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Note: GbX®, VHDM-HSD™, VHDM®, HDM® and HDMPLUS® are trademarks or registered trademarks of Amphenol Corporation

Visit [www.molex.com](http://www.molex.com) to access more part numbers and product information, download sales drawings, product specifications, 3D models, place sample requests, and more.

Molex offers a variety of backplane/midplane solutions to meet the demand for increased network bandwidth and advanced technology. Each solution is designed for high performance, increased density and compatibility with industry-standard interfaces. Molex provides a user-friendly transition between the PCB-mounted connector and the backplane/midplane. The Molex Research and Development Team has extensive knowledge and expertise on high-speed interface design. Your specific needs can be customized and transformed into new manufacturable designs.

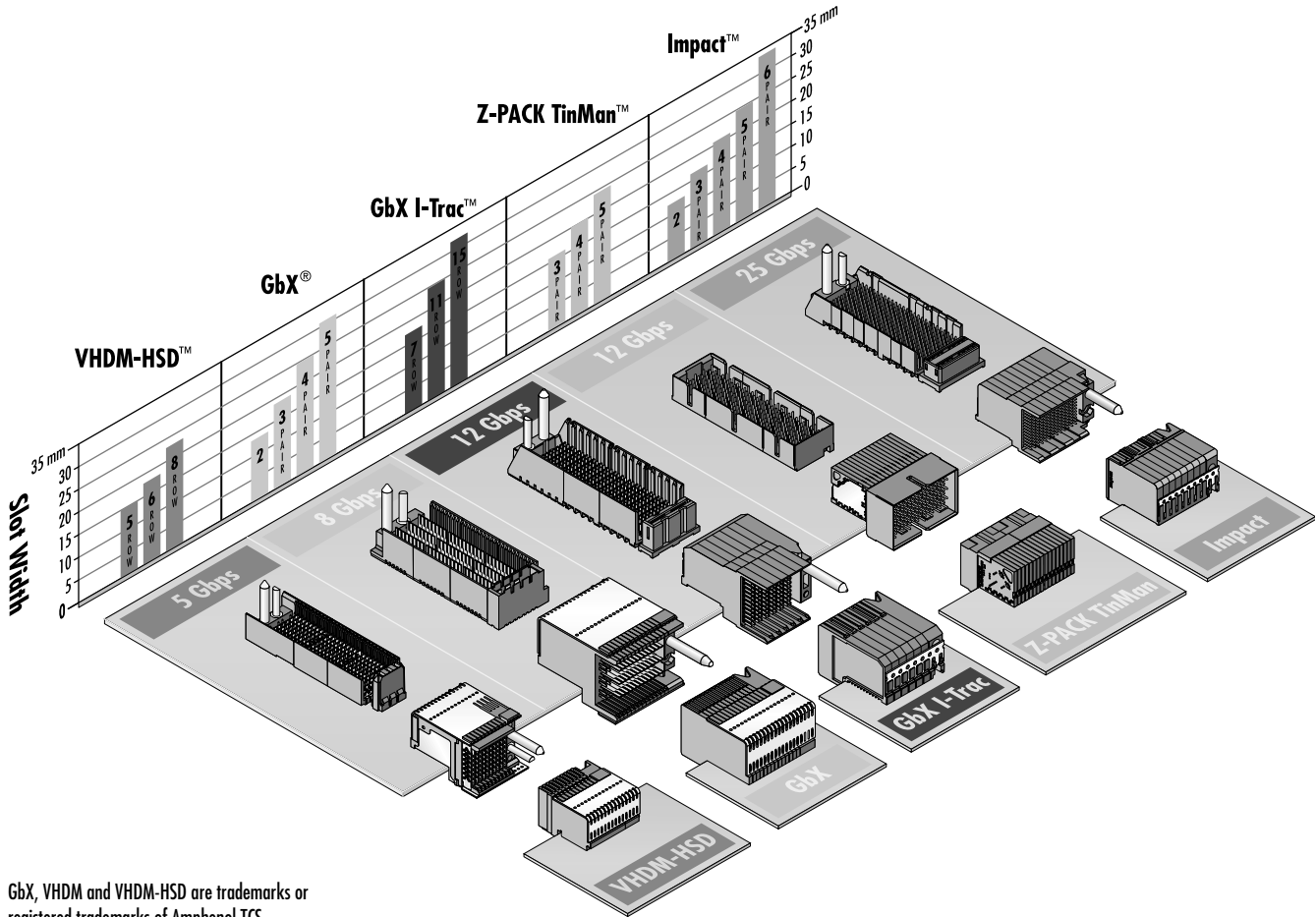
### Capabilities

- High-density connector and high-speed design capabilities
- Electrical and mechanical design capabilities
- Press-Fit, SMT and through hole available for product manufacturing
- Expertise on process manufacturing
- DFM support
- Rigid and flexible backplane design
- Reference designs available on major connector configurations such as VHDM®, GbX® and GbX I-Trac™
- Specific storage backplanes reference designs (SAS/SATA)
- Cost-effective interconnect solutions

### Backplane Products Configurator on [molex.com](http://molex.com)

The Backplane Products Configurator is an online tool available to registered users to create custom daughtercard proposal drawings and bills of materials (BOMs) by selecting from a list of available components. This tool is available on the following Backplane Products: VHDM®, VHDM-HSD™, VHDM RAM and GbX®.

To use the backplane configurator, click on the appropriate product link in the configurator selection matrix on [molex.com](http://molex.com) where you can also view a demonstration of how the configurator works.



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 Z-PACK TinMan is a trademark of Tyco Electronics

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Backplane Connector System

The Impact Backplane Connector System from Molex pushes the speed and density envelope to meet the growing demands of next-generation telecommunication and data networking equipment. The system is available in 2- to 6-pair configurations with a complete range of guidance and power-solution options

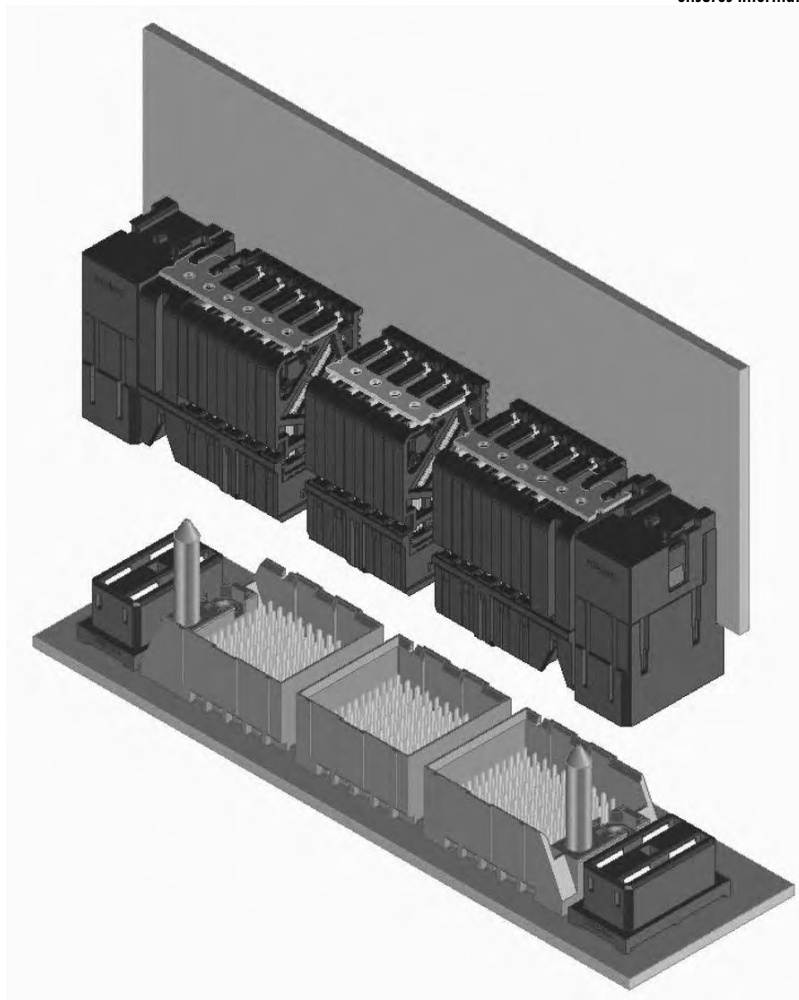
The Impact backplane connector system provides data rates up to 25 Gbps and superior signal density up to 80 differential pairs per inch. The Impact system's broad-edge-coupled transmission technology enables low cross-talk and high signal bandwidth while minimizing channel-performance variation across every differential pair within the system.

Molex's Impact connector system is available in two compliant-pin design options on both daughtercard and backplane connectors, providing customers ultimate flexibility to optimize their designs for superior mechanical and electrical performance. The Impact system's mating interface provides in-line staggered, bifurcated contacts that provide 2 points of contact for long-term reliability performance and built-in, ground-signal sequencing. This reduces the average mating force per connector to improve the mechanical mating performance of the system.

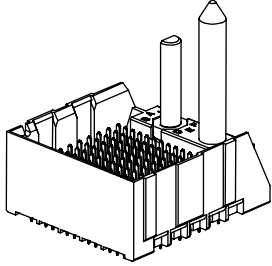
The Impact connector system is designed for traditional backplane and/or midplane architectures to meet the growing demand for next-generation telecommunication and data networking equipment manufacturers. The Impact system is available in 2-, 3-, 4-, 5- and 6-pair versions with a complete range of guidance and power-solution options. Other options available include: 2-, 3- and 4-pair coplanar, 5-pair mezzanine and 4- and 6-pair cable assemblies. For more information on Molex's Impact backplane connector system, contact [impact@molex.com](mailto:impact@molex.com).

## Features and Benefits

- Impact's broad edge-coupled, hybrid shielding design provides superior density, low cross-talk, low insertion loss and minimal performance variation across all high-speed channels
- At over 20 Gbps data rates, Impact provides significant channel performance headroom for future system upgradeability
- Impact is IEEE 10GBASE-KR and OIF State Eye Channel Compliant
- Molex's Impact product provides up to 80 differential pairs per linear inch, making it the fastest, densest backplane connector on the market today
- Impact provides 2 compliant-pin design options that allows customers to balance their electrical and mechanical application needs
- The Impact daughtercard mating interface utilizes an inline staggered, bifurcated contact system that reduces the mating force per pin and provides ground-signal sequencing without the need for multiple backplane signal pin heights
- Impact's simple PCB layout provides adequate spacing for high-speed routing
- The Impact system properly balances the speed, density, cost and quality requirements of our customers' current and future systems
- The Impact system is a multi-sourced backplane system (available from Molex and Tyco Electronics) which ensures intermateability and interchangeability



# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Backplane Header 76455 2-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

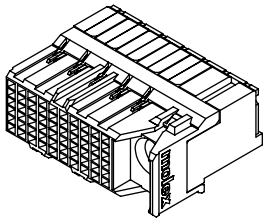
\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options*	Mating Pin Length	
76455-ABCD	1 = Unguided 3 = Guide left, open right 5 = Guide right, open left 7 = Guide left, end wall right 9 = Guide right, end wall left	1 = 10 Column 6 = 16 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	3 = 4.50mm (PTH = 0.46) 4 = 4.90mm (PTH = 0.46) 5 = 5.50mm (PTH = 0.46) 6 = 4.50mm (PTH = 0.39) 7 = 4.90mm (PTH = 0.39) 8 = 5.50mm (PTH = 0.39)	Yes

\* Unguided wall options available on #0-#3 unguided module type.

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
Custom header pin layouts using standard pin lengths fall under separate series numbers. Contact Molex for details.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Daughtercard Receptacle 76460 2-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

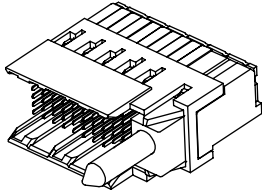
\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
76460-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	10 = 10 Column (PTH = 0.46) 16 = 16 Column (PTH = 0.46) 20 = 10 Column (PTH = 0.39) 26 = 16 Column (PTH = 0.39)	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Coplanar Header (RAM)

**76450**  
2-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

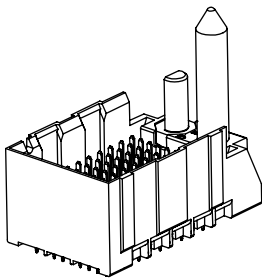
Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options*	Mating Pin Length	
76450-ABCD	1 = Unguided 3 = Guide left 5 = Guide right 7 = Guide left, end wall right 9 = Guide right, end wall left	1 = 10 Column 6 = 16 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	4 = 4.90mm (PTH = 0.46) 5 = 5.50mm (PTH = 0.46) 7 = 4.90mm (PTH = 0.39) 8 = 5.50mm (PTH = 0.39)	Yes

\* Unguided wall options available on #0-#3 unguided module type.

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left Coplanar mates to a guide right Daughtercard and vice versa. They are opposite.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Backplane Header

**76165**  
3-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

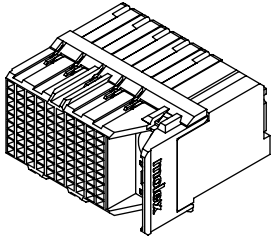
Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options*	Mating Pin Length	
76165-ABCD	1 = Unguided 3 = Guide left, open right 5 = Guide right, open left 7 = Guide left, end wall right 9 = Guide right, end wall left	8 = 8 Column 1 = 10 Column 6 = 16 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	3 = 4.50mm (PTH = 0.46) 4 = 4.90mm (PTH = 0.46) 5 = 5.50mm (PTH = 0.46) 6 = 4.50mm (PTH = 0.39) 7 = 4.90mm (PTH = 0.39) 8 = 5.50mm (PTH = 0.39)	Yes

\* Unguided wall options available on #0-#3 unguided module type.

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
Custom header pin layouts using standard pin lengths fall under separate series numbers. Contact Molex for details.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Daughtercard Receptacle

76170  
3-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

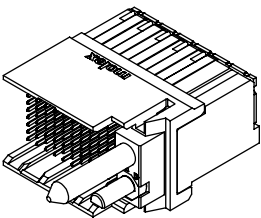
\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
76170-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	08 = 8 Column (PTH = 0.46) 10 = 10 Column (PTH = 0.46) 16 = 16 Column (PTH = 0.46) 20 = 10 Column (PTH = 0.39) 26 = 16 Column (PTH = 0.39) 38 = 8 Column (PTH = 0.39)	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Coplanar Header (RAM)

76410  
3-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

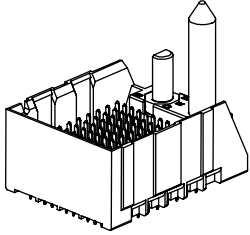
Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options*	Mating Pin Length	
76410-ABCD	1 = Unguided 3 = Guide left 5 = Guide right 7 = Guide left, end wall right 9 = Guide right, end wall left	1 = 10 Column 6 = 16 Column 8 = 8 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	4 = 4.90mm (PTH = 0.46) 5 = 5.50mm (PTH = 0.46) 7 = 4.90mm (PTH = 0.39) 8 = 5.50mm (PTH = 0.39)	Yes

\* Unguided wall options available on #0-#3 unguided module type.  
Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left Coplanar mates to a guide right Daughtercard and vice versa. They are opposite.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Backplane Header 76155 4-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

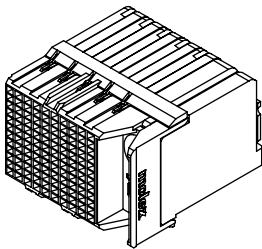
\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options*	Mating Pin Length	
76155-ABCD	1 = Unguided 3 = Guide left, open right 5 = Guide right, open left 7 = Guide left, end wall right 9 = Guide right, end wall left	8 = 8 Column 1 = 10 Column 6 = 16 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	3 = 4.50mm (PTH = 0.46) 4 = 4.90mm (PTH = 0.46) 5 = 5.50mm (PTH = 0.46) 6 = 4.50mm (PTH = 0.39) 7 = 4.90mm (PTH = 0.39) 8 = 5.50mm (PTH = 0.39)	Yes

\* Unguided wall options available on #0-#3 unguided module type.

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
Custom header pin layouts using standard pin lengths fall under separate series numbers. Contact Molex for details.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Daughtercard Receptacle 76160 4-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

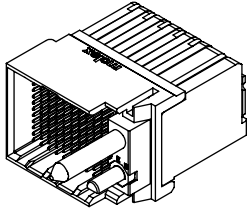
\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
76160-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	08 = 8 Column (PTH = 0.46) 10 = 10 Column (PTH = 0.46) 16 = 16 Column (PTH = 0.46) 20 = 10 Column (PTH = 0.39) 26 = 16 Column (PTH = 0.39) 38 = 8 Column (PTH = 0.39)	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Coplanar Header (RAM)

76500  
4-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options*	Mating Pin Length	
76500-ABCD	1 = Unguided 3 = Guide left 5 = Guide right 7 = Guide left, end wall right 9 = Guide right, end wall left	1 = 10 Column 6 = 16 Column 8 = 8 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	4 = 4.90mm (PTH = 0.46) 5 = 5.50mm (PTH = 0.46) 7 = 4.90mm (PTH = 0.39) 8 = 5.50mm (PTH = 0.39)	Yes

\* Unguided wall options available on #0-#3 unguided module type.

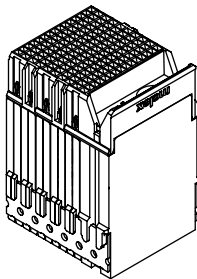
Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.

A guide left Coplanar mates to a guide right Daughtercard and vice versa. They are opposite.

For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Mezzanine

76530  
5-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
76530-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	10 = 10 Column (PTH = 0.46) 16 = 16 Column (PTH = 0.46) 20 = 10 Column (PTH = 0.39) 26 = 16 Column (PTH = 0.39)	Yes

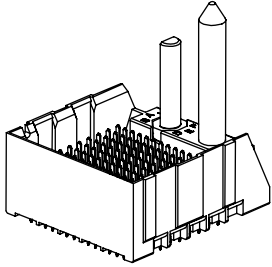
Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.

A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.

For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).



# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Backplane Header 76055 5-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

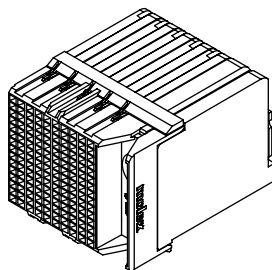
\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options*	Mating Pin Length	
76055-ABCD	1 = Unguided 3 = Guide left, open right 5 = Guide right, open left 7 = Guide left, end wall right 9 = Guide right, end wall left	1 = 10 Column 2 = 12 Column 6 = 16 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	3 = 4.50mm (PTH = 0.46) 4 = 4.90mm (PTH = 0.46) 5 = 5.50mm (PTH = 0.46) 6 = 4.50mm (PTH = 0.39) 7 = 4.90mm (PTH = 0.39) 8 = 5.50mm (PTH = 0.39)	Yes

\* Unguided wall options available on #0-#3 unguided module type.

