GigaBit Interface Converter (GBE GBIC MLX)
1.25Gbps 1310nm FP Multimode Transceiver

AB-GSC-MLX-MM
Ver. A

Feature

- Compliant with Gigabit Interface Converter (GBIC)
- 1.0625Gbps Fiber Channel Compliant
- 1.25Gbps Gigabit Ethernet Compliant
- Single 3.3/5.0V Power Supply Voltage
- AC/AC Differential Electrical Interface
- For MMF 2km transmission
- Duplex SC Connector
- Class 1 laser product
- RoHS Compliance

Application

- Router / Server interface
- Distributed multi-processing
- Switch to switch interface
- High speed I/O for file server

Absolute Maximum Rating

PARAMETER	SYMBOL	MIN	MAX	UNIT
Storage Temperature	T_S	–40	85	°C
Supply Voltage	Vcc	0	6	V
Input Voltage	V_{IN}	0	*Vcc*	V
Operating Humidity		5	95	%

Recommended Operating Condition

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
Ambient Operating Temperature	T_A	0	70	°C	
Supply Voltage	*Vcc*	3.1	5.25	V	
Supply Current	$I_{TX} + I_{RX}$		300	mA	

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Transmitter Electro-optical Characteristic

***Vcc* = 3.1 V to 5.25 V, T_A = 0 °C to 70 °C**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Output Optical Power 62.5/125 μm fiber	P_{out}	-9.5		1	dBm	
Extinction Ratio	ER	9			dB	
Center Wavelength	λ_C	1270	1310	1355	nm	
Spectral Width - rms	$\Delta\lambda$			4	nm	
Rise/Fall Time, (20–80%)	$T_{r, f}$			260	ps	
Relative Intensity Noise	RIN			–120	dB/Hz	
Total Jitter	TJ			227	ps	
Output Eye	Compliant with IEEE802.3z/D5.0					
Tx_ Fault Output Voltage - Low	V_{OL}	0.0		0.8	V	
Tx_ Fault Output Voltage - High	V_{OH}	2.0		V_{CC}	V	
Tx_ Disable Input Voltage - Low	V_{IL}	0.0		0.8	V	
Tx_ Disable Input Voltage - High	V_{IH}	2.0		V_{CC}	V	

Receiver Electro-optical Characteristic

***Vcc* = 3.1 V to 5.25 V, T_A = 0 °C to 70 °C**

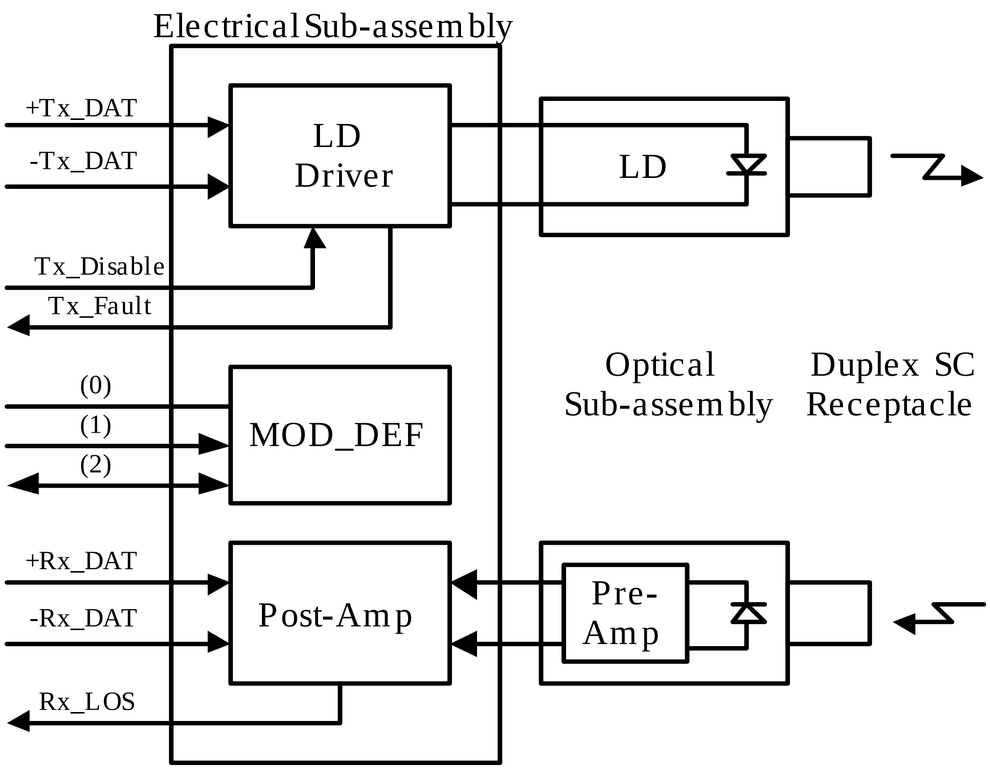
PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Optical Input Power-maximum	P_{IN}	-3			dBm	BER < 10^{-12}
Optical Input Power-minimum (Sensitivity)	P_{IN}			-21	dBm	BER < 10^{-12}
Operating Center Wavelength	λ_C	1100		1600	nm	
Loss of signal -Asserted	P_A	–35			dBm	
Loss of signal -Deasserted	P_D			-21	dBm	
Signal Detect Hysteresis	P_{HYS}	0.5			dB	
Return Loss	ORL	12			dB	
Receiver Loss of Signal Output Voltage-Low	RX_LOS_L	0		0.8	V	
Receiver Loss of Signal Output Voltage-High	RX_LOS_H	2.0		V_{CC}	V	

