

SV-CFP4-100G-PSR4

100GBase aggregating 4 x 850nm duplex MM (MPO-12) with DDM, distance up to 100m



Features

- Hot pluggable CFP4 MSA form factor
- Supports 103.1Gb/s to 112.2Gb/s aggregate bit rates
- Compliant to IEEE 802.3bm 100GBASE-SR4
- Power class 2 (<2.5W max)
- Up to 70m on OM3 and 100m OM4 MMF transmission
- Up to 28Gb/s data rate per channel
- Operating case temperature: 0-70 °C
- 4x28G Electrical Serial Interface (CEI-28G-VSR)
- MDIO management interface with digital diagnostic monitoring
- Maximum power consumption <2.5W
- Utilizes a standard 12/8 lane optical fiber with MPO connector
- RoHS 6 compliant(lead free)
- 4x28Gb/s 850nm VCSEL-based transmitter

Applications

- 100GBASE-SR4 Ethernet
- OTN OTU4
- 128G Fiber Channel

Ordering Information

Part number	Description
SV-CFP4-100G-PSR4	Starview CFP4 100Gbps module 100GBase aggregating 4 x 850nm duplex MM (MPO-12) with Digital Diagnostic Monitoring (DDM), distance up to 100m

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-40		85	°C	
Relative Humidity (non-condensation)	RH			85	%	
Operating Case Temperature	Top	0		70	°C	
Supply Voltage	Vcc	-0.5		3.6	V	
Voltage on LVTTTL Input	Vilvttl	-0.5		VCC3+0.3	V	
LVTTTL Output Current	Iolvttl			15	mA	
Voltage on Open Collector Output	Voco	0		6	V	
Damage Threshold, each Lane	THd	3.4			dBm	1

Note(1): PIN receiver

Recommended Operating Conditions and Supply Requirements

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	TOP	0		70	degC	
Power Supply Voltage	VCC	3.135	3.3	3.465	V	
Data Rate, each Lane			25.78125		Gbps	1
Data Rate, each Lane			27.9525		Gbps	2
Control Input Voltage High		2		Vcc	V	
Control Input Voltage Low		0		0.8	V	
Power Supply Noise	Vrip			2	%	DC-1MHz
				3	%	1-10MHz
Link Distance (OM3 MMF)	D1			70	m	
Link Distance (OM4 MMF)	D2			100	m	

Notes:

- 100GBASE-SR4.
- OUT4 with FEC.

Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Power Consumption				2.5	W	
Supply Current	Icc			800	mA	
Low Power Mode Power Dissipation				1	W	
Transmitter (each Lane)						

Single-ended Input Voltage Tolerance (Note 1)		-0.3		4.0	V	Referred to TP1 signal common
AC Common Mode Input Voltage Tolerance		15			mV	RMS
Differential Input Voltage Swing Threshold		50			mVp p	LOSA Threshold
Differential Input Voltage Swing	V _{in,pp}	190		700	mVp p	
Differential Input Impedance	Z _{in}	90	100	110	Ohm	
Receiver (each Lane)						
Single-ended Output Voltage		-0.3		4.0	v	Referred to signal common
AC Common Mode Output Voltage				7.5	mV	RMS
Differential Output Voltage Swing	V _{out,pp}	300		850	mVp p	
Differential Output Impedance	Z _{out}	90	100	110	Ohm	
Termination Mismatch at 1MHz				5	%	

Notes:

The single ended input voltage tolerance is the allowable range of the instantaneous input signals.

Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Units	Notes
Transmitter						
Center Wavelength	λ_C	840	850	860	nm	
RMS Spectral Width	$\Delta\lambda_{rms}$			0.6	nm	
Average Launch Power, each Lane	PAVG	-8.4		2.4	dBm	
Optical Modulation Amplitude (OMA), each Lane	POMA	-6.4		3.0	dBm	1
Difference in Launch Power between any Two Lanes	P _{tx,diff}			4.0	dB	

Stressed Eye J2 Jitter, Lane under Test	0.39	UI
Stressed Eye J4 Jitter, Lane under Test	0.53	UI
OMA of each Aggressor Lane	3	dBm
Stressed receiver eye mask definition {X1, X2, X3, Y1, Y2, Y3}	{0.28,0.5,0.5,0.33,0.33,0.4}	

Notes:

1. Even if the TDP < 0.9 dB, the OMA min must exceed the minimum value specified here.
2. The receiver shall be able to tolerate, without damage, continuous exposure to a modulated optical input signal having this power level on one lane. The receiver does not have to operate correctly at this input power.
3. Measured with conformance test signal at receiver input for BER = 1x10⁻¹².
4. Stressed eye closure and stressed eye jitter are test conditions for measuring stressed receiver sensitivity. They are not characteristics of the receiver.

Digital Diagnostic Functions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Temperature monitor absolute error	DMI_Temp	-3		3	°C	Over operating temperature range
Supply voltage monitor absolute error	DMI_VCC	-0.15		0.15	V	Over full operating range
Channel RX power monitor absolute error	DMI_RX_Ch	-2		2	dB	1
Channel Bias current monitor	DMI_Ibias_Ch	-10%		10%	mA	Ch1~Ch4
Channel TX power monitor absolute error	DMI_TX_Ch	-2		2	dB	1

Note(1): Due to measurement accuracy of different single mode fibers, there could be an additional +/-1 dB fluctuation, or a +/- 3 dB total accuracy