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
Custom header pin layouts using standard pin lengths fall under separate series numbers. Contact Molex for details.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Daughtercard Receptacle 76060 5-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

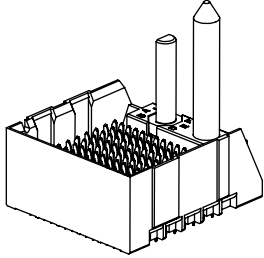
\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
76060-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	10 = 10 Column (PTH = 0.46) 12 = 12 Column (PTH = 0.46) 16 = 16 Column (PTH = 0.46) 20 = 10 Column (PTH = 0.39) 22 = 12 Column (PTH = 0.39) 26 = 16 Column (PTH = 0.39)	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Backplane Header

76775  
5-Pair, 85 Ohm



### Features and Benefits

- Broad-edge-coupled, 85 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

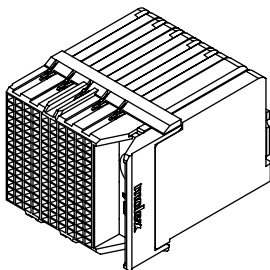
\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options*	Mating Pin Length	
76775-ABCD	1 = Unguided 3 = Guide left, open right 5 = Guide right, open left 7 = Guide left, end wall right 9 = Guide right, end wall left	1 = 10 Column 2 = 12 Column 6 = 16 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	3 = 4.50mm (PTH = 0.46) 4 = 4.90mm (PTH = 0.46) 5 = 5.50mm (PTH = 0.46) 6 = 4.50mm (PTH = 0.39) 7 = 4.90mm (PTH = 0.39) 8 = 5.50mm (PTH = 0.39)	Yes

\* Unguided wall options available on #0-#3 unguided module type.  
Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
Custom header pin layouts using standard pin lengths fall under separate series numbers. Contact Molex for details.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Daughtercard Receptacle

76780  
5-Pair, 85 Ohm



### Features and Benefits

- Broad-edge-coupled, 85 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

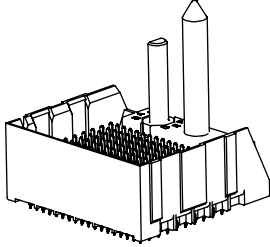
Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
76780-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	10 = 10 Column (PTH = 0.46) 12 = 12 Column (PTH = 0.46) 16 = 16 Column (PTH = 0.46) 20 = 10 Column (PTH = 0.39) 22 = 12 Column (PTH = 0.39) 26 = 16 Column (PTH = 0.39)	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Backplane Header 76145 6-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

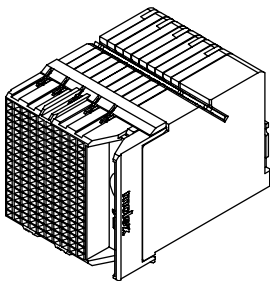
\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options*	Mating Pin Length	
76145-ABCD	1 = Unguided 3 = Guide left, open right 5 = Guide right, open left 7 = Guide left, end wall right 9 = Guide right, end wall left	1 = 10 Column 6 = 16 Column 7 = 14 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	3 = 4.50mm (PTH = 0.46) 4 = 4.90mm (PTH = 0.46) 5 = 5.50mm (PTH = 0.46) 6 = 4.50mm (PTH = 0.39) 7 = 4.90mm (PTH = 0.39) 8 = 5.50mm (PTH = 0.39)	Yes

\* Unguided wall options available on #0-#3 unguided module type.

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
Custom header pin layouts using standard pin lengths fall under separate series numbers. Contact Molex for details.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.90 by 1.35mm (.075 by .053") Pitch Impact™ Daughtercard Receptacle 76150 6-Pair



### Features and Benefits

- Broad-edge-coupled, 100 ohm impedance, differential-pair system for superior density, low cross-talk and low insertion loss
- Differential-pair density up to 80 pairs per linear inch
- IEEE 10GBASE-KR and Optical Internetworking Forum (OIF) Stat Eye Compliant
- Two compliant-pin attach options
- Inline staggered, bifurcated contact beams in daughtercard interface for superior mating performance with two points of contact for long-term reliability and built-in ground-signal sequencing
- Data rates scalable up to 25 Gbps support future system performance upgrades

### Reference Information\*

Packaging: Tray  
UL File No.: E28179  
Designed In: Millimeters

### Electrical

Voltage: 30V AC RMS/DC max.  
Current: 0.75A per pin max.  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Mating Force: 0.30N (.066 lb) max. per pin  
Compliant Pin Retention Force to PCB: 3.56N (.80 lb) per compliant pin average min.  
Compliant Pin Insertion Force to PCB: 26.7N (6.0 lb max.) per contact  
Durability: 200 cycles min.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

\*For complete electrical and mechanical test reports, please contact [impact@molex.com](mailto:impact@molex.com)

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
76150-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	10 = 10 Column (PTH = 0.46) 14 = 14 Column (PTH = 0.46) 16 = 16 Column (PTH = 0.46) 20 = 10 Column (PTH = 0.39) 24 = 14 Column (PTH = 0.39) 26 = 16 Column (PTH = 0.39)	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.85 by 3.70mm (.073 by .146") Pitch GbX I-Trac™ Backplane Connector System

The GbX I-Trac backplane system effectively balances electrical performance, differential-pair density, mechanical robustness and cost savings to meet customer application needs. It is designed to support the telecommunications, data networking and storage markets.

At 12.5 Gbps data rates, the GbX I-Trac broadside-coupled, skew equalized design provides multiple benefits, including superior impedance control, lower cross-talk and lower insertion loss versus other open pin-field or metal shielded-backplane products.

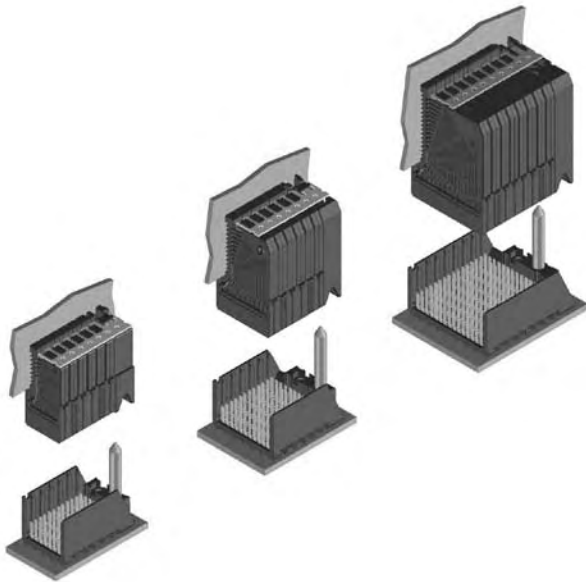
GbX I-Trac's open pin-field design allows customers the flexibility to assign high-speed differential pairs, low-speed signals, power and ground contacts anywhere within the pin-field. The broadside-coupling design allows the entire pinfield to be utilized for high-speed signals. GbX I-Trac is designed for both standard backplane architectures, as well as orthogonal backplane architectures, using the same connector part numbers. GbX I-Trac is a press-fit, flexible, mono-block based system with integrated guidance, power and signals that can be stacked end-to-end to meet customer pin-count requirements.

## Features and Benefits

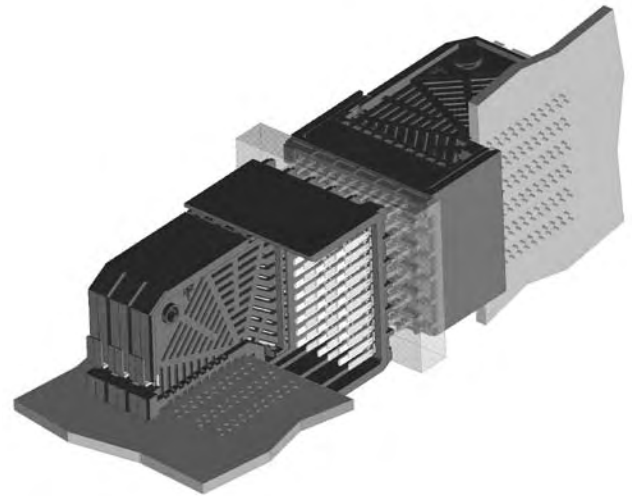
- The versatile design allows the headers to be rotated 90° on opposite sides of the midplane creating an orthogonal architecture, eliminating the need for PCB traces by using shared vias through the midplane. The same header and daughtercard part numbers are used for both standard and orthogonal configurations.
- Offers printed-circuit-board designers the flexibility to quad route the signal traces (2 pairs per layer) reducing the PCB layer count.
- Integrated guidance options and stand alone guidance options ensure superior mating performance and design flexibility.
- Power modules capable of supporting over 250.0A of current per linear inch.
- Available in backplane signal header modules, daughtercard signal modules and right angle male signal modules (coplanar).
- 7-, 11- and 15-row versions with Press-Fit module sizes ranging from 56 to 300 circuits.

**The GbX I-Trac backplane system is offered in the following options:**

- The 7-row product is available in 4, 6 or 10 column (56, 84 or 140 circuits) with backplane, daughtercard, coplanar and power module options
- The 11-row product is available in 5, 6, 8 or 10 column (110, 132, 176 or 220 circuits) with backplane, daughtercard, coplanar and power module options
- The 15-row product is available in 8, 9 or 10 column (240, 270 or 300 circuits) with backplane, daughtercard and power module options



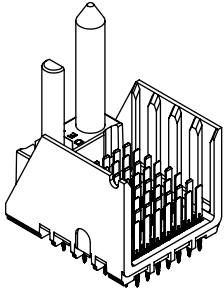
GbX I-Trac Backplane Connector System



GbX I-Trac Backplane Connector System  
for Orthogonal Architectures

# 1.85 by 3.70mm (.073 by .146") Pitch GbX I-Trac™ Backplane Signal Module

76015  
7-Row



### Features and Benefits

- Data rates of 12.5 Gbps or higher support future system performance upgrade
- Broadside-coupled, 100 ohm impedance, skew-equalized, differential pair system offers superior impedance control, low crosstalk and low insertion loss
- Allows standard and orthogonal connections using the same parts allows design flexibility, connector and PCB cost savings
- Quad PCB routing capability reduces PCB layers required to route high-speed lines, reducing PCB cost
- Bifurcated contact beams in daughtercard interface provides greater reliability with 2 points of contact to the header pin

### Reference Information\*

Packaging: Tray  
UL File No.: E29179  
Designed In: Millimeters

### Electrical

Signal Contact Current Rating: 1.0A  
Contact to Plated Through-Hole Resistance:  
1.0 milliohm max.  
Dielectric Withstanding Voltage: 750V RMS  
Insulation Resistance: 1,000 Megaohms min.

### Mechanical

Contact Insertion Force: 35.6N (8.0 lb) max. per contact  
Contact Retention Force: 4.45N (1.0 lb) min. per contact  
Mating Force: 0.69N (0.15 lb) max. per contact  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") min.

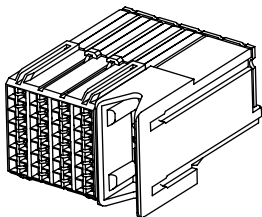
\*For complete electrical and mechanical test reports, please contact i-trac@molex.com

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options or Guided Key Position	Mating Pin Length	
76015-ABCD	1 = Unguided 3 = Guide left, open right 5 = Guide right, open left 7 = Guide left, end wall right 9 = Guide right, end wall left	4 = 4 Column 6 = 6 Column 1 = 10 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	2 = 3.90mm 3 = 4.70mm 4 = 5.70mm 5 = 4.70 and 5.70 Staggered	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
Custom header pin layouts using standard pin lengths fall under separate series numbers. Contact Molex for details.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.85 by 3.70mm (.073 by .146") Pitch GbX I-Trac™ Daughtercard Signal Module

76020  
7-Row



### Features and Benefits

- Data rates of 12.5 Gbps or higher support future system performance upgrade
- Broadside-coupled, 100 ohm impedance, skew-equalized, differential pair system offers superior impedance control, low crosstalk and low insertion loss
- Allows standard and orthogonal connections using the same parts allows design flexibility, connector and PCB cost savings
- Quad PCB routing capability reduces PCB layers required to route high-speed lines, reducing PCB cost
- Bifurcated contact beams in daughtercard interface provides greater reliability with 2 points of contact to the header pin

### Reference Information\*

Packaging: Tray  
UL File No.: E29179  
Designed In: Millimeters

### Electrical

Signal Contact Current Rating: 1.0A  
Contact to Plated Through-Hole Resistance:  
1.0 milliohm max.  
Dielectric Withstanding Voltage: 750V RMS  
Insulation Resistance: 1,000 Megaohms min.

### Mechanical

Contact Insertion Force: 35.6N (8.0 lb) max. per contact  
Contact Retention Force: 4.45N (1.0 lb) min. per contact  
Mating Force: 0.69N (0.15 lb) max. per contact  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") min.

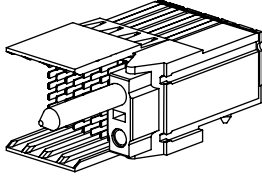
\*For complete electrical and mechanical test reports, please contact i-trac@molex.com

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
76020-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	04 = 4 Column 06 = 6 Column 10 = 10 Column	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.85 by 3.70mm (.073 by .146") Pitch GbX I-Trac™ Coplanar Signal Module

76011  
7-Row



### Features and Benefits

- Data rates of 12.5 Gbps or higher support future system performance upgrade
- Broadside-coupled, 100 ohm impedance, skew-equalized, differential pair system offers superior impedance control, low crosstalk and low insertion loss
- Allows standard and orthogonal connections using the same parts allows design flexibility, connector and PCB cost savings
- Quad PCB routing capability reduces PCB layers required to route high-speed lines, reducing PCB cost
- Bifurcated contact beams in daughtercard interface provides greater reliability with 2 points of contact to the header pin

### Reference Information\*

Packaging: Tray  
UL File No.: E29179  
Designed In: Millimeters

### Electrical

Signal Contact Current Rating: 1.0A  
Contact to Plated Through-Hole Resistance:  
1.0 milliohm max.  
Dielectric Withstanding Voltage: 750V RMS  
Insulation Resistance: 1,000 Megaohms min.

### Mechanical

Contact Insertion Force: 35.6N (8.0 lb) max. per contact  
Contact Retention Force: 4.45N (1.0 lb) min. per contact  
Mating Force: 0.69N (0.15 lb) max. per contact  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76μm (30μ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") min.

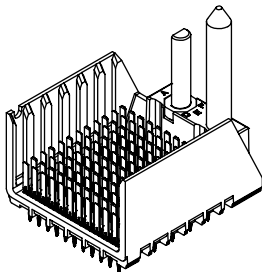
\*For complete electrical and mechanical test reports, please contact [i-trac@molex.com](mailto:i-trac@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options or Guided Key Position	Mating Pin Length	
76011-ABCD	1 = Unguided 3 = Guide left 5 = Guide right 7 = Guide left, end wall right 9 = Guide right, end wall left	6 = 6 Column 1 = 10 Column	0 = Open ends 1 = Left end wall 2 = Right end wall or coplanar guide pin 3 = Dual end wall or inverted guide pin	3 = 4.70mm 5 = 3.80 and 4.70 Staggered 6 = 3.80 and 4.70 Staggered (Reference drawings for staggering options)	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.85 by 3.70mm (.073 by .146") Pitch GbX I-Trac™ Backplane Signal Module

75705  
11-Row



### Features and Benefits

- Data rates of 12.5 Gbps or higher support future system performance upgrade
- Broadside-coupled, 100 ohm impedance, skew-equalized, differential pair system offers superior impedance control, low crosstalk and low insertion loss
- Allows standard and orthogonal connections using the same parts allows design flexibility, connector and PCB cost savings
- Quad PCB routing capability reduces PCB layers required to route high-speed lines, reducing PCB cost
- Bifurcated contact beams in daughtercard interface provides greater reliability with 2 points of contact to the header pin

### Reference Information\*

Packaging: Tray  
UL File No.: E29179  
Designed In: Millimeters

### Electrical

Signal Contact Current Rating: 1.0A  
Contact to Plated Through-Hole Resistance:  
1.0 milliohm max.  
Dielectric Withstanding Voltage: 750V RMS  
Insulation Resistance: 1,000 Megaohms min.

### Mechanical

Contact Insertion Force: 35.6N (8.0 lb) max. per contact  
Contact Retention Force: 4.45N (1.0 lb) min. per contact  
Mating Force: 0.69N (0.15 lb) max. per contact  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76μm (30μ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") min.

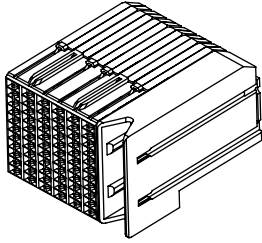
\*For complete electrical and mechanical test reports, please contact [i-trac@molex.com](mailto:i-trac@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options or Guided Key Position*	Mating Pin Length	
75705-ABCD	1 = Unguided 3 = Guide left, open right 5 = Guide right, open left 7 = Guide left, end wall right 9 = Guide right, end wall left	5 = 5 Column 6 = 6 Column 8 = 8 Column 1 = 10 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	2 = 3.90mm 3 = 4.70mm 4 = 5.70mm 5 = 4.70 and 5.70 Staggered	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
Custom header pin layouts using standard pin lengths fall under separate series numbers. Contact Molex for details.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.85 by 3.70mm (.073 by .146") Pitch GbX I-Trac™ Daughtercard Signal Module

75710  
11-Row



### Features and Benefits

- Data rates of 12.5 Gbps or higher support future system performance upgrade
- Broadside-coupled, 100 ohm impedance, skew-equalized, differential pair system offers superior impedance control, low crosstalk and low insertion loss
- Allows standard and orthogonal connections using the same parts allows design flexibility, connector and PCB cost savings
- Quad PCB routing capability reduces PCB layers required to route high-speed lines, reducing PCB cost
- Bifurcated contact beams in daughtercard interface provides greater reliability with 2 points of contact to the header pin

### Reference Information\*

Packaging: Tray  
UL File No.: E29179  
Designed In: Millimeters

### Electrical

Signal Contact Current Rating: 1.0A  
Contact to Plated Through-Hole Resistance:  
1.0 milliohm max.  
Dielectric Withstanding Voltage: 750V RMS  
Insulation Resistance: 1,000 Megaohms min.

### Mechanical

Contact Insertion Force: 35.6N (8.0 lb) max. per contact  
Contact Retention Force: 4.45N (1.0 lb) min. per contact  
Mating Force: 0.69N (0.15 lb) max. per contact  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") min.

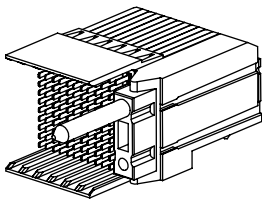
\*For complete electrical and mechanical test reports, please contact i-trac@molex.com

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
75710-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	05 = 5 Column 06 = 6 Column 08 = 8 Column 10 = 10 Column	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.85 by 3.70mm (.073 by .146") Pitch GbX I-Trac™ Coplanar Signal Module

75910  
11-Row



### Features and Benefits

- Data rates of 12.5 Gbps or higher support future system performance upgrade
- Broadside-coupled, 100 ohm impedance, skew-equalized, differential pair system offers superior impedance control, low crosstalk and low insertion loss
- Allows standard and orthogonal connections using the same parts allows design flexibility, connector and PCB cost savings
- Quad PCB routing capability reduces PCB layers required to route high-speed lines, reducing PCB cost
- Bifurcated contact beams in daughtercard interface provides greater reliability with 2 points of contact to the header pin

### Reference Information\*

Packaging: Tray  
UL File No.: E29179  
Designed In: Millimeters

### Electrical

Signal Contact Current Rating: 1.0A  
Contact to Plated Through-Hole Resistance:  
1.0 milliohm max.  
Dielectric Withstanding Voltage: 750V RMS  
Insulation Resistance: 1,000 Megaohms min.

### Mechanical

Contact Insertion Force: 35.6N (8.0 lb) max. per contact  
Contact Retention Force: 4.45N (1.0 lb) min. per contact  
Mating Force: 0.69N (0.15 lb) max. per contact  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") min.

