Plastic optical fiber SMI interconnects provide high-speed data signals for end-user applications

Molex’s SMI Interconnects provide high-speed and effective data connections for industrial, consumer and end-user applications. This plastic optical system ensures many benefits over traditional copper lines.

SMI is a POF interface standardized to IEC-61754-21. SMI is accepted as an industry standard POF interconnect for applications ranging from wind turbines, medical equipment and internal equipment data links to set-top box interfaces and Internet Protocol Television (IPTV) applications. SMI plastic optical interconnects complement Molex’s existing line of optical products.

**Transceiver and Cable Assemblies**

- Dielectric material of POF (PMMA) cabling interconnects is immune to EMI and RFI, lightweight and easy to handle
- Push-pull positive latching with safe-release mechanism for industrial and consumer applications offers secure, safe and easy mate de-mate
- Easy connector termination process
- Designed to IEC-61754-21 SMI interface standard
- SMI transceiver with digital integrated fiber optic transmit (Tx) and receive (Rx) modules, and integrated digital signaling reduces board layout requirements, minimizing design requirements
- Logic interfaces: LVDS and LVPECL
- Available in Ethernet 10 to 100 Mbps versions which provides increased versatility and market applications
- RoHS Compliant
- Data speeds up to 250 Mbps over 50 meters Step Index POF cable (0.5 NA) to provide high-speed signals for Ethernet and Industrial Datalink (proprietary protocol) applications

**Applications**

**Industrial**
- Wind industry
- Frequency Inverters/Converters/Drives
- Controller board
- Networking
- Power Transmission & Distribution
- Transportation/Traction
- Factory automation

**Optical sensors**

**Consumer**
- HDTV
- Set Top Boxes

**Medical**
- Data and video transmission
- Medical diagnostic equipment
- Optical sensors

**Networking**
- Data communication centers
**SMI Optical Interconnects**

**106108 Transceivers, 88531 Cable Assemblies**

## Transceiver Specifications

### REFERENCE INFORMATION

**Transceiver Packaging:**
- Tray (50 per tray)

### PHYSICAL

**Housing:**
- High-temperature Thermo Plastic

**Plating:**
- Solder Tail Area – Tin (Sn)
- Underplating – Nickel (Ni)

**Operating Temperature:**
- -20 to +85˚C (Industrial Datalink)
- -40 to +85˚C (Ethernet)

The Moisture Sensitivity Level (MSL) classification of this device is 2a according to JEDEC J-STD-020. The shelf life of an unopened MBB (Moisture Barrier Bag) is 24 months at < 40 °C and < 90 % R.H.

Once the Moisture Barrier Bag is opened the devices can be either a) Stored in normal factory conditions < 30 °C and < 60 % R.H. for a maximum of 672 hours (4 Weeks) prior to soldering b) Stored at < 10 % R.H. (Dry Cabinet)

### MECHANICAL

Mating Force SMI connector-to-transceiver at 25°C:
- SMI connector Long Body: 29.69N
- SMI connector Short Body: 29.69N

Unmating Force SMI connector-to-transceiver at 25°C:
- SMI connector Long Body: 23.73N
- SMI connector Short Body: 100N

Retention Force Cable-to-SMI connector (straight pull) at 25°C for 10 seconds, average increase loss 1.68dB:
- SMI connector Long Body: 22.24N
- SMI connector Short Body: 22.24N

### OPTICAL

Insertion loss: 2.0 dB max.

Plastic Optical Fiber Compatibility:
- Standard 980μm core POF
- Step Index 0.3 and 0.5NA

### ELECTRICAL

**Data Rate:**
- 10/100 Ethernet (100 Mbps)
- Industrial Datalink (min 10 Mbps up to 250 Mbps)

**Distance:**
- 50.00m (1968.5’’)

**Step Index POF**

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## Ordering Information

### TRANSCIEVER

<table>
<thead>
<tr>
<th>Order No.</th>
<th>PCB Mounting Style</th>
<th>Signaling Type</th>
<th>Data Rate</th>
<th>Baud Rate</th>
<th>Logic Interface</th>
<th>Operating Temperature Range</th>
<th>Storage Temperature Range</th>
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<tbody>
<tr>
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<td>Through Hole</td>
<td>Ethernet</td>
<td>100 Mbps</td>
<td>125 Mbd</td>
<td>LVPECL</td>
<td>-40 to +85˚C</td>
<td>-40 to +85˚C</td>
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<td>106108-4100</td>
<td>Through Hole</td>
<td>Industrial Datalink</td>
<td>250 Mbps</td>
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<td>LVDS</td>
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### SMI CONNECTOR

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<th>Description</th>
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<tbody>
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<td>106108-6004</td>
<td>SMI Long Body Connector Bulk Pack (50 pcs)</td>
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<tr>
<td>106108-6301</td>
<td>SMI Short Body Connector Bulk Pack (50 pcs)</td>
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### STANDARD LENGTH CABLE ASSEMBLIES

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<th>Order No.</th>
<th>Cable Type</th>
<th>Length</th>
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<tbody>
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<td>88531-9808</td>
<td>2.20mm diameter zipcord</td>
<td>0.20m</td>
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<td>88531-9810</td>
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<td>88531-9800</td>
<td>2.20mm diameter zipcord</td>
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<td>88531-9807</td>
<td>2.20mm diameter zipcord</td>
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