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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

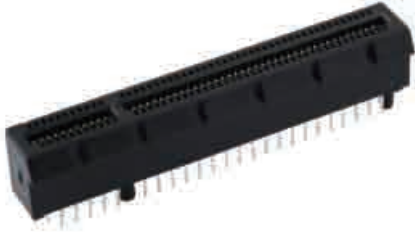
- Base connector range offers 1, 4, 8, or 16 serial PCI Express links for different bandwidth requirements
- Options for through-hole solder, press-fit, surface-mount, or straddle-mount termination
- Press-fit version provides a solderless alternative for termination to thick PCBs
- Larger 200, 230 (x24), 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

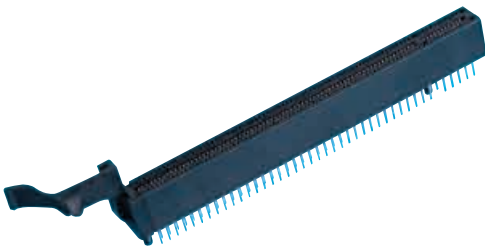
▶ PCI EXPRESS® CARD EDGE CONNECTORS

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.

▶ PCI EXPRESS® CARD EDGE CONNECTORS

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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