

**From low- to high-profile-PCB-module applications, Molex's variable height PCI Express Mini Card Connectors offer customizable design solutions and cost savings that communication-device makers need for high-signal-integrity wired or wireless applications**

Molex's 4.00mm (.157") to 9.90mm (.390") height PCI Express Mini Card Connectors give wired and wireless communication-device makers the design flexibility and cost savings they need – from meeting low-profile, high signal-integrity requirements to building high-profile Mini Card applications that create space beneath the connected PCB module adjacent to the Mini Card connector.

Molex's series 48338 of PCI Express Mini Card connectors meets the PCI Express Mini Card Electromechanical Revision 1.2 Specification. This family of fine-pitch Mini Card connectors with its compact 30.00mm (1.181") by 9.25mm (.364") foot-print, customizable profile height, terminal plating and housing features, allows users of these customizable connectors to realize PCB real-estate and application cost savings.

The most popular versions of this interconnect series are the 4.00mm (.157") and 9.00mm (.354") height versions. The former provides significant vertical space savings for very low-profile applications while the latter higher-housing design optimizes vertical real estate by enabling customers to mount components beneath the connected PCB module. The latter feature is especially important for tight-fitting, high-density electronic packaging applications.

Modeled after and replacing the Mini PCI Type III card, this series of top-mount, right angle connectors features strong terminal spring design that provides stable normal force, low contact resistance and reliable, high-speed signal transmission. For more information, visit our website at: [www.molex.com/link/mid\\_mount\\_pcie\\_mini\\_card.html](http://www.molex.com/link/mid_mount_pcie_mini_card.html).

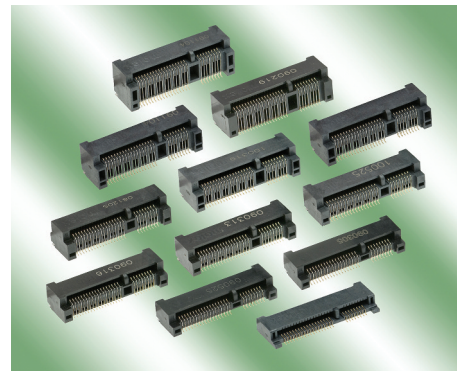
## FEATURES AND BENEFITS

- Connectors meet the PCI Express Mini Card Electromechanical Specification Revision 1.2 and satisfy performance characteristics required to address system manufacturers' needs
- Extensive range of 4.00 (.157") to 9.90mm (.390") height connectors configurable to the customer's needs provide complete design flexibility and support for low- to high-profile applications
- Small connector footprint provides significant PCB real estate savings
- Tight-fitting reinforced housing ribs between the SMT terminals prevent bent pins while ensuring linearity and accurate positioning of the blade-type SMT terminals
- Staggered SMT terminal design on each side of connector body enhances signal integrity (SI) performance and minimizes cross-talk
- High temperature thermoplastic used offers halogen-free benefits; ability to withstand IR reflow process
- SMT soldertab on each side of connector provides robust connector hold-down to PCB
- Beveled, dual-sized locating pegs customizable to 'crush-rib' types ensure correct connector-to-PCB polarization; optional 'crush-rib' pegs provide greater PCB retention during soldering process
- Polarization key prevents mis-mating upon insertion of PCB module into the connector
- Wide 35-degree PCB module entry angle allows greater ease-of-use with less restriction on the insertion angle of the PCB module

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## PCI Express Mini Card Connector, Top-Mount, Right Angle, 4.00 to 9.90mm (.157 to .390") Mounted Heights

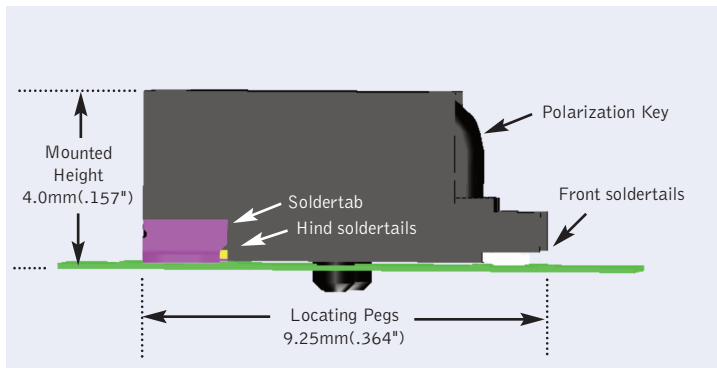
**48338** PCI Express Mini Card Connector, Top-Mount, Right Angle, Halogen-free



