

**Features**

- Compliant to SFF-8431 specifications for enhanced 8.5 and 10 Gigabit small form factor pluggable module "SFP+"
- 1550nm cooled EML transmitter with TEC, APD photo-detector
- 2-wire interface for management specifications compliant with SFF 8472 digital diagnostic monitoring interface for optical transceivers
- Operating case temperature: 0 to 70 °C
- All-metal housing for superior EMI performance
- Low power consumption, less than 1.8W
- 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**

- 10GBASE-ZR/ZW
- 10GBASE-ZR/ZW + FEC
- 10G Storage system

**ABSOLUTE MAXIMUM RATING**

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	V <sub>CC</sub>	0	3.6	V
Storage Temperature	T <sub>c</sub>	-40	85	°C
Operating Case Temperature	T <sub>c</sub>	0	70	°C
Relative Humidity	RH	5	95	%
RX Input Average Power	P <sub>max</sub>	-	-1	dBm

**RECOMMENDED OPERATING ENVIRONMENT**

Parameters	Symbol	Min.	Typical	Max	Unit
Power Supply Voltage	V <sub>CC</sub>	3.135	3.3	3.465	V
Power Supply Current	I <sub>CC</sub>	-	400	520	mA
Operating Case temperature	T <sub>C</sub>	0		70	°C

**OPTICAL CHARACTERISTICS**

Parameter	Symbol	Min.	Typical	Max	Unit	Note
Operating Reach				80	km	
<b>Transmitter</b>						
Center wavelength	$\lambda$	1530		1565	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Launched power	Po	0		4	dBm	
Launched power in OMA		-2.1			dBm	
Transmitter and dispersion penalty	DP			3	dB	3
Average launch power of OFF transmitter	Poff			-30	dBm	
Extinction ratio	ER	9			dB	
RIN	RIN			-128	dB/Hz	
Optical Return Loss Tolerance	RL	21			dB	
<b>Receiver</b>						
Center wavelength	$\lambda$	1260	-	1620	nm	
Receiver Overload		-7			dBm	
Receiver Sensitivity	RSEN			-24	dBm	2
Receiver reflectance	Rf			-26	dB	
LOS Assert	LOSA	-40			dBm	
LOS De-assert	LOSD			-24	dBm	
LOS Hysteresis		0.5			dB	
Stressed eye jitter		0.3			UI	2
Receive electrical 3dB upper cutoff frequency				12.3	GHz	
Receiver power (damage)				1	dBm	

**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. Path penalty is intended as the power penalty of the interface between back-to-back and the maximum applied dispersion.

**ELECTRICAL CHARACTERISTICS**

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Data Rate		-	10.3125	11.3	Gbps	NRZ
Power Consumption		-	1200	1800	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	
	Voh	2.0		Vcc+0.3	V	
Tx Disable	VoL	Vee		Vee+0.8	V	
	Voh	2		Vcc	V	
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	

**DITITAL DIAGNOSTIC FUNCTIONS**

Parameter	Symbol	Min.	Max	Unit	Notes
Temperature monitor absolute error	DML_Temp	-3	3	degC	Over operating temp
Laser power monitor absolute error	DML_TX	-3	3	dB	
RX power monitor absolute error	DML_RX	-3	3	dB	-7dBm to -24dBm range
Supply voltage monitor absolute error	DML_VCC	-0.1	0.1	V	Full operating range
Bias current monitor	DML_Ibias	-10%	10%	mA	

## Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
SV-SFPP-6GLRD8H	Starview SFP module Multi-rate 1.25Gbps to 6.25Gbps supporting CPRI and OBSAI Fiber Optic 1550nm SM (LC) with Digital Diagnostic Monitoring (DDM), Industrial temperature range, distance up to 80km	0 to 4	-24 to -7	24	80	NO