

PCI EXPRESS® CARD EDGE CONNECTORS

Extend differential signaling to 8.0GB/S for new generation systems

OVERVIEW

These 1.0mm pitch, vertical card edge connectors from FCI enable all generations of PCI Express® signaling in desktop PCs, workstations, and servers. The connector designs provide support for 2.5Gb/s (Gen1), 5.0Gb/s (Gen2), and the recent update to 8.0Gb/s (Gen3) per differential signal pair.

The base connector family provides x1, x4, x8, or x16 link widths to suit different bandwidth requirements. The basic bandwidth (x1) version supports a single PCI Express lane and is typically used for I/O cards in desktop PCs. The x4 and x8 connectors provide 64 and 98 contacts, respectively, for server I/O. The high bandwidth versions (x16 lanes and higher) are used for applications that require even more bandwidth, such as graphics cards in desktop PCs or riser cards in servers.

FCI's expansive range of available PCI Express card edge connectors includes options for through-hole solder, press-fit, surface-mount, or straddle-mount termination.



FEATURES & BENEFITS

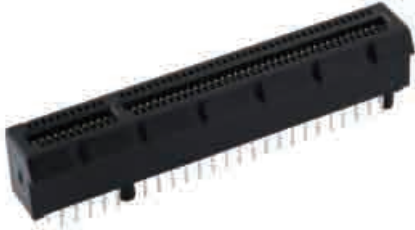
- Base connector range offers 1, 4, 8, or 16 serial PCI Express links for different bandwidth requirements
- Options for through-hole solder, press-fit, surface-mount, or straddle-mount termination
- Press-fit version provides a solderless alternative for termination to thick PCBs
- Larger 200, 230 (x24), and 280-position vertical connectors supply more lanes for server riser cards
- ExpressModule™ versions provide an expanded lead-in window for blind-mate server applications
- Options for rugged stand-alone retention mechanism or a x16 connector with an integrated retention arm to secure graphics cards during shipping and handling
- Straddle-mount connectors feature mounting ears for additional mechanical support and a molded post to assure proper alignment to the host PCB
- RoHS-compliant connector versions are available

TARGET MARKETS/APPLICATIONS

- Data
 - Desktop PCs
 - Servers
 - Workstations
- Industrial
 - SHB Express™ backplanes per PICMG 1.3 spec

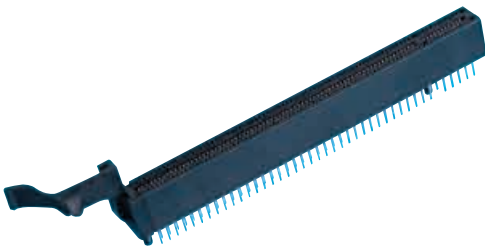
▶ PCI EXPRESS® CARD EDGE CONNECTORS

PCI EXPRESS® VERTICAL CARD EDGE CONNECTORS, THROUGH-HOLE SOLDER



| Description | Part Numbers |
|--|--------------|
| 36 (x1), 64 (x4), 98 (x8), and 164 (x16) contact positions, reflow solder compatible | 10018783 |
| 36 (x1), 64 (x4), 98 (x8), and 164 (x16) contact positions, wave solder compatible | 10018784 |
| 98 positions for x8 card but fits on x16 motherboard footprint | 10036767 |
| 200 positions | 10054652 |
| 230 positions (x24) | 10063960 |
| 280 positions, keyed for 280-position riser card, without side ridge | 10027747 |
| 280 positions, keyed for x8 card or 280-position riser card, without side ridge | 10037901 |
| 280 positions, keyed for 280-position riser card | 10057596 |
| 280 positions, keyed for 230-position (x24) or 280-position riser card | 10066356 |
| 280 positions, keyed for x16 card or 280-position riser card, without side ridge | 10073481 |

PCI EXPRESS® GRAPHIC CARD RETENTION



| Description | Part Numbers |
|--|--------------|
| Stand-alone graphics card retention mechanism, green or blue | 10042618 |
| x16 connector with integrated retention arm on component side of add-in card | 10083987 |
| x16 connector with integrated retention arm on solder side of add-in card | 10085429 |

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SHB Express™ is a trademark of PICMG®

For more information,
please contact: Communications@fci.com
or visit us at www.fci.com

Disclaimer
Please note that the above information is subject to change without notice.

