MicroStac
0.8 mm Connectors
MicroStac - MEZZANIN CONNECTOR SYSTEM

The MicroStac connector series features hermaphroditic mating design within a pitch of 0.8 mm. Connectors and their mating connectors are identical. This reduces the bill of material and also storage and handling costs. Two contact points between mated contacts and the wipe length of up to 1.5 mm provide a high reliability.

The design calls for fast automatic Surface Mount Technology (SMT) assembly. MicroStac connectors are available for Board-to-Board heights of 3 mm and 5 mm. Despite their small size, MicroStac connector contacts offer large radiating surfaces to provide a high current rating.

FEATURES

<table>
<thead>
<tr>
<th>Pitch</th>
<th>0.8 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Pins</td>
<td>6, 9, 10, 12, 14, 50, 54</td>
</tr>
<tr>
<td>Current rating per contact</td>
<td>up to 2.7 A</td>
</tr>
<tr>
<td>Termination technology</td>
<td>SMT</td>
</tr>
<tr>
<td>Applications</td>
<td>stacked boards (Mezzanine)</td>
</tr>
<tr>
<td>Board-to-Board height</td>
<td>3 mm, 5 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>0.18 g (6-pin version)</td>
</tr>
<tr>
<td>Variants</td>
<td>single row connectors, dual row connectors</td>
</tr>
</tbody>
</table>

Wipe length

- 5 mm board height: 1.5 mm
- 3 mm board height: 0 mm
CAPABILITIES

• stacked boards (mezzanine)
  single row version
  (5 mm board height)

• stacked boards (mezzanine)
  single row version
  (3 mm board height)

• stacked boards (mezzanine)
  dual row version
  (5 mm board height)

ADVANTAGES

Contact Design
• no difference between male and female connector
• contacts are based on a patented contact design;
  Patent-No.: DE 19 809 881; US 6,379,170
• two contact points for compensation of tolerances

Easy Assembly
• integrated pick and place surface for automatic assembly
• pick and place surface will hinge away when mated the first time (2-row versions)

Locating Pegs
• geometrically heterogeneous locating pegs for precise positioning on the circuit board
• enables highly reliable compensation of Printed Circuit Board (PCB) holes for both positive and negative tolerances

Processing
• tape and reel packaging for transport safe packaging and automatic assembly
• automatic assembly and reflow soldering for efficient processing on modern assembly lines
MATING CONDITIONS FOR SINGLE ROW VERSIONS

Allowed Inclination for a more Secure Self-Centering

1) depends on No. of Pins and misalignment tolerance

Allowed Misalignment Tolerances for a more Secure Self-Centering

MATING CONDITIONS FOR DUAL ROW VERSIONS

Allowed Inclination for a more Secure Self-Centering

1) depends on No. of Pins and misalignment tolerance

Allowed Misalignment Tolerances for a more Secure Self-Centering
**ELECTRICAL AND MECHANICAL CHARACTERISTICS**

**Technical Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Standard</th>
<th>Single- and Dual-Row Connectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate category</td>
<td>DIN EN 60068-1 test b</td>
<td>-15 / 125 / 21</td>
</tr>
<tr>
<td>Temperature range</td>
<td></td>
<td>55 / 125 °C</td>
</tr>
<tr>
<td>Current rating per contact</td>
<td>IEC60512 test 5b</td>
<td>50-pin version at 20 °C, ambient temperature: 1.6 A</td>
</tr>
<tr>
<td>Air- and creepage distance</td>
<td></td>
<td>contact - contact min. 0.4 mm</td>
</tr>
</tbody>
</table>

Operating voltage (IEC 60664)

- The permissible operating voltages depend on the customer application and on the applicable or specified safety requirements.
- Insulation coordination according to IEC 60641 has to be regarded for the complete electrical device. Therefore, the maximum creepage and clearance distances of the mated connectors are specified for consideration as a part of the whole current path. In practice, reductions in creepage or clearance distances may occur due to the conductive pattern of the printed board or the wiring used, and have to be taken into account separately.
- As a result, the creepage and clearance distances for the application may be reduced compared to those of the connector.

- Dielectric strength (IEC 60512 test 4a, contact - contact 500 Vrms)
- Contact resistance (IEC 60512 test 2a) < 10 mΩ
- Insulation resistance (IEC 60512 test 3a) > 10⁹ MΩ
- Vibration, sine (IEC 60512 test 6d) 10 - 2000 Hz, 20 g
- Contact disturbance (while vibration test) (IEC 60512 test 2e) < 1 µs
- Shock halfsine (IEC 60512 test 6c) 50 g, 11 ms
- Contact disturbance (while shock test) (IEC 60512 test 2e) < 1 µs
- Mechanical operation (IEC 60512 test 9a) < 10 mating cycles
- Insertion and withdrawal force (IEC 60512 test 13b) 3 mm stack height: max. 4 N per contact, 5 mm stack height: max. 2 N per contact
- Gauge retention force (IEC 60512 test 16e) > 0.15 N

**Processing Conditions**

- Hand soldering (temperature max.) (IEC 60648-2-20) 3.5 s at 350 °C
- Dip soldering (temperature max.) (IEC 60648-2-20) 10 s at 260 °C
- Reflow soldering (temperature max.) (JEDEC J-STD-020) 20 - 40 s at 260 °C
- Coplanarity < 0.1 mm

**Housing Material**

- Insulation body PPA
- CTI value IEC 112 > 600
- UL file plastic material E171666

**Contact Material**

- Base material Cu alloy
- Mating area gold plating
- Termination area Sn

**Environment Compatibility**

- Recycling no flame-retardant additives, no toxic additives, allow easy recycling
**VERTICAL MALE, SINGLE ROW**

**Product Specification**
- pitch 0.8 mm
- SMT process compatible
- two contact points
- one part number for interconnection
- saving admin and logistic costs
- mated stacking height: 3 mm (wipe length: 0 mm) or 5 mm (wipe length: 1.5 mm)
- anti-magnetic versions available
- for available part numbers please refer to our website

**Dimensional Drawings**

**Recommended Layout**

**VERTICAL, DUAL ROW**

**Product Specification**
- pitch 0.8 mm
- SMT process compatible
- two contact points
- one part number for interconnection
- saving admin and logistic costs
- mated stacking height: 5 mm (wipe length: 1.5 mm)
- anti-magnetic versions available
- for available part numbers please refer to our website

**Dimensional Drawings**

**Recommended Layout**
Connect With Us

We make it easy to connect with our experts and are ready to provide the support you need. Visit www.te.com/support to chat with a Product Information Specialist.