

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
Transmitter						
Center Wavelength	λ_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	
Receiver						
Center Wavelength	λ_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 = 1×10^{-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	
Transmitter						
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	
Receiver						
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-6GLRD2H	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 20km	-8.2 to 0.5	-14.4 to 0.5	6.2	20	NO