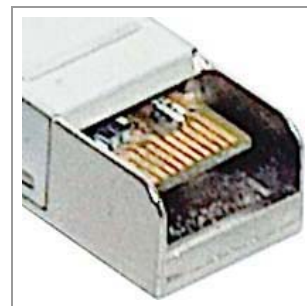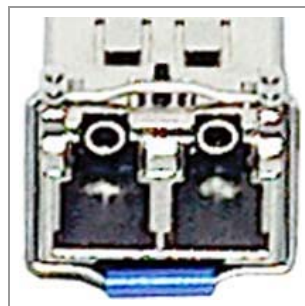# SFP SERIES

SMALL FROM FACTOR PLUGGABLE

1310nm 1.25Gbps Single Mode SFP

LCS-MGBIC-LX-10

1310 nm 1.25Gbps Single Mode
SFP LC Transceiver Module 3.3V

1310nm 1.25Gbps Single Mode SFP

The LCS-MGBIC-LX-10 is a high performance, cost effective module for serial optical data communications applications specified for a multimode of 1.25Gb/s. The module is intended for multi-mode fiber, operates at a nominal wavelength of 850nm and complies with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP). LCS-MGBIC-LX-10 is a duplex LC transceiver designed for use in Gigabit Ethernet and to provide a IEEE-802.3z compliant link for 1.25Gb/s short reach applications.

Features

· Small From Factor Pluggable MSA compliant.
· For Single Mode Applications.
· Standard LC Duplex Connector.
· Up to 1310nm & 1.25 Gb/s .
· Compliant for IEEE-802.3z Gigabit Ethernet.
· Power supply : +3.3V
· EEPROM with serial ID functionality
· TTL Signal detect indicator.
· PECL differential input & output logic levels.
· Uncooled MQW structure laser.
· 0° ~ +70° operating temperature.
· Class 1 laser safety compliance.
· $2^{23}-1$ PRBS, BER=$1*10^{-10}$.
· 10 km reach.

Specifications

Absolute Maximum Ratings				
Parameter	**Symbol**	**Min**	**Max**	**Unit**
Operating temperature	T_{opr}	0	+70	^{o}C
Storage temperature	T_{stg}	-40	+85	^{o}C
Lead soldering limits	-	-	260/10	^{o}C/sec
Supply voltage	VccT	-0.5	4	V

Electrical Characteristics					
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**
Transmitter:					
Data rate (NRZ)	B	-	1250	-	Mb/s
Data PECL Differential input (6)	V_{il}		-	1.85	V
	V_{ih}	2.15			
Supply voltage	VCCT	3.1	3.3	3.5	V
Supply current	ICCT	-	130	-	mA
Receiver:					
Data rate (NRZ)	B	-	1250	-	Mb/s
Output rise time (10-90%)	tr	-	-	400	ps
Output fall time (10-90%)	tf	-	-	400	ps
Data PECL output (6)	V_{OL}	-	-	1.65	V
	V_{OH}	2.25	-	-	V
Supply voltage	VCCR	3.1	3.3	3.5	V
Supply current	ICCR	-	120	-	mA
Hysteresis		-	2.5	-	dB

SFP Series
LCS-MGBIC-LX-10

Optical Characteristics					
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**
Transmitter:					
Optical output (avg.) (1) (3)	P_o	-10	-	-5	dBm
Extinction ratio	ER	10	-	-	dB
Output rise time (10-90%)	tr	-	-	400	ps
Output fall time (10-90%)	tf	-	-	400	ps
Optical wavelength	λ	1280	1310	1340	nm
Spectral width	Δλ	-	2	-	nm
Receiver:					
Optical input (avg.) sensitivity (1) (5)	P_{IN}	-20	-	-	dBm
Saturation	-	-	-	0	dBm
Optical wavelength	λ	1100	-	1600	nm
Signal detect asserted (avg)	P_A	-	-	-20	dBm
Signal detect deasserted (avg)	P_D	-31	-	-	dBm
Signal Detect-Hysteresis	P_A-P_D	1.0	-	-	dB
Signal Detect Assert Time	T_{SD+}	-	-	100	μs
Signal Detect Deassert Time	T_{SD-}	-	-	100	μs
Differential Output Voltage	V_{DEF}	0.37	-	2.0	V
Receiver Loss of Signal Output Voltage-low	RX_LOS$_L$	0	-	0.35	V
Receiver Loss of Signal Output Voltage-High	RX_LOS$_H$	2.4	-	Vcc	V
Receiver Loss of Signal Assert Time (off to on)	I_{ARX_LOS}	-	-	100	μs
Receiver Loss of Signal Assert Time (on to off)	I_{DRX_LOS}	-	-	100	μs

Note	
1	With 0.275 NA, 9/125μm Fiber.
2	Driven with a differential signal
3	Class 1 eye safe per FDA and IEC.
4	Compliant with IEEE 802.3Z Gigabit Ethernet.
5	2^{23} - 1 PRBS, BER= $1*10^{-10}$.
6	PECL Differential Voltage Mode.
7	Take normal ESD precautions when handing this product.