Timing Requirement

Vcc **= 3.1 V to 5.25 V,** T_A **= 0 °C to 70 °C**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
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	
TX_DISABLE time to start reset	t_reset	10			μs	
Receiver Loss of Signal Assert Time (off to on)	t_{A,RX_LOS}			100	μs	
Receiver Loss of Signal Assert Time (on to off)	t_{D,RX_LOS}			100	μs	

Block Lock Diagram Of Transceiver



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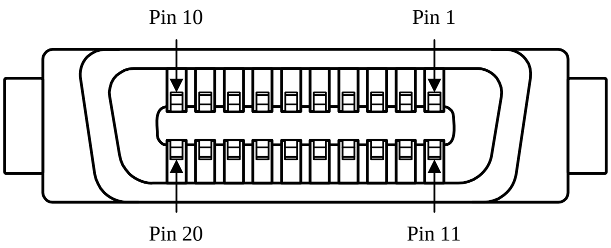
Pin Assignment



GBIC Transceiver Electric Pad Layout

Pin Function Definition

Pin No.	Symbol	Functional Description
1	Rx_LOS	Loss of Signal
2	RGND	Receiver Ground
3	RGND	Receiver Ground
4	MOD-DEF(0)	Module Definition 0 – Grounded in module
5	MOD-DEF(1)	Module Definition 1 – Two wire serial ID interface
6	MOD-DEF(2)	Module Definition 2 – Two wire serial ID interface
7	Tx_Disable	Transmitter Disable – Module disables on high or open
8	TGND	Transmitter Ground
9	TGND	Transmitter Ground
10	Tx_Fault	Transmitter Fault Indication
11	RGND	Receiver Ground
12	-Rx_DAT	Inverse Received Data Out
13	+Rx_DAT	Received Data Out
14	RGND	Receiver Ground
15	$V_{DD}R$	Receiver Power
16	$V_{DD}T$	Transmitter Power
17	TGND	Transmitter Ground
18	+Tx_DAT	Transmitter Data In
19	-Tx_DAT	Inverse Transmitter Data In
20	TGND	Transmitter Ground

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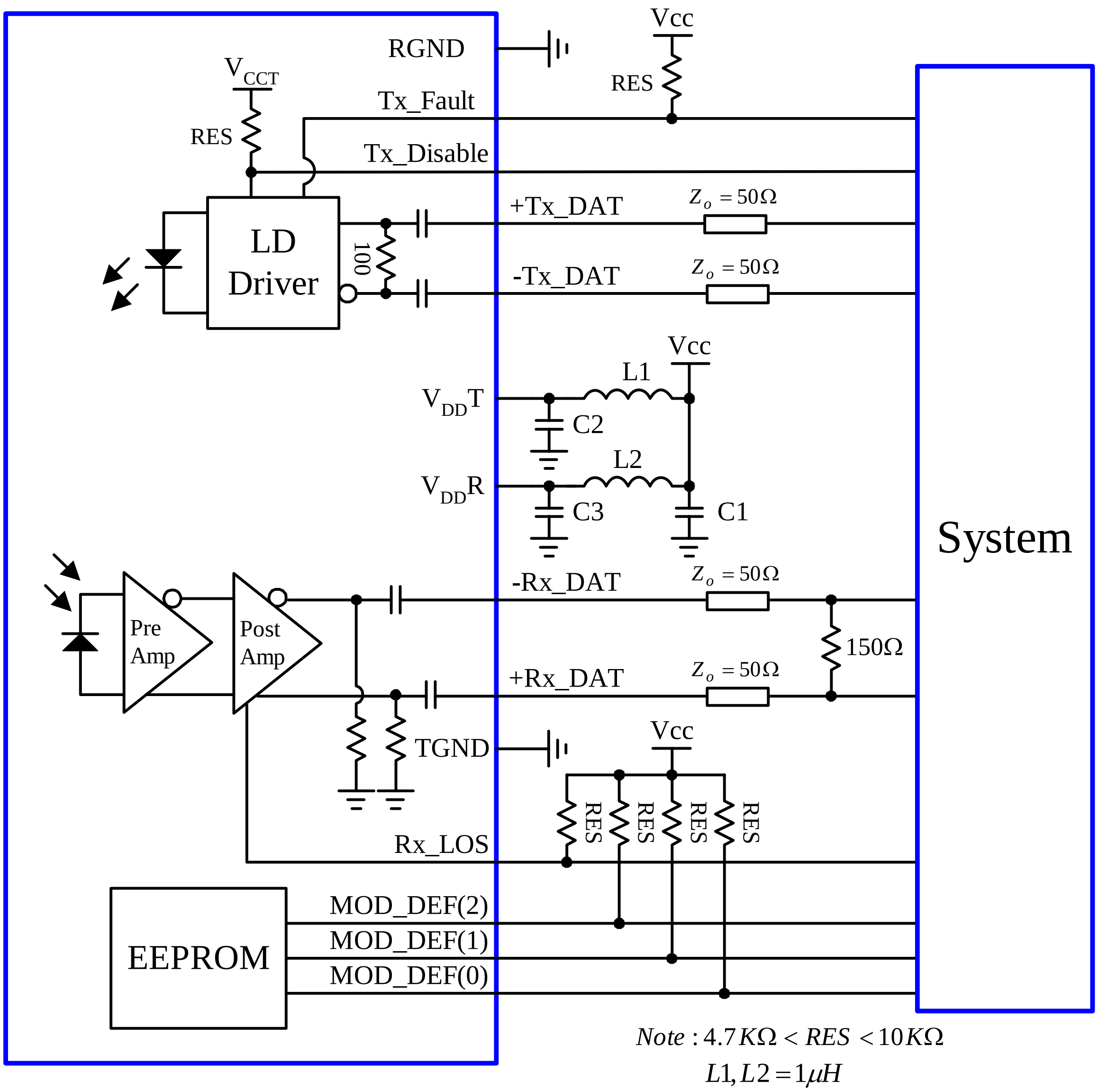
Suggest Transceiver / Host Interface



