

Mini-GBIC (SFP)

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

- Distance: 2km, 5km, 30km, 60km
- 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 60km 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 _{TX} + I _{RX}		150	300	mA	Max. 250 for 5km model Max. 240 for 60km model

Receiver Electro-Optical Interface

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Receiver Differential Output Voltage	RD +/-	400		2000	mV	Min. 300, Max. 1000 for 60km model
Receiver Overload	P _{IN} MAX	2km		-8	dBm	1, 2
		5km		0		
		30km		-5		
		60km		-3		
Receiver Sensitivity	P _{IN} MIN	2km		-32	dBm	1, 2
		5km		-30		
		30km		-34		
		60km		-34		
Operating Center Wavelength	λ _c	1260		1620	nm	Max. 1600 for

Receiver Loss of Signal – TTL Low	2km	PRX_LOSD			-32	dBm	5km model
	5km				-30		
	30km				-35		
	60km				-34		
Receiver Loss of Signal – TTL High		PRX_LOSA	-45			dBm	Min. -46 for 60km model
Receiver Loss of Signal - Hysteresis		PRX_LOSH	0.5			dB	Min. 1.0 for 5km model

Notes: 1. (For 2/5/30km models) With BER better than or equal to 1×10^{-12} , measured in the center of the eye opening with $2^7 - 1$ PRBS

Notes: 2. (For 60km model) Measured with a PRBS $2^{23}-1$ test pattern @155Mbps BER< 10^{-10}

Transmitter Electro-Optical Interface

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter Differential Input Voltage	TD +/-	400		2400	mV	Min. 300, Max. 1600 for 60km model
Tx_Fault - High	V _{Fault_H}	2		V _{cc}	V	
Tx_Fault - Low	V _{Fault_L}	V _{ee}		V _{ee} +0.8	V	
Tx_Disable - High	V _{Disable_H}	2		V _{cc}	V	
Tx_Disable - Low	V _{Disable_L}	V _{ee}		V _{ee} +0.8	V	
Optical Output Power	2km	-20		-14	dBm	1
	5km	-9		0		
	30km	-15		-8		
	60km	-5		0		2
Optical Extinction Ratio	2km	10			dB	
	5km	8.2				
	30km	8.2				
	60km	10				
Center Wavelength	2km	1270	1310	1380	nm	
	5km	1261		1360		
	30km	1261		1360		
	60km	1280		1340		
Spectral Width	2km			7.7	nm	
	5km			7		
	30km			4		
	60km			2		
Optical Rise / Fall Time	2km			3.0	ns	2, 3
	5km			2		
	30km			2		
	60km			2		

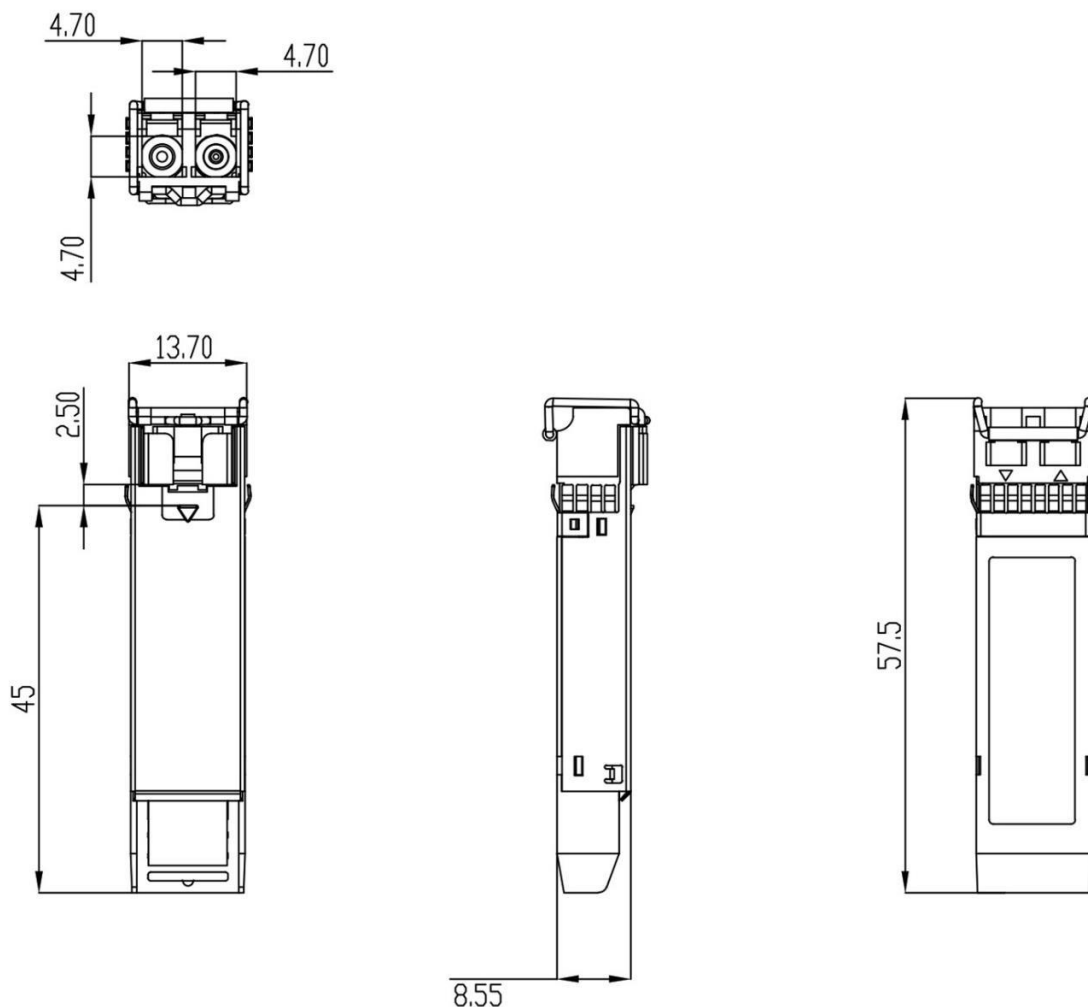
Notes: 1. Coupling into a 62.5/125µm, NA=0.275 fiber. 2. The optical power is launched into a 9/125µm single-mode fiber 3. 10% to 90% value (2/5/30km models) 4. 20% to 80% value (60km model)

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
60km	813526	1229	325410	3073

DIMENSIONS (unit=mm)

*All dimensions are ±0.2mm unless otherwise specified



ORDERING INFORMATION

Part Number	Wavelength	LD	IO	LOS	Mode	Link	Temp.
8330-060-V1	1310nm	FP	AC/AC	TTL	Multi-mode	2km	-10~70°C
8330-065-V1	1310nm	FP	AC/AC	TTL	Multi-mode	5km	-10~70°C
8330-061-V1	1310nm	FP	AC/AC	TTL	Single-mode	30km	-10~70°C
8330-059-V1	1310nm	FP	AC/AC	TTL	Single-mode	60km	-10~70°C
8330-060E-V1	1310nm	FP	AC/AC	TTL	Multi-mode	2km	-40~85°C
8330-065E-V1	1310nm	FP	AC/AC	TTL	Multi-mode	5km	-40~85°C
8330-061E-V1	1310nm	FP	AC/AC	TTL	Single-mode	30km	-40~85°C
8330-059E-V1	1310nm	FP	AC/AC	TTL	Single-mode	60km	-40~85°C

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