

**Improve system airflow and reduce performance constraints by eliminating backplane and midplane connections with Molex's Impact™ Orthogonal Direct connector system, ideal for next-generation data and telecommunication equipment with rates up to 25 Gbps**

Molex's Impact™ Orthogonal Direct connectors are designed to connect vertical to horizontal add-in cards on the mating side, without the need for a midplane. 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 direct connectors leverage the fieldproven Impact mating interface (lowest mating force in the industry) and compliant-pin technologies, providing customers ultimate flexibility to optimize their designs for superior mechanical and electrical performance.

Impact™ Orthogonal Direct connectors mate with previously released Impact Orthogonal midplane daughtercard receptacles: 4-pair (series 76850), 5-pair (series 76990), 6-pair (series 76290).

For more information on Molex's Impact offering, visit:  
<http://www.molex.com/link/impact.html>.

**FEATURES AND BENEFITS**

- Designed for a direct connection of PCBs using the same daughtercard connector which improves airflow and reduces board-space constraints compared to backplane and midplane connector systems, simplifies component management for contract manufacturers and designers and reduces midplane thickness and enhances high-speed performance
- Shorter line cards and switch-module signal paths versus typical routed backplane connections allow for more overall robust signal channels
- Two compliant-pin attach options and 18 to 72 differential pairs per orthogonal node provide customers ultimate flexibility to optimize their designs for superior mechanical and electrical performance
- Broad-edge-coupled, differential-pair system has superior density, low cross-talk, low insertion loss and minimal performance variation across high-speed channels
- 4-through 6-pair configurations provide a complete range of guidance options for the PCB and mating interface plus easier PCB routing
- Data rates scalable up to 25 Gbps support future system performance upgrades
- Simple 2.15 by 1.35mm grid on both backplane and daughtercard reduces PCB routing complexity and costs and provides PCB routing flexibility
- Designed to meet IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant channel performance requirements to ensure end-to-end channel performance compliance

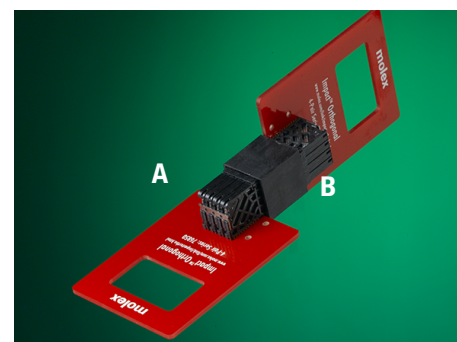
**Impact™ 100-Ohm Orthogonal Direct Connector System 4- Through 6-Pair, 2.15 by 1.35mm Pitch**

**Right-Angle Male Connectors**

- 76730 4-Pair
- 76725 5-Pair
- 76735 6-Pair

**Right-Angle Daughtercard Receptacles**

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



A = Impact™ Orthogonal Midplane Right-Angle Daughtercard Receptacle 4-Pair (Series 76850)

B = Impact™ Orthogonal Direct Right-Angle Male Connector 4-Pair (Series 76730)

**SPECIFICATIONS**

**Reference Information**

Packaging: Tray  
 UL File No.: E28179  
 Mates With:  
 Impact Orthogonal midplane daughtercard receptacles:  
 4-Pair (series 76850)  
 5-Pair (series 76990)  
 6-Pair (series 76290)  
 Designed In: mm  
 RoHS: Yes, Compliant  
 Halogen Free: Yes

**Electrical**

Voltage (max.): 500V AC max.  
 Current (max.): 0.75A per pin  
 Insulation Resistance:  
 1,000 Megohms min.

**Mechanical**

Contact Retention to Housing:  
 3.56N (.800 lb) per compliant pin average min.  
 Insertion Force to PCB:  
 26.7N (6.00 lb) max. per contact  
 Mating Force: 35g  
 Unmating Force: 15g per pin  
 Durability (min.): 200 cycles

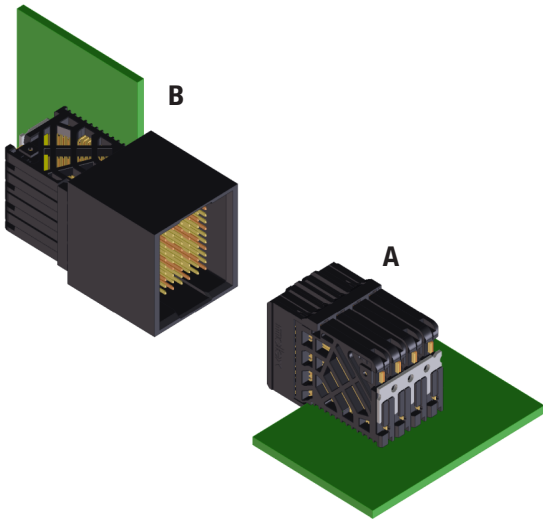
**Physical**

Housing:  
 Liquid Crystal Polymer, UL 94V-0  
 Contact:  
 High Performance Copper (Cu) Alloy  
 Plating:  
 Contact Area — 0.76µm (30µm)  
 Gold (Au) min.  
 Solder Tail Area — Tin (Sn) or Tin/Lead (Sn/Pb)  
 Underplating — Nickel (Ni)  
 PCB Thickness: 1.60mm (.062") typical  
 Operating Temperature:  
 -55 to +85°C max.

## ADDITIONAL PRODUCT FEATURES

- Allows for shorter channels, enhancing high-speed system
- The Impact Orthogonal Direct right-angle male connector is designed with a plastic "locking" latch on one side of the daughtercard housing to securely mate with the standard orthogonal daughtercard connector, creating an Impact orthogonal direct right-angle to right-angle connector solution

## Impact™ 100-Ohm Orthogonal Direct Connector System 4- Through 6-Pair, 2.15 by 1.35mm Pitch



A = Impact™ Orthogonal Midplane Right-Angle Daughtercard Receptacle, 4-pair shown (Series 76850)

B = Impact™ Orthogonal Direct Right-Angle Male Connector, 4-pair shown (Series 76730)

## APPLICATIONS

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



Medical diagnostic equipment

## ORDERING INFORMATION

### Right-Angle Connector

Order No.	Pairs	Guide	Rows
76730-181*	4-by-8	-	12
76730-780*		Top	
76730-980*		Bottom	
76725-111*	5-by-10	-	15
76725-710*		Top	
76725-910*		Bottom	
76735-121*	6-by-12	-	18
76735-720*		Top	
76735-920*		Bottom	

### Right-Angle Daughtercard Receptacles

Order No.	Pairs	Guide	Rows
76850-10**	4-by-8	-	12
76850-30**		Left	
76850-50**		Right	
76990-10**	5-by-10	-	15
76990-30**		Left	
76990-50**		Right	
76290-10**	6-by-12	-	18
76290-30**		Left	
76290-30**		Right	



[www.molex.com/link/impact.html](http://www.molex.com/link/impact.html)