$Note : 4.7K\Omega < RES < 10K\Omega$

$L1, L2 = 1\mu H$

$C1 = 10\mu F$

$C2, C3 = 0.1\mu F$

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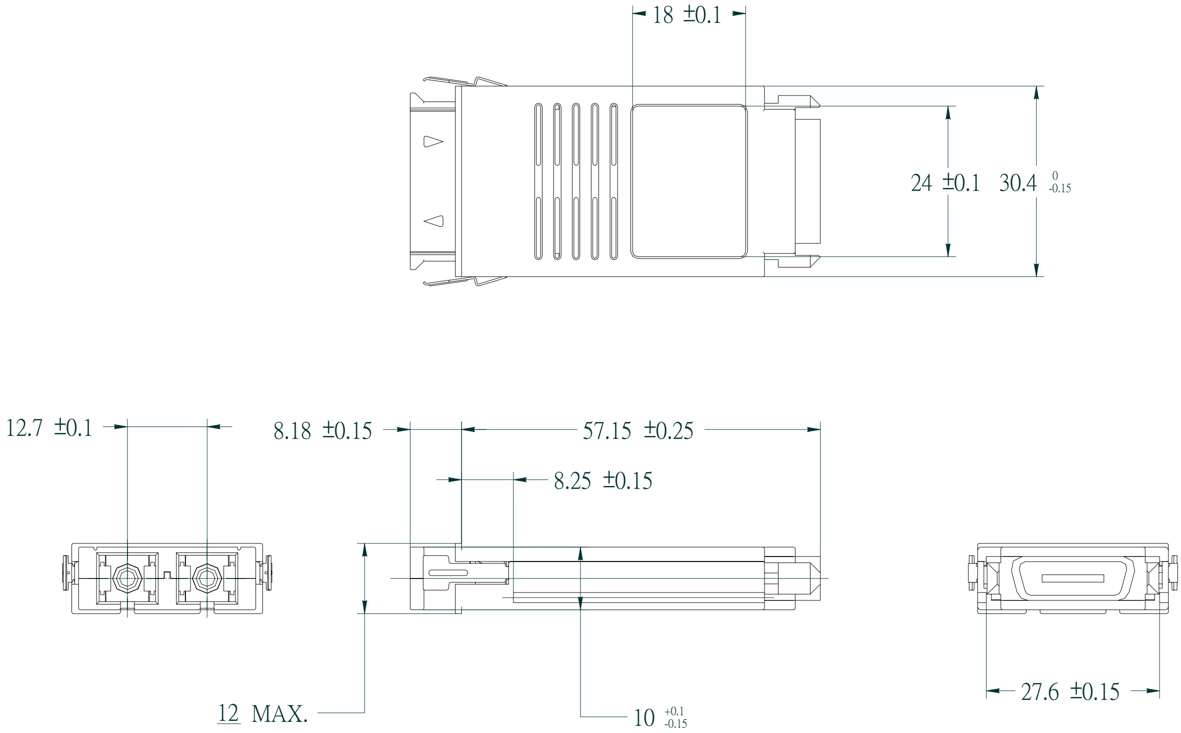
Dimensions (mm):



Safety Information

- All versions of this laser are Class 1 laser products per IEC* 60825-1:2001. Users should observe safety precautions such as those recommended by ANSI** Z136.1-2000, ANSI Z36.2-1997 and IEC 60825-1:2001.
- Caution: use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

*IEC is a registered trademark of the International Electrotechnical Commission

**ANSI is a registered trademark of the American National Standards Institute

AIBAO reserves the right to make changes in the specification described hereinafter without prior notice.

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