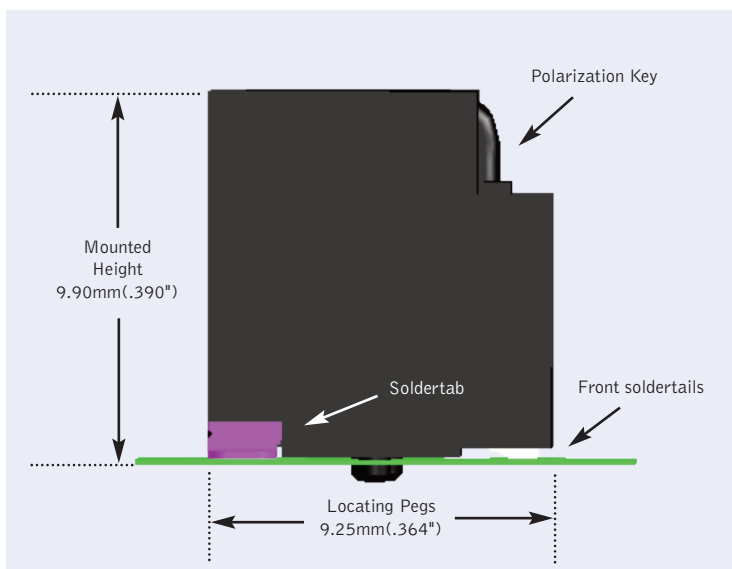
PCI Express Mini Card Connector  
Top-Mount, Right Angle  
(Series 48338)

**PCI Express Mini Card Connector, Top-Mount, Right Angle, 4.00 to 9.90mm (.157 to .390") Mounted Heights**

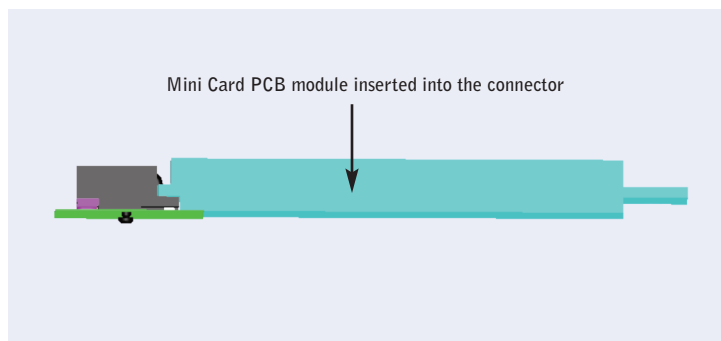
48338 PCI Express Mini Card Connector, Top-Mount, Right Angle, Halogen-free



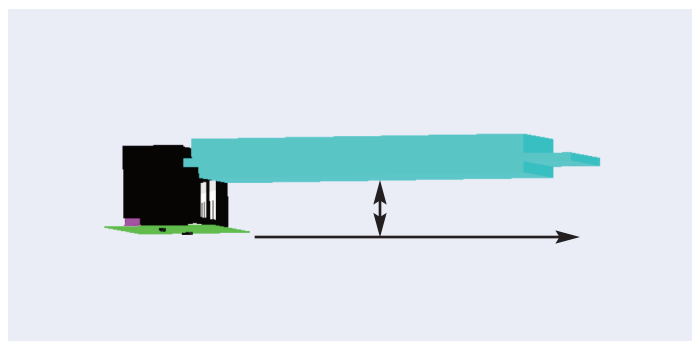
Side view of low-profile, 4.00mm (.157") height, Right Angle, Top-Mount PCI Express Mini Card Connector showing small connector foot-print with low-profile height



Side view of 9.90mm (.390") height, Right Angle, Top-Mount PCI Express Mini Card Connector showing small connector foot-print and taller housing height



