

Gemini Mezz Connectors >

Gemini Mezz Connectors provide compact, high-speed and high-density board-to-board connections that ensure exceptional signal integrity at data rates of 224Gbps+. With fully shielded differential pairs, a grid-based layout, and a low-profile hermaphroditic (self-mating) design, these mezzanine connectors enhance design flexibility and support cost-effective architectures for high-performance applications.

ADVANTAGES AND FEATURES

Improves performance in electrically noisy environments

Fully shielded DP terminals minimize crosstalk and reduce the impacts of EMI, enabling superior signal integrity performance at 224Gbps+ data rates.

Reduces PCB costs by simplifying routing

The grid-based DP structure helps simplify PCB design and reduces the need for additional breakout layers by improving routing flexibility.

Eases inventory management challenges

The hermaphroditic (self-mating) design simplifies the bill of materials and minimizes tooling requirements.

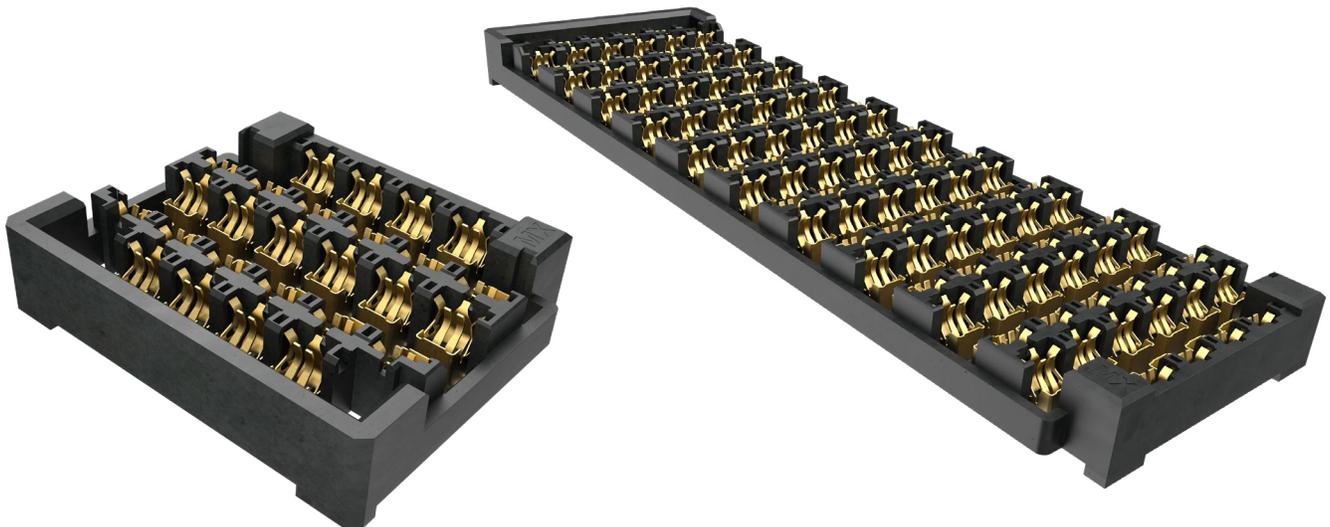
Number of Circuits	Up to 185 differential pairs (DPs)
Data Rates	224Gbps+ PAM-4
Stack Height	5.00mm
DPs per Square Inch	Up to 63
Pitch	3.00mm (row to row and column to column)

Saves space without sacrificing performance

The low-profile 5.00mm stack height permits use in compact and low-clearance designs by reducing board-to-board space requirements.

Enhances design flexibility

The grid-based layout and potential for various connector footprints help lessen design constraints and shorten development times.



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MARKETS AND APPLICATIONS

Automotive

Domain control units
Electronic control units
Zonal control units

Industrial Automation

Drone and unmanned aerial vehicle control units
Industrial robot control units
Personal robots

Servers and Storage

High-performance compute trays
Interposer applications
Networking equipment
Server racks
Storage racks

Telecommunications

Networking equipment
Telecommunications infrastructure



Server Racks



Personal Robots



Industrial Robot Control Units

PRELIMINARY SPECIFICATIONS

Reference Information

Packaging: Tape and reel
Designed in: Millimeters
RoHS: Yes
Halogen Free: Yes
Mates with: Hermaphroditic/self-mating

Electrical

Speed: 224Gbps+ PAM-4
Voltage (max.): 30V AC (RMS)/DC
Current (max.): 0.5A per contact
Initial Low-Level Contact Resistance:
30 milliohms (max.)
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1,000 Megohms

Mechanical

Pitch: 3.00mm between DPs
DPs per Square Inch: Up to 63
Circuit Count: Currently up to 185 DPs; flexibility
for custom circuit counts
Connector Height: 2.50mm
Stack Height: 5.00mm
Gatherability: 0.60mm (Y-axis) and 0.60mm (X-axis)
Mating Force (average): 1.4N per DP
Unmating Force (min.): 0.5N per DP
Durability (min.): 100 cycles

Physical

Housing: LCP
Contact: Copper alloy
Plating:
Contact area—gold
Solder tail area—tin
Underplating—nickel
Operating Temperatures: -55 to +105°C

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