

# Mini-GBIC (SFP)

## 125Mbps, 850nm, 100Base SFP Transceiver

- Distance: 2km
- 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.

The high performance 850nm provides superior performance for Ethernet applications up to 2KM MMF optical links.

### FEATURES & BENEFITS

- Compliant with IEEE802.3u 100Base-FX Standard
- Compliant with SFP MSA
- Hot Pluggable
- 850nm VCSEL laser transmitter
- Duplex LC connector
- 2-wire interface for management
- Single +3.3V power supply voltage
- Transmission distance of 2KM over MM fiber
- RoHS Compliant

### 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    | 3.15 | 3.3  | 3.45 | V    |      |
| Supply Current             | Icc    |      |      | 240  | mA   |      |

#### Receiver Electro-Optical Interface

| Parameter                              | Symbol                          | Min. | Typ. | Max.    | Unit | Note |
|--|---------------------------------|------|------|---------|------|------|
| Differential Data Output Voltage       | Vout, pp                        | 500  |      | 1200    | mV   |      |
| Maximum Input Power                    | P <sub>IN</sub> MAX             | -3   |      |         | dBm  | 1    |
| Receiver Sensitivity                   | P <sub>IN</sub> MIN             |      |      | -26     | dBm  | 1    |
| Operating Center Wavelength            | λ <sub>c</sub>                  | 770  |      | 870     | nm   |      |
| LOS De-Assert                          | LOS <sub>D</sub>                |      |      | -26     | dBm  |      |
| LOS Assert                             | LOS <sub>A</sub>                | -37  |      |         | dBm  |      |
| LOS Hysteresis                         | LOS <sub>VHY</sub>              | 0.5  |      |         | dB   |      |
| Optical Rise / Fall Timet              | t <sub>r</sub> / t <sub>f</sub> |      |      | 2       | ns   | 2    |
| Receiver LOS Signal Output Voltage-Low | LOS <sub>V</sub> L              | GND  |      | GND+0.5 | V    |      |
| Receiver LOS Signal Output             | LOS <sub>V</sub> H              | 2.4  |      | Vcc     | V    |      |

Datasheet Version 1.0

Voltage-High

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 2. 20% to 80% value

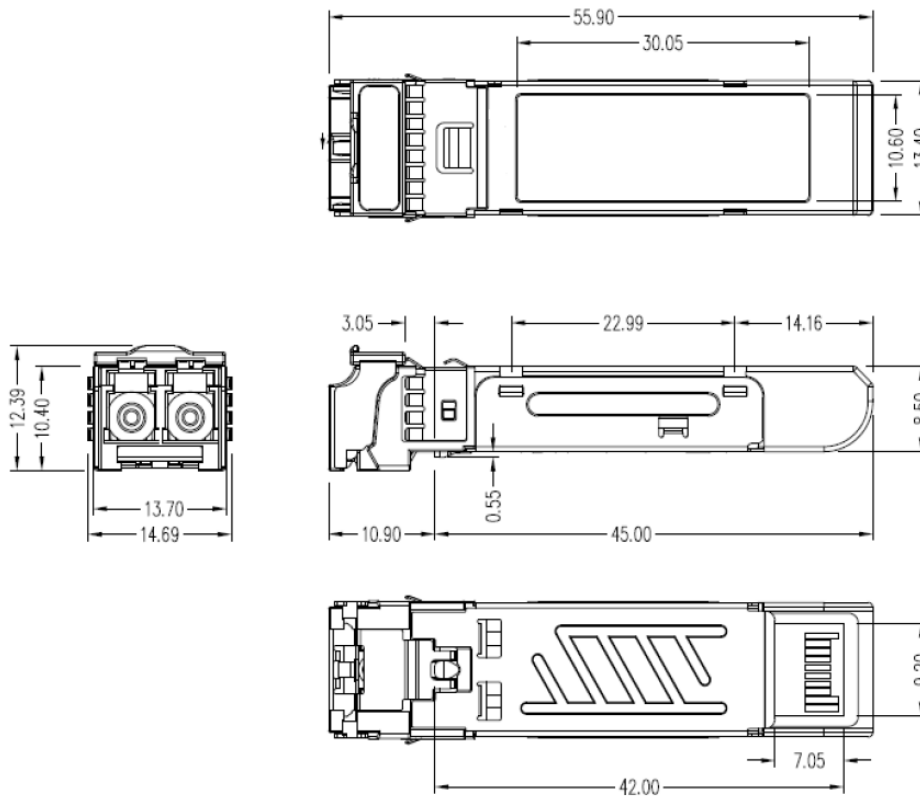
**Transmitter Electro-Optical Interface**

| Parameter                       | Symbol           | Min. | Typ.       | Max.     | Unit | Note |
|---------------------------------|------------------|------|------------|----------|------|------|
| Differential Data Input Voltage | $V_{DIFF}$       | 400  |            | 2000     | mV   |      |
| Optical Launch Power            | $P_o$            | -9   |            | -3       | dBm  | 1    |
| Optical Extinction Ratio        | $E_R$            | 9    |            |          | dB   |      |
| Center Wavelength               | $\lambda_c$      | 830  | 850        | 870      | nm   |      |
| Spectral Width                  | $\Delta \lambda$ |      |            | 0.85     | nm   |      |
| Optical Rise / Fall Timet       | $t_r / t_f$      |      |            | 2        | ns   | 2    |
| Optical Eye Mask                |                  |      | IEEE802.3u |          |      |      |
| Transmit Disable Voltage        | $V_{DIS}$        | 2.0  |            | $V_{CC}$ | V    |      |
| Transmit Enable Voltage         | $V_{EN}$         | GND  |            | GDN+0.8  | V    |      |

Notes: 1. Coupling into a 62.5/125 $\mu$ m, NA=0.275 fiber. 2. 20% to 80% value

**DIMENSIONS (unit=mm)**

\*All dimensions are  $\pm 0.2$ mm unless otherwise specified



**ORDERING INFORMATION**

| Part Number | Wavelength | Mode       | Link | Temp.    |
|-------------|------------|------------|------|----------|
| 8330-073    | 850nm      | Multi-mode | 2km  | -10~70°C |
| 8330-073-E  | 850nm      | Multi-mode | 2km  | -40~85°C |

Lantech Communications Global Inc.

www.lantechcom.tw  
info@lantechcom.tw

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