Solder on Polyester Substrate

A proprietary soldering technique enables high-density surface-mount components on a polyester substrate, creating a flexible and cost-effective circuitry that presents an alternative to polyimide and printed circuit boards.

Features and Benefits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
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</thead>
<tbody>
<tr>
<td>Polyester substrate</td>
<td>Provides flexible alternative to rigid PCB. More cost effective than polyimide</td>
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<tr>
<td>Proprietary soldering technique on screen-print silver ink pad</td>
<td>Supports attachment of fine-pitch (0.50mm) microprocessor-based components (ICs) on polyester with traditional SMT processes. More components on polyester substrate frees up real estate on the controller PCB</td>
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<tr>
<td>Option to attach components to both sides of polyester substrate</td>
<td>Provides the design flexibility similar to polyimide</td>
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<td>UV-cured encapsulant</td>
<td>Protects solder joints, enabling them to withstand vibration and mechanical shock. Offers robust connection that tolerates a wide variety of applications</td>
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<td>Allows attachment of right-angle LEDs</td>
<td>Enables enhanced backlighting for user-interface applications</td>
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<td>Carbon overcoat on tail and button contacts</td>
<td>Protects contact area from abrasion and the silver from corrosive chemicals. Acts as a lubricant providing low friction and thermal stability. Withstands high mating cycles</td>
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</tbody>
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Applications

Consumer
- GPS equipment
- Fitness equipment
- Printers
- Home appliances
- Children's toys

Medical
- Patient monitoring
- Electronic sensors
- Glucose meters

Industrial
- Automation equipment
- Fluid detection
- Hand-held devices
- Sensors

Lead-Free Solder-Bonded Components on Polyester Circuit: Demonstration Unit

Glucose Meter

Building Sensor

Capacitive Fluid Sensor
Specifications

REFERENCE INFORMATION
Designed In: Millimeters
RoHS: Yes

ENVIRONMENTAL
Operating Temperature: -20 to +85°C typical

PHYSICAL
Polyester (PET): Clear, translucent or white, 0.13 or 0.18mm thick

ELECTRICAL*
Circuit Resistance (max.): 100 Ohms standard (May vary depending on circuit design)
Durability
Tactile: 1 million operations
Non-tactile: 5 million operations
Contact Bounce: 5 milliseconds, typical
Insulation Resistance:
100 Megohms initial between adjacent traces

COMPONENT ATTACHMENT
Component types: Resistors, capacitors, diodes/LEDs, phototransistors, 7-segment displays, integrated circuits (ICs)

*Actual specifications may be design dependent

Ordering Information

<table>
<thead>
<tr>
<th>Custom Product</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Contact Molex</td>
<td>Solder on Polyester Substrate</td>
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</table>

www.molex.com/link/silverflexcircuit.html