This low-profile 4.00mm height connector offers excellent vertical space-savings for low-profile wired or wireless communication applications



The high-profile height of the 9.90mm height connector provides vertical clearance beneath the PCB module for placement of electronic components onto the PCB in tight electronic packaging situations

## MARKETS AND APPLICATIONS

- Notebook PCs
- Netbooks
- Wireless Data Communication Devices
  - Routers
  - High-speed Network Interface
  - Wireless-LAN
  - Wireless-WAN
- Wireless-PAN (*Personal Area Network*)  
(more commonly known as *Bluetooth*†)
- Global Positioning System (GPS)
- Wired Data Communication Devices
  - Local Area Network (LAN)
  - Wide Area Network (WAN)

†Bluetooth is a registered trademark of Bluetooth SIG



Notebook PC



GPS



Wireless router



Netbook

## PCI Express Mini Card Connector, Top-Mount, Right Angle, 4.00 to 9.90mm (.157 to .390") Mounted Heights

48338 PCI Express Mini Card Connector, Top-Mount, Right Angle, Halogen-free

## SPECIFICATIONS

### Reference Information

Packaging: Embossed Tape on Reel with dual pull-directions  
 UL File No.: TBA  
 CSA File No.: TBA  
 Mates With:  
 PCI Express<sup>®</sup> Mini Card PCB Module  
 Designed In: mm  
 RoHS: Yes  
 Halogen Free: Yes  
 Glow Wire Compliant: No

### Mechanical

Mating/Unmating Force (max.): 2.3 kgf (22.5N)  
 Terminal / Housing Retention Force (min.): 2.5N  
 Nail / Housing Retention Force (min.): 2.5N  
 \*Vibration (max.): 20 milliohms (*change from initial*) and Discontinuity < 1 microsecond  
 Durability (min.): 50 cycles

### Electrical

Voltage (max.): 50V AC  
 Current (max.): 0.5A  
 Low Level Contact Resistance (max.): 55 milliohms  
 Dielectric Withstanding Voltage: 300V AC (1 minute)  
 Insulation Resistance (min.): 500 Megaohm  
 Temperature Rise (max.): 30°C  
 Insertion Loss: 1dB max. up to 1.25GHz  
 $:\leq [1.6*(F-1.25)+1]$  dB for 1.25GHz < F  $\leq 3.75$ GHz  
 Return Loss:  $\leq 12$ dB up to 1.3GHz  
 $:\leq -7$ dB up to 2GHz  
 $:\leq -4$ dB up to 3.75GHz  
 Next Cross-talk: -32dB up to 1.25GHz  
 $:\leq [-32-2.4*(F-1.25)]$  dB for 1.25GHz < F  $\leq 3.75$ GHz

### Physical

Housing: High temperature, halogen-free, UL94-V0, Black  
 Contact and Solder tab: Copper Alloy  
 Plating:  
 Contact and soldertail Area — Gold (Au) Flash  
 Underplating — Nickel (Ni) overall  
 Fitting Nail / Solder Tab — 2.54µm (100µ")  
 Tin (Sn)  
 PCB Thickness: 1.20mm (.047")  
 Operating Temperature: -40 to +85°C  
 (*including terminal temperature*)

## ORDERING INFORMATION

Description	Profile Height	Plating	Housing Material	Housing Colors	PCB Locator	Packaging Configuration	Minimum Order Quantity	Samples Available
Right angle, low-to high-profile, top-mount PCI Express Mini Card connector	4.00 to 9.90mm (.157 to .390")	Gold (Au) Flash and 0.25 - 0.76µm (10-30µ") options	LCP; consult Global Product Manager for non-LCP alternatives	Black; contact Global Product Manager for Natural and White options	Standard round or crush-rib pegs if needed; consult Global Product Manager for non-standard designs	Clock-wise Reel Operation or anti-clockwise Reel	Refer PK-48338-002 for details	Yes, contact Global Product Manager

\*Vibration Test conditions: Refer to PS-48338-002 for details



[www.molex.com/link/mid\\_mount\\_pcie\\_mini\\_card.html](http://www.molex.com/link/mid_mount_pcie_mini_card.html)