SlimStack™ SMT Stacking

Board-to-Board Connectors

0.40 to 1.00mm (.016 to .039") Pitch
0.90 to 20.00mm (.035 to .787") Height
SlimStack: The Industry’s Broadest Range of Micro SMT Stacking Connectors.

SlimStack offers designers a wide variety of space-saving choices for applications such as cell phones, digital cameras, PDAs and other mobile devices.

The latest additions to our SlimStack family include stack heights as low as 0.90mm (.035") and space-saving J-Lead SMT tails that save up to 35% PCB space. Contact your Molex representative to see how SlimStack can help you save valuable PCB real-estate.

System Overview:
- Pitch sizes: 0.40, 0.50, 0.635 and 1.00mm (.016, .020, .025 and .039")
- Stack Heights: 0.90 to 20.00mm (.035 to .787")
- Circuit Size Range: 7 to 240
- Board Mounting: SMT
- Plating: Gold
- Mating Styles: Vertical and Right Angle

Related Products:
- *0.50/0.635mm (0.020/.025") pitch shielded versions
- *0.80mm (.031") pitch SMT tin-plated versions
- *1.00mm (.039") pitch Mezzanine IEEE 1386

FEATURES AND BENEFITS FOR SLIMSTACK 0.4 AND 0.5MM

Space Savings

- J-Lead type SMT tail is 35% smaller than standard Gull Wing type.

Various Locking Features

- Housing Lock
- Terminal Lock
- Tab Lock

Superior Mechanical Forces

Friction locks provides added mating retention to withstand shock or vibration.

Friction lock on select circuits provides superior mating/unmating forces.

Wipe Length

Up to 0.65mm (.026") wipe length helps provide good electrical reliability.

SLIMSTACK 0.40MM (.016") PITCH SELECTION GUIDE

Key Selection Criteria To Help You Choose The SlimStack 0.40mm (.016") Pitch Connector That Meets Your Needs

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Series</th>
<th>Mated Height</th>
<th>Space Comparison 50ckt Receptacle Length x Width</th>
<th>Features and Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Row</td>
<td>500463 - Rec 500464 - Plg</td>
<td>0.95mm (.037&quot;)</td>
<td>0.95mm (.037&quot;) Stack Height Single Row</td>
<td>1. Ultra Low Profile 2. Lower Circuit Sizes 3. For FPC-to-Board only</td>
</tr>
<tr>
<td>Dual Row</td>
<td>500024 - Rec 500027 - Plg</td>
<td>0.95mm (.037&quot;)</td>
<td>0.95mm (.037&quot;) Stack Height</td>
<td>2. BTB or FPC-to-Board</td>
</tr>
<tr>
<td>Space Saving</td>
<td>51338 - Rec 55909 - Plg</td>
<td>1.50mm (.059&quot;)</td>
<td>J-Lead SMT Tail (51338 only)</td>
<td>1. Ultra Small PCB Footprint Width 2. BTB or FPC-to-Board</td>
</tr>
<tr>
<td>Standard</td>
<td>54765 - Rec 55604 - Plg</td>
<td>1.50mm (.059&quot;)</td>
<td>Mating Guide</td>
<td>1. Superior Mating Alignment 2. BTB or FPC-to-Board</td>
</tr>
<tr>
<td>Standard</td>
<td>54518 - Rec 53372 - Plg</td>
<td>1.50mm (.059&quot;)</td>
<td>With Solder Tab</td>
<td>1. Extra PCB Retention 2. BTB or FPC-to-Board</td>
</tr>
<tr>
<td>Standard</td>
<td>54796 - Rec 55622 - Plg</td>
<td>1.50mm (.059&quot;)</td>
<td>Robust Proven Design</td>
<td>1. Quality &amp; Performance 2. BTB or FPC-to-Board</td>
</tr>
</tbody>
</table>

