Fiber Module
LC 1.25 G

LanPOE

Model:
LP-FMLC125

Type:
Transceiver Module

NDAA Compliant

Overview

The Fiber Module LC 1.25 G offers reliable fiber optic connectivity with its LC connector. Operating at a data transfer rate of 1.25 Gbps, it facilitates swift data exchange between networking devices such as switches and routers. This module is ideal for enhancing network performance in various environments requiring high-speed data transmission over short distances.

Features

- SFP package with LC connector
- 850nm VCSEL Laser and PIN photo detector
- Up to 550m transmission on 50/125 um MMF
- +3.3V single power supply
- LVPECL compatible data input/output interface
- Low EMI and excellent ESD protection
- Laser safety standard IEC-60825 compliant
- Compatible with RoHS
- Digital Diagnostic SFF-8472 compliant

Typical Application

The Fiber Module LC 1.25 G excels in various networking environments, ideal for connecting switches, routers, and networking equipment. Its LC connector ensures reliable fiber optic connections, making it a go-to solution for high-speed data transmission requirements in local area networks and similar setups demanding swift and dependable connectivity.

1.25 Gb/s 1000Base-SX Ethernet

- This module delivers a robust data transfer rate of 1.25 Gb/s, specifically catering to the demands of 1000Base-SX Ethernet applications.
- Whether facilitating short-range uplinks or interconnecting network switches, it ensures a reliable and swift data transmission, crucial for seamless network operations.

Dual Rate 1.063/2.125 Gb/s Fiber Channel

- Offering dual-rate capabilities of 1.063 Gb/s and 2.125 Gb/s, the module stands out in Fiber Channel applications.
- This flexibility allows for optimal performance across a spectrum of networking scenarios, ensuring adaptability and efficiency in various Fiber Channel setups.

Wireless – CPRI, OBSAI, LTE

- Beyond traditional wired connections, the module extends its functionality to wireless applications like CPRI (Common Public Radio Interface), OBSAI (Open Base Station Architecture Initiative), and LTE (Long-Term Evolution).
- This makes it a versatile solution for advanced wireless technologies, enhancing the overall capabilities of the network.

Outline Drawing

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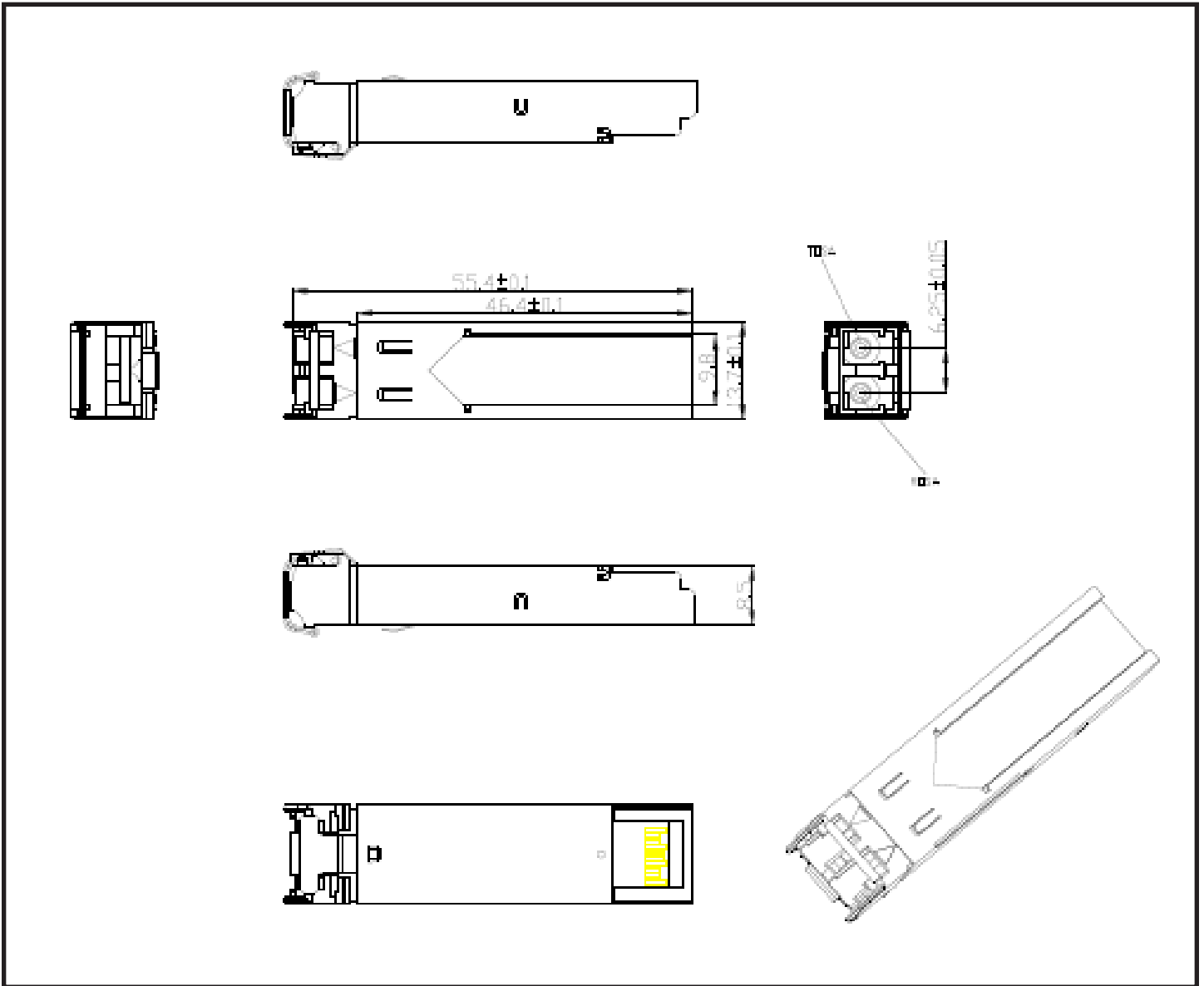
Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Storage Temperature	Tst	–40	+85	°C
Supply Voltage	Vcc	0	+3.6	V
Operating Relative Humidity	RH	5	95	%