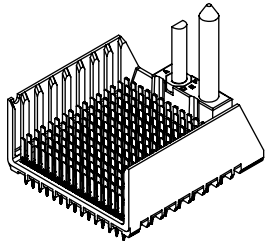
\*For complete electrical and mechanical test reports, please contact i-trac@molex.com

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options or Guided Options	Mating Pin Length	
75910-ABCD	1 = Unguided 3 = Guide left 5 = Guide right 7 = Guide left, end wall right 9 = Guide right, end wall left	5 = 5 Column 6 = 6 Column 1 = 10 Column	0 = Open ends 1 = Left end wall 2 = Right end wall or coplanar guide pin 3 = Dual end wall or inverted guide pin	3 = 4.70mm 5 = 3.80 and 4.70 Staggered	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.85 by 3.70mm (.073 by .146") Pitch GbX I-Trac™ Backplane Signal Module

76035  
15-Row



### Features and Benefits

- Data rates of 12.5 Gbps or higher support future system performance upgrade
- Broadside-coupled, 100 ohm impedance, skew-equalized, differential pair system offers superior impedance control, low crosstalk and low insertion loss
- Allows standard and orthogonal connections using the same parts allows design flexibility, connector and PCB cost savings
- Quad PCB routing capability reduces PCB layers required to route high-speed lines, reducing PCB cost
- Bifurcated contact beams in daughtercard interface provides greater reliability with 2 points of contact to the header pin

### Reference Information\*

Packaging: Tray  
UL File No.: E29179  
Designed In: Millimeters

### Electrical

Signal Contact Current Rating: 1.0A  
Contact to Plated Through-Hole Resistance:  
1.0 milliohm max.  
Dielectric Withstanding Voltage: 750V RMS  
Insulation Resistance: 1,000 Megaohms min.

### Mechanical

Contact Insertion Force: 35.6N (8.0 lb) max. per contact  
Contact Retention Force: 4.45N (1.0 lb) min. per contact  
Mating Force: 0.69N (0.15 lb) max. per contact  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") min.

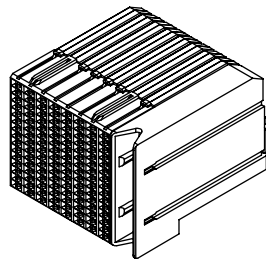
\*For complete electrical and mechanical test reports, please contact [i-trac@molex.com](mailto:i-trac@molex.com)

Order No.	A	B	C	D	Lead-free
	Module Type	Module Size	Unguided Wall Options or Guided Key Position	Mating Pin Length	
76035-ABCD	1 = Unguided 3 = Guide left, open right 5 = Guide right, open left 7 = Guide left, end wall right 9 = Guide right, end wall left	8 = 8 Column 9 = 9 Column 1 = 10 Column	0 = Open ends 1 = Left end wall 2 = Dual end wall 3 = Right end wall	2 = 3.90mm 3 = 4.70mm 4 = 5.70mm 5 = 4.70 and 5.70 Staggered	Yes

Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
Custom header pin layouts using standard pin lengths fall under separate series numbers. Contact Molex for details.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).

# 1.85 by 3.70mm (.073 by .146") Pitch GbX I-Trac™ Daughtercard Signal Module

76040  
15-Row



### Features and Benefits

- Data rates of 12.5 Gbps or higher support future system performance upgrade
- Broadside-coupled, 100 ohm impedance, skew-equalized, differential pair system offers superior impedance control, low crosstalk and low insertion loss
- Allows standard and orthogonal connections using the same parts allows design flexibility, connector and PCB cost savings
- Quad PCB routing capability reduces PCB layers required to route high-speed lines, reducing PCB cost
- Bifurcated contact beams in daughtercard interface provides greater reliability with 2 points of contact to the header pin

### Reference Information\*

Packaging: Tray  
UL File No.: E29179  
Designed In: Millimeters

### Electrical

Signal Contact Current Rating: 1.0A  
Contact to Plated Through-Hole Resistance:  
1.0 milliohm max.  
Dielectric Withstanding Voltage: 750V RMS  
Insulation Resistance: 1,000 Megaohms min.

### Mechanical

Contact Insertion Force: 35.6N (8.0 lb) max. per contact  
Contact Retention Force: 4.45N (1.0 lb) min. per contact  
Mating Force: 0.69N (0.15 lb) max. per contact  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: High performance Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin or Tin/Lead  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") min.

\*For complete electrical and mechanical test reports, please contact [i-trac@molex.com](mailto:i-trac@molex.com)

Order No.	A	B	CD	Lead-free
	Module Type	Guided Key Position	Module Size	
76040-ABCD	1 = Unguided 3 = Guide left 5 = Guide right	0 = No Keying	08 = 8 Column 09 = 9 Column 10 = 10 Column	Yes

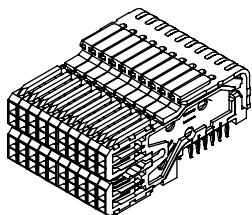
Note: Replace A, B, C, D with the values listed to the right to configure your Order Number.  
A guide left backplane mates to a guide left daughtercard and vice versa. They are the same.  
For Tin/Lead and Keying options, please visit [www.molex.com](http://www.molex.com).



# 1.85mm (.073") Pitch GbX<sup>®</sup> Board-to-Board Custom Daughtercard Receptacle

75650/75670/75676

Right Angle  
2 Pair Daughtercards



Order No.	Description	Lead-free
<a href="#">75650-****</a>	2 Pair Daughtercard	RoHS compliant by exemption
<a href="#">75670-****</a>	2 L Daughtercard	
<a href="#">75676-****</a>	2 Pair Hybrid Daughtercard	

Note: GbX<sup>®</sup> is a registered trademark of Amphenol Corporation  
Please visit the Backplane Configurator at [www.molex.com/configurator.html](http://www.molex.com/configurator.html)  
to configure your own custom daughtercard.

## Features and Benefits

- Signal wafers, GbX L-Series blocks, guide modules and power modules are mounted onto a metal stiffener to make a custom connector. Assemblies are assigned a custom part number (see ordering information below)
- Data rates up to 10 Gbps support future daughtercard speed upgrades
- Up to 27 real differential pairs per linear inch (11 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- GbX L-Series is a lower cost, unshielded version of GbX designed for lower-speed requirements
- GbX L-Series blocks are manufactured in 5 column blocks, consisting of 5 signal circuits per column for 2 pair, and can be combined on same stiffener with standard GbX wafers to create a hybrid daughtercard assembly

## Reference Information

Product Specification: PS-75221-999

Packaging: Tray

UL File No.: E29179

Mates With: 75827 and 75861

Designed In: Millimeters

## Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: 1 milliohm max.

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 Megohms min.

## Mechanical

Insertion Force to PCB: 45N max. per press-fit pin

Contact Retention Force: 9N min. per press-fit pin

Mating Force: .6N per circuit

Unmating Force: .3N per circuit

Signal Normal Force: .4N min.

Durability: 200 cycles

## Physical

Housing: Liquid Crystal Polymer, UL 94V-0

Contact: Copper Alloy

Plating: Contact—Select Gold

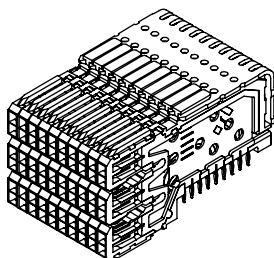
Tail—Tin/Lead

PCB Thickness: 1.60mm (.063") min.

# 1.85mm (.073") Pitch GbX<sup>®</sup> Board-to-Board Custom Daughtercard Receptacle

75370/75660/75666

Right Angle  
3 Pair Daughtercards



Order No.	Description	Lead-free
<a href="#">75370-****</a>	3 Pair Daughtercard	RoHS compliant by exemption
<a href="#">75660-****</a>	3 L Daughtercard	
<a href="#">75666-****</a>	3 Pair Hybrid Daughtercard	

Note: GbX<sup>®</sup> is a registered trademark of Amphenol Corporation  
Please visit the Backplane Configurator at [www.molex.com/configurator.html](http://www.molex.com/configurator.html)  
to configure your own custom daughtercard.

## Features and Benefits

- Signal wafers, GbX L-Series blocks, guide modules and power modules are mounted onto a metal stiffener to make a custom connector. Assemblies are assigned a custom part number (see ordering information below)
- Data rates up to 10 Gbps support future daughtercard speed upgrades
- Up to 41 real differential pairs per linear inch (16 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- GbX L-Series is a lower-cost, unshielded version of GbX designed for lower-speed requirements
- GbX L-Series blocks are manufactured in 5 column blocks, consisting of 8 signal circuits per column for 3 pair, and can be combined on same stiffener with standard GbX wafers to create a hybrid daughtercard assembly

## Reference Information

Product Specification: PS-75221-999

Packaging: Tray

UL File No.: E29179

Mates With: 75433/75649

Designed In: Millimeters

## Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: 1 milliohm max.

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 Megohms min.

## Mechanical

Insertion Force to PCB: 45N max. per press-fit pin

Contact Retention Force: 9N min. per press-fit pin

Mating Force: .6N per circuit

Unmating Force: .3N per circuit

Signal Normal Force: .4N min.

Durability: 200 cycles

## Physical

Housing: Liquid Crystal Polymer, UL 94V-0

Contact: Copper Alloy

Plating: Contact—Select Gold

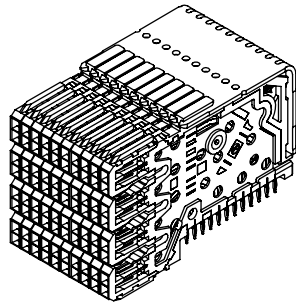
Tail—Tin/Lead

PCB Thickness: 1.60mm (.063") min.

# 1.85mm (.073") Pitch GbX® Board-to-Board Custom Daughtercard Receptacle

75220/75420/75426

Right Angle  
4 Pair Daughtercards



Order No.	Description	Lead-free
<a href="#">75220-****</a>	4 Pair Daughtercard	RoHS compliant by exemption
<a href="#">75420-****</a>	4 L Daughtercard	
<a href="#">75426-****</a>	4 Pair Hybrid Daughtercard	

Note: GbX® is a registered trademark of Amphenol Corporation  
Please visit the Backplane Configurator at [www.molex.com/configurator.html](http://www.molex.com/configurator.html)  
to configure your own custom daughtercard.

## Features and Benefits

- Signal wafers, GbX L-Series blocks, guide modules and power modules are mounted onto a metal stiffener to make a custom connector. Assemblies are assigned a custom part number (see ordering information below)
- Data rates up to 10 Gbps support future daughtercard speed upgrades
- Up to 55 real differential pairs per linear inch (22 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- GbX L-Series is a lower-cost, unshielded version of GbX designed for lower-speed requirements
- GbX L-Series blocks are manufactured in 5 column blocks, consisting of 11 signal circuits per column for 4 pair, and can be combined on same stiffener with standard GbX wafers to create a hybrid daughtercard assembly

## Reference Information

Product Specification: PS-75221-999  
Packaging: Tray  
UL File No.: E29179  
Mates With: 75235 and 75465  
Designed In: Millimeters

## Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

## Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Signal Normal Force: .4N min.  
Durability: 200 cycles

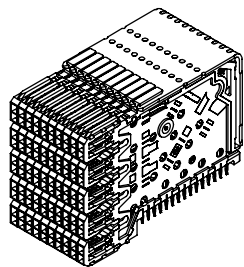
## Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—Select Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

# 1.85mm (.073") Pitch GbX® Board-to-Board Custom Daughtercard Receptacle

75360

Right Angle  
5 Pair Daughtercard



Order No.	Description	Lead-free
<a href="#">75360-****</a>	5 Pair Daughtercard	RoHS compliant by exemption

Note: GbX® is a registered trademark of Amphenol Corporation  
Please visit the Backplane Configurator at [www.molex.com/configurator.html](http://www.molex.com/configurator.html)  
to configure your own custom daughtercard.

## Features and Benefits

- Signal wafers, guide modules and power modules are mounted onto a metal stiffener to make a custom connector. Assemblies are assigned a custom part number (see ordering information below)
- Data rates up to 10 Gbps support future daughtercard speed upgrades
- Up to 69 real differential pairs per linear inch (27 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing

## Reference Information

Product Specification: PS-75221-999  
Packaging: Tray  
UL File No.: E29179  
Mates With: 75237  
Designed In: Millimeters

## Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

## Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Signal Normal Force: .4N min.  
Durability: 200 cycles

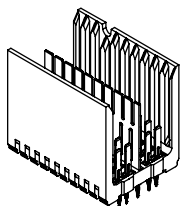
## Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—Select Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.



# 1.85mm (.073") Pitch GbX<sup>®</sup> Board-to-Board Backplane Header

**75827**  
Vertical  
2 Pair Open Backplane



### Features and Benefits

- Up to 27 real differential pairs per linear inch (11 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- Data rates greater than 6 Gbps, up to 10 Gbps, support future daughtercard speed upgrades

### Reference Information

Product Specification: PS-75221-999  
Packaging: Tray  
UL File No.: E29179  
Mates With: 75650 and 75676  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: 0.3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

Circuits	Order No.	Description	Lead-free
40	75827-010X	2 Pair by 10 Column	RoHS compliant by exemption
100	75827-020X	2 Pair by 25 Column	

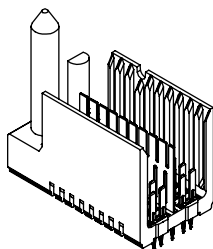
Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

The last digit in the Molex part number sequence defines the length of the signal pin.

3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")

# 1.85mm (.073") Pitch GbX<sup>®</sup> Board-to-Board Backplane Header

**75827**  
Vertical  
2 Pair Guided Backplane



### Features and Benefits

- Up to 27 real differential pairs per linear inch (11 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- Data rates greater than 6 Gbps, up to 10 Gbps, support future daughtercard speed upgrades

### Reference Information

Product Specification: PS-75221-999  
Packaging: Tray  
UL File No.: E29179  
Mates With: 75650 and 75676  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: 0.3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

Circuits	Order No.	Description	Guide	Code Key	Lead-free
40	75827-210X	2 Pair by 10 Column	Left	No Code Key	RoHS compliant by exemption
	75827-21XX			Code Key "X"	
	75827-410X	2 Pair by 10 Column	Right	No Code Key	
	75827-41XX			Code Key "X"	
100	75827-220X	2 Pair by 25 Column	Left	No Code Key	
	75827-22XX			Code Key "X"	
	75827-420X	2 Pair by 25 Column	Right	No Code Key	
	75827-42XX			Code Key "X"	

Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

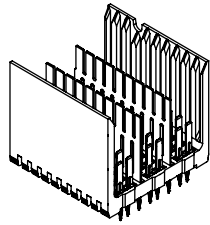
The "X" in the second to last position of the Molex part number is replaced by a digit to define the keying position. There are 8 different keying positions available: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7, H = 8  
The last digit in the Molex part number sequence defines the length of the signal pin.

3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")

# 1.85mm (.073") Pitch GbX<sup>®</sup> Board-to-Board Backplane Header

75433

## Vertical 3 Pair Open Backplane



Circuits	Order No.	Description	Lead-free
30	75433-050X	3 Pair by 5 Column	RoHS compliant by exemption
60	75433-010X	3 Pair by 10 Column	
150	75433-020X	3 Pair by 25 Column	

Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

### Features and Benefits

- Up to 41 real differential pairs per linear inch (16 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- Data rates greater than 6 Gbps, up to 10 Gbps, support future daughtercard speed upgrades

### Reference Information

Product Specification: PS-75221-999  
Packaging: Tube  
UL File No.: E29179  
Mates With: 75370 and 75666  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30μ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

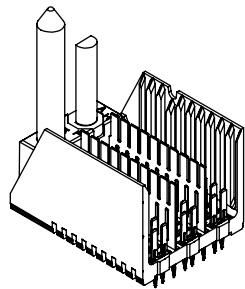
The last digit in the Molex part number sequence defines the length of the signal pin.

3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")

# 1.85mm (.073") Pitch GbX<sup>®</sup> Board-to-Board Backplane Header

75433

## Vertical 3 Pair Guided Backplane



Circuits	Order No.	Description	Guide	Code Key	Lead-free
60	75433-210X	3 Pair by 10 Column	Left	No Code Key	RoHS compliant by exemption
	75433-21XX			Code Key "X"	
	75433-410X	3 Pair by 10 Column	Right	No Code Key	
	75433-41XX			Code Key "X"	
150	75433-220X	3 Pair by 25 Column	Left	No Code Key	
	75433-22XX			Code Key "X"	
	75433-420X	3 Pair by 25 Column	Right	No Code Key	
	75433-42XX			Code Key "X"	

Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

### Features and Benefits

- Up to 41 real differential pairs per linear inch (16 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- Data rates greater than 6 Gbps, up to 10 Gbps, support future daughtercard speed upgrades

### Reference Information

Product Specification: PS-75221-999  
Packaging: Tube  
UL File No.: E29179  
Mates With: 75370 and 75666  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

### Physical

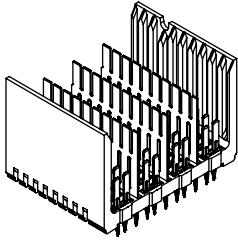
Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30μ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

The "X" in the second to last position of the Molex part number is replaced by a digit to define the keying position. There are 8 different keying positions available: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7, H = 8  
The last digit in the Molex part number sequence defines the length of the signal pin.

3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")

# 1.85mm (.073") Pitch GbX<sup>®</sup> Board-to-Board Backplane Header

## 75235 Vertical 4 Pair Open Backplane



### Features and Benefits

- Up to 55 real differential pairs per linear inch (22 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- Data rates greater than 6 Gbps, up to 10 Gbps, support future daughtercard speed upgrades

### Reference Information

Product Specification: PS-75221-999  
Packaging: Tray  
UL File No.: E29179  
Mates With: 75220 and 75426  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

Circuits	Order No.	Description	Lead-free
56	75235-070X	4 Pair by 7 Column	RoHS compliant by exemption
80	75235-010X	4 Pair by 10 Column	
200	75235-020X	4 Pair by 25 Column	

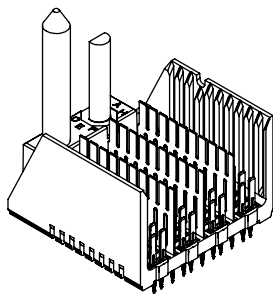
Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

The last digit in the Molex part number sequence defines the length of the signal pin.

3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")

# 1.85mm (.073") Pitch GbX<sup>®</sup> Board-to-Board Backplane Header

## 75235 Vertical 4 Pair Guided Backplane



### Features and Benefits

- Up to 55 real differential pairs per linear inch (22 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- Data rates greater than 6 Gbps, up to 10 Gbps, support future daughtercard speed upgrades

### Reference Information

Product Specification: PS-75221-999  
Packaging: Trays  
UL File No.: E29179  
Mates With: 75220 and 75426  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

Circuits	Order No.	Description	Guide	Code Key	Lead-free
56	75235-270X	4 Pair by 7 Column	Left	No Code Key	RoHS compliant by exemption
	75235-27XX			Code Key "X"	
	75235-470X	4 Pair by 7 Column	Right	No Code Key	
	75235-47XX			Code Key "X"	
80	75235-210X	4 Pair by 10 Column	Left	No Code Key	
	75235-21XX			Code Key "X"	
	75235-410X	4 Pair by 10 Column	Right	No Code Key	
	75235-41XX			Code Key "X"	
200	75235-220X	4 Pair by 25 Column	Left	No Code Key	
	75235-22XX			Code Key "X"	
	75235-420X	4 Pair by 25 Column	Right	No Code Key	
	75235-42XX			Code Key "X"	

Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

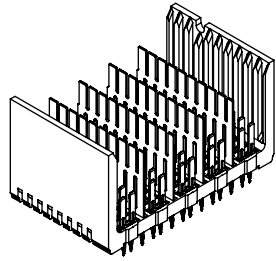
The "X" in the second to last position of the Molex part number is replaced by a digit to define the keying position. There are 8 different keying positions available: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7, H = 8  
The last digit in the Molex part number sequence defines the length of the signal pin.

