

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.

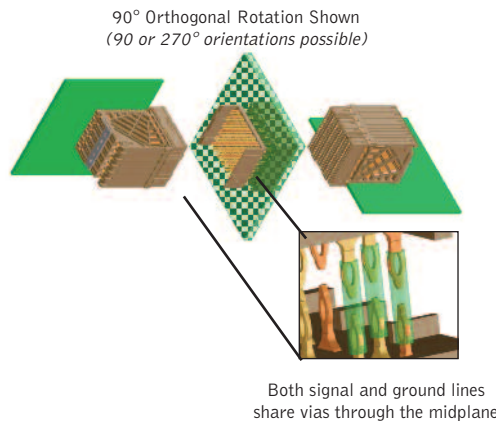
The Impact broad-edge-coupled transmission technology enables low cross-talk and high signal bandwidth while minimizing channel-performance variation across every differential pair within the system. Impact orthogonal midplane connectors leverage the field-proven Impact mating interface (with the lowest 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

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



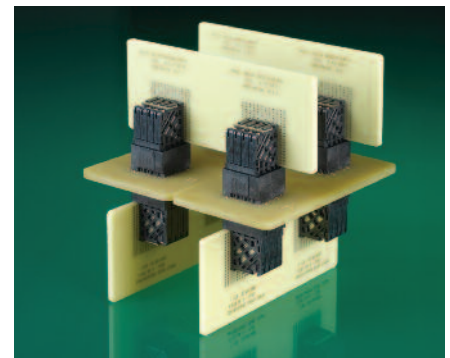
Impact™ Orthogonal Midplane Connector System

Midplane Headers

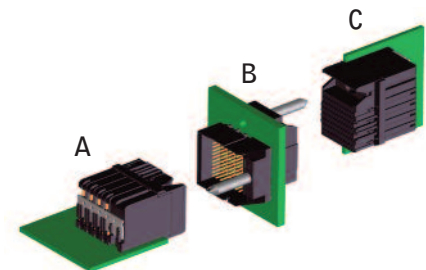
76855	3-Pair
76845	4-Pair
76985	5-Pair
76285	6-Pair

Daughtercard Receptacles

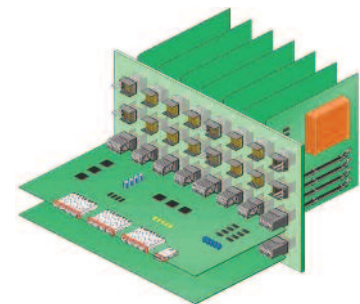
76860	3-Pair
76850	4-Pair
76990	5-Pair
76290	6-Pair



4-Pair by 8-Column Orthogonal, Unguided Daughtercard Receptacle and Midplane Header



A: Orthogonal 4-Pair Daughtercard Receptacle (76850)
B: Two, 4-Pair Midplane Headers (76845), mounted at a 90° angle
C: Orthogonal 4-Pair Daughtercard Receptacle (76850)



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.

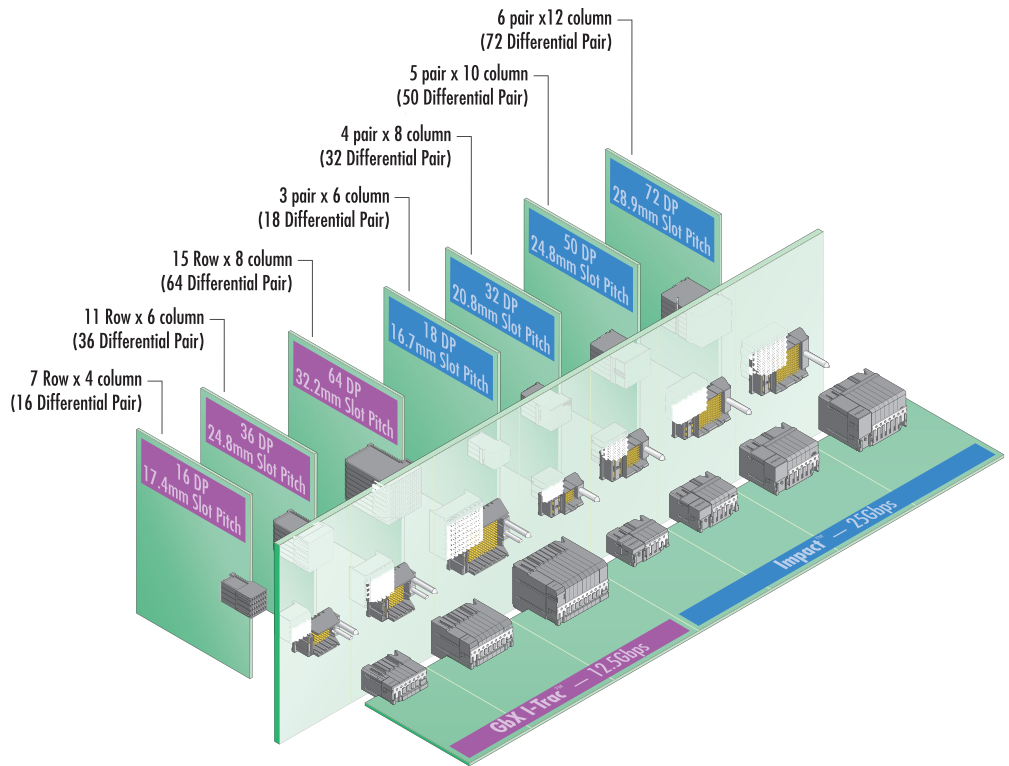
Solder Tail Area - Tin (Sn) or Tin/Lead (Sn/Pb)

Underplating - Nickel (Ni)

PCB Thickness: 1.57mm (.062") typical

Operating Temperature: -55 to +85°C

Impact™ Orthogonal Midplane Connector System



ORDERING INFORMATION

Component	Orientation	Pair	Series†	Guide	Molex Sales Drawing Guide
Orthogonal Daughtercard Receptacle	Right-Angle	3	76860	Unguided	SD-76860-001
				Left	SD-76860-002
				Right	SD-76860-004
Orthogonal Midplane Header	Vertical		76855	Unguided	SD-76855-001
				Left	SD-76855-002
				Right	SD-76855-003
Orthogonal Daughtercard Receptacle	Right-Angle	4	76850	Unguided	SD-76850-001
				Left	SD-76850-002
				Right	SD-76850-004
Orthogonal Midplane Header	Vertical		76845	Unguided	SD-76845-001
				Left	SD-76845-002
				Right	SD-76845-003
Orthogonal Daughtercard Receptacle	Right-Angle	5	76990	Unguided	SD-76990-001
				Left	SD-76990-002
				Right	SD-76990-004
Orthogonal Midplane Header	Vertical		76985	Unguided	SD-76985-001
				Left	SD-76985-002
				Right	SD-76985-003
Orthogonal Daughtercard Receptacle	Right-Angle	6	76290	Unguided	SD-76290-001
				Left	SD-76290-002
				Right	SD-76290-004
Orthogonal Midplane Header	Vertical		76285	Unguided	SD-76285-001
				Left	SD-76285-002
				Right	SD-76285-003

* 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

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www.molex.com/link/impact.html