

0.50mm Board-to-Board – G831M Series

0.50MM PITCH, 85Ω BOARD-TO-BOARD SOLUTION

Amphenol high speed board-to-board connectors provide high contact force reliability ensuring strong connectivity, forced insertions, and removals.

Broad range of stacking heights and pin counts are offered to provide maximum design flexibility.

Amphenol 0.50mm pitch connector design is suitable for high performance applications.

- Speed performance up to 8Gb/s
- High reliability of contact force
- Locating pegs for correct board orientation
- High gold plating for Low Level Contact Resistance, protects against corrosion
- Polarization key at pin edge to prevent misalignment



TARGET MARKETS



FEATURES

- 60, 100, 120, 180, 240 position sizes available upon request
- Polarization key, and coined feature at pin edge
- Snap-in and catch operation
- 85Ω differential impedance
- Gold flash (8, 15, 30μin) gold plating for reliable mating
- 0.10mm max. coplanarity for SMT process
- All stack heights meet PCIe Gen 3, 8GT/s electrical requirements

BENEFITS

- Wide range of options for different application needs
- Strengthens lead-in and improves contact wipe during connector mating
- Superior tactile sense
- Robust mating operation ensures strong connection
- Optimized high speed performance at all stack heights
- Improves contact resistance and prevents corrosion
- Caps, mylar and PCB locator pegs options available for correct board orientation
- Superior signal integrity (SI) performance

TECHNICAL INFORMATION

MATERIAL

- Housing: High Temperature Thermoplastic, UL 94V-0, other color options available
- Contact: Copper Alloy, 0.15mm thickness
- Plating: Selective gold plated on contact area, 100u" min. matte tin plated on soldering tail, 50u" min. nickel under-plated overall

MECHANICAL PERFORMANCE

- Insertion Force: 0.9N (90 gf) max. per contact
- Withdrawal Force: 0.1N (10 gf) min. per contact
- Durability: 500 mating cycles
- Vibration: No disturbance >1μs
- Mechanical Shock: No disturbance >1μs

ELECTRICAL PERFORMANCE

- Low Level Contact:
 - Initial: 30mΩ max.
 - Final Δ R: 20mΩ max.
- Current Rating: 0.3A max. per contact
- Temperature Rise: T30°C max.
- Insulation Resistance: 1000mΩ min.
- Differential Impedance: 85±10 Ω
- Voltage Rating: 500 VAC/ DC

PACKAGING

- Tape and Reel
- Tube available upon request

PART NUMBERS

Description	Type	Part Numbers
0.50mm pitch header, Dual Row	Vertical, SMT	G831M0XXXFX11HR

SPECIFICATION

- Amphenol Product Specification: PS-7524

ENVIRONMENTAL

- Operating Temperature: 0°C to 65°C
- Shipping and Storage Temperature: -40°C to 105°C
- Thermal Shock: No damage Δ R:20mΩ max.
- Cyclic Temperature and Humidity: No damage Δ R:20mΩ max.
- Temperature Life: No damage Δ R:20mΩ max.
- Mixed Flowing Gas: No damage Δ R:20mΩ max.
- Thermal Disturbance: No damage Δ R:20mΩ max.
- Solderability: 95% of immersed area, No voids and pin holes
- Soldering Heat: No damage

TARGET MARKETS/APPLICATIONS



IP Phone
Telecom/Datacom equipment



High End Computers
Router
Servers
Test Card and Card Extenders



Test and Measurement Equipment