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PCI EXPRESS® VERTICAL CARD EDGE CONNECTORS, SURFACE-MOUNT



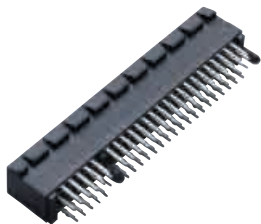
| Description | Part Numbers |
|---|--------------|
| x1, x4, x8 and x16 with molded orientation posts | 10061913 |
| x1, x4, x8 and x16 without molded orientation posts | 10076266 |

PCI EXPRESS® STRADDLE-MOUNT CARD EDGE CONNECTORS



| Description | Part Numbers |
|---|--------------|
| x1, x4, x8 and x16 for 1.57/2.0/2.08/2.31/2.36/2.4mm thick host PCB | 10125756 |
| x1, x4, x8 and x16 for 2.30mm thick host PCB | 10069690 |
| x1, x4, x8 and x16 for 1.57mm thick host PCB | 10025026 |

PCI EXPRESS® VERTICAL CARD EDGE CONNECTORS, PRESS-FIT



| Description | Part Numbers |
|---|--------------|
| 36 (x1), 64 (x4), 98 (x8), and 164 (x16) contact positions | 10082378 |
| 36 (x1), 64 (x4), 98 (x8), and 164 (x16) contact positions. PCIe Gen1 | 10039755 |

EXPRESSMODULE VERTICAL CARD EDGE CONNECTORS



| Description | Part Numbers |
|---|--------------|
| 140-position (x8 with storage extension), ExpressModule connector, press-fit | 10116975 |
| 36 (x1), 64 (x4), 98 (x8), and 164 (x16) contact positions, ExpressModule type, surface-mount | 10073228 |

TECHNICAL INFORMATION

MATERIALS

- Contact base metal: Copper alloy
- Contact area finish: Gold over nickel
- Solder area finish: Tin over nickel or tin-lead over nickel
- Housing material: High-temperature thermoplastic (UL94V-0) for reflow soldering or thermoplastic (UL94V-0) for wave soldering. Color: Black or off-white
- Metal board locks: Copper alloy
- Board locks finish: Tin over nickel or tin-lead over nickel

ELECTRICAL PERFORMANCE

- Contact resistance: 30mΩ max initially with 10 mΩ max. change after environmental exposures
- Current rating: 1.1A min. per pin for the 8 power pins and 8 nearest ground pins
- Signal integrity summary
- The part series shown on this datasheet support PCI Express high speed electrical requirements for 2.5Gb/s (PCIe® Gen1), 5.0Gb/s (PCIe® Gen2) and 8.0Gb/s (PCIe® Gen3) with the exception of those part series specifically noted as PCIe® Gen1 in the part number tables.

ENVIRONMENTAL

- EIA-364-1000.01. The test groups/sequences and durations are derived from the following requirements:
 - Durability (mating/unmating) rating of 50 cycles
 - Field temperature: 65°C
 - Field life: Seven years
 - Temperature life (preconditioning): 92 hours at 105°C
 - Temperature life: 168 hours at 105°C
 - Mixed flowing gas: 10 days

MECHANICAL PERFORMANCE

- Durability rating: 50 cycles min.
- PCB insertion force: 1.15 N max. per contact pair
- PCB removal force: 0.15 N min. per contact pair

SPECIFICATIONS

- Industry
 - PCI Express® Card Electromechanical Specification
 - PCI Express® Module Electromechanical Specification
 - For more information on the applicable PCI-SIG specifications, visit www.pcisig.com.
- FCI
 - GS-12-1193 PCI Express® 3.0 Straddle Mount Connector Product Specification
 - GS-12-233 PCI Express® Connector Product Specification
 - GS-12-319 PCI Express® Press-Fit Connector Product Specification
 - GS-12-288 PCI Express® Retention Mechanism Product Specification
 - GS-12-390 PCI Express® Surface-Mount Connector

APPROVALS & CERTIFICATIONS

- UL and CSA approvals

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