



# SFP100B3-MM / SFP100B3-MM-I

100Mbps SFP optical Transceiver, Multi-mode  
BIDI / 2KM, TX1310nm / RX1550nm

## Highlights

- Compliant with Fast Ethernet Standard
- Compliant with IEEE802.3ah 100Base-BX
- Differential LVPECL inputs and outputs
- TTL signal detect indicator
- Single power supply 3.3VDC



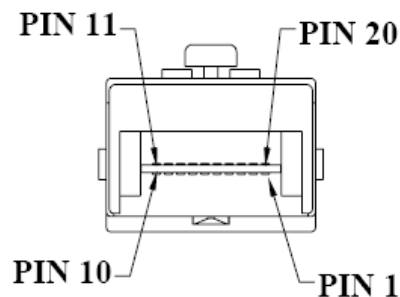
## Features

- RoHS compliant
- Compliant with Fast Ethernet standard
- Compliant with IEEE802.3ah 100Base-BX
- Industry standard small form pluggable (SFP) package
- Simplex LC connector
- Differential LVPECL inputs and outputs
- Single power supply 3.3V
- TTL signal detect indicator
- Hot Pluggable
- Class 1 laser product complies with EN 60825-1

## Application

- Distributed multi-processing
- Switch to switch interface
- High speed I/O for file server
- Bus extension application
- Channel extender, data storage

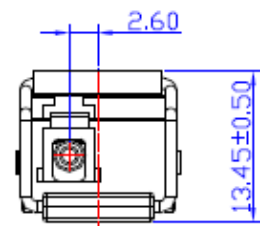
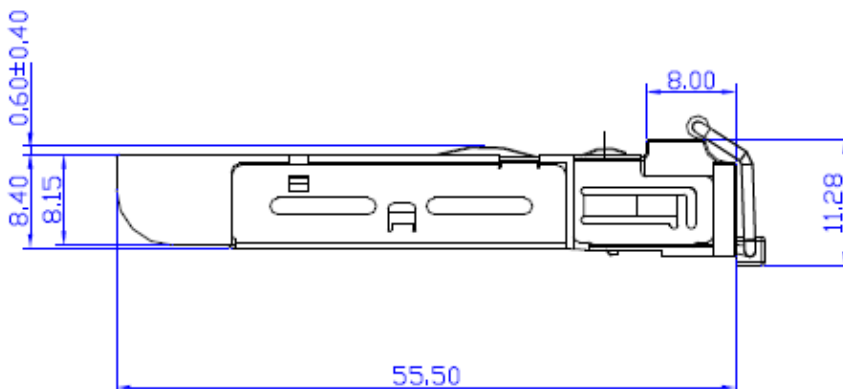
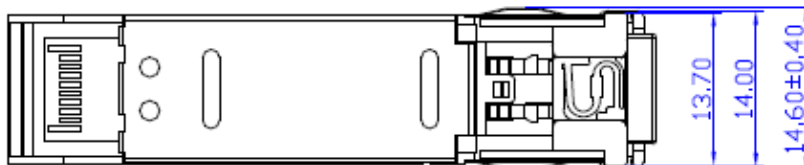
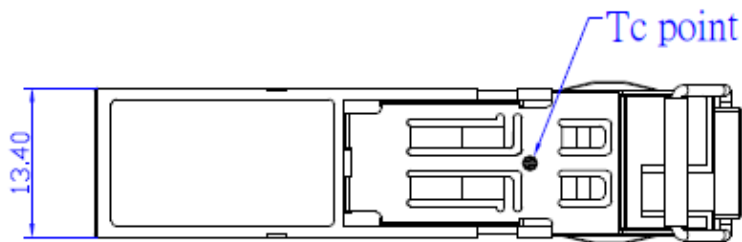
## Pin-Assignment



| Pin | Signal Name      | Description                                       |
|-----|------------------|---|
| 1   | T <sub>GND</sub> | Transmit Ground                                   |
| 2   | TX_FAULT         | Transmit Fault                                    |
| 3   | TX_DISABLE       | Transmit Disable                                  |
| 4   | MOD_DEF (2)      | SDA Serial Data Signal                            |
| 5   | MOD_DEF (1)      | SCL Serial Clock Signal                           |
| 6   | MOD_DEF (0)      | TTL Low   |
| 7   | RATE SELECT      | Open Circuit                                      |
| 8   | RX_LOS           | Receiver Loss of Signal, TTL High, open collector |
| 9   | R <sub>GND</sub> | Receiver Ground                                   |
| 10  | R <sub>GND</sub> | Receiver Ground                                   |
| 11  | R <sub>GND</sub> | Receiver Ground                                   |
| 12  | RX-              | Receiver Data Bar, Differential PECL, ac coupled  |
| 13  | RX+              | Receiver Data, Differential PECL, ac coupled      |
| 14  | R <sub>GND</sub> | Receiver Ground                                   |
| 15  | V <sub>CCR</sub> | Receiver Power Supply                             |
| 16  | V <sub>CCT</sub> | Tranmitter Power Supply                           |
| 17  | T <sub>GND</sub> | Transmit Ground                                   |
| 18  | TX+              | Transmit Data, Differential PCEL, ac coupled      |
| 19  | TX-              | Transmit Data Bar, Differential PCEL, ac coupled  |
| 20  | T <sub>GND</sub> | Transmit Ground                                   |

