Datasheet

Enterasys Compatible transceiver MGBIC-LC09

PART NUMBER: MGBIC-LC09-C

PRODUCT FEATURES:

Hot-swappable SFP Enterasys compatible transceiver

Compliant with IEEE Std 802.3-2005, Gigabit Ethernet 1000Base-LX

Compliant with SFF-8074i

Compliant with SFP MSA Specification, duplex LC connector compliant

Uncooled 1310nm Fabry-Perot (FP) Class 1 laser safety certified

Up to 1.25Gb/s bi-directional data links

Single +3.3V DC power supply

RoHS6 Compliant

SPECIFICATIONS:

Original Part Number:	MGBIC-LC09
Device type:	SFP LX
Package:	SFP MSA
Wavelength:	1310nm
Distance/Power Budget:	Up to 10km on 9/125µm SMF
Optical componentes	LED: Fabry-Perot (FP)Laser
Output power:	-9 ~ -3dBm
Receiver Sensitivity:	< -23dBm
Power Supply Voltage:	3,3V
Connector:	Dual LC
Fiber type:	Single Mode
Operating Temperature:	0 - 70 °C
Application:	Gigabit Ethernet 1000Base-LX
Compatiblity:	100 % Enterasys Compatible
ROHS:	Compliant

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ABSOLUTE MAXIMUM RATINGS:

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Minimum	Maximum	Unit
Storage Temperature	Ts	-40	85	°C
Relative Humidity	RH	5	95	%
Supply Voltage	Vcc	-0,5	4,0	V

RECOMMENDED OPERATING CONDITIONS:

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating Case Temperature	Tc	-10	25	70	°C
Supply Voltage	Vcc	3,135	3,3	3,465	V
Data Rate	-	0,1	-	1,25	Gb/s

TRANSCEIVER ELECTRICAL CHARACTERISTICS:

Parameter		Symbol	Minimum	Typical	Maximum	Unit
Module Supply Current		Icc	-	-	220	mA
Power dissipation		Pd	-	-	800	mW
Transmitter Differential Input Voltage (TD +/-)		-	300	-	2200	mVp-p
Receiver Differential Output Voltage (RD +/-)		-	600	-	1200	mVp-p
LOW SPEED OUTPUT	Transmitter Fault(TX_FAULT) / Loss of Signal (LOS)	V_{OH}	2,0	-	Vcc	V
		V_{OL}	0	-	0,8	V
LOW SPEED INPUT	Transmitter Disable (TX_DISABLE), MOD_DEF 1, MOD_DEF 2 2	V_{IH}	2,0	-	Vcc	V
		V_{IL}	0	-	0,8	V

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TRANSMITTER OPTICAL CHARACTERISTICS:

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Launch Optical Power	Po	-9	-6	-3	dBm	1
Center Wavelength Range	λc	1260	1310	1360	nm	-
Extinction Ratio	EX	9	-	-	dB	-
Spectral Width(RMS)	Δλ	-	-	4	nm	-
Total Jitter	TJ	-	-	266	Ps	-
Dispersion Penalty	-	-	-	1	dB	-
Optical Rise/Fall Time	T_{rise}/T_{fall}	-	-	260	ps	-
Pout @TX-Disable Asserted	P_{off}	-	-	-45	dBm	-
Eye diagram	IEEE Std 802.3-2005 Gigabit Ethernet 1000Base-LX compatible					

RECEIVER OPTICAL CHARACTERISTICS:

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Receiver Sensitivity	S	-	-	-23	dBm	1
Receiver Overload	P_{OL}	-3	-	-	dBm	1
Optical Return Loss	OR_L	12	-	-	dB	-
LOS De-Assert	LOS_D	-	-	-24	dBm	-
LOS Assert	LOS_A	-35	-	-	dBm	-
LOS Hysteresis	-	0,5	3	5	dB	-

Notas:
1. Measured with PRBS 2^7-1 test pattern, 1.25Gb/s, EX=9dB, BER<10^{-12}.

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Tx_disable assert time	T_off	-	-	10	μs
Tx_disable negate time	T_on	-	-	1	ms
Time to initialize,include reset of TX_FAULT	T_init	-	-	300	ms
TX_FAULT from fault to assertion	T_fault	-	-	100	μS
Receiver LOS Assert Time(off to on)	T_D,RX_LOS	-	-	80	μS
Receiver LOS Assert Time(on to off)	T_A,RX_LOS	-	-	80	μS
Serial I2C Clock Rate	I2C_Clock			100	KHz

The MGBIC-LC09 is a Class 1 laser product. It fully complies with the multi-sourcing agreement (MSA) which enables it to work in all MSA compliant platforms. The MGBIC-LC09 must be operated within the specified temperature and voltage limits.

The optical ports of the module shall be terminated with an optical connector or with a dust plug.