

GLC-SX-MMD-IL

1.25GBd SFP (Small Form Pluggable) Short Wavelength (850nm) Transceiver

PRODUCT FEATURES

Up to 1.25 GBd bi-directional data links
Compliant with IEEE 802.3z Gigabit Ethernet and 1000BASE-SX
Compliant with SFP MSA
Hot-pluggable SFP footprint
850nm VCSEL laser transmitter
Duplex LC connector
Built-in digital diagnostic functions
Up to 550m on 50/125um MMF
Up to 300m on 62.5/125um MMF
Single power supply 3.3V
RoHS Compliance
Class 1 laser product complies with EN 60825-1
Operating temperature range: 0°C to 85°C

APPLICATIONS

1.25 GBd Gigabit Ethernet
1.063 GBd Fiber Channel

General Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Data Rate	DR	1.25 1.062			GBd	IEEE 802.3 FC-PI-2 Rev 5
Bit Error Rate	BER		10 ⁻¹²			
Operating Temperature	T _{OP}	0	85		°C	Case temperature
Storage Temperature	T _{STO}	- 40	85		°C	Ambient temperature
Supply Current	I _S		180	240	mA	For electrical power interface
Input Voltage	V _{CC}	3	3.3	3.6	V	
Maximum Voltage	V _{MAX}	- 0.5		4	V	For electrical power interface

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Optical Characteristics - Transmitter

($V_{cc}=3V$ to $3.6V$, $T_c=0^\circ C$ to $85^\circ C$)

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Output Optical Power						
50/125um fiber, NA=0.2	P_{TX}	- 9		- 3	dBm	Class 1 Product
62.5/125um fiber, NA-0.275						
Optical Center Wavelength	λ_c	830		860	nm	
Optical Modulation Amplitude@1.063GBd	OMA	156			uW	Equivalent extinction ratio specification for FC
Extinction Ratio@1.25GBd	ER	9			dB	
Spectral Width (RMS)	λ			0.85	nm	
Optical Rise/Fall Time (20% - 80%)	T_{RF_IN}		100	150	ps	
Relative Intensity Noise	RIN			-120	dB/Hz	
Deterministic Jitter Contribution	TX_ DJ		20	60	ps	
Total Jitter Contribution	TX_ TJ		65	125	ps	
Mask Margin			45%			

Optical Characteristics – Receiver

($V_{cc}=3V$ to $3.6V$, $T_c=0^\circ C$ to $85^\circ C$)

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Optical Receiver Power	P_{RX}			0	dBm	Average
Optical Center Wavelength	λ_C	770		860	nm	
Receiver Sensitivity @ 1.063GBd	R_{X_SEN1}			- 20	dBm	FC-PI-2 Rev.5
Receiver Sensitivity @ 1.25GBd	R_{X_SEN2}			- 20	dBm	IEEE 802.3
Optical Return Loss	ORL	12			dB	
Receiver Electrical 3dB Upper cutoff frequency				1500	MHz	
Loss of Signal-Asserted	PL_{OS_A}	- 30			dBm	
Loss of Signal-Deasserted	P_{LOS_D}	- 20			dBm	
Loss of Signal-Hysteresis		0.5			dB	

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Electrical Characteristics - Transmitter

($V_{CC}=3V$ to $3.6V$, $T_c=0^\circ C$ to $85^\circ C$)

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Input differential impedance	R_{IN}		100		Ω	Non condensin g
Single ended data input swing	V_{IN_PP}	250		1200	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 $85^\circ C$)

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Single ended data output swing	V_{OUT_PP}	250	450	550	mV	
Data output rise time (20%-80%)	T_R		90	175	ps	
Data output fall time (20%-80%)	T_F		90	175	ps	
LOS Fault	V_{LOS_Fault}	2		V_{CC_HOST}	V	
LOS Normal	V_{LOS_normal}	V_{EE}		$V_{EE}+0.5$	V	