## Dimension

Unit = mm



## Specifications

| ABSOLUTE MAXIMUM RATINGS :  |   |  |  |                 |       |                         |
|---|---|--|--|-----------------|-------|-------------------------|
| Parameter   | Symbol  | Min                                    | Max                                    | Units           |       |                         |
| Storage Temperature   | T <sub>s</sub>  | -40                                    | 85                                     | °C              |       |                         |
| Supply Voltage  | V <sub>CC</sub>   | -0.5                                   | 4.0                                    | V               |       |                         |
| Input Voltage   | V <sub>IN</sub>   | -0.5                                   | V <sub>CC</sub>                        | V               |       |                         |
| Output Current  | I <sub>o</sub>  | -                                      | 50                                     | mA              |       |                         |
| Operating Current   | I <sub>OP</sub>   | -                                      | 400                                    | mA              |       |                         |
| RECOMMENDED OPERATING CONDITIONS :  |   |  |  |                 |       |                         |
| Parameter   | Symbol  | Min                                    | Max                                    | Units           |       |                         |
| Case Operating Temperature  | T <sub>c</sub>  | SFP100B3-MM = 0<br>SFP100B3-MM-I = -40 | SFP100B3-MM = 70<br>SFP100B3-MM-I = 85 | °C              |       |                         |
| Supply Voltage  | V <sub>CC</sub>   | 3.1                                    | 3.5                                    | V               |       |                         |
| Supply Current  | I <sub>TX</sub> + I <sub>RX</sub>   | -                                      | 200                                    | mA              |       |                         |
| TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS : V <sub>CC</sub> = 3.1V to 3.5V, T <sub>c</sub> =0°C to 70°C (-40°C to 85°C) |   |  |  |                 |       |                         |
| Parameter   | Symbol  | Min                                    | Typ.                                   | Max             | Units | Note                    |
| Output Optical Power 9/125, 62.5/125 μm fiber   | P <sub>OUT</sub>  | -10                                    | -                                      | 0               | dBm   | Average                 |
| Extinction Ratio  | ER  | 8.2                                    | -                                      | -               | dB    |                         |
| Center Wavelength   | λ <sub>c</sub>  | 1261                                   | 1310                                   | 1360            | nm    |                         |
| Spectral Width (RMS)  | Δλ  | -                                      | -                                      | 7               | nm    |                         |
| Rise / Fall Time, (10-90%)  | T <sub>r, f</sub>   | -                                      | 1                                      | 2               | ns    |                         |
| Max. P <sub>out</sub> TX-DISABLE Asserted   | P <sub>OFF</sub>  | -                                      | -                                      | -45             | dBm   |                         |
| Output Eye  | Compliant with Telcordia GR-253-CORE Issue 3 and ITU-T recommendation G-957 |  |  |                 |       |                         |
| Differential Input Voltage  | V <sub>DIFF</sub>   | 0.4                                    | -                                      | 2.0             | V     |                         |
| RECEIVER ELECTRO-OPTICAL CHARACTERISTICS : V <sub>CC</sub> = 3.1V to 3.5V, T <sub>c</sub> =0°C to 70°C (-40°C to 85°C)    |   |  |  |                 |       |                         |
| Parameter   | Symbol  | Min                                    | Typ.                                   | Max             | Units | Note                    |
| Optical Input Power-maximum   | P <sub>IN</sub>   | 0                                      | -                                      | -               | dBm   | BER < 10 <sup>-10</sup> |
| Optical Input Power-minimum (Sensitivity)   | P <sub>IN</sub>   | -                                      | -                                      | -28             | dBm   | BER < 10 <sup>-10</sup> |
| Operating Center Wavelength   | λ <sub>c</sub>  | 1480                                   | -                                      | 1600            | nm    |                         |
| Optical Isolation   | ISO   | -                                      | -                                      | -40             | dB    | λ = 1480~1600 nm        |
| Loss of Signal-Asserted   | P <sub>A</sub>  | -                                      | -                                      | -28             | dBm   |                         |
| Loss of Signal-Deasserted   | P <sub>D</sub>  | -45                                    | -                                      | -               | dBm   |                         |
| Differential Output Voltage   | V <sub>DIFF</sub>   | 0.5                                    | -                                      | 1.6             | V     |                         |
| Data Output Rise, Fall Time (10-90%)  | T <sub>r, f</sub>   | -                                      | 1                                      | 2               | ns    |                         |
| Receiver Loss of Signal Output Voltage-Low  | RX_LOS <sub>L</sub>   | 0                                      | -                                      | 0.5             | V     |                         |
| Receiver Loss of Signal Output Voltage-High   | RX_LOS <sub>H</sub>   | 2.4                                    | -                                      | V <sub>CC</sub> | V     |                         |

## Ordering Information

**SFP100B3-MM-A**

| Code Definition | Additional Port Type   |
|-----------------|--|
| <b>Option</b>   | -I: Industrial extended model for -40 ~ 85°C<br>* Regular model : 0 ~ 70°C |

|                        | Model Name           | Description  | Operating Temperature |
|------------------------|----------------------|--|-----------------------|
| <b>Available Model</b> | <b>SFP100B3-MM</b>   | 100Mbps SFP optical Transceiver, Multi-mode BIDI / 2KM, TX1310nm / RX1550nm, | 0 ~ 70°C              |
|                        | <b>SFP100B3-MM-I</b> | 100Mbps SFP optical Transceiver, Multi-mode BIDI / 2KM, TX1310nm / RX1550nm, | -40 ~ 85°C            |