Simplify backplane connections and achieve superior mechanical and electrical performance with Molex’s Impact™ orthogonal midplane connector system, ideal for next-generation data communication and telecommunication equipment, with data rates up to 25 Gbps and 18 to 72 differential pairs per orthogonal node.

Molex’s Impact™ orthogonal midplane connectors are designed to connect vertical add-in cards on one side of a midplane to horizontal add-in cards on the opposite side, allowing the PCBs to mate orthogonally. Orthogonal midplane technology simplifies backplane connections and can be used in high-density applications where standard backplane connections are difficult to implement due to space limitations and airflow constraints. In addition, greater architectural density within a system can be achieved over traditional backplane connections.

The Impact broad-edge-coupled transmission technology enables low cross-talk and high signal bandwidth while minimizing channel-performance variation across every differential pair within the system. Impact orthogonal midplane connectors leverage the field-proven Impact mating interface (with the lowest mating force in the industry) and compliant-pin technologies, providing customers ultimate flexibility to optimize their designs for superior mechanical and electrical performance.

**FEATURES AND BENEFITS**

- 18 to 72 differential pair orthogonal midplane modules available to provide customers flexibility to design for superior mechanical and electrical performance
- Data rates scalable up to 25 Gbps to support future system performance upgrades
- 3- through 6-pair configurations provide a complete range of guidance options
- Orthogonal rotation design of 90 or 270° allows connections to vertical add-in cards on one side of a midplane to horizontal add-in cards on the opposite side
- Broad-edge-coupled, differential-pair system has superior density, low cross-talk, low insertion loss and minimal performance variation across all high-speed channels
- Same midplane connector is used on both sides of the midplane to ease in component management for contract manufacturers and designers
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant channel performance demonstrates end-to-end channel performance compliance
- Two compliant-pin attach options provide customers ultimate flexibility to optimize their designs for superior mechanical and electrical performance
- Inline staggered, bifurcated contact beams in daughtercard interface provides superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Orthogonal 4-Pair Daughtercard Receptacle and Midplane Header
- 4-Pair by 8-Column Orthogonal, Unguided Daughtercard Receptacle and Midplane Header
- Both signal and ground lines share vias through the midplane

**MARKETS AND APPLICATIONS**

- Telecommunication equipment
  - Hubs, switches, routers
  - Central office, cellular infrastructure and multi-platform service (DSL, Cable Data) systems
- Data networking equipment
  - Servers
  - Storage
- Test and measurement equipment
- Medical diagnostic equipment

Orthogonal midplane architecture allows for a matrix of communication channels.
## SPECIFICATIONS

### Reference Information
- **Packaging:** Trays
- **UL File No.:** E28179
- **Mates With:** Headers to Receptacles:
  - 76855  76860
  - 76845  76850
  - 76985  76990
  - 76285  76290
- **Designed In:** Millimeters

### Electrical
- Voltage (max.): 30V AC RMS/DC max.
- Current (max.): 0.75A per pin
- Insulation Resistance: 1,000 Megohms min.

### Mechanical
- Mating Force: 0.30N (.067 lbf) max. per pin
- Compliant pin retention force to PCB: 3.56N (.800 lbf) per compliant pin average min.
- Compliant pin insertion force to PCB: 26.7N (6.00 lbf) max. per contact
- Durability (min.): 200 cycles

### Physical
- Housing: Liquid Crystal Polymer, UL 94V-0
- Contact: High Performance Copper (Cu)
- Plating:
  - Contact Area - 0.76um (30u") Gold (Au) min.
  - Solder Tail Area - Tin (Sn) or Tin/Lead (Sn/Pb)
  - Underplating - Nickel (Ni)
- PCB Thickness: 1.57mm (.062") typical
- Operating Temperature: -55 to +85°C

## ORDERING INFORMATION

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<tr>
<th>Component</th>
<th>Orientation</th>
<th>Pair</th>
<th>Series†</th>
<th>Guide</th>
<th>Molex Sales Drawing Guide</th>
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*Please review the Product Specifications for specific details

† Search www.molex.com for a sales drawing by typing the SD number in the Keyword Search, for example: SD-76460-001