3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")

# 1.85mm (.073") Pitch GbX® Board-to-Board Backplane Header

## 75237

### Vertical 5 Pair Open Backplane



Circuits	Order No.	Description	Lead-free
100	75237-010X	5 Pair by 10 Column	RoHS compliant by exemption
250	75237-020X	5 Pair by 25 Column	

Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

#### Features and Benefits

- Up to 69 real differential pairs per linear inch (27 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- Data rates greater than 6 Gbps, up to 10 Gbps, support future daughtercard speed upgrades

#### Reference Information

Product Specification: PS-75221-999  
Packaging: Tray  
UL File No.: E29179  
Mates With: 75360  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

#### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

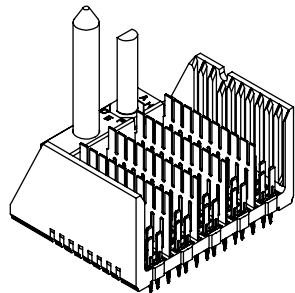
The last digit in the Molex part number sequence defines the length of the signal pin.

3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")

# 1.85 mm (.073") Pitch GbX® Board-to-Board Backplane Header

## 75237

### Vertical 5 Pair Guided Backplane



Circuits	Order No.	Description	Guide	Code Key	Lead-free
100	75235-210X	5 Pair by 10 Column	Left	No Code Key	RoHS compliant by exemption
	75235-21XX			Code Key "X"	
	75235-410X	5 Pair by 10 Column	Right	No Code Key	
75235-41XX	Code Key "X"				
250	75235-220X	5 Pair by 25 Column	Left	No Code Key	
	75235-22XX			Code Key "X"	
	75235-420X	5 Pair by 25 Column	Right	No Code Key	
75235-42XX	Code Key "X"				

Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

#### Features and Benefits

- Up to 69 real differential pairs per linear inch (27 real differential pairs per 10.00mm)
- Optimized differential pair contacts promote easier board trace routing
- Data rates greater than 6 Gbps, up to 10 Gbps, support future daughtercard speed upgrades

#### Reference Information

Product Specification: PS-75221-999  
Packaging: Tray  
UL File No.: E29179  
Mates With: 75360  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

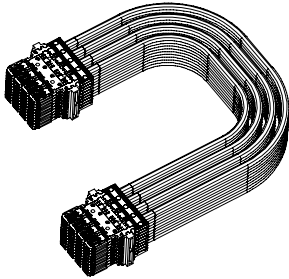
#### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

The "X" in the second to last position of the Molex part number is replaced by a digit to define the keying position. There are 8 different keying positions available: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7, H = 8  
The last digit in the Molex part number sequence defines the length of the signal pin.

3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")

**1.85 x 1.85mm  
(.073 x .073") Pitch  
GbX<sup>®</sup>  
Cable Assembly  
4 Pair**



**Features and Benefit**

- Bifurcated contact beams provide greater reliability with two points of contact to header pins
- GbX 4-pair configuration provides high density (55 real-differential pairs per linear inch) with more differential pairs than similar backplane products (2, 3 and 5 pair configurations are possible extensions\*)
- Ground shield for individual parts reduces crosstalk at the mating interface for improved system performance
- Opposed gap-resistance welding re-flows cable conductor into the signal contact, providing a clean electrical path
- Low-pressure, strain-relief insert molding provides strain relief for the termination area and allows tighter cable shield to conductor tolerances for better impedance control

**Reference Information**

Mates With: 75235 and 75717  
Designed In: Millimeters

**Electrical**

Current: 1.0A  
Dielectric Withstanding Voltage: 250V  
Insulation Resistance: 40 Megohms min.

**Mechanical**

Contact Insertion Force: 44.48N (10.00 lbf) typical per contact  
Contact Retention to Housing: 8.90N (2.00 lbf) min. per contact  
Insertion Force to PCB: 0.59N (0.13 lbf) max. per contact  
Mating Force: 0.59N (0.13 lbf) max. per contact  
Unmating Force: 0.29N (0.07 lbf) min. per contact  
Durability: 250 cycles max.

**Physical**

Housing: LCP, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact Area—0.76µm (30µ") Gold min.  
Solder Tail Area—Tin  
Underplating—Nickel  
PCB Thickness: 1.60mm (.062") typical

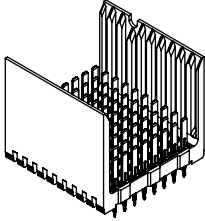
Order No.	Wafer Configuration	Lead-free
GbX cables only sold as terminated cable assemblies. Part numbers and sales drawings will be established based on specific customer design requirements. Contact Molex for tooling justification	4 pair	Yes

Cable Length: Dependent upon customer design. Contact Molex with specific requirements.  
Note: GbX is a registered trademark of Amphenol Corporation

# 1.85mm (.073") Pitch GbX® L-Series Board-to-Board Backplane Header

## 75649

### Vertical 3 Pair GbX L-Series Open Backplane



Circuits	Order No.	Description	Lead-free
40	75649-050X	3 L by 5 Column	RoHS compliant by exemption
80	75649-010X	3 L by 10 Column	

Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

#### Features and Benefits

- GbX L-Series is a lower-cost, unshielded version of GbX designed for lower-speed circuits
- GbX L-Series allows customers to customize their daughtercards to their specific needs with a mix of low and high speeds
- End-to-end stackable with standard GbX headers

#### Reference Information

Product Specification: PS-75221-999  
Packaging: Tube  
UL File No.: E29179  
Mates With: 75660 and 75666  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0 A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

#### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

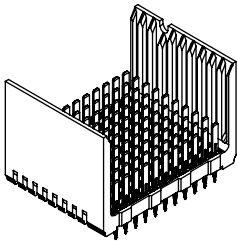
The last digit in the Molex part number sequence defines the length of the signal pin.

3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")

# 1.85mm (.073") Pitch GbX® L-Series Board-to-Board Backplane Header

## 75465

### Vertical 4 Pair GbX L-Series Open Backplane



Circuits	Order No.	Description	Lead-free
55	75465-050X	4 L by 5 Column	RoHS compliant by exemption
110	75465-010X	4 L by 10 Column	

Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

#### Features and Benefits

- GbX L-Series is a lower-cost, unshielded version of GbX designed for lower-speed circuits
- GbX L-Series allows customers to customize their daughtercards to their specific needs with a mix of low and high speeds
- End-to-end stackable with standard GbX headers

#### Reference Information

Product Specification: PS-75221-999  
Packaging: Tray  
UL File No.: E29179  
Mates With: 75420 and 75426  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

#### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

The last digit in the Molex part number sequence defines the length of the signal pin.

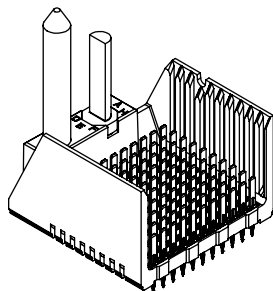
3 = 3.55mm (.140")	Contact Wipe = 1.00mm (.039")
4 = 4.55mm (.179")	Contact Wipe = 2.00mm (.079")
5 = 5.55mm (.219")	Contact Wipe = 3.00mm (.118")





# 1.85mm (.073") Pitch GbX® L-Series Board-to-Board Backplane Header

**75465**  
Vertical  
4 Pair GbX L-Series  
Guided Backplane



### Features and Benefits

- GbX L-Series is a lower-cost, unshielded version of GbX designed for lower-speed circuits
- GbX L-Series allows customers to customize their daughtercards to their specific needs with a mix of low and high speeds
- End-to-end stackable with standard GbX headers

### Reference Information

Product Specification: PS-75221-999  
Packaging: Trays  
UL File No.: E29179  
Mates With: 75420/75426  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—30µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

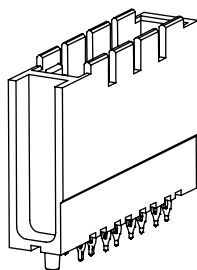
Circuits	Order No.	Description	Guide	Code Key	Lead-free
55	75465-250X	4 Pair by 5 Column	Left	No Code Key	RoHS compliant by exemption
	75465-25XX			Code Key "X"	
	75465-450X	4 Pair by 5 Column	Right	No Code Key	
	75465-45XX			Code Key "X"	
110	75465-210X	4 Pair by 10 Column	Left	No Code Key	
	75465-21XX			Code Key "X"	
	75465-410X	4 Pair by 10 Column	Right	No Code Key	
	75465-41XX			Code Key "X"	
275	75465-220X	4 Pair by 25 Column	Left	No Code Key	
	75465-22XX			Code Key "X"	
	75465-420X	4 Pair by 25 Column	Right	No Code Key	
	75465-42XX			Code Key "X"	

The "X" in the second to last position of the Molex part number is replaced by a digit to define the keying position. There are 8 different keying positions available: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6, G = 7, H = 8  
The last digit in the Molex part number sequence defines the length of the signal pin.  
3 = 3.55mm (.140") Contact Wipe = 1.00mm (.039")  
4 = 4.55mm (.179") Contact Wipe = 2.00mm (.079")  
5 = 5.55mm (.219") Contact Wipe = 3.00mm (.118")

Custom pinouts available, please contact Molex  
Note: GbX is a registered trademark of Amphenol Corporation

# 1.85mm (.073") Pitch GbX® Board-to-Board Backplane Power Header

**75492/75331/75341/75510**  
Vertical



### Features and Benefits

- Dual beam independent contacts ensure reliable connection
- Power blade pairs available in 3 lengths for sequential mating or hot swap applications

### Reference Information

Product Specification: PS-75221-999  
Packaging: Tube  
UL File No.: E29179  
Mates With: GbX Daughtercards  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 6.0A per blade  
Contact Resistance: 1 milliohm max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force to PCB: 45N max. per press-fit pin  
Contact Retention Force: 9N min. per press-fit pin  
Mating Force: .6N per circuit  
Unmating Force: .3N per circuit  
Normal Force: 40g min.  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact—50µ" Gold  
Tail—Tin/Lead  
PCB Thickness: 1.60mm (.063") min.

Circuits	Order No.	Description	Lead-free
4	75492-10XX	2 Pair Power	RoHS compliant by exemption
6	75331-0XXX	3 Pair Power	
8	75341-XXXX	4 Pair Power	
10	7551X-XXXX	5 Pair Power	

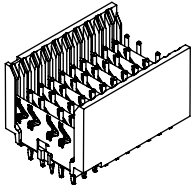
The last digits in the Molex part number sequence defines the wipe length of the power contacts in their respective row positions.  
0 = Void  
4 = 4.55mm (.179")  
6 = 6.00mm (.236")  
7 = 7.55mm (.297")

Note: GbX is a registered trademark of Amphenol Corporation



## 2.00mm (.079") Pitch VHDM-HSD™ Board-to-Board Backplane Header

### 74695 Vertical 5-Row Open Signal Module



Order No.	Pin Length	Lead-free
30µ" Gold		
<a href="#">74695-1001</a>	4.75mm (.187")	RoHS compliant by exemption
<a href="#">74695-1002</a>	6.25mm (.246")	
<a href="#">74695-1003</a>	4.25mm (.167")	
<a href="#">74695-1004</a>	5.15mm (.203")	
<a href="#">74695-2501</a>	4.75mm (.187")	
<a href="#">74695-2502</a>	6.25mm (.246")	
<a href="#">74695-2503</a>	4.25mm (.167")	
<a href="#">74695-2504</a>	5.15mm (.203")	

Note: VHDM-HSD™ is a trademark of Amphenol Corporation

#### Features and Benefits

- 10 and 25 column versions available
- Stackable end-to-end
- Ground planes between signal columns
- Press-fit construction
- High-temperature plastic housing are Surface Mount Compatible

#### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 74670  
Use With: Daughtercard modules  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 74670  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

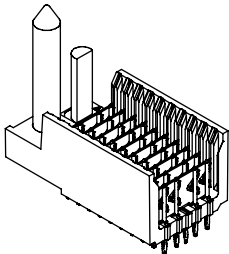
Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

#### Physical

Housing: LCP Liquid Crystal Polymer  
Contact: Tin/lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

## 2.00mm (.079") Pitch VHDM-HSD™ Board-to-Board Backplane Header

### 74696 Vertical 5-Row Guide Pin Signal Module Pin End Version



#### Features and Benefits

- 10 and 25 column versions available
- Metal guide pin integrated into the header body
- Coding Key provides 8 different codes (A through H)
- Stackable end-to-end
- Ground planes between signal columns
- Press-fit construction
- High-temperature plastic housings are Surface Mount Compatible

#### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 74670  
Use With: Daughtercard modules  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 74670  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

#### Physical

Housing: LCP Liquid Crystal Polymer  
Contact: Tin/lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

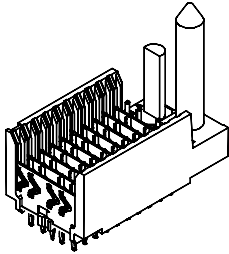
Circuits	Order No.	Pin Length	Code Key	Lead-free
40	<a href="#">74696-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">74696-1012</a>	6.25mm (.246")	code key A	
	<a href="#">74696-1013</a>	4.25mm (.167")		
	<a href="#">74696-1014</a>	5.15mm (.203")		
100	<a href="#">74696-2501</a>	4.75mm (.187")	no code key	
	<a href="#">74696-2512</a>	6.25mm (.246")	code key A	
	<a href="#">74696-2513</a>	4.25mm (.167")		
	<a href="#">74696-2514</a>	5.15mm (.203")		

Other codes are available, visit [www.molex.com](http://www.molex.com)  
Note: VHDM-HSD™ is a trademark of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM-HSD™ Board-to-Board Backplane Header

**74697**

## Vertical 5-Row Guide Pin Signal Module Shield Version



### Features and Benefits

- 10 and 25 column versions available
- Metal guide pin integrated into the header body
- Coding Key provides 8 different codes (A through H)
- Stackable end-to-end
- Ground planes between signal columns
- Press-fit construction
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 74670  
Use With: Daughtercard modules  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 74670  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

### Physical

Housing: LCP Liquid Crystal Polymer  
Contact: Tin/lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

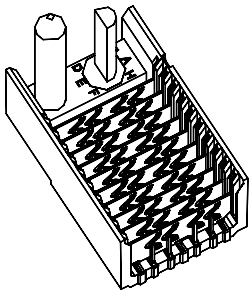
Circuits	Order No.	Pin Length	Code Key	Lead-free
40	<a href="#">74697-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">74697-1012</a>	6.25mm (.246")	code key A	
	<a href="#">74697-1013</a>	4.25mm (.167")		
	<a href="#">74697-1014</a>	5.15mm (.203")		
100	<a href="#">74697-2501</a>	4.75mm (.187")		
	<a href="#">74697-2512</a>	6.25mm (.246")	code key A	
	<a href="#">74697-2513</a>	4.25mm (.167")		
	<a href="#">74697-2514</a>	5.15mm (.203")		

Other codes are available, visit [www.molex.com](http://www.molex.com)  
Note: VHDM-HSD™ is a trademark of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM-HSD™ Board-to-Board Backplane Header

**74980**

## Vertical 6-Row Guide Pin Signal Module Pin End Version



### Features and Benefits

- 10 and 25 column versions available
- Metal guide pin integrated into the header body
- Coding Key provides 8 different codes (A through H)
- Stackable end-to-end
- Ground planes between signal columns
- Press-fit construction
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 74880  
Use With: Daughtercard modules  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 74880  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

### Physical

Housing: LCP Liquid Crystal Polymer  
Contact: Tin/lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

Circuits	Order No.	Pin Length	Code Key	Lead-free
40	<a href="#">74980-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">74980-1012</a>	6.25mm (.246")	code key A	
	<a href="#">74980-1013</a>	4.25mm (.167")		
	<a href="#">74980-1014</a>	5.15mm (.203")		
100	<a href="#">74980-2501</a>	4.75mm (.187")		
	<a href="#">74980-2512</a>	6.25mm (.246")	code key A	
	<a href="#">74980-2513</a>	4.25mm (.167")		
	<a href="#">74980-2514</a>	5.15mm (.203")		

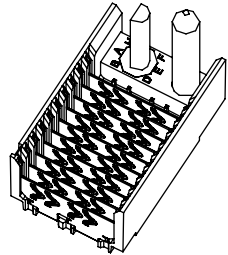
Other codes are available, visit [www.molex.com](http://www.molex.com)  
Note: VHDM-HSD™ is a trademark of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM-HSD™ Board-to-Board Backplane Header

74981

Vertical

### 6-Row Guide Pin Signal Module Shield End Version



#### Features and Benefits

- 10 and 25 column versions available
- Metal guide pin integrated into the header body
- Coding Key provides 8 different codes (A through H)
- Stackable end-to-end
- Ground planes between signal columns
- Press-fit construction
- High-temperature plastic housings are Surface Mount Compatible

#### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 74880  
Use With: Daughtercard modules  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 74880  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

#### Physical

Housing: LCP Liquid Crystal Polymer  
Contact: Tin/lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

Circuits	Order No.	Pin Length	Code Key	Lead-free
40	<a href="#">74981-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">74981-1012</a>	6.25mm (.246")	code key A	
	<a href="#">74981-1013</a>	4.25mm (.167")		
	<a href="#">74981-1014</a>	5.15mm (.203")		
100	<a href="#">74981-2501</a>	4.75mm (.187")	no code key	
	<a href="#">74981-2512</a>	6.25mm (.246")	code key A	
	<a href="#">74981-2513</a>	4.25mm (.167")		
	<a href="#">74981-2514</a>	5.15mm (.203")		

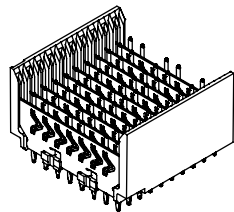
Other codes are available, visit [www.molex.com](http://www.molex.com)  
Note: VHDM-HSD™ is a trademark of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM-HSD™ Board-to-Board Backplane Header

74649

Vertical

### 8-Row Open Signal Module



#### Features and Benefits

- 10 and 25 column versions available
- Stackable end-to-end
- Ground planes between signal columns
- Press-fit construction
- High-temperature plastic housings are Surface Mount Compatible

#### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 74680 and 74686  
Use With: Daughtercard modules  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 74680  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

#### Physical

Housing: LCP Liquid Crystal Polymer  
Contact: Tin/lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

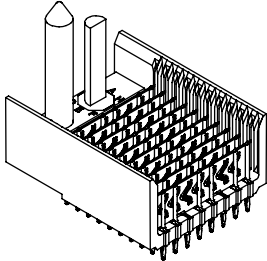
Order No.	Pin Length	Lead-free
<b>30µL" Gold</b>		
<a href="#">74649-1001</a>	4.75mm (.187")	RoHS compliant by exemption
<a href="#">74649-1002</a>	6.25mm (.246")	
<a href="#">74649-1003</a>	4.25mm (.167")	
<a href="#">74649-1004</a>	5.15mm (.203")	
<a href="#">74649-2501</a>	4.75mm (.187")	
<a href="#">74649-2502</a>	6.25mm (.246")	
<a href="#">74649-2503</a>	4.25mm (.167")	
<a href="#">74649-2504</a>	5.15mm (.203")	

