Storage & Server IO

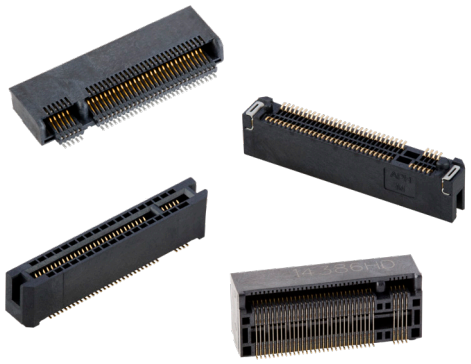
Amphenol

PCIe® M.2 Gen 5 Card Edge Connectors

HIGH DENSITY HIGH PERFORMANCE CONNECTOR

Amphenol's PCIe® M.2 Gen 5 Connectors provide 67 contacts on 0.50mm pitch. It occupies less board space, offers more connector height options and supports higher data rates compared to PCIe® Mini Card connector. It is designed for PCIe® Gen 5, making it suitable for tablets, laptops and low profile storage and server applications. PCIe® M.2 connectors also support higher data rate transmission with both single and double-sided modules.

- Various connector height and keying options
- Accepts angled insertion of add-in module cards
- The product support angled insertion
- Provides both right angle and vertical orientation for M.2 Connectors. Right angle option is available, the design of vertical option is ongoing



TARGET MARKETS



FEATURES

▪ Card edge connector with 67 contacts on a 0.50mm pitch	▪ Fully compliant with PCI-SIG PCIe® M.2 specification
▪ 75 positions with 8 connector key options	▪ Design flexibility
▪ Available in various connector heights	▪ Options to reduce overall height
▪ Supports both single and double-sided modules	▪ Enables higher data rates
▪ Upgradable to Gen 5 (32Gb/s)	▪ Supports higher speeds with backward compatibility to Gen 3 and Gen 4
▪ Provides both right-angle and vertical orientations	▪ Allows for application flexibility

TECHNICAL INFORMATION

MATERIAL

- Contact: Copper Alloy with Gold plating sufficient to meet all mechanical and environmental requirements
- Contact Finish: Must be compatible with Lead-free soldering process
- Housing: Complies with UL 94 V-0. Must be compatible with Lead-free soldering process

ELECTRICAL PERFORMANCE

- Low Level Contact Resistance: EIA-364-23, 55mΩ max. (initial) per contact, *20mΩ max. change allowed
- Insulation Resistance: EIA-364-21, *>5 x 108Ω at 500V DC
- Dielectric Withstanding Voltage: EIA-364-20, *>300VAC (RMS) at sea level
- Current Rating: *0.75A/Power contact (continuous), * The temperature rise above ambient shall not exceed 30˚C, * The ambient condition is still air at 25˚C, * EIA-364-70 Method 2
- Voltage Rating: 50VAC per contact

MECHANICAL PERFORMANCE

- Durability:
  - Normal M.2: 25-60 mating cycles

ENVIRONMENTAL

- Durability: EIA-364-9; *Option 1 – 25 Cycles, *Option 2 – 60 Cycles, Upon completion of cycles the sample must meet all visual and electrical performance requirements
- Insertion Force: 20N (2.04KgF, 1 Newton = 1Kg* m/s^2) max., EIA-364-13, Method A
- Shock: * 250G (notebook) and 285G (tablet), *at 2ms half sine, *on all six (6) axis
- Vibration: EIA-364-1000 Test group 3, EIA-364-28
- Operating Temperature Range: -40°C to +80°C
- Environmental Test Methodology: EIA-364-1000 Test group 1, 2, 3, 4
- Useful Field Life: Three (3) years

SPECIFICATIONS

- Amphenol Product Specification:
  - GS-12-1142
  - GS-12-1195
  - GS-12-1248

PACKAGING

- Tape & Reel

TOOLING INFORMATION

- Tooled Up

TARGET MARKETS/APPLICATIONS


Wireless


Laptop
Tablet


Storage


Industrial PC

PART NUMBERS

Description	Height (mm)	Data rate	Orientation	Key Options	Part Numbers
M.2 Gen 5	4.2	32Gb/s	Right Angle	M	MDT420M0X501
M.2 Gen 5	6.7	32Gb/s	Right Angle	M	MDT670M0X501
M.2 Gen 5	8.5	32Gb/s	Right Angle	M	MDT850M0X501
M.2 Gen 5	3.2	32Gb/s	Right Angle	M	MDT320M01501

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