* For 22 circuit version
<table>
<thead>
<tr>
<th>Mated Height</th>
<th>Receptacle Plug</th>
<th>Circuit Sizes</th>
<th>Color/Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90 mm (.035&quot;)</td>
<td>501591-XX11 With Solder Tabs and J-Lead Tails</td>
<td>20, 22, 24, 26, 30, 40, 50, 54, 70</td>
<td>Black/3.40mm</td>
</tr>
<tr>
<td>0.95mm (.037&quot;)</td>
<td>500463-XX79 Single-Row With Solder Tabs For FPC-to-Board only</td>
<td>7, 16, 22</td>
<td>Black/3.60mm</td>
</tr>
<tr>
<td>0.95mm (.037&quot;)</td>
<td>500024-XX81 (16, 24 circuits) 500024-XX71 (30 to 80 circuits) Dual-Row With Solder Tabs</td>
<td>16, 20, 24, 30, 34, 40, 50, 60, 64, 70, 80</td>
<td>White/5.00mm</td>
</tr>
<tr>
<td>1.30mm (.051&quot;)</td>
<td>501527-XX30 With Solder Tabs, J-Lead Tails and Metal Vacuum Cover</td>
<td>30, 34, 40, 50, 80, 90</td>
<td>Black/3.40mm</td>
</tr>
<tr>
<td>1.50mm (.059&quot;)</td>
<td>51338-XX74 With Solder Tabs and J-Lead Tails</td>
<td>12, 20, 22, 24, 26, 30, 34, 40, 50, 60, 70, 80, 100</td>
<td>Black/3.40mm</td>
</tr>
<tr>
<td>1.50mm (.059&quot;)</td>
<td>54796-XX84</td>
<td>32, 40, 50, 60, 80, 90</td>
<td>Black/5.20mm</td>
</tr>
<tr>
<td>1.50mm (.059&quot;)</td>
<td>54518-XX72 With Solder Tabs</td>
<td>60, 80, 100</td>
<td>Black/5.20mm</td>
</tr>
<tr>
<td>1.50mm (.059&quot;)</td>
<td>5476-XX70 With Solder Tabs and Guide Posts 5496-XX77: And Pegs (30, 50, 70, 80 circuits)</td>
<td>22, 30, 40, 44, 50, 54, 70, 80</td>
<td>Black/5.20mm</td>
</tr>
<tr>
<td>1.70mm (.067&quot;)</td>
<td>501635-XX10 With Solder Tabs and J-Lead Tails</td>
<td>40, 60</td>
<td>Black/3.40mm</td>
</tr>
<tr>
<td>1.80mm (.071&quot;)</td>
<td>500913-XX72 With Solder Tabs</td>
<td>24, 40, 50, 60, 70, 100</td>
<td>Black/4.20mm</td>
</tr>
<tr>
<td>2.50mm (.098&quot;)</td>
<td>54876-XX74 With Solder Tabs</td>
<td>40, 120</td>
<td>Black/5.80mm</td>
</tr>
<tr>
<td>3.50mm (.138&quot;)</td>
<td>54684-XX84</td>
<td>24, 70, 80, 90, 120</td>
<td>Black/5.10mm</td>
</tr>
<tr>
<td>4.00mm (.157&quot;)</td>
<td>54477-XX84 With Pegs</td>
<td>60, 80, 120</td>
<td>Black/5.10mm</td>
</tr>
<tr>
<td>3.20mm (.126&quot;) Right Angle</td>
<td>54552-XX6</td>
<td>40, 80</td>
<td>Black/4.25mm</td>
</tr>
</tbody>
</table>

Notes:
* XX = Circuit size
† Plating: Gold
‡ (Red) = With Solder Tabs
(Blue) = Solder Tabs
(Green) = With PCB Positioning Pegs
## SLIMSTACK™ 0.5 SELECTION GUIDE (ALL LEAD-FREE VERSIONS)

**0.50mm (.020”) Pitch**

**SlimStack™ SMT**

<table>
<thead>
<tr>
<th>Mated Height</th>
<th>Receptacle</th>
<th>Plug</th>
<th>Circuit Sizes</th>
<th>Color/Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.50mm (.059”)</td>
<td>54722-XXX4</td>
<td>55540-XXX7</td>
<td>16, 20, 22, 24, 30, 34, 40, 46, 50, 60, 80</td>
<td>Black/6.00mm</td>
</tr>
<tr>
<td>2.00mm (.079”)</td>
<td>54729-XXX6</td>
<td>55559-XXX8</td>
<td>16, 24</td>
<td>Black/5.40mm</td>
</tr>
<tr>
<td>3.00mm (.118”)</td>
<td>54363-XX78 With Solder Tabs</td>
<td>55201-XX78 With Solder Tabs</td>
<td>20, 30, 40, 50, 80, 120, 140</td>
<td>Black/6.00mm</td>
</tr>
<tr>
<td>2.50mm (.098”)</td>
<td>54102-XXX4 No Tabs (16, 20, 30, 40, 50, 60, 70 circuits)</td>
<td>53885-XXX8 No Tabs (16, 20, 30, 40, 50, 60, 70 circuits)</td>
<td>16, 20, 30, 40, 50, 60, 70</td>
<td>Black/5.30mm</td>
</tr>
<tr>
<td>5.00mm (.197”)</td>
<td>54230-XX78 With Solder Tabs and Pegs</td>
<td>55055-XX78 With Solder Tabs and Pegs</td>
<td>50, 60, 80</td>
<td>White/5.40mm</td>
</tr>
</tbody>
</table>

