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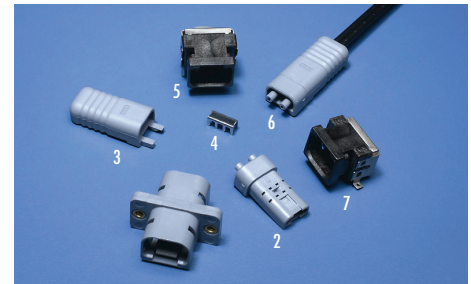# Small Multimedia Interface (SMI) Optical Interconnects

106108 Transceiver
501266 Adapter
88531 Cable Assemblies
85994 Tooling Kit

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 consumer and end-user applications. Data rates up to 250 Mbps are achieved over long distances. This plastic optical system provides many benefits over traditional metallic systems.

Designed to provide a end-to-end solution, Molex offers the complete solution with the optoelectronic transmitter and receiver module integrated with transceiver, adapter, cable assemblies and complementary tooling. Electro Magnetic Interference (EMI), Radio Frequency Interference (RFI) and ground loops are no longer a concern with the non-metallic Plastic Optical Fiber (POF) cabling. In addition, the plastic optical fiber connectors and transceivers are light weight and more cost effective than the traditional glass or copper cabling counterparts.

SMI is a POF interface standardized to IEC-671754-21. The SMI interface has been adopted by IEEE for 1394b (Firewire) for medium-length data links. SMI is gaining acceptance as an industry standard POF interconnect for applications ranging from 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. For more information on our extensive optical offering, visit: www.molex.com/fiber.

For additional information on the internal optoelectronic transmit and receiver modules, please reference Firecomms website at: www.firecomms.com.

1- SMI adapter 2- SMI connector inner housing
3- SMI connector outer housing 4- SMI connector POF cable clamp 5- SMI through-hole transceiver 6- Assembled SMI connector 7 - SMI surface-mount lead transceiver

TRANSCIEVER, ADAPTER AND CABLE ASSEMBLIES

Features and Benefits

■ Non-metallic POF cabling interconnects are immune to EMI and RFI, lightweight and easy to handle

■ Push-pull positive latching with safe-release mechanism for consumer applications offer secure, safe and easy mate de-mate

■ Easy no-epoxy, no-polish, field-termination process with speacilized tooling has quick, simple, easy field terminations for installers

■ Designed to IEC-671754-21 SMI interface standard

■ Data speeds up to 250 Mbps over 50 meters to provide high-speed, long distance signals for IEEE1394 and Ethernet applications

■ SMI transceiver with digital integrated fiber optic transmit (Tx) and receive (Rx) modules, and integrated digital signaling reduces board layout requirements, minimizing design requirements

■ Available in IEEE1394 and Ethernet 10 to 100 Mbps versions which provides increased versatility and market applications

TRANSCEIVER SPECIFICATIONS

Reference Information
Transceiver Packaging: Tray (50 per tray)

Optical
Insertion loss: 2.0 dB max.
Plastic Optical Fiber Compatibility: SI 0.3 and 0.5NA

Electrical
Data Rate:
    S200 IEEE1394 (250 Mbps)
    10/100 Ethernet (125 Mbps)
    Industrial Datalink (250 Mbps)
Distance: 50.00m (164.041')

Mechanical
Insertion Force — SMI connector-to-transceiver:
    29.4N (3.0 kgf) max.
Extraction Force — SMI connector-to-transceiver:
    4.9N to 29.N (0.5 to 3.0 kgf) max.
Durability: 500 cycles

Physical
Housing: High-temperature Thermo Plastic
Plating:
    Solder Tail Area — Tin (Sn)
    Underplating — Nickel (Ni)

Operating Temperature: -20 to +60°C
Shelf Life: 12 months in sealed, un-opened bag with desiccant

Processing
Plated through-hole wave soldering at +260°C for 3, 5-second exposures
Required 2.20mm (.086") distance between wave solder and PCB
Hot Bar, laser or infra-red (IR) processing recommended (SMT transceiver is not currently approved for re-flow processing)

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Transceiver
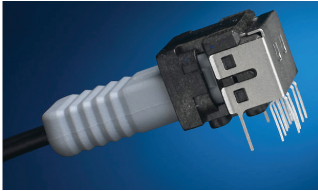
Order No.	PCB Mounting Style	Signaling Type
106108-2100	Through Hole	IEEE 1394 integrated digital FDL 300K
106108-2200	Surface Mount	
106108-3100	Through Hole	Ethernet integrated digital EDL 300K
106108-3200	Surface Mount	
106108-4100	Through Hole	Industrial Datalink IDL 300K
106108-4200	Surface Mount	

Cable Assemblies/Adapters

Order No.	Cable Type	Length
88531-9800		1.00m (3.280')
88531-9801		2.00m (6.561')
88531-9802		3.00m (9.842')
88531-9803	2.20mm diameter zip cord 0.30 Numerical Aperture	5.00m (16.404')
88531-9804		10.00m (32.808')
88531-9805		20.00m (65.616')
88531-9806		30.00m (98.425')
88531-9807		50.00m (164.041')

Adapter

Order No.	End-to-End
501266-0000	SMI-to-SMI

Media Converter Kit

Order No.	Description
106108-8010	Media converter with SMI ethernet, EU power supply, 6" Category 5 cables
106108-8020	Media converter with SMI ethernet, US power supply, 6" Category 5 cables
106108-8030	Media converter with OptaLock ethernet 1.50mm black, EU power supply, 6" Category 5 cables
106108-8040	Media converter with OptaLock ethernet 1.50mm black, US power supply, 6" Category 5 cables
106108-8050	Media converter with OptaLock ethernet 2.20mm black, EU power supply, 6" Category 5 cables
106108-8060	Media converter with OptaLock ethernet 2.20mm black, US power supply, 6" Category 5 cables

Tooling
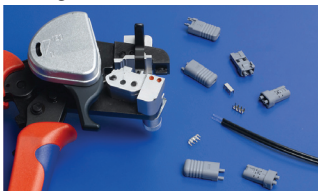
Order No.	Component	Contents
85994-0212	Field Termination Kit	50 SMI connectors, termination tooling
85994-0214	Replacement Cutter	Replacement cutting head for hand-termination tool
106108-6004	Bulk Pack	50 SMI connectors

FIELD-TERMINATION TOOLING KIT

Features and Benefits

■ Designed to terminate both duplex fibers (standard as one cable assembly) simultaneously provides consistent termination results with average attenuation loss 1.0 to 1.5 dB

■ Strips the fiber jacketing to the proper length and installs the connector holding tab to provide quick, simple, easy field terminations for installers

■ Designed for small quantity applications, Molex offers fully tested factory-manufactured cable assemblies for large quantities

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Visit our website at www.molex.com/fiber/smipof.html