Note: VHDM-HSD™ is a trademark of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM-HSD™ Board-to-Board Backplane Header

**74650**

## Vertical 8-Row Guide Pin Signal Module Pin End Version



### Features and Benefits

- 10 and 25 column versions available
- Metal guide pin integrated into the header body
- Coding Key provides 8 different codes (A through H)
- Stackable end-to-end
- Ground planes between signal columns
- Press-fit construction
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 74680  
Use With: Daughtercard modules  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 74680  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

### Physical

Housing: LCP Liquid Crystal Polymer  
Contact: Tin/lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

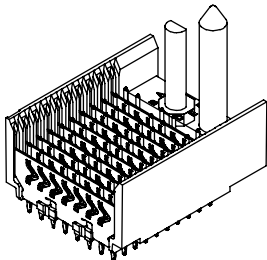
Circuits	Order No.	Pin Length	Code Key	Lead-free
40	<a href="#">74650-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">74650-1012</a>	6.25mm (.246")	code key A	
	<a href="#">74650-1013</a>	4.25mm (.167")		
	<a href="#">74650-1014</a>	5.15mm (.203")		
100	<a href="#">74650-2501</a>	4.75mm (.187")	no code key	
	<a href="#">74650-2512</a>	6.25mm (.246")	code key A	
	<a href="#">74650-2513</a>	4.25mm (.167")		
	<a href="#">74650-2514</a>	5.15mm (.203")		

Other codes are available, visit [www.molex.com](http://www.molex.com)  
Note: VHDM-HSD™ is a trademark of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM-HSD™ Board-to-Board Backplane Header

**74651**

## Vertical 8-Row Guide Pin Signal Module Shielded Version



### Features and Benefits

- 10 and 25 column versions available
- Metal guide pin integrated into the header body
- Coding Key provides 8 different codes (A through H)
- Stackable end-to-end
- Ground planes between signal columns
- Press-fit construction
- High-temperature plastic housing are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 74680  
Use With: Daughtercard modules  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 74680  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

### Physical

Housing: LCP Liquid Crystal Polymer  
Contact: Tin/lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

Circuits	Order No.	Pin Length	Code Key	Lead-free
40	<a href="#">74651-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">74651-1012</a>	6.25mm (.246")	code key A	
	<a href="#">74651-1013</a>	4.25mm (.167")		
	<a href="#">74651-1014</a>	5.15mm (.203")		
100	<a href="#">74651-2501</a>	4.75mm (.187")	no code key	
	<a href="#">74651-2512</a>	6.25mm (.246")	code key A	
	<a href="#">74651-2513</a>	4.25mm (.167")		
	<a href="#">74651-2514</a>	5.15mm (.203")		

Other codes are available, visit [www.molex.com](http://www.molex.com)  
Note: VHDM-HSD™ is a trademark of Amphenol Corporation

# 2.00 by 2.25mm (.079 by .089") Pitch VHDM® Module-to-Backplane Connector

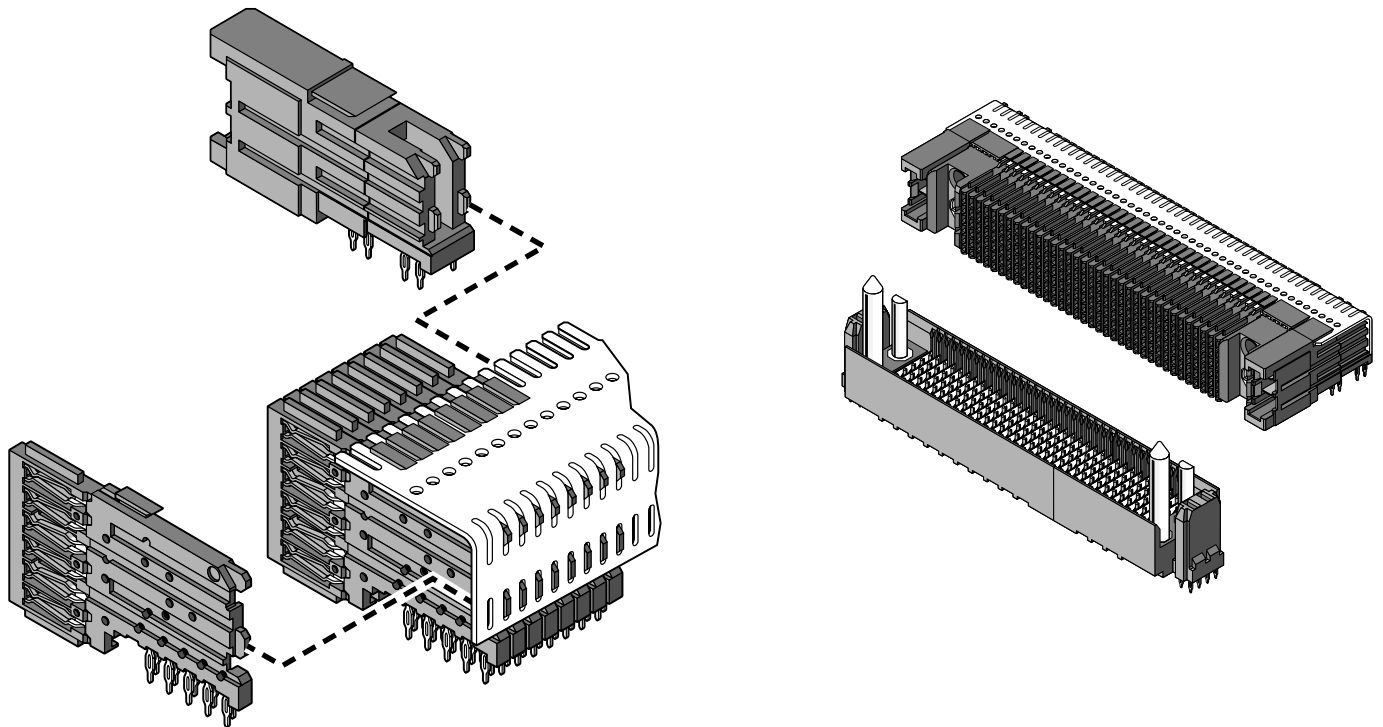
The Very High Density Metric (VHDM) connector system is designed for applications that require very high interconnect density and high-speed signal integrity. The modularity of the signal portion of the connector is in increments of 10 columns and 25 columns in either 6 rows or 8 rows. The daughtercard connector consists of a metal stiffener that combines signal wafers, power modules and guidance modules to make one continuous connector that can be ordered with one custom part number. The maximum length of a single stiffener is 300.00mm (~12.00"). The power contacts can handle 10.0A of current per blade, efficiently delivering up to 120 amps per 25.00mm (.984") of board edge with multiple mating levels for hot plug applications.

Metal guide pins and metallic coding bushings provide excellent guidance for large cards and eliminate the possibility of plugging a card into the wrong slot.

The modularity and design flexibility allows engineers to adapt quickly to changing design requirements for future system upgrades without changing systems.

## Features and Benefits

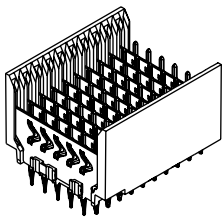
- 2.00mm (.079") by 6 row connectors provide 30 contacts per centimeter
- 2.00mm (.079") by 8 row connectors provide 40 contacts per centimeter
- Wafer construction permits very accurate location of ground planes relative to the signal contacts for improved impedance control
- Press-fit right angle receptacles allow tight spacing without solder bridging between contact tails
- Ground planes between signal columns provide:
  - Tightly controlled impedance for rise times down to 200 picoseconds
  - Very low cross talk between signals within a column
  - Extremely low cross talk between signal columns
- Mix-and-match signal, power and guidance to optimize the connector for the application
- Multiple sourced connector (available from Molex and from Amphenol Corporation) ensures intermateability and interchangeability
- Power module with 10.0A blades can carry up to 120A per 25mm (.984") for high current requirements
- Eye of the needle press-fit tails on both the backplane header and the daughtercard receptacles allow reparability and a highly reliable termination to the PCB
- 50 ohms impedance
- Low insertion force (0.40N nominal per contact) allows very high pin counts with reasonable mating forces (~58N per 25.00mm (.984") or 13 lb per inch of connector length for the 8 row)
- Dual beam contacts for redundancy
- Contacts preloaded in the housing to prevent stubbing and reduce insertion force
- Tin/Lead compliant zones very suitable for use with bare copper or Gold plated printed circuit boards (PCBs)
- Meets Bellcore GR-1217-CORE Requirements
- Strong integrated metal guide pins provide a wide capture range ( $\pm 1.67\text{mm}$  (.065")) and protect the connector from damage during mating
- Metallic stiffener provides a board straightening action to avoid damage of the mating connectors and more accurate true position of the mating halves
- Robust metal coding features assure that the board cannot be plugged into the wrong slot



Note: VHDM® is a registered trademark of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM® Board-to-Board Backplane Header

## 74057 Vertical 6 Row Open Signal Module



### Features and Benefits

- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999  
 Packaging: Tube  
 UL File No.: Pending  
 CSA File No.: Pending  
 Mates With: 74030 receptacles (composed of 74031 wafers)  
 Designed In: Millimeters

### Electrical

Voltage: 250V  
 Current: 1.0A  
 Dielectric Withstanding Voltage: 750V  
 Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
 Retention Force: 9N min. per press-fit pin  
 Mating Force: 0.40N nominal per press-fit pin  
 Unmating Force: 0.15N min. per press-fit pin  
 Signal Normal Force: 0.5N min.  
 Durability: 200 cycles

### Physical

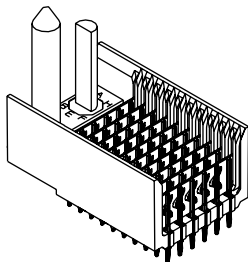
Housing: Liquid crystal polymer UL, 94V-0  
 Contact: Copper Alloy  
 Plating: Selective Gold 30µ" min. with Tin/Lead on the tails

Circuits	Order No.	Termination	Lead-free
60	<a href="#">74057-1001</a>	Press-Fit	RoHS compliant by exemption
	<a href="#">74057-1002</a>		
150	<a href="#">74057-2501</a>		
	<a href="#">74057-2502</a>		

Note: VHDM is a registered trademark of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM® Board-to-Board Backplane Header

## 74058 Vertical 6 Row Guide Pin Signal Module, Pin End Version



### Features and Benefits

- Metal guide pin provides for ±1.65mm (.065") of mating capture
- Guide pin integrated into the header body (no other hardware needed)
- Coding hex key provides 8 different codes
- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999  
 Packaging: Tube  
 UL File No.: Pending  
 CSA File No.: Pending  
 Mates With: 74030 receptacles (including 74031 wafers and 74037 guidance module)  
 Designed In: Millimeters

### Electrical

Voltage: 250V  
 Current: 1.0A  
 Dielectric Withstanding Voltage: 750V  
 Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
 Retention Force: 9N min. per press-fit pin  
 Mating Force: 0.40N nominal per press-fit pin  
 Unmating Force: 0.15N min. per press-fit pin  
 Signal Normal Force: 0.5N min.  
 Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0  
 Contact: Copper Alloy  
 Plating: Selective Gold 30µ" min. with Tin/Lead on the tails

Circuits	Order No.			Termination	Lead-free
	No Code	Code A	Code B		
60	<a href="#">74058-1001</a>	<a href="#">74058-1011</a>	<a href="#">74058-1021</a>	Press-Fit	RoHS compliant by exemption
	<a href="#">74058-1002</a>	<a href="#">74058-1012</a>	<a href="#">74058-1022</a>		
150	<a href="#">74058-2501</a>	<a href="#">74058-2511</a>	<a href="#">74058-2521</a>		
	<a href="#">74058-2502</a>	<a href="#">74058-2512</a>	<a href="#">74058-2522</a>		

Note: Other codes are available. Please contact Molex for more information.

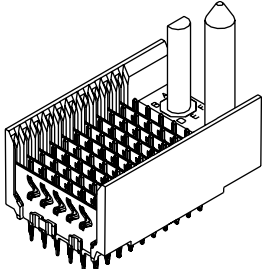
Note: VHDM is a registered trademark of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM® Board-to-Board Backplane Header

### 74059

#### Vertical

#### 6 Row Guide Pin Signal Module Shield End Version



#### Features and Benefits

- Metal guide pin provides for  $\pm 1.65\text{mm}$  (.065") of mating capture
- Guide pin integrated into the header body (No other hardware needed)
- Coding hex key provides 8 different codes
- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

#### Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: Pending

CSA File No.: Pending

Mates With: 74030 receptacles (including 74031 wafers and 74037 guidance module)

Designed In: Millimeters

#### Electrical

Voltage: 250V

Current: 1.0A

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.40N nominal per press-fit pin

Unmating Force: 0.15N min. per press-fit pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

#### Physical

Housing: Liquid crystal polymer, UL 94V-0

Contact: Copper Alloy

Plating: Selective Gold 30 $\mu$ " min. with Tin/Lead on the tails

Circuits	Order No.			Termination	Lead-free
	No Code	Code A	Code B		
60	<a href="#">74059-1001</a>	<a href="#">74059-1011</a>	<a href="#">74059-1021</a>	Press-Fit	RoHS compliant by exemption
	<a href="#">74059-1002</a>	<a href="#">74059-1012</a>	<a href="#">74059-1022</a>		
150	<a href="#">74059-2501</a>	<a href="#">74059-2511</a>	<a href="#">74059-2521</a>		
	<a href="#">74059-2502</a>	<a href="#">74059-2512</a>	<a href="#">74059-2522</a>		

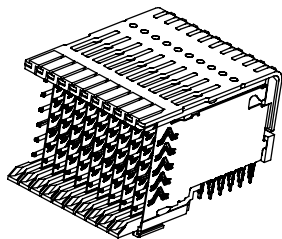
Note: Other codes are available. Please contact Molex for more information.

Note: VHDM is a registered trademark of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM® Board-to-Board Custom Connector

### 74600

#### 6 Row, Right Angle, Male



#### Features and Benefits

- Designed to meet the needs of coplanar board-to-board applications
- Any multiple of signal, power and guidance modules can be arranged on a length of stiffener
- Mates to 6 row VHDM daughtercards
- Maximum length is 300.00mm (11.811")

#### Reference Information

Product Specification: PS-74031-999

Packaging: Tube

UL File No.: E29179

CSA File No.: 152514

Mates With: 74030

Use With: Daughtercards

Designed In: Millimeters

#### Electrical

Voltage: 250V

Current: 1.0A

Contact Resistance: 9.2 milliohms max.

Dielectric Withstanding Voltage: 750V

Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin

Retention Force: 9N min. per press-fit pin

Mating Force: 0.40N nominal per pin

Unmating Force: 0.15N min. per press-fit pin

Signal Normal Force: 0.5N min.

Durability: 200 cycles

#### Physical

Housing: Liquid Crystal Polymer, UL 94V-0

Contact: Copper Alloy

Plating: Contact Area—Copper Alloy

Tail—Tin/Lead

PCB Thickness: 1.80mm (.071") min.

RoHS compliant by exemption

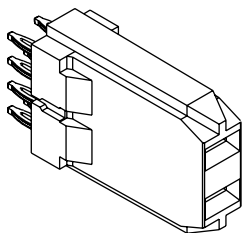
Note: VHDM is a registered trademark of Amphenol Corporation



# 2.00mm (.079") Pitch VHDM® Board-to-Board Backplane Power Module

74029

Vertical, 6 Row  
2 Circuit Power Receptacle



### Features and Benefits

- 2 contacts per module
- 10.0A per contact
- Receptacle on backplane prevents touching a high current contact
- Module only 6.00mm (.236") wide allows 4 modules per 25.00mm (.984") for 80.0A per 25.00mm (.984")
- Press-fit for ease of installation and repair

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: Pending  
CSA File No.: Pending  
Mates With: 74026 power module as part of a 74030 daughtercard assembly  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 10.0A  
Contact Resistance: 3 milliohms max.  
Dielectric Withstanding Voltage: 1500V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 22N min. per press-fit pin  
Mating Force: 4.0N max. per pin  
Power Normal Force: 1.0N min.  
Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Selective Gold 30µ" min. with Tin/Lead on the tails

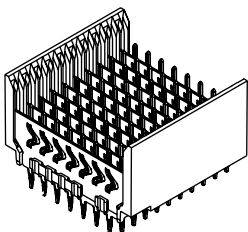
Module	Order No.	Termination	Finish	Lead-free
2 Circuit Power Module	<a href="#">74029-6000</a>	Press-Fit	Gold	RoHS compliant by exemption

Note: VHDM is a registered trademark of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM® Board-to-Board Backplane Header

74060

Vertical  
8 Row Open Signal Module



### Features and Benefits

- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: Pending  
CSA File No.: Pending  
Mates With: 74040 receptacles (composed of 74041 wafers)  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9N min. per shield pin, 22N per signal pin  
Mating Force: 0.40N nominal per press-fit pin  
Unmating Force: 0.15N min. per press-fit pin  
Signal Normal Force: 0.5N min.  
Durability: 200 cycles

### Physical

Housing: Liquid crystal polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Selective Gold 30µ" min. with Tin/Lead on the tails

Circuits	Order No.	Termination	Lead-free
80	<a href="#">74060-1001</a>	Press-Fit	RoHS compliant by exemption
	<a href="#">74060-1002</a>		
200	<a href="#">74060-2501</a>		
	<a href="#">74060-2502</a>		

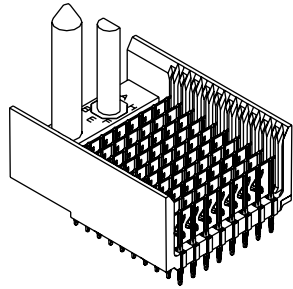
Note: VHDM is a registered trademark of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM® Board-to-Board Backplane Header

### 74061

#### Vertical

#### 8 Row Guide Pin Signal Module, Pin End Version



#### Features and Benefits

- Metal guide pin provides for  $\pm 1.67\text{mm}$  (.065") of mating capture
- Guide pin integrated into the header body (no other hardware needed)
- Coding hex key provides 8 different codes
- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

#### Reference Information

Product Specification: PS-74031-999  
 Packaging: Tube  
 UL File No.: Pending  
 CSA File No.: Pending  
 Mates With: 74040 receptacles (including 74041 wafers and 74037 guidance module)  
 Designed In: Millimeters

#### Electrical

Voltage: 250V  
 Current: 1.0A  
 Dielectric Withstanding Voltage: 750V  
 Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
 Retention Force: 9N min. per press-fit pin  
 Mating Force: 0.40N nominal per press-fit pin  
 Unmating Force: 0.15N min. per press-fit pin  
 Signal Normal Force: 0.5N min.  
 Durability: 200 cycles

#### Physical

Housing: Liquid crystal polymer, UL 94V-0  
 Contact: Copper Alloy  
 Plating: Selective Gold  $30\mu\text{m}$  min. with Tin/Lead on the tails

Circuits	Order No.			Termination	Lead-free
	No Code	Code A	Code B		
80	<a href="#">74061-1001</a>	<a href="#">74061-1011</a>	<a href="#">74061-1021</a>	Press-Fit	RoHS compliant by exemption
	<a href="#">74061-1002</a>	<a href="#">74061-1012</a>	<a href="#">74061-1022</a>		
200	<a href="#">74061-2501</a>	<a href="#">74061-2511</a>	<a href="#">74061-2521</a>		
	<a href="#">74061-2502</a>	<a href="#">74061-2512</a>	<a href="#">74061-2522</a>		