**Notes:**
- **XX** = Circuit size
- † Plating: Gold
- ‡ (Red) = With Solder Tabs
- (Green) = With PCB Positioning Pegs

### APPLICATIONS

- Mobile Phone
- PDA
- Digital Video Camera
- Digital Still Camera
- Digital Video Player
- Digital Audio Player
- Voice Recorder
- Notebook PC
- Any Compact Applications
### SlimStack™ Selection Guide (All Lead-Free Versions)

**Mated Height** | **Receptacle** | **Plug** | **Circuit Sizes** | **Color/Width**
--- | --- | --- | --- | ---
6.00mm (.236") | 52760-XX78/XX79 52885-XX74/XX75 With Solder Tabs | 55091-XX74/XX75/XX79 With Solder Tabs | 20, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 240 | White (Rec) Black (Plug) / 6.40mm

7.00mm (.276") |  | 53481-XX68/XX79 53625-XX74/XX75 With Solder Tabs | 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 240 | White (Rec) Brown (Plug) / 6.40mm

8.00mm (.315") |  | 53551-XX78/XX79 53647-XX74/XX75 With Solder Tabs | 20, 30, 40, 60, 70, 80, 100, 120, 140, 160 | White (Rec) Brown (Plug) / 6.40mm

9.00mm (.354") |  | 53552-XX79 53649-XX74/XX75 With Solder Tabs | 30, 40, 50, 60, 80, 100, 140, 160 | White (Rec) Brown (Plug) / 6.40mm

10.00mm (.394") |  | 53553-XX78/XX79 53627-XX74/XX75 With Solder Tabs | 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200 | White (Rec) Brown (Plug) / 6.40mm

12.00mm (.472") | 52837-XX78/XX79 52901-XX74/XX75 With Solder Tabs | 55091-XX74/XX75/XX79 With Solder Tabs | 20, 40, 50, 60, 70, 80, 90, 120, 140, 160, 180 | White (Rec) Black (Plug) / 6.40mm

13.00mm (512") |  | 53481-XX68/XX79 53625-XX74/XX75 With Solder Tabs | 20, 30, 40, 50, 60, 70, 80, 90, 120, 140, 160, 180 | White (Rec) Brown (Plug) / 6.40mm

14.00mm (.551") |  | 53551-XX78/XX79 53647-XX74/XX75 With Solder Tabs | 20, 30, 40, 60, 70, 80, 120, 140, 160 | White (Rec) Brown (Plug) / 6.40mm

15.0mm (.591") |  | 53552-XX79 53649-XX74/XX75 With Solder Tabs | 30, 40, 50, 60, 80, 140, 160 | White (Rec) Brown (Plug) / 6.40mm

16.00mm (.630") |  | 53553-XX78/XX79 53627-XX74/XX75 With Solder Tabs | 20, 30, 40, 50, 60, 70, 80, 90, 120, 140, 160, 180 | White (Rec) Brown (Plug) / 6.40mm

### Notes:
- XX = Circuit size
- † Plating: Gold
- ‡ (Red) = With Solder Tabs
- § For above packaging, please see below. For further details, please visit molex website.
  - XX74: Embossed Tape Packaging with Vacuum Cover
  - XX75: Tube Packaging with Vacuum Cover
  - XX68/XX78: Embossed Tape Packaging
  - XX79: Tube Packaging
0.635mm (.025") Pitch High-Speed Capabilities

**SlimStack 0.635mm: Up to 3 GHz Performance Across The Board**

Molex's 0.635mm (.025") pitch connectors are tested to accommodate frequency rates up to 3 GHz for various high-speed applications. With a broad range of circuit sizes and stack heights, SlimStack offers an economical way to achieve high-speed performance in both 50 and 100 Ohm systems.

These high-speed capabilities apply for all SlimStack 0.635 versions shown on page 5 of this catalog.

For even higher speeds, Molex's Plateau HS Mezz™ system offers up to 10 Gb/s (6.8 GHz). See Molex website for details.

