

SFP-10G-LR-IL

10GBd SFP+ LR (1310nm) Transceiver 10GBd SFP+ LR (1310nm) Transceiver

PRODUCT FEATURES

Up to 10.7 GBd bi-directional data links
Compliant with IEEE 802.3ae 10GBASE-LR/LW
Compliant with 10GFC
Compliant with SFF8431
Hot-pluggable SFP+ footprint
1310nm DFB laser transmitter
Duplex LC connector
Built-in digital diagnostic functions
Up to 10km on SMF
Single power supply 3.3V
RoHS Compliance
Operating temperature range: 0°C to 70°C

APPLICATIONS

10GBASE-LR/LW Ethernet
10GFC

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	Distance Range (Km)
10.3125 GBd	9/125um SMF	80

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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	- 8.2		0.5	dBm	Average
Optical Center Wavelength	λ_C	1260		1355	nm	
Optical Modulation Amplitude	OMA	- 5.2				Per IEEE 802.3ae
Extinction Ratio	ER	3	5.5		dB	
Spectral Width (- 20 dB)	λ			0.6	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Relative Intensity Noise	RIN			- 128	dB/Hz	
Transmitter Dispersion Penalty	TDP			3.2	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	1260		1600	nm	
Optical Input Power	P_{IN}	-14.4		0.5	dBm	Average, Informative
Receiver Sensitivity (OMA)@ 10.3GBd	R_{X_SEN1}			- 12.6	dBm	Measured with worst ER: BER<10-12 231-1 PRBS
Stressed Receiver Sensitivity in OMA @ 10.3Gb/s	P_{SENS2}			- 10.3	dBm	IEEE 802.3ae
Receiver Reflectance	TR_{RX}			- 12	dB	
LOS Assert	LOS_A	- 25			dBm	
LOS De-Assert	LOS_D			- 16	dBm	
LOS Hysteresis		0.5			dB	
Input differential impedance	RIN		100		Ω	Non condensing
Single ended data input swing	V_{IN_PP}	250		800	mV	
Transmit disable voltage	VD	2		VCC	V	
Transmit enable voltage	V_{EN}	V_{EE}		$V_{EE}+0.8$	V	

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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	VOUT_PP	150	300	425	mV	
Data output rise time (20%-80%)	TR		30		ps	
Data output fall time (20%-80%)	TF		30		ps	
LOS Fault	V_{LOS_Fault}	2		V_{CC_HOST}	V	
LOS Normal	V_{LOS_normal}	V_{EE}		$V_{EE}+0.5$	V	