

# Mini-GBIC (SFP)

## 125Mbps~155Mbps, 1310nm, 100Base SFP Transceiver

- Distance: 2km, 5km, 30km
- Standard Operating Temperature: -10°C ~ 70°C
- Wide Operating Temperature: -40°C ~ 85°C



## OVERVIEW

Lantech 100Base Small Form Factor Pluggable (SFP) transceiver module series is specifically designed for the high performance integrated duplex data link over single-mode or multi-mode optical fiber. These transceiver modules are compliant with the SFP Multisource Agreement (MSA). With the hot pluggability, these modules offer an easy way to be installed into SFP MSA compliant ports at any time without the

interruption of the host equipments operating online.

Lantech 100Base SFP transceivers using a long wavelength (1310nm) enable data transmission up to 30km on a single-mode optical fiber or up to 5km on a multimode optical fiber.

## FEATURES & BENEFITS

- SFP Multi-Source Agreement compliant
- Serial ID functionality support
- AC-coupled differential inputs and outputs
- Class 1 laser safety standard IEC 60825 compliant
- Low power dissipation

## SPECIFICATION

### Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
Storage Temperature	Ts	-40	+85	°C	
Supply Voltage	VccT, VccR	-0.5	4.0	V	
Storage Relative Humidity	RH	5	95	%	

### Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tc	-10		70	°C	
Supply Voltage	Vcc	3.1	3.3	3.5	V	
Supply Current	I <sub>TX</sub> + I <sub>RX</sub>		150	300	mA	Max. 250 for 5km model

### Receiver Electro-Optical Interface

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Receiver Differential Output Voltage	RD +/-	400		2000	mV	
Receiver Overload	2km	-8			dBm	1
	5km	0				
	30km	-5				
Receiver Sensitivity	2km			-32	dBm	1
	5km			-30		
	30km			-34		
Operating Center Wavelength	λc	1260		1620	nm	Max. 1600 for 5km model
Receiver Loss of Signal – TTL Low	2km			-32	dBm	
	5km			-30		
	30km			-35		
Receiver Loss of Signal – TTL High	P <sub>RX_LOSA</sub>	-45			dBm	
Receiver Loss of Signal - Hysteresis	P <sub>RX_LOSH</sub>	0.5			dB	Min. 1.0 for 5km model

**Notes:** 1. With BER better than or equal to  $1 \times 10^{-12}$ , measured in the center of the eye opening with  $2^7 - 1$  PRBS

**Transmitter Electro-Optical Interface**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter Differential Input Voltage	TD +/-	400		2400	mV	
Tx_Fault - High	V <sub>Fault_H</sub>	2		V <sub>cc</sub>	V	
Tx_Fault - Low	V <sub>Fault_L</sub>	V <sub>ee</sub>		V <sub>ee</sub> +0.8	V	
Tx_Disable - High	V <sub>Disable_H</sub>	2		V <sub>cc</sub>	V	
Tx_Disable - Low	V <sub>Disable_L</sub>	V <sub>ee</sub>		V <sub>ee</sub> +0.8	V	
Optical Output Power	P <sub>o</sub>	2km		-20	dBm	1
		5km		-9		
		30km		-15		
Optical Extinction Ratio	E <sub>r</sub>	2km		10	dB	
		5km		8.2		
		30km		8.2		
Center Wavelength	λ <sub>c</sub>	2km		1270	nm	
		5km		1261		
		30km		1261		
Spectral Width	Δλ	2km		7.7	nm	
		5km		7		
		30km		4		
Optical Rise / Fall Timet	t <sub>r</sub> / t <sub>f</sub>	2km		3.0	ns	2
		5km		2		
		30km		2		

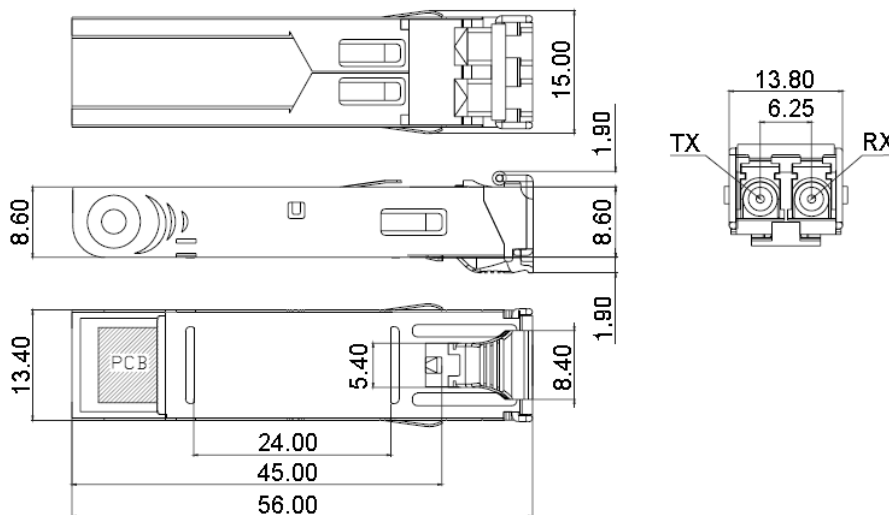
Notes: 1. Coupling into a 62.5/125μm, NA=0.275 fiber. 2. 10% to 90% value

**MTBF**

	60% Confidence Level, 25°C		90% Confidence Level, 25°C	
	MTBF	FIT	MTBF	FIT
2km	1627052	615	650821	1537
5km	1627052	615	650821	1537
30km	1627052	615	650821	1537

**DIMENSIONS (unit=mm)**

\*All dimensions are ±0.2mm unless otherwise specified



**ORDERING INFORMATION**

Part Number	Wavelength	LD	IO	LOS	Mode	Link	Temp.
8330-060	1310nm	FP	AC/AC	TTL	Multi-mode	2km	-10~70°C
8330-065	1310nm	FP	AC/AC	TTL	Multi-mode	5km	-10~70°C
8330-061	1310nm	FP	AC/AC	TTL	Single-mode	30km	-10~70°C
8330-060XE	1310nm	FP	AC/AC	TTL	Multi-mode	2km	-40~85°C
8330-065-E	1310nm	FP	AC/AC	TTL	Multi-mode	5km	-40~85°C
8330-061XE	1310nm	FP	AC/AC	TTL	Single-mode	30km	-40~85°C

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