

**Features**

- 10Gb/s serial optical interface compliant to 802.3ae 10GBASE-LR
- Electrical interface compliant to SFF-8431 specifications for enhanced 8.5 and 10 Gigabit small form factor pluggable module "SFP+"
- 1310nm DFB transmitter, PIN photo-detector
- 2-wire interface for management specifications compliant with SFF 8472 digital diagnostic monitoring interface for optical transceivers
- Advanced firmware allow customer system encryption information to be stored in transceiver
- Cost effective SFP+ solution, enables higher port densities and greater bandwidth
- RoHS compliant



**Applications**

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

**ABSOLUTE MAXIMUM RATING**

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	VCC	0	3.6	V
Storage Temperature	Tc	-40	85	°C
Operating Case Temperature	Tc	-40	85	°C
Relative Humidity	RH	5	95	%
RX Input Average Power	Pmax	-	1.5	dBm

**RECOMMENDED OPERATING ENVIRONMENT**

Parameters	Symbol	Min.	Typical	Max	Unit
Power Supply Voltage	VCC	3.135	3.3	3.465	V
Power Supply Current	Icc			300	mA
Operating Case Temperature	TC	-40		85	°C

**OPTICAL CHARACTERISTICS**

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
<b>Transmitter</b>						
Center Wavelength	$\lambda_t$	1260		1355	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Optical Power	$P_{avg}$	-8.2	-	0.5	dBm	1
Laser Off Power	$P_{off}$	-	-	-30	dBm	
Extinction Ratio	ER	3.5	-	-	dB	
Transmitter Dispersion Penalty	TDP	-	-	3.2	dB	
Relative Intensity Noise	$R_{in}$	-	-	-128	dB/Hz	12dB reflection
Optical Return Loss Tolerance		-	-	12	dB	
<b>Receiver</b>						
Center Wavelength	$\lambda_r$	1260		1360	nm	
Receiver Sensitivity in average power	$P_{sens}$	-	-	-14.4	dBm	1
Receiver Sensitivity in OMA	$P_{sens}$	-	-	-12.6	dBm	2
Stressed Sensitivity (OMA)		-	-	-10.3	dBm	2
Vertical eye closure penalty		2.2			dB	3
Stressed eye jitter		0.3			Ulp-p	2
Receive electrical 3dB upper cutoff frequency				12	GHz	
LOS Assert	LOSA	-30	-	-	dBm	
LOS Deassert	LOSD	-	-	-15	dBm	
LOS Hysteresis	LOSH	0.5	-	-	dB	
Overload	$P_{in}$	-	-	0.5	dBm	1
Receiver power damage				1.5	dBm	
Receiver Reflectance		-	-	-12	dB	

**Notes:**

1. Average optical power shall be measured using the methods specified in TIA/EIA-455-95.
2. Receiver sensitivity is informative. Stressed receiver sensitivity shall be measured with conformance test signal for BER =  $1 \times 10^{-12}$ .
3. Vertical eye closure penalty and stressed eye jitter are the test conditions for measuring stressed receiver sensitivity. They are not the required characteristic of the receiver.

**DITITAL DIAGNOSTIC FUNCTIONS**

Parameter	Symbol	Min.	Max	Unit	Notes
Temperature monitor absolute error	DMI_Temp	-3	3	degC	Over operating temp
Laser power monitor absolute error	DMI_TX	-3	3	dB	
RX power monitor absolute error	DMI_RX	-3	3	dB	-1dBm to -15dBm range
Supply voltage monitor absolute error	DMI_VCC	-0.1	0.1	V	Full operating range
Bias current monitor	DMI_Ibias	-10%	10%	mA	

**ELECTRICAL CHARACTERISTICS**

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Data Rate		-	10.3125	-	Gbps	
Power Consumption		-	800	1000	mW	
<b>Transmitter</b>						
Single Ended Output Voltage Tolerance		-0.3	-	4	V	
C common mode voltage tolerance		15	-	-	mV	
Tx Input Diff Voltage	VI	180		700	mV	
Tx Fault	VoL	-0.3		0.4	V	At 0.7mA
Data Dependent Input Jitter	DDJ			0.1	UI	
Data Input Total Jitter	TJ			0.28	UI	
<b>Receiver</b>						
Single Ended Output Voltage Tolerance		-0.3	-	4	V	
Rx Output Diff Voltage	Vo	300		850	mV	
Rx Output Rise and Fall Time	Tr/Tf	30			ps	20% to 80%
Total Jitter	TJ			0.7	UI	
Deterministic Jitter	DJ			0.42	UI	

### Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
SV-SFPP-6GLRD1H	Starview SFP module Multi-rate 1.25Gbps to 6.25Gbps supporting CPRI and OBSAI Fiber Optic 1310nm SM (LC) with Digital Diagnostic Monitoring (DDM), Industrial temperature range, distance up to 10km	-8.2 to 0.5	-14.4 to 0.5	6.2	10	NO