

SFP-10G-SR-IL

10GBd SFP+ Short Wavelength (850nm) Transceiver

PRODUCT FEATURES

- Up to 10.5 GBd bi-directional data links
- Compliant with IEEE 802.3ae 10GBASE-SR/SW
- Compliant with SFF8431
- Hot-pluggable SFP+ footprint
- 850nm VCSEL laser transmitter
- Duplex LC connector
- Built-in digital diagnostic functions
- Up to 300m on OM3 MMF
- Single power supply 3.3V
- RoHS Compliance
- Class 1 laser product complies with EN 60825-1
- Operating temperature range: 0°C to 70°C

APPLICATIONS

10GBASE-SR/SW Ethernet

General Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Data Rate	DR		10.3125		GBd	IEEE 802.3ae
Bit Error Rate	BER			10 ⁻¹²		
Operating Temperature	T _{OP}	0		70	°C	Case temperature
Storage Temperature	T _{STO}	- 40		85	°C	Ambient temperature
Supply Current	I _S	230	260		mA	For electrical power interface
Input Voltage	V _{CC}	3	3.3	3.6	V	
Maximum Voltage	VMAX	- 0.5		4	V	For electrical power interface

Link Distances

Parameter	Fiber Type	Modal Bandwidth @ 850nm (MHz-km)	Distance Range (m)
	62.5/125um MMF	160	2-26
	62.5/125um MMF	200	2-33
9.95 – 10.5 GBd	50/125um MMF	400	2-66
	50/125um MMF	500	2-82
	50/125um MMF	2000	2-300

SFP-10G-SR-IL

10GBd SFP+ Short Wavelength (850nm) Transceiver

Optical Characteristics - Transmitter

$V_{CC}=3V$ to $3.6V$, $T_C=0^{\circ}C$ to $70^{\circ}C$

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Output Optical Power	PTX	- 5		- 1	dBm	Class 1 Product
Optical Center Wavelength	λ_C	840		860	nm	
Optical Modulation Amplitude	OMA		- 1.5dB			IEEE 802.3ae
Extinction Ratio	ER	3	5.5		dB	
Spectral Width (RMS)	λ			0.45	nm	
Relative Intensity Noise	RIN			- 128	dB/Hz	
Transmitter Dispersion Penalty	TDP			3.9	dB	
Transmitter Jitter	According to IEEE 802.3ae requirement					
Launch Power of OFF Transmitter	P_{OUT_OFF}			- 30	dBm	Average

Optical Characteristics - Receiver

$V_{CC}=3V$ to $3.6V$, $T_C=0^{\circ}C$ to $70^{\circ}C$

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Optical Center Wavelength	λ_C	840		860	nm	
Receiver Sensitivity (OMA)@ 10.3GBd	R_{X_SEN1}			- 12.6	dBm	Measured with worst ER: BER10^{-12} 2 ³¹ -1 PRBS
Stressed Receiver Sensitivity in OMA @ 10.3Gb/s	P_{SENS2}			- 7.5	dBm	IEEE 802.3ae
Maximum Input Power	P_{IN}	0.5			dBm	
Receiver Reflectance	TR_{RX}			- 12	dB	
LOS Assert	LOS_A	- 30			dBm	
LOS De-Assert	LOS_D			- 12	dBm	
LOS Hysteresis		0.5			dB	

SFP-10G-SR-IL

10GBd SFP+ Short Wavelength (850nm) Transceiver

Electrical Characteristics - Transmitter

$V_{CC}=3V$ to $3.6V$, $T_c=0^{\circ}C$ to $70^{\circ}C$

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Input differential impedance	R_{IN}		100		Ω	Non condensing
Single ended data input swing	V_{IN_PP}	250		800	mV	
Transmit disable voltage	V_D	2		V_{CC}	V	
Transmit enable voltage	V_{EN}	V_{EE}		$V_{EE}+0.8$	V	

Electrical Characteristics - Receiver

$V_{CC}=3V$ to $3.6V$, $T_c=0^{\circ}C$ to $70^{\circ}C$

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Single ended data output swing	V_{OUT_PP}	150	300	425	mV	
Data output rise time (20%-80%)	T_R		30		ps	
Data output fall time (20%-80%)	T_F		30		ps	
LOS Fault	V_{LOS_Fault}	2		V_{CC_HOST}	V	
LOS Normal	V_{LOS_normal}	V_{EE}		$V_{EE}+0.5$	V	