

Mini-GBIC (SFP)

1.25Gbps, 1000BASE-T Copper SFP Transceiver

- Distance: 100m
- Standard Operating Temperature: -10°C ~ 70°C
- Wide Operating Temperature: -40°C ~ 85°C



OVERVIEW

Lantech 1.25Gbps Small Form Factor Pluggable (SFP) transceiver module is specifically designed for the high performance integrated full duplex data link at 1.25Gbps over four pair Category 5 UTP. The transceiver module is compliant with the SFP MultiSource Agreement (MSA) and IEEE802.3:2002. With the hot pluggability, the module offers a flexible and easy way to be installed into SFP MSA compliant

ports at any time without the interruption of the host equipments operating online.

The 1000BASE-T electrical SFP transceivers use an integrated RJ-45 connector with transformer and PHY IC. The link length is up to 100m over four pair Category 5 UTP cabling

FEATURES & BENEFITS

- Small Form Factor Pluggable (SFP) MSA Compliant
- Compatible with IEEE 802.3:2002
- Compatible with 1000BASE-X and 1000BASE-T auto-negotiation
- Link length up to 100m at 1.25Gbps with four pair Category 5 UTP cabling
- Auto-detect MDI/MDI-X
- Internal PHY IC is configurable by host system via I²C interface
- Single 3.3V power supply operation and low power dissipation

SPECIFICATION

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
Storage Temperature	Ts	-40	+85	°C	1
Supply Voltage	Vcc	-0.5	3.6	V	
Storage Relative Humidity	RH	5	95	%	

Notes: 1. Ambient Temperature

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tc	-10 / -40		70 / 85	°C	1
Supply Voltage	Vcc	3.15	3.3	3.45	V	
Supply Current	I _{TX} + I _{RX}		300	350	mA	

Notes: 1. Case Temperature, Standard Operating Temperature / Wide Operating Temperature (-E model)

General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Data Rate	DR	10		1000	Mb/sec	1
Bit Error Rate	BER			10 ⁻¹⁰		2

Notes: 1. 10/100/1000 BASE-T operation requires the host system to have an SGMII interface with no clocks and the module PHY to be configured by user. 2. 100m Cat 5 UTP Cable per 802.3:2002

High-Speed Electrical Interface, Host to SFP

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
TD+, TD- Input Voltage Swing	V _{in+} V _{in-}	250		1200	mV	2
RD+, RD- Output Voltage Swing	V _{out+} V _{out-}	250		800	mV	2
Rise Time (Receiver)	t _r		180	250	ps	1
Fall Time (Receiver)	t _f		180	250	ps	1
Tx Input Impedance	Z _{in}		50		Ohm	2
Rx Output Impedance	Z _{out}		50		Ohm	2

Notes: 1. 20% to 80% value 2. Single ended

High-Speed Electrical Interface, Cable to SFP

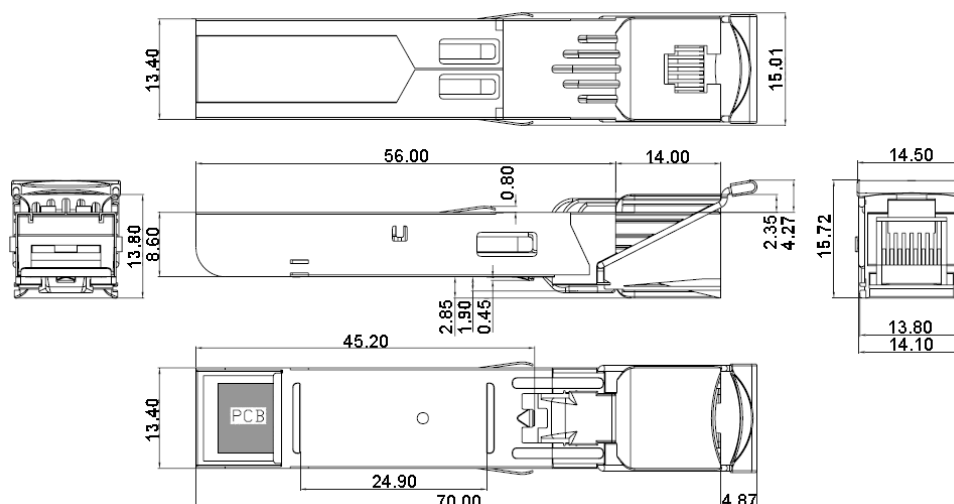
Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmission Frequency	f _t		125		MHz	1
Tx Output Impedance	Z _{out.Tx}		100		Ohm	2
Rx Output Impedance	Z _{in.Rx}		100		Ohm	2

Notes: 1. 4D-PAM-5 encoding per IEEE802.3: 2002 2. Differential for frequencies ranging from 1MHz to 125MHz

MTBF

60% Confidence Level, 25°C		90% Confidence Level, 25°C	
MTBF	FIT	MTBF	FIT
1848923	541	739569	1352

DIMENSIONS (unit=mm)



*All dimensions are $\pm 0.10\text{mm}$ unless otherwise specified

ORDERING INFORMATION

Part Number	Description
8330-168	1000Base-T, SFP, 100m, 3.3V, -10~70°C
8330-168-E	1000Base-T, SFP, 100m, 3.3V, -40~85°C

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