply Current	ICC			B	mA	Note (1)
LOSS Output Voltage-High	VLOSH	2		V <sub>CC</sub> +0.3	V	LVTTL
LOSS Output Voltage-Low	VLOSL	0		0.8	V	

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

## Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
SV-SFP-OC12SD4	Starview SFP module, OC-12/ STM-4 622Mbps 1310nm SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 40km	-5 to 0	-28 to -8	23	40	YES
SV-SFP-OC12SD4H	Starview SFP module, OC-12/ STM-4 622Mbps 1310nm SM (LC) with Digital Diagnostic Monitoring (DDM), Industrial temperature range, distance up to 40km	-5 to 0	-28 to -8	23	40	YES