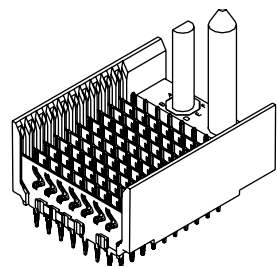
Note: Other codes are available. Please contact Molex for more information.  
 Note: VHDM is a registered trademark of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM® Board-to-Board Backplane Header

### 74062

#### Vertical

#### 8 Row Guide Pin Signal Module, Shield End Version



#### Features and Benefits

- Metal guide pin provides for  $\pm 1.67\text{mm}$  (.065") of mating capture
- Guide pin integrated into the header body (no other hardware needed)
- Coding hex key provides 8 different codes
- 10 column and 25 column versions available
- Stackable end to end for high density
- Ground planes between signal columns control impedance and reduce cross talk
- Press-fit construction eliminates solder defects and allows use of thicker PCBs without worrying about solder tail length
- High-temperature plastic housings are Surface Mount Compatible

#### Reference Information

Product Specification: PS-74031-999  
 Packaging: Tube  
 UL File No.: Pending  
 CSA File No.: Pending  
 Mates With: 74040 receptacles (including 74041 wafers and 74037 guidance module)  
 Designed In: Millimeters

#### Electrical

Voltage: 250V  
 Current: 1.0A  
 Dielectric Withstanding Voltage: 750V  
 Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
 Retention Force: 9N min. per press-fit pin  
 Mating Force: 0.40N nominal per press-fit pin  
 Unmating Force: 0.15N min. per press-fit pin  
 Signal Normal Force: 0.5N min.  
 Durability: 200 cycles

#### Physical

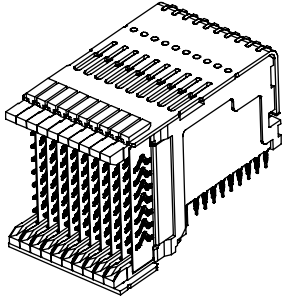
Housing: Liquid crystal polymer UL 94V-0  
 Contact: Copper Alloy  
 Plating: Selective Gold  $30\mu\text{m}$  min. with Tin/Lead on the tails

Circuits	Order No.			Termination	Lead-free
	No Code	Code A	Code B		
80	<a href="#">74062-1001</a>	<a href="#">74062-1011</a>	<a href="#">74062-1021</a>	Press-Fit	RoHS compliant by exemption
	<a href="#">74062-1002</a>	<a href="#">74062-1012</a>	<a href="#">74062-1022</a>		
200	<a href="#">74062-2501</a>	<a href="#">74062-2511</a>	<a href="#">74062-2521</a>		
	<a href="#">74062-2502</a>	<a href="#">74062-2512</a>	<a href="#">74062-2522</a>		

Note: Other codes are available. Please contact Molex for more information.  
 Note: VHDM is a registered trademark of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM® Board-to-Board Custom Connector

**75165**  
**8 Row, Right Angle, Male**



RoHS compliant by exemption  
Note: VHDM® is a registered trademark of Amphenol Corporation

### Features and Benefits

- Designed to meet the needs of coplanar board-to-board applications
- Any multiple of signals, power and guidance modules can be arranged on a length of stiffener
- Mates to 8 row VHDM daughtercards
- Maximum length is 300.00mm (11.811")

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: 152514  
Mates With: 74040  
Use With: Daughtercards  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 9.2 milliohms max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

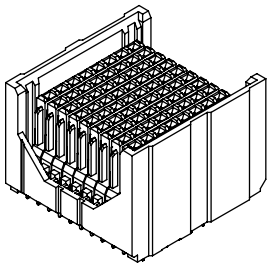
Insertion Force: 45N max. per press-fit pin  
Retention Force: 9N min. per press-fit pin  
Mating Force: 0.40N nominal per pin  
Unmating Force: 0.15N min. per press-fit pin  
Signal Normal Force: 0.5N min.  
Durability: 200 cycles

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0  
Contact: Copper Alloy  
Plating: Contact Area—Copper Alloy  
Tail—Tin/Lead  
PCB Thickness: 1.80mm (.071") min.

# 2.00mm (.079") Pitch VHDM® Board-to-Board Stacking Connector

**75117**  
**8 Row**



Note: VHDM® is a registered trademark of Amphenol Corporation

### Features and Benefits

- Mezzanine-style connector offering 100 real circuits per square inch
- Mates with standard VHDM 8-row backplane modules
- Available in circuit sizes up to 400 pins with a stack height of 18.00mm (.709")

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 74060  
Use With: Backplane modules  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 7 milliohms max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Contact Insertion Force: 45N max. per press fit pin  
Retention force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

### Physical

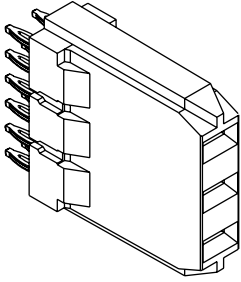
Housing: LCP Liquid Crystal Polymer  
Contact: Tin/lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

Circuits	Order No.		Lead-free
	Plating		
	0.76µm (30µ") Gold	1.3µm (50µ") Gold	
200	<a href="#">75117-0218</a>	<a href="#">75117-1218</a>	RoHS compliant by exemption
400	<a href="#">75117-0018</a>	<a href="#">75117-1018</a>	
80	<a href="#">75117-0118</a>	<a href="#">75117-1118</a>	

# 2.00mm (.079") Pitch VHDM® Board-to-Board Backplane Power Module

## 74029

### Vertical, 8 Row 3 Circuit Power Receptacle



#### Features and Benefits

- 3 contacts per module
- 10.0A per contact
- Receptacle on backplane prevents touching a high current contact
- Module only 6.00mm (.23") wide allows 4 modules per 25.00mm (.984") for 120A per 25.00mm (.984")
- Press-fit for ease of installation and repair

#### Reference Information

Product Specification: PS-74031-999  
 Packaging: Tube  
 UL File No.: Pending  
 CSA File No.: Pending  
 Mates With: 74026 power module as part of a 74040 daughtercard assembly  
 Designed In: Millimeters

#### Electrical

Voltage: 250V  
 Current: 10.0A  
 Contact Resistance: 3 milliohms max.  
 Dielectric Withstanding Voltage: 1500V  
 Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
 Retention Force: 22N min. per press-fit pin  
 Mating Force: 4.0N max. per pin  
 Power Normal Force: 1.0N min.  
 Durability: 200 cycles

#### Physical

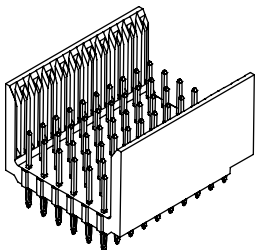
Housing: Liquid crystal polymer, UL 94V-0  
 Contact: Copper Alloy  
 Plating: Selective Gold 30µ" min. with Tin/Lead on the tails

Module	Order No.	Termination	Finish	Lead-free
3 Circuit Power Module	<a href="#">74029-8000</a>	Press-Fit	Gold	RoHS compliant by exemption

Note: VHDM is a registered trademark of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM® Lite Board-to-Board Backplane Header

## 75194 Vertical 6 Row, Open Signal Module



### Features and Benefits

- Open-pin field version of VHDM® system
- Electrical performance up to 1 Gbps
- 10 and 25 columns
- Press-fit construction
- High-temperature plastic housing is Surface Mount Compatible
- Available in the following pin lengths: 4.25, 4.75, 5.15 and 6.25mm (.071, .187, .203 and .246")

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 75189  
Use With: Daughtercard modules  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 75189  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

### Physical

Housing: LCP Liquid Crystal Polymer, UL 94V-0  
Contact: Tin/Lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") minimum

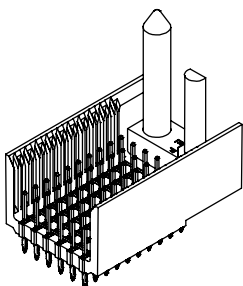
Circuits	Order No.	Pin Length	Plating	Lead-free
60	<a href="#">75194-1001</a>	4.75mm (.187")	0.76µm (30µ") Gold	RoHS compliant by exemption
	<a href="#">75194-1002</a>	6.25mm (.246")		
	<a href="#">75194-1003</a>	4.25mm (.071")		
	<a href="#">75194-1004</a>	5.15mm (.203")		

Circuits	Order No.	Pin Length	Plating	Lead-free
150	<a href="#">75194-2501</a>	4.75mm (.187")	0.76µm (30µ") Gold	RoHS compliant by exemption
	<a href="#">75194-2502</a>	6.25mm (.246")		
	<a href="#">75194-2503</a>	4.25mm (.071")		
	<a href="#">75194-2504</a>	5.15mm (.203")		

Note: VHDM and VHDM Lite are registered trademarks of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM® Lite Board-to-Board Backplane Header

## 75195 Vertical, 6 Row Guide Pin Signal Module Pin End Version



### Features and Benefits

- Open-pin field version of VHDM® system
- Electrical performance up to 1 Gbps
- Metal guide pin integrated into the header body
- Coding key provides 8 different codes (A through H)
- 10 and 25 columns
- Press-fit construction
- High-temperature plastic housing is Surface Mount Compatible
- Available in the following pin lengths: 4.25, 4.75, 5.15 and 6.25mm (.071, .187, .203 and .246")

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 75189  
Use With: Daughtercard modules  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 75189  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

### Physical

Housing: LCP Liquid Crystal Polymer, UL 94V-0  
Contact: Tin/Lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

Circuits	Order No.	Pin Length	Code Key	Lead-free
60	<a href="#">75195-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">75195-1012</a>	6.25mm (.246")	code key A	
	<a href="#">75195-1013</a>	4.25mm (.071")		
	<a href="#">75195-1014</a>	5.15mm (.203")		

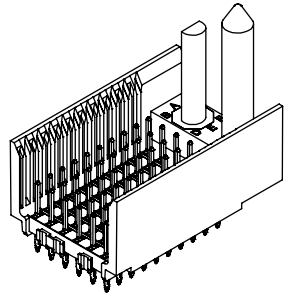
Circuits	Order No.	Pin Length	Code Key	Lead-free
150	<a href="#">75195-2502</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">75195-2512</a>	6.25mm (.246")	code key A	
	<a href="#">75195-2513</a>	4.25mm (.071")		
	<a href="#">75195-2514</a>	5.15mm (.203")		

Note: VHDM and VHDM Lite are registered trademarks of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM® Lite Board-to-Board Backplane Header

### 75196

#### Vertical, 6 Row Guide Pin Signal Module Shield End Version



#### Features and Benefits

- Open-pin field version of VHDM® system
- Electrical performance up to 1 Gbps
- Metal guide pin integrated into the header body
- Coding key provides 8 different codes (A through H)
- 10 and 25 columns
- Press-fit construction
- High-temperature plastic housing is Surface Mount Compatible
- Available in the following pin lengths: 4.25, 4.75, 5.15 and 6.25mm (.071, .187, .203 and .246")

#### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 75189  
Use With: Daughtercard modules  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 75189  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

#### Physical

Housing: LCP Liquid Crystal Polymer, UL 94V-0  
Contact: Tin/Lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

Circuits	Order No.	Pin Length	Code Key	Lead-free
60	<a href="#">75196-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">75196-1012</a>	6.25mm (.246")	code key A	
	<a href="#">75196-1013</a>	4.25mm (.071")		
	<a href="#">75196-1014</a>	5.15mm (.203")		

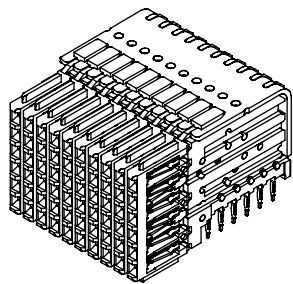
Circuits	Order No.	Pin Length	Code Key	Lead-free
150	<a href="#">75196-2502</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">75196-2512</a>	6.25mm (.246")	code key A	
	<a href="#">75196-2513</a>	4.25mm (.071")		
	<a href="#">75196-2514</a>	5.15mm (.203")		

Note: VHDM and VHDM Lite are registered trademarks of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM® Lite Board-to-Board Custom Daughtercard Receptacle

### 74030

#### Right Angle 6 Row, Signal Module



#### Features and Benefits

- Wafers aggregated into connectors receive a custom order number, 74030-XXXX
- Open-pin field version of VHDM® system
- Electrical performance up to 1 Gbps
- VHDM®, VHDM-HSD™ and VHDM Lite wafers can be used on the same stiffener
- 10 and 25 columns
- Press-fit construction
- High-temperature plastic housing is Surface Mount Compatible

#### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 75194, 75195 and 75196  
Use With: Backplane modules  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 10.8 milliohms max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9N min. per press-fit pin  
Mating Force: 0.40N nominal per pin  
Unmating Force: 0.15N min. per press-fit pin  
Signal Normal Force: 0.5N min.  
Durability: 200 cycles

#### Physical

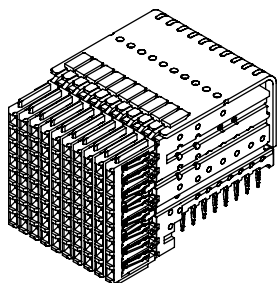
Housing: LCP Liquid Crystal Polymer, UL 94V-0  
Contact: Tin/Lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

RoHS compliant by exemption

Note: VHDM, VHDM-HSD and VHDM Lite are trademarks or registered trademarks of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM® Lite Board-to-Board Custom Daughtercard Receptacle

**75191**  
Right Angle  
8 Row, Signal Module



### Features and Benefits

- Wafers aggregated into connectors receive a custom order number, 75194-XXXX
- Open-pin field version of VHDM® system
- Electrical performance up to 1 Gbps
- VHDM®, VHDM-HSD™ and VHDM Lite wafers can be used on the same stiffener
- 10 and 25 columns
- Press-fit construction
- High-temperature plastic housing is Surface Mount Compatible

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 75197, 75195 and 75199  
Use With: Backplane modules  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: 14.0 milliohms max.  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9N min. per press-fit pin  
Mating Force: 0.40N nominal per pin  
Unmating Force: 0.15N min. per press-fit pin  
Signal Normal Force: 0.5N min.  
Durability: 200 cycles

### Physical

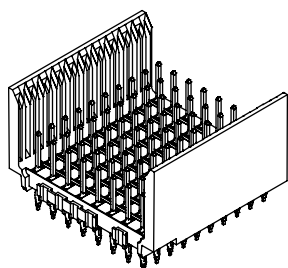
Housing: LCP Liquid Crystal Polymer, UL 94V-0  
Contact: Tin/Lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

RoHS compliant by exemption

Note: VHDM, VHDM-HSD and VHDM Lite-Series are trademarks or registered trademarks of Amphenol Corporation

# 2.00mm (.079") Pitch VHDM® Lite Board-to-Board Backplane Header

**75197**  
Vertical, 8 Row  
Open Signal Module



### Features and Benefits

- Open-pin field version of VHDM® system
- Electrical performance up to 1 Gbps
- 10 and 25 columns
- Press-fit construction
- High-temperature plastic housing is Surface Mount Compatible
- Available in the following pin lengths: 4.25, 4.75, 5.15 and 6.25mm (.071, .187, .203 and .246")

### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 75191  
Use With: Daughtercard modules  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 75194  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

### Physical

Housing: LCP Liquid Crystal Polymer, UL 94V-0  
Contact: Tin/Lead  
Mating Area: 0.38µm (30µ") Gold  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

Circuits	Order No.	Pin Length	Lead-free
80	<a href="#">75197-1001</a>	4.75mm (.187")	RoHS compliant by exemption
	<a href="#">75197-1002</a>	6.25mm (.246")	
	<a href="#">75197-1003</a>	4.25mm (.071")	
	<a href="#">75197-1004</a>	5.15mm (.203")	

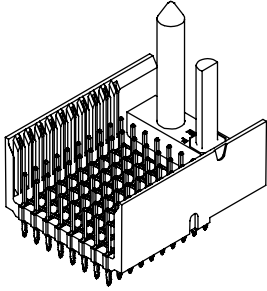
Circuits	Order No.	Pin Length	Lead-free
200	<a href="#">75197-2501</a>	4.75mm (.187")	RoHS compliant by exemption
	<a href="#">75197-2502</a>	6.25mm (.246")	
	<a href="#">75197-2503</a>	4.25mm (.071")	
	<a href="#">75197-2504</a>	5.15mm (.203")	

Note: VHDM and VHDM Lite are registered trademarks of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM® Lite Board-to-Board Backplane Header

### 75198

Vertical, 8 Row  
Guide Pin Signal Module  
Pin End Version



#### Features and Benefits

- Open-pin field version of VHDM® system
- Electrical performance up to 1 Gbps
- Metal guide pin integrated into the header body
- Coding key provides 8 different codes (A through H)
- 10 and 25 columns
- Press-fit construction
- High-temperature plastic housing is Surface Mount Compatible
- Available in the following pin lengths: 4.25, 4.75, 5.15 and 6.25mm (.071, .187, .203 and .246")

#### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 75191  
Use With: Daughtercard modules  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 75194  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

#### Physical

Housing: LCP Liquid Crystal Polymer, UL 94V-0  
Contact: Tin/Lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") min.

Circuits	Order No.	Pin Length	Code Key	Lead-free
80	<a href="#">75198-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">75198-1012</a>	6.25mm (.246")	code key A	
	<a href="#">75198-1013</a>	4.25mm (.071")		
	<a href="#">75198-1014</a>	5.15mm (.203")		

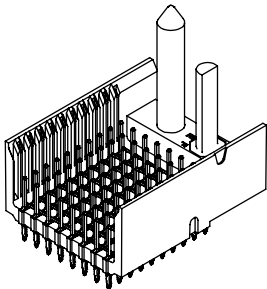
Circuits	Order No.	Pin Length	Code Key	Lead-free
200	<a href="#">75198-2502</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">75198-2512</a>	6.25mm (.246")	code key A	
	<a href="#">75198-2513</a>	4.25mm (.071")		
	<a href="#">75198-2514</a>	5.15mm (.203")		

Note: VHDM and VHDM Lite are registered trademarks of Amphenol Corporation

## 2.00mm (.079") Pitch VHDM® Lite Board-to-Board Backplane Header

### 75199

Vertical, 8 Row  
Guide Pin Signal Module  
Shield End Version



#### Features and Benefits

- Open-pin field version of VHDM® system
- Electrical performance up to 1 Gbps
- Metal guide pin integrated into the header body
- Coding key provides 8 different codes (A through H)
- 10 and 25 columns
- Press-fit construction
- High-temperature plastic housing is Surface Mount Compatible
- Available in the following pin lengths: 4.25, 4.75, 5.15 and 6.25mm (.071, .187, .203 and .246")

#### Reference Information

Product Specification: PS-74031-999  
Packaging: Tube  
UL File No.: E29179  
CSA File No.: LR19980  
Mates With: 75191  
Use With: Daughtercard modules  
Designed In: Millimeters

#### Electrical

Voltage: 250V  
Current: 1.0A  
Contact Resistance: See 75194  
Dielectric Withstanding Voltage: 750V  
Insulation Resistance: 10,000 Megohms min.

#### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9.00N per press-fit pin  
Insertion Force to PCB: 45.00N per press-fit pin  
Mating Force: .040N per press-fit pin  
Unmating Force: 1.50N per press-fit pin  
Normal Force: 0.50N per press-fit pin  
Durability: 200 cycles

#### Physical

Housing: LCP Liquid Crystal Polymer, UL 94V-0  
Contact: Tin/Lead  
Plating: Contact Area—Copper Alloy  
PCB Thickness: 1.80mm (.071") minimum

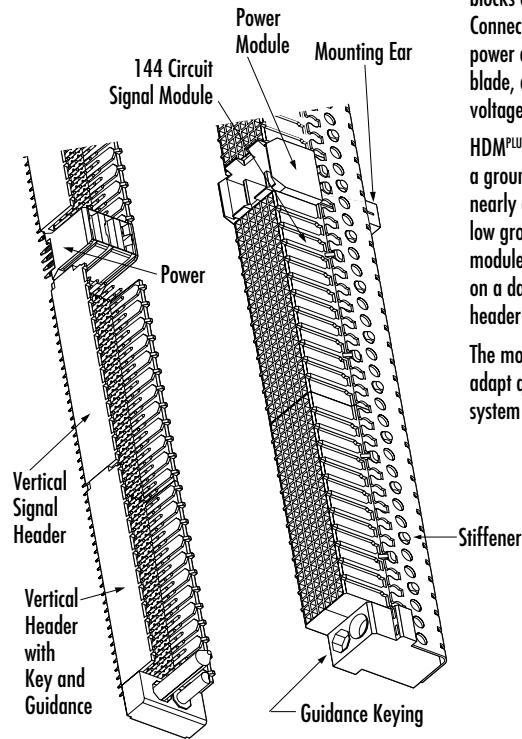
Circuits	Order No.	Pin Length	Code Key	Lead-free
80	<a href="#">75199-1001</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">75199-1012</a>	6.25mm (.246")	code key A	
	<a href="#">75199-1013</a>	4.25mm (.071")		
	<a href="#">75199-1014</a>	5.15mm (.203")		

Circuits	Order No.	Pin Length	Code Key	Lead-free
200	<a href="#">75199-2502</a>	4.75mm (.187")	no code key	RoHS compliant by exemption
	<a href="#">75199-2512</a>	6.25mm (.246")	code key A	
	<a href="#">75199-2513</a>	4.25mm (.071")		
	<a href="#">75199-2514</a>	5.15mm (.203")		

Note: VHDM and VHDM Lite are registered trademarks of Amphenol Corporation



# 2.00mm (.079") Pitch HDM<sup>®</sup> and HDM<sup>PLUS</sup><sup>®</sup> Module-to-Backplane Connector



The High Density Metric (HDM) connector system is designed for applications that require high interconnect density and high-speed signal integrity. Signal modules of 72 and 144 contacts are available. Daughtercard modules are combined on a metal stiffener so that they are handled as one connector. Special modules are available for power, guidance, mounting and coding functions. These building blocks can be combined to create very large connectors. Connectors of above 1000 circuits are not unusual. The power contacts can handle 15.0A of current per power blade, efficiently delivering hundreds of watts in multiple voltage levels, even in hot plug applications.

HDM<sup>PLUS</sup> modules have internal ground contacts that provide a ground reference and isolate contacts from each other nearly all the way through the connector, allowing for either low ground ratios, or subnanosecond rise times. Unshielded modules and shielded modules can be combined as needed on a daughtercard, and will all mate with the same simple header on the backplane.

The modularity and design flexibility allow engineers to adapt quickly to changing design requirements or future system upgrades without changing systems.

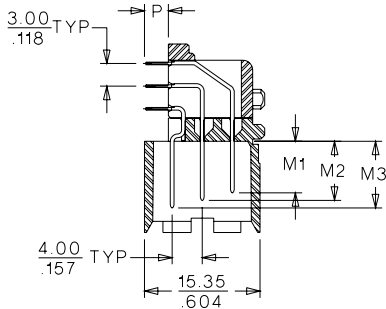
## Features and Benefits

- 2mm 6-row connector provides 30 contacts per centimeter
- Designed for high-density/high-speed applications—internal shielding allows subnanosecond rise times with low crosstalk (see HDM<sup>PLUS</sup>)
- Shielded and unshielded modules mate with the same backplane header (low cost on backplane)
- Mix and match signal, power, guidance, shielded modules to optimize the connector to the application
- Multiple sourced connector (available from Molex and Teradyne) assures intermateability and interchangeability
- 45.0A power modules
- Tail lengths available in 0.5mm increments to optimize to PCB thickness
- 50 ohm impedance
- Metric connector in the same form factor as Futurebus
- Very low insertion force (0.35N per contact) allows very high pin counts with reasonable mating forces (~5.5 lb per inch of connector length)
- Both press-fit and solder tail versions available for backplane and daughtercards
- Meets Bellcore requirements

## HDM<sup>®</sup> Design Guide

### Power Strategy

The strategies outlined here will help determine exactly what you need for any HDM<sup>®</sup> or HDM<sup>PLUS</sup><sup>®</sup> application.

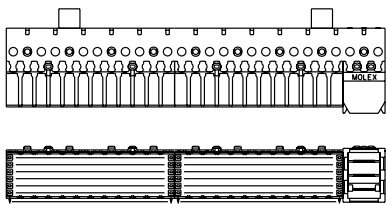


### Features and Specifications

- 15 Amperes per Power Blade
- Sequenced Mating for Hot Plug
- 3 levels available
- LMS preferred and is the most popular
- L = First mate, power return
- M = Second mate, precharge capacitors
- S = Third mate, primary voltage level

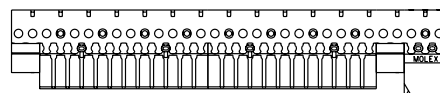
- Use the following formula to determine the number of power modules needed for current carrying:  
Capacity example—200 Watts at 5V  
Volts x Amps = Watts  
 $5V \times 40.0A = 200 \text{ Watts}$   
 $40.0A/15.0A = 2.66$   
Therefore, 3 power blades are recommended (plus 3 blades for power return)
- Group power modules together or disperse depending on PCB layout

### Hold Down Strategy

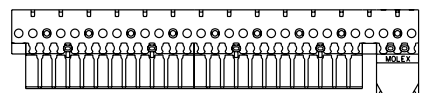


Mounting ears behind stiffener give maximum interconnect density

Note: HDM<sup>®</sup> and HDM<sup>PLUS</sup><sup>®</sup> are registered trademarks of Amphenol Corporation



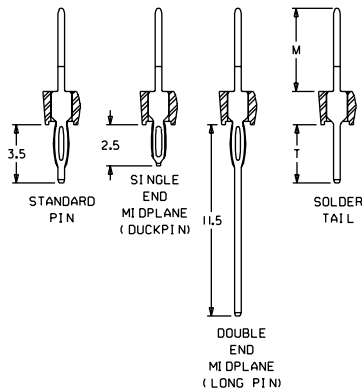
Guide blocks accept screws



Short end caps accept screws for maximum available PCB real estate

# HDM® Design Guide

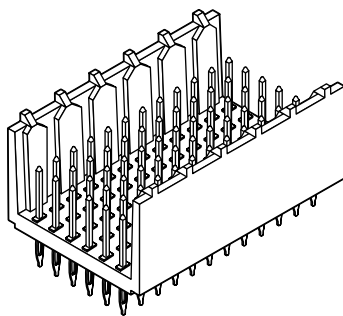
## Available Pin Types



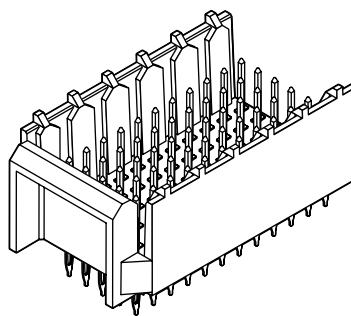
### Features and Specifications

- Mating end available in 3 lengths: 5, 5.5 and 6mm
- Solder tails available from 2.0 to 3.5mm in 0.5 increments
- Duckpins permit header insertion into both the front and rear of backplane in the same holes

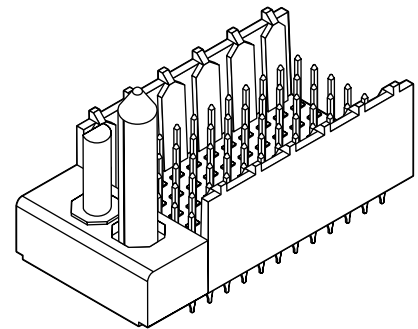
## Header Configuration Strategy



Open End Option



Closed End Option

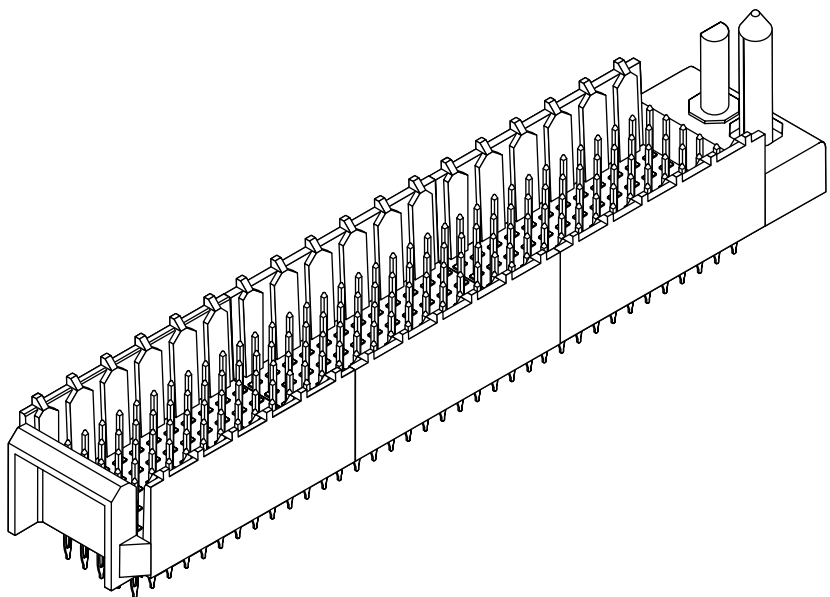


Guide Pin Option

Header Option	Series No.	
	Standard Press-Fit 3.5mm Tail	Solder Tail 2 to 3.5mm Tail
Open	73642	73942
Endwall	73643	73943
Guide Pin	73644	73944

Place together to create one assembly, keeping in mind the following features and recommendations:

- The endwall and standard press-fit options are recommended wherever possible
- The endwall 3 wall box is stronger than the 2 wall box and protects pins
- Use Duckpin press-fit for midplanes thicker than 5mm to press in headers from both sides
- Use solder tail version for motherboards or backplanes thinner than 2.13mm (.084")



# HDM® Design Guide

## Midplane Design Strategy

### Features and Specifications

#### For backplanes 3.6 to 4.4mm thick

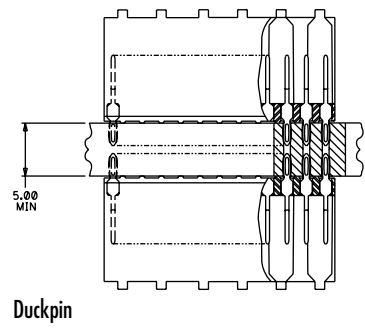
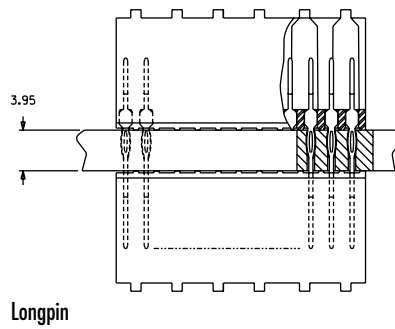
- Long pins from the front and plastic shrouds on the rear offer a good solution
- Rear shrouds can be open, endwall, guide pin or cable connector shrouds

#### For backplanes thicker than 5mm (.200")

- Duckpin headers can be pressed in from the front and rear (sharing holes)

#### For backplanes thinner than 3.6mm (.140")

- Contact Molex for more information

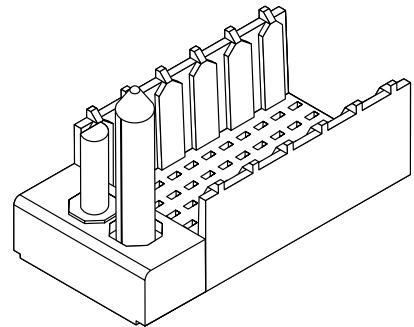
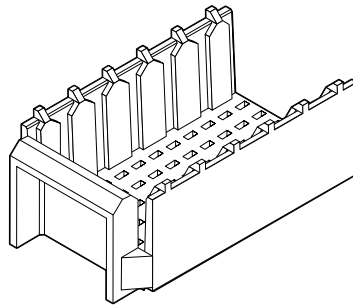
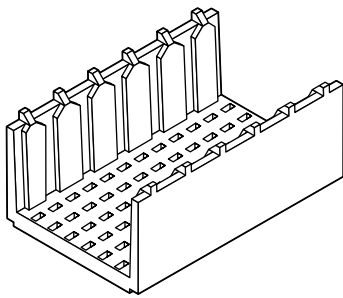


## Rear Shrouds

### Features and Specifications

#### Shrouds press on to pins

- Protruding from backplane to enable rear plugging of boards or cables



#### Open End Option

72 Position—[73809-0000](#)  
144 Position—[73810-1000](#)

#### Closed End Option

72 Position—[73809-0100](#)  
144 Position—[73810-1100](#)

#### Guide Pin Option

72 Position—[73809-02XX](#)  
144 Position—[73810-12XX](#)

## HDM Stackers

### Features and Specifications

- Vertical female and headers
- Used for:
  - Parallel backplanes
  - Mezzanine Modules
  - Processor modules for large computers
  - Bridge boards joining adjacent backplanes
- Headers in open, end-wall and guide pin versions facilitate "blind-mating"
- Receptacles available in both solder tail and press-fit termination

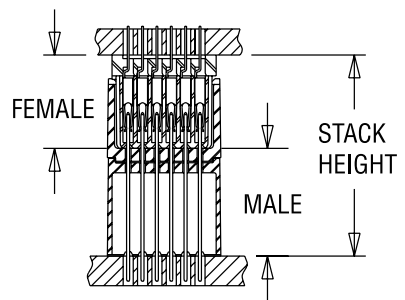
See tables to determine stack height

#### Header

Stack Height	Header	Receptacle
28	15	13
23	10	13

#### Possible header/receptacle combinations to reach specific stack heights

Header	Receptacle				
	13mm	14mm	15mm	16mm	17mm
15mm	28	29	30	31	32
10mm	23	24	25	26	27
6mm	19	20	21	22	23
2mm	15	16	17	18	19

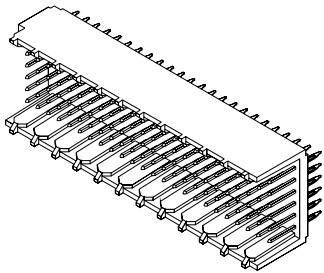


Note: HDM® and HDMPLUS® are registered trademarks of Amphenol Corporation

# 2.00mm (.079") Pitch HDM® Board-to-Board Backplane Header

73642/73942

Vertical  
Open End Option



### Features and Benefits

- High-density 2mm, 6-row connector provides 30 contacts per linear centimeter (over 75 per inch)
- Designed for high-density/high-speed applications
- HDM header modules can mate interchangeably with either shielded (HDM) or unshielded (HDM<sup>PLUS</sup>) receptacle modules
- Modular components for design flexibility; 72 position (6 row by 12) and 144 position (6 row by 24) modules
- Eye of the needle press-fit for high reliability
- 3 mating pin lengths available for custom configurations
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999  
Packaging: Tube  
UL File No.: E29179  
Mates With: 73632 and 73780  
Designed In: Millimeters

### Electrical

Current: 1.0A  
Contact Resistance:

Row	A	B	C	D	E	F
milliohms max.	13	18	20	25	30	32

Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 1000 Megohms min.

### Mechanical

Insertion Force: 135N max. per press-fit pin  
Retention Force: 22.5N min. per press-fit pin  
Mating Force: 0.35N typical per contact  
Unmating Force: 0.15N min.  
Signal Normal Force: 0.75N nom./0.60N min.  
Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer  
Contact: Phosphor Bronze  
Plating: 30µ" Gold

Circuits	Order No.	Termination	Dimension		Lead-free
			Mating Pin Length	PC Tail Length	
72	<a href="#">73942-0000</a>	Solder Tail	5.00 (.197)	2.00 (.079)	Yes
	<a href="#">73942-0200</a>		6.00 (.236)		
	<a href="#">73942-2000</a>		5.00 (.197)		
	<a href="#">73942-2200</a>		6.00 (.236)	2.50 (.098)	
	<a href="#">73942-4000</a>		5.00 (.197)		
	<a href="#">73942-4200</a>		6.00 (.236)		
	<a href="#">73942-6000</a>		5.00 (.197)	3.00 (.118)	
	<a href="#">73942-6200</a>		6.00 (.236)		
	<a href="#">73642-0000</a>		5.00 (.197)		
	<a href="#">73642-0200</a>	Standard Press-Fit	6.00 (.236)	N/A	No
	<a href="#">73642-2000</a>	Tin/Lead Press-Fit	5.00 (.197)		
	<a href="#">73642-2200</a>		6.00 (.236)		

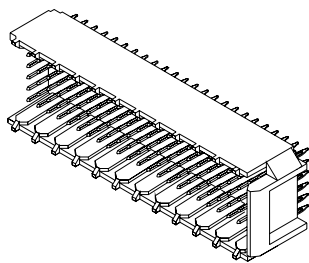
Circuits	Order No.	Termination	Dimension		Lead-free
			Mating Pin Length	PC Tail Length	
144	<a href="#">73942-1000</a>	Solder Tail	5.00 (.197)	2.00 (.079)	Yes
	<a href="#">73942-1200</a>		6.00 (.236)		
	<a href="#">73942-3000</a>		5.00 (.197)		
	<a href="#">73942-3200</a>		6.00 (.236)	2.50 (.098)	
	<a href="#">73942-5000</a>		5.00 (.197)		
	<a href="#">73942-5200</a>		6.00 (.236)		
	<a href="#">73942-7000</a>		5.00 (.197)	3.00 (.118)	
	<a href="#">73942-7200</a>		6.00 (.236)		
	<a href="#">73642-1000</a>		5.00 (.197)		
	<a href="#">73642-1200</a>	Standard Press-Fit	6.00 (.236)	N/A	No
	<a href="#">73642-3000</a>	Tin/Lead Press-Fit	5.00 (.197)		
	<a href="#">73642-3200</a>		6.00 (.236)		

Note: HDM® and HDM<sup>PLUS</sup>® are registered trademarks of Amphenol Corporation

# 2.00mm (.079") Pitch HDM® Board-to-Board Backplane Header

73943

Vertical  
Closed End Option



### Features and Benefits

- Similar features as the 73642 header
- Eye of the needle press-fit for high reliability
- End wall improves mating guidance and increases strength for the end of connectors
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999  
Packaging: Tube  
UL File No.: E29179  
Mates With: 73632 and 73780  
Designed In: Millimeters

### Electrical

Current: 1.0A  
Contact Resistance:

Row	A	B	C	D	E	F
milliohms max.	13	18	20	25	30	32

Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 1000 Megohms min.