Operation Environment

Parameter	Symbol	Minimum	Typical	Maximum	Units
Storage Temperature	Vcc	3.15	+85	3.45	V
Operating Case Temperature	Tc	0	+3.6	+70	°C
Power Dissipation				1	W
Data Rate			1250		Mbps

Optical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Units
Transmitter Section					
Center Wavelength	λo	830	850	860	nm
Average Output Power	Po	–9		–3	dBm
Extinction Ratio	Er	8			dB
Rise/Fall Time (20%~80%)	Tr/Tf	Tr/Tf		150	ps
Total Jitter	Tj			0.43	UI
Optical Eye Diagram	IEEE 802.3z and ANSI Fiber Channel Compatible				
Receiver Section					
Center Wavelength	λo	830		860	nm
Receiver Sensitivity	Rsen			–19	dBm
Receiver Overload	Rov	–3			dBm
Return Loss		12			dB
LOS Assert	LOSA	–36			dBm
LOS Dessert	LOSD			–20	dBm
LOS Hysteresis		0.5		5	

Electrical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Units
Transmitter Section					
Input Differential Impedance	Zin	90	100	1100	Ohm
Data Input Swing Differential	Vin	500		2400	mV
TX Disable: Disable		2.0		Vcc	V
TX Disable: Enable		0		0.8	V
TX Fault: Assert		2.0		Vcc	V
TX Fault: Deassert		0		0.8	V
Receiver Section					
Output differential Impedance	Zout		100	860	Ohm
Data Input Swing Differential	Vout	370		2000	mV
Rx_LOS: Assert		2.0		Vcc	V
Rx_LOS: Deassert		0		0.8	V
LOS Assert	LOSA	−36			dBm

EEPROM Information (AO)

Addr	Field Size (Bytes)	Name of Field	HEX	Description
0	1	Identifier	03	SFP
1	1	Ext. Identifier	04	MOD4
2	8	Connector	07	LC
3–10	1	Transceiver	00 00 00 02 12 00 0D 01	Transmitter Code
11	1	Encoding	01	8B10B
12	1	BR, nominal	0D	1250M bps
13	1	Reserved	00	
14	1	Length (9um)–km	00	
15	1	Length (9um)	00	
16	1	Length (50um)	37	550m
17	1	Length (62.5um)	1B	270m
18	1	Length (copper)	00	
19	1	Reserved	00	
20–35	16	Vendor name	57 49 4E 54 4F 50 20 20 20 20 20 20 20 20 20 20	OEM
36	1	Reserved	00	
37–39	3	Vendor OUI	00 00 00	
40–55	16	Vendor PN	xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx	ASC II
56–59	4	Vendor rev	31 2E 30 20	V1.0
60–61	2	Wavelength	03 52	850nm
62	1	Reserved	00	
64–65	2	Options	00 1A	LOS, TX_DISABLE,

(cont.) EEPROM Information (A0)

Addr	Field Size (Bytes)	Name of Field	HEX	Description
63	1	CC BASE	XX	Check sum of byte 0~62
64–65	2	Options	00 1A	LOS, TX_DISABLE
66	1	BR, max	32	50%
67	1	BR, min	32	50%
68–83	16	Vendor SN	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Unspecified
84–91	8	Vendor date code	XX XX XX 20	Year, Month, Day
92–94	3	Reserved	00	1250M bps
95	1	CC_EXT	XX	Check sum of byte 64~94
96–255	160	Vendor Specific		

Pin Description

Pins	Name	Description	Note
1	VeeT	Transmitter Ground	
2	Tx Fault	Transmitter Fault Indication	1
3	Tx Disable	Transmitter Disable	2
4	MOD DEF2	Module Definition 2	3
5	MOD DEF1	Module Definition 1	3
6			3
7			
8			4
9			
10			
11			
12			5
13			5
14			
15			
16			
17			
18			6
19			6
20			

(cont.) Pin Description

Notes:

1. TX Fault is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates a laser fault of some kind. In the low state, the output will be pulled to less than 0.8V.

2. TX Disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a 4.7k~10kΩ resistor. Its states are:
    Low (0~0.8V): Transmitter on
    (>0.8V, <2.0V): Undefined
    High (2.0~3.465V): Transmitter Disabled
    Open: Transmitter Disabled

3. MOD-DEF 0,1,2 is the module definition pins. They should be pulled up with a 4.7k~10kΩ resistor on the host board. The pull-up voltage shall be VccT or VccR.
    MOD-DEF 0 is grounded by the module to indicate that the module is present
    MOD-DEF 1 is the clock line of two wire serial interface for serial ID
    MOD-DEF 2 is the data line of two wire serial interface for serial ID

4. LOS is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates loss of signal. In the low state, the output will be pulled to less than 0.8V.

5. These are the differential receiver output. They are internally AC-coupled 100Ω differential lines which should be terminated with 100Ω (differential) at the user SERDES.

6. These are the differential transmitter inputs. They are AC-coupled, differential lines with 100Ω differential termination inside the module.

Have a question?

For troubleshooting LanPoE Smart Networking Products, please reach out to our support team and provide detailed information for assistance.

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