

# Mini-GBIC (SFP)

## 1.25Gbps, 10/100/1000BASE-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 10/100/1000BASE-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
- 10/100/1000BASE-T operation in host system with SGMII interface
- 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 I<sup>2</sup>C interface
- Single 3.3V power supply operation and low power dissipation

## SPECIFICATION

### Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
Storage Temperature	T <sub>s</sub>	-40	+85	°C	1
Supply Voltage	V <sub>cc</sub>	-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	T <sub>c</sub>	-10 / -40		70 / 85	°C	1
Supply Voltage	V <sub>cc</sub>	3.15	3.3	3.45	V	
Supply Current	I <sub>tx</sub> + I <sub>rx</sub>		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 <sup>-10</sup>		2

**High-Speed Electrical Interface, Host to SFP**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
TD+, TD- Input Voltage Swing	Vin+ Vin-	250		1200	mV	2
RD+, RD- Output Voltage Swing	Vout+ Vout-	250		800	mV	2
Rise Time (Receiver)	tr		180	250	ps	1
Fall Time (Receiver)	tf		180	250	ps	1
Tx Input Impedance	Zin		50		Ohm	2
Rx Output Impedance	Zout		50		Ohm	2

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

**High-Speed Electrical Interface, Cable to SFP**

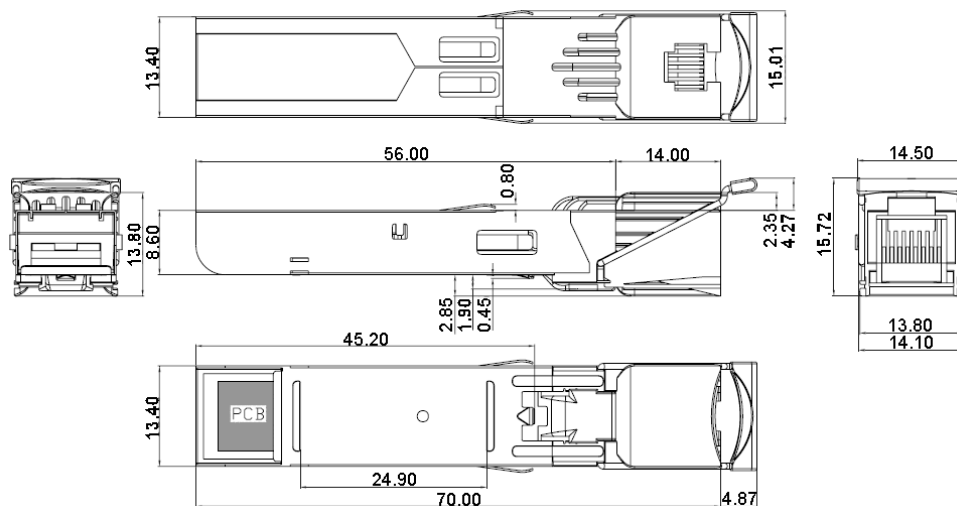
Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmission Frequency	ft		125		MHz	1
Tx Output Impedance	Zout.Tx		100		Ohm	2
Rx Output Impedance	Zin.Rx		100		Ohm	2

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 ±0.10mm unless otherwise specified

**ORDERING INFORMATION**

Part Number	Description
8330-168	10/100/1000Base-T, SFP, 100m, 3.3V, -10~70°C
8330-168-E	10/100/1000Base-T, SFP, 100m, 3.3V, -40~85°C
8330-178	1000Base-T, SFP, 100m, 3.3V, -10~70°C
8330-178-E	1000Base-T, SFP, 100m, 3.3V, -40~85°C

**Lantech Communications Global Inc.**

www.lantechcom.tw  
info@lantechcom.tw

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