### Mechanical

Insertion Force: 135N max. per press-fit pin  
Retention Force: 22.5N min. per press-fit pin  
Mating Force: 0.35N typical per contact  
Unmating Force: 0.15N min.  
Signal Normal Force: 0.75N nom./0.60N min.  
Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer  
Contact: Phosphor Bronze  
Plating: 30µ" Gold

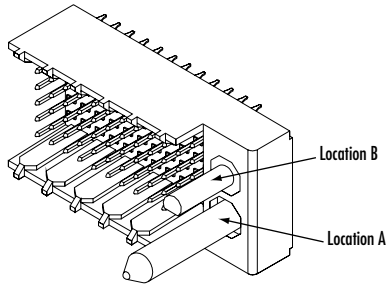
Circuits	Order No.	Termination	Dimension		Lead-free
			Mating Pin Length	PC Tail Length	
72	<a href="#">73943-0000</a>	Solder Tail	5.00 (.197)	2.00 (.079)	Yes
	<a href="#">73943-0200</a>		6.00 (.236)		
	<a href="#">73943-2000</a>		5.00 (.197)		
	<a href="#">73943-2200</a>		6.00 (.236)	2.50 (.098)	
	<a href="#">73943-4000</a>		5.00 (.197)		
	<a href="#">73943-4200</a>		6.00 (.236)		
	<a href="#">73943-6000</a>		5.00 (.197)	3.00 (.118)	
	<a href="#">73943-6200</a>		6.00 (.236)		
	<a href="#">73943-7200</a>		6.00 (.236)		

Circuits	Order No.	Termination	Dimension		Lead-free
			Mating Pin Length	PC Tail Length	
144	<a href="#">73943-1000</a>	Solder Tail	5.00 (.197)	2.00 (.079)	Yes
	<a href="#">73943-1200</a>		6.00 (.236)		
	<a href="#">73943-3000</a>		5.00 (.197)		
	<a href="#">73943-3200</a>		6.00 (.236)	2.50 (.098)	
	<a href="#">73943-5000</a>		5.00 (.197)		
	<a href="#">73943-5200</a>		6.00 (.236)		
	<a href="#">73943-7000</a>		5.00 (.197)	3.00 (.118)	
	<a href="#">73943-7200</a>		6.00 (.236)		
	<a href="#">73943-7200</a>		6.00 (.236)		

Note: HDM® and HDM<sup>PLUS</sup>® are registered trademarks of Amphenol Corporation

# 2.00mm (.079") Pitch HDM® Board-to-Board Backplane Header

## 73644 Vertical Press-Fit Guide Pin Option



### Features and Benefits

- Similar features as the 73642 header
- Eye of the needle press-fit for high reliability
- Metal hex key offers 8 coding combinations (64 with 2 keys) and makes metallic sound when card is in wrong slot
- Guide pin provides ± 1.9mm of capture prior to plastic mating
- Can use 1 guide pin in center of connector or on both ends
- Guide pin module attached to header enhances accuracy and reduces parts count
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999  
Packaging: Tube  
UL File No.: E29179  
Mates With: 73632 and 73780  
Designed In: Millimeters

### Electrical

Current: 1.0A

Contact Resistance:

Row	A	B	C	D	E	F
milliohms max.	13	18	20	25	30	32

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 Megohms min.

### Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

### Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30µ" Gold

Circuits	Order No.				Termination	Mating Pin Length	Lead-free
	Location B = Pin Location A = No Code	Location B = No Code Location A = Pin	Location B = Pin Location A = Code A	Location B = Code A Location A = Pin			
72	<a href="#">73644-0016</a>	<a href="#">73644-0017</a>	<a href="#">73644-0000</a>	<a href="#">73644-0001</a>	Standard Press-Fit	5.00 (.197)	Yes
	<a href="#">73644-0216</a>	<a href="#">73644-0217</a>	<a href="#">73644-0200</a>	<a href="#">73644-0201</a>		6.00 (.236)	
	<a href="#">73644-2016</a>	<a href="#">73644-2017</a>	<a href="#">73644-2000</a>	<a href="#">73644-2001</a>	Tin/Lead Press-Fit	5.00 (.197)	
	<a href="#">73644-2216</a>	<a href="#">73644-2217</a>	<a href="#">73644-2200</a>	<a href="#">73644-2201</a>		6.00 (.236)	
144	<a href="#">73644-1016</a>	<a href="#">73644-1017</a>	<a href="#">73644-1000</a>	<a href="#">73644-1001</a>	Standard Press-Fit	5.00 (.197)	No
	<a href="#">73644-1216</a>	<a href="#">73644-1217</a>	<a href="#">73644-1200</a>	<a href="#">73644-1201</a>		6.00 (.236)	
	<a href="#">73644-3016</a>	<a href="#">73644-3017</a>	<a href="#">73644-3000</a>	<a href="#">73644-3001</a>	Tin/Lead Press-Fit	5.00 (.197)	
	<a href="#">73644-3216</a>	<a href="#">73644-3217</a>	<a href="#">73644-3200</a>	<a href="#">73644-3201</a>		6.00 (.236)	

Note: HDM® is a registered trademark of Amphenol Corporation

Note: Additional key combinations and locations are available, please contact Molex

Note: Tin/Lead press-fit zones are used for bare Copper or Gold plated PCBs

Note: The guide pin must mate with the top position on the mating receptacle to clear the board edge.

Therefore, if guide pin headers are used on each end of a header array, you should select one with the pin in location B and the second with the guide pin in location A.

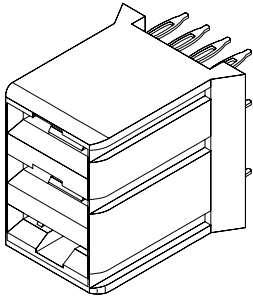
### Application Note

The backplane headers are delivered as modules and are press-fitted into the backplane. This allows maximum flexibility with minimum inventory. Note that the guidepins are an integral part of the headers. This also means that you may have different part numbers for left-handed and right-handed headers. You must consult the customer print to determine the appropriate part number for various combinations of guide pin locations (2) and coding pin orientations (8).

## 2.00mm (.079") Pitch HDM® Board-to-Board Backplane Power Module

### 73656

### Vertical Power Receptacle



#### Features and Benefits

- 15A per blade current carrying capacity
- Press-fit on backplane eliminates soldering
- Female on backplane for safety
- 12mm module can be distributed between signal modules as needed
- Metric connector in Futurebus form factor
- Surface Mount Compatible

#### Reference Information

Product Specification: PS-73651-1998  
Packaging: Tube  
UL File No.: E29179  
Mates With: 73651  
Designed In: Millimeters

#### Electrical

Current: 15.0A  
Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 1000 Megohms min.

#### Mechanical

Insertion Force: 135N max. per press-fit pin  
Retention Force: 22.5N min. per press-fit pin  
Mating Force: 2.5N max. per contact  
Unmating Force: 0.15N min.  
Normal Force: 1.0N min.  
Durability: 250 cycles

#### Physical

Housing: Liquid crystal polymer  
Contact: 0.4mm Beryllium Copper  
Plating: 30µ" Gold

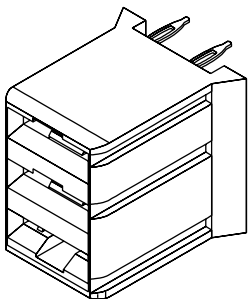
Module	Order No.	Termination	PC Tail Length	Lead-free
Backplane Power Module	<a href="#">73656-0000</a>	Press-Fit	3.50 (.138)	No

Note: HDM® is a registered trademark of Amphenol Corporation

## 2.00mm (.079") Pitch HDM® Board-to-Board Midplane Power Module

### 73656

### Vertical Power Receptacle, Press-Fit



#### Features and Benefits

- Two tails per contact permits back-to-back mounting of power connectors on midplane
- 11.0A per contact
- For backplanes thicker than 3.5mm
- Requires only 12 holes in backplane
- Surface Mount Compatible

#### Reference Information

Product Specification: PS-73651-1998  
Packaging: Tube  
UL File No.: E29179  
Mates With: 73651  
Designed In: Millimeters

#### Electrical

Current: 11.0A  
Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 1000 Megohms min.

#### Mechanical

Insertion Force: 135N max. per press-fit pin  
Retention Force: 22.5N min. per press-fit pin  
Mating Force: 2.5N max. per contact  
Unmating Force: 0.15N min.  
Normal Force: 1.0N min.  
Durability: 250 cycles

#### Physical

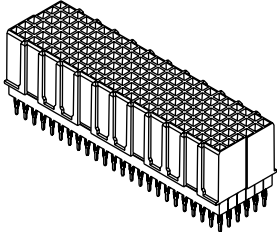
Housing: Liquid crystal polymer  
Contact: 0.4mm Beryllium Copper  
Plating: 30µ" Gold

Module	Order No.	Termination	Finish	Lead-free
Midplane Power Module	<a href="#">73656-1000</a>	Press-Fit	Gold	No

Note: HDM® is a registered trademark of Amphenol Corporation

# 2.00mm (.079") Pitch HDM<sup>®</sup> Board-to-Board Daughterboard Receptacle

## 73780 Vertical Signal Module



### Features and Benefits

- High-density 2.00mm metric connector in the same form factor as Futurebus
- 6-row 2mm connector provides 30 contacts per linear centimeter (over 75 per inch)
- Designed for high-density, high-speed applications
- Modular components for design flexibility; 72 position (6 row by 12) and 144 position (6 row by 24) modules
- Tail lengths available in 0.5mm increments to optimize PCB thickness
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999  
Packaging: Tube  
UL File No.: E29179  
Mates With: 73642, 73643, 73644, 73769, 73770, 73771, 73781, 73783, 74349 and 74428  
Designed In: Millimeters

### Electrical

Voltage: 1000V  
Current: 1.0A  
Contact Resistance: 40 milliohms max  
Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 1000 Megohms min.

### Mechanical

Insertion Force: 45N max. per press-fit pin  
Retention Force: 9N min. per press-fit pin  
Mating Force: 0.35N typical  
Unmating Force: 0.15N min.  
Signal Normal Force: 0.75N nom./0.60N min.  
Durability: 250 cycles

### Physical

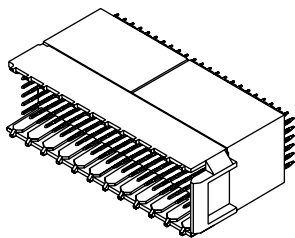
Housing: Liquid crystal polymer  
Contact: Copper Alloy per C72500  
Plating: 30µ" Gold with 300µ" Tin/Lead

Circuits	Termination	PC Tail Length	Distance from Mating Interface to Surface of Board					Lead-free
			13.0mm (.512")	14.0mm (.551")	15.0mm (.591")	16.0mm (.630")	17.0mm (.669")	
72	Solder Tail	2.00 (.079)	<a href="#">73780-0223</a>	<a href="#">73780-0224</a>	<a href="#">73780-0225</a>	<a href="#">73780-0226</a>	<a href="#">73780-0227</a>	Yes
		2.50 (.098)	<a href="#">73780-0233</a>	<a href="#">73780-0234</a>	<a href="#">73780-0235</a>	<a href="#">73780-0236</a>	<a href="#">73780-0237</a>	
		3.00 (.118)	<a href="#">73780-0243</a>	<a href="#">73780-0244</a>	<a href="#">73780-0245</a>	<a href="#">73780-0246</a>	<a href="#">73780-0247</a>	
		3.50 (.138)	<a href="#">73780-0253</a>	<a href="#">73780-0254</a>	<a href="#">73780-0255</a>	<a href="#">73780-0256</a>	<a href="#">73780-0257</a>	
	Press-Fit	4.00 (.158)	<a href="#">73780-0263</a>	<a href="#">73780-0264</a>	<a href="#">73780-0265</a>	<a href="#">73780-0266</a>	<a href="#">73780-0267</a>	No
		3.00 (.118)	<a href="#">73780-2243</a>	<a href="#">73780-2244</a>	<a href="#">73780-2245</a>	<a href="#">73780-2246</a>	<a href="#">73780-2247</a>	
		3.50 (.138)	<a href="#">73780-2253</a>	<a href="#">73780-2254</a>	<a href="#">73780-2255</a>	<a href="#">73780-2256</a>	<a href="#">73780-2257</a>	
		4.00 (.158)	<a href="#">73780-2263</a>	<a href="#">73780-2264</a>	<a href="#">73780-2265</a>	<a href="#">73780-2266</a>	<a href="#">73780-2267</a>	
144	Solder Tail	2.00 (.079)	<a href="#">73780-1223</a>	<a href="#">73780-1224</a>	<a href="#">73780-1225</a>	<a href="#">73780-1226</a>	<a href="#">73780-1227</a>	Yes
		2.50 (.098)	<a href="#">73780-1233</a>	<a href="#">73780-1234</a>	<a href="#">73780-1235</a>	<a href="#">73780-1236</a>	<a href="#">73780-1237</a>	
		3.00 (.118)	<a href="#">73780-1243</a>	<a href="#">73780-1244</a>	<a href="#">73780-1245</a>	<a href="#">73780-1246</a>	<a href="#">73780-1247</a>	
		3.50 (.138)	<a href="#">73780-1253</a>	<a href="#">73780-1254</a>	<a href="#">73780-1255</a>	<a href="#">73780-1256</a>	<a href="#">73780-1257</a>	
	Press-Fit	4.00 (.158)	<a href="#">73780-1263</a>	<a href="#">73780-1264</a>	<a href="#">73780-1265</a>	<a href="#">73780-1266</a>	<a href="#">73780-1267</a>	No
		3.00 (.118)	<a href="#">73780-3243</a>	<a href="#">73780-3244</a>	<a href="#">73780-3245</a>	<a href="#">73780-3246</a>	<a href="#">73780-3247</a>	
		3.50 (.138)	<a href="#">73780-3253</a>	<a href="#">73780-3254</a>	<a href="#">73780-3255</a>	<a href="#">73780-3256</a>	<a href="#">73780-3257</a>	
		4.00 (.158)	<a href="#">73780-3263</a>	<a href="#">73780-3264</a>	<a href="#">73780-3265</a>	<a href="#">73780-3266</a>	<a href="#">73780-3267</a>	

Note: HDM<sup>®</sup> is a registered trademark of Amphenol Corporation

# 2.00mm (.079") Pitch HDM<sup>®</sup> Board-to-Board Stacking Header

## 73770 High Rise Vertical Closed End Option



### Features and Benefits

- For parallel board packaging
- Available in press-fit or solder tail
- Up to 32mm board-to-board stack heights
- For Mezzanine cards, parallel backplanes and bridge board applications
- End walls facilitate blind mating
- Surface Mount Compatible

### Reference Information

Product Specification: PS-73670-9999  
Packaging: Tube  
UL File No.: E29179  
Mates With: 73632 and 73780  
Designed In: Millimeters

### Electrical

Current: 1.0A  
Contact Resistance:

Row	A	B	C	D	E	F
milliohms max.	13	18	20	25	30	32

Dielectric Withstanding Voltage: 1000V  
Insulation Resistance: 1000 Megohms min.

### Mechanical

Insertion Force: 135N max. per press-fit pin  
Retention Force: 22.5N min. per press-fit pin  
Mating Force: 0.35N typical per contact  
Unmating Force: 0.15N min.  
Signal Normal Force: 0.75N nom./0.60N min.  
Durability: 250 cycles

### Physical

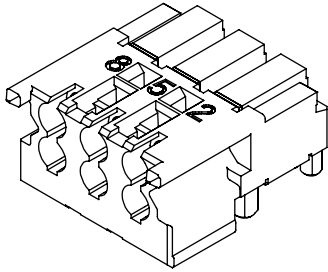
Housing: Liquid crystal polymer  
Contact: Phosphor Bronze  
Plating: 30µ" Gold

Circuits	Order No.	Distance from Mating Interface to Surface of Board	Lead-free
	Press-Fit Tail = 3.50mm (.138")		
72	<a href="#">73770-0100</a>	15.05 (.593)	No
	<a href="#">73770-0200</a>	6.05 (.238)	
	<a href="#">73770-0300</a>	10.05 (.396)	
144	<a href="#">73770-1100</a>	15.05 (.593)	
	<a href="#">73770-1200</a>	6.05 (.238)	
	<a href="#">73770-1300</a>	10.05 (.396)	

Note: HDM<sup>®</sup> is a registered trademark of Amphenol Corporation

## 6.25mm (.246") Pitch Ganged RF Daughtercard

**74642**  
Right Angle



Order No.	Loaded Terminals	Lead-free
<a href="#">74642-0001</a>	2, 5, 8, 11	Yes
<a href="#">74642-0002</a>	2	
<a href="#">74642-1001</a>	2, 5, 8	
<a href="#">74642-1002</a>	2, 5	
<a href="#">74642-1003</a>	2	
<a href="#">74642-1004</a>	8	

### Features and Benefits

- Available in 3 and 4 port sizes with selective loading
- 50 ohms  $\pm$  10% match impedance contact system for low insertion loss and optimal signal integrity
- 60 db minimum isolation to minimize crosstalk
- Press-fit termination and locator pegs for easy and reliable board termination

### Reference Information

Product Specification: PS-74854-001  
 Packaging: Tray  
 UL File No.: E107635  
 CSA File No.: 152514 (LR19980)  
 Mates With: 74712  
 Use With: Header  
 Designed In: Millimeters

### Electrical

Voltage: 50V  
 Current: 1.0A  
 Contact Resistance: 35 milliohms max.  
 Insulation Resistance: 1,000 Megohms min.

### Mechanical

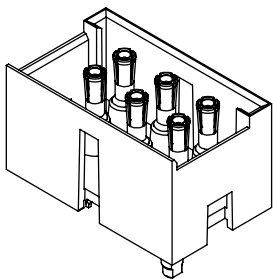
Contact Retention to Housing: 5.0N (1.12 lb)  
 Insertion Force to PCB: 50.0N (11.24 lb)  
 Mating Force: 5.00N (1.12lb)  
 Unmating Force: 1.0N (0.22 lb)  
 Normal Force :0.5N (0.11 lb)  
 Durability: 500 cycles

### Physical

Housing: Glass-filled LCP Liquid Crystal Polymer, UL 94V-0  
 Contact: Brass  
 Plating: Contact Area—0.76 $\mu$ m (30 $\mu$ ") Gold  
 PCB Thickness: 3.20mm (.125")

## 6.25mm (.246") Pitch Ganged RF Header

**74712**  
Vertical



Order No.	Loaded Terminals	Lead-free
<a href="#">74712-0001</a>	2, 5, 8, 11	Yes
<a href="#">74712-0002</a>	2	
<a href="#">74712-1001</a>	2, 5, 8	
<a href="#">74712-1002</a>	2, 5	
<a href="#">74712-1003</a>	2	
<a href="#">74712-1004</a>	8	

### Features and Benefits

- Available in 3 and 4 port sizes with selective loading
- 50 ohms  $\pm$  10% match impedance contact system for low insertion loss and optimal signal integrity
- 60 db minimum isolation to minimize crosstalk
- Press-fit termination and locator pegs for easy and reliable board termination

### Reference Information

Product Specification: PS-74854-001  
 Packaging: Tray  
 UL File No.: E107635  
 CSA File No.: 152514 (LR19980)  
 Mates With: 74712  
 Use With: Daughtercards  
 Designed In: Millimeters

### Electrical

Voltage: 50V  
 Current: 1.0A  
 Contact Resistance: 35 milliohms max.  
 Insulation Resistance: 1,000 Megohms min.

### Mechanical

Contact Retention to Housing: 5.0N (1.12 lb)  
 Insertion Force to PCB: 50.0N (11.24 lb)  
 Mating Force: 5.00N (1.12lb)  
 Unmating Force: 1.0N (0.22 lb)  
 Normal Force: 0.5N (0.11 lb)  
 Durability: 500 cycles

### Physical

Housing: Glass-filled LCP Liquid Crystal Polymer, UL 94V-0  
 Contact: Brass  
 Plating: Contact Area—0.76 $\mu$ m (30 $\mu$ ") Gold  
 PCB Thickness: 3.20mm (.125")