**The SlimStack High-Speed Unshielded Advantage:**
- 3 GHz performance
- Cross Talk < 7%
- For 50 and 100 Ohm applications
- Economical design
- 6.00 to 16.00mm stack heights
- 20 to 240 circuits
- Superior terminal design/wipe length
- Easy board processing
- H-SPICE and 3d VRML models
- Test data available

**Molex offers several versions of 0.635mm (.025") Pitch SMT board-to-board connectors with metal shielding for additional EMI/RFI protection. Our fully-shielded version with chamfered lead-ins shown on the right (55952/51411) is available in 110 circuits in 20.00mm (.787") stack heights. This system offers high-speed capabilities up to 4GHz, and is ideal for high frequency applications such as flat-panel displays, video games or servers.**

We also offer custom versions with shielding that can be used for applications such as high-density docking.

**0.635mm (.025") SlimStack™ 0.635mm Options**

<table>
<thead>
<tr>
<th>Height (mm)</th>
<th>Cross Talk @100ps</th>
<th>Impedance</th>
<th>Insertion Loss</th>
<th>Skew</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency Near End</td>
<td>For End</td>
<td>R</td>
<td>Ohms</td>
</tr>
<tr>
<td>1</td>
<td>4.7</td>
<td>6.5</td>
<td>50</td>
<td>54.9</td>
</tr>
<tr>
<td>2</td>
<td>4.6</td>
<td>6.4</td>
<td>100</td>
<td>53.3</td>
</tr>
<tr>
<td>3</td>
<td>4.5</td>
<td>6.6</td>
<td>500</td>
<td>53.7</td>
</tr>
</tbody>
</table>

*Note: Above test results based on single-ended measurements, 1:1 signal/ground layout and 9.00mm (.354") stack height.

**Shielded SlimStack™ 0.635mm Options**

Molex offers several versions of 0.635mm (.025") Pitch SMT board-to-board connectors with metal shielding for additional EMI/RFI protection. Our fully-shielded version with chamfered lead-ins shown on the right (S5952/S14111) is available in 110 circuits in 20.00mm (.787") stack heights. This system offers high-speed capabilities up to 4GHz, and is ideal for high frequency applications such as flat-panel displays, video games or servers.

We also offer custom versions with shielding that can be used for applications such as high-density docking.

**New!**

Molex’s latest 0.50mm (.020") pitch SlimStack connectors are high-density, high circuit size versions with full shielding. These connectors are finding use in Plasma Display Panels and other applications that require shielding for ESD protection.

Features include guide posts to facilitate mating and vacuum pick-up tape.
SLIMSTACK™ 1.0 SELECTION GUIDE (ALL LEAD-FREE VERSIONS)

<table>
<thead>
<tr>
<th>Mated Height</th>
<th>Receptacle</th>
<th>Plug</th>
<th>Circuit Sizes</th>
<th>Voltage/Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.00mm (.315&quot;)</td>
<td>52584-XX79 With Pegs</td>
<td>53395-XX79 With Pegs</td>
<td>20, 34, 66, 100, 140</td>
<td>100V/0.5A</td>
</tr>
<tr>
<td>18.00mm (.709&quot;)</td>
<td>52602-XX79 With Pegs</td>
<td>53408-XX79 With Pegs</td>
<td>50, 60, 80, 100, 120, 140</td>
<td>100V/0.5A</td>
</tr>
<tr>
<td>20.00mm (.787&quot;)</td>
<td>71436</td>
<td>71439</td>
<td>24, 50, 60, 120, 140</td>
<td>100V/0.5A</td>
</tr>
</tbody>
</table>

Notes:
* XX = Circuit size
† Plating: Gold
‡ (Green) = With PCB Positioning Pegs

1.00MM (.039") PITCH MEZZANINE IEEE 1386

Molex’s 1mm Mezzanine connectors follow the IEEE 1386 specification, which is a 64-pin mezzanine interface used for PCI Mezzanine Cards (PMCs) typically found in CompactPCI and VME based systems. PMCs have evolved to PCI-X and packet-based transports, enabling mezzanine expansion cards to be faster and handle more information while still backwards-compatible to existing PCI standards (32 or 64 bit). With PCB density increasing every year, 1mm Mezz will continue to support mezzanine solutions to provide customers with extra PCB real estate and increased system functionality.

Molex’s 1mm Mezz system offers stack heights from 8-15mm for design flexibility and signal speeds of up to 5Gb/sec. Gold over nickel contact plating ensures long-term reliability, and a leaf-style contact design prevents stubbing when mating. Molex parts are RoHS compliant and come with pick-and-place caps for automated assembly.

1.25mm (.049") Pitch Wire-to-Wire Connectors