ZIPLINE™ HIGH-DENSITY, HIGH-PERFORMANCE CONNECTOR SYSTEM

DESCRIPTION

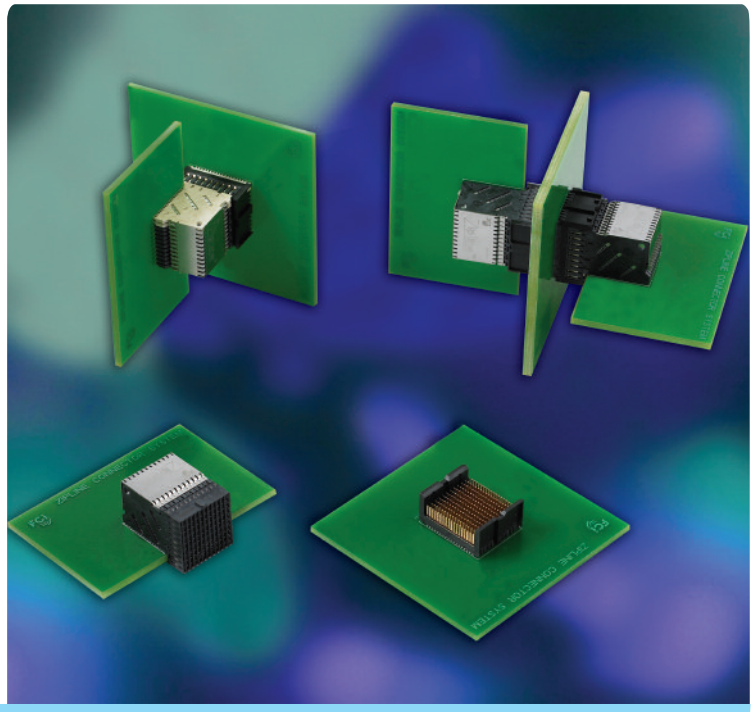
The ZipLine™ connector system addresses customer demand for maximum signal density – a paramount requirement for future equipment platforms – at data rates up to 12.5 Gb/s.

The initial ZipLine signal modules with 1.8mm column pitch support backplane and orthogonal midplane applications. A module with 72 differential pairs – consisting of 12 insert-molded leadframe assemblies (IMLAs), each supporting 6 high-speed differential signal pairs - provides the maximum density available by delivering 84.6 differential pairs per inch of card edge. Allowing a minimum 1-inch card slot pitch, the compact module dimensions help system designers address mechanical and thermal concerns. The 6-pair ZipLine signal IMLAs can also be configured on 1.5mm column pitch to provide more than 100 signal pairs per inch of card edge for even more backplane signal density.

ZipLine connectors use FCI's proven shield-less technology to deliver low insertion loss and crosstalk without using costly and space-consuming metal shields. Data rates can scale up to 12.5 Gb/s without requiring the redesign of a basic platform.

In addition to offering superior signal density and electrical performance, the versatile ZipLine design allows for mixed differential (orthogonal or backplane), single-ended or power pin assignments within a connector. Another unique feature is a special power wafer, with up to 36A capacity, which can be integrated within a module.

Complementary guide modules and high-power connector modules are also available. All ZipLine connectors and accessory modules are compatible with Hard Metric (HM) equipment design practice.



FEATURES & BENEFITS

- Supports backplane and orthogonal midplane applications
- 6-pair modules with IMLAs on 1.8mm column pitch deliver 84.6 differential pairs per inch of card edge while allowing a minimum 1-inch card slot pitch
- 6-pair modules can also be configured on 1.5mm column pitch to provide >100 pairs per inch for even more density
- 3-pair configuration is under development to enable use on 15mm card slot pitch
- Provides maximum signal density available at data rates up to 12.5 Gb/s
- Use FCI's shield-less technology to deliver low insertion loss and crosstalk
- Allows for mixed differential (orthogonal or backplane), single-ended or power pin assignments within a connector
- A special power wafer, with up to 36A capacity, can be integrated within a 6-pair module
- Compatible with Hard Metric equipment practice

TARGET MARKETS / APPLICATIONS

- Communications
  - Routers
  - Switches
  - Networking
  - Access
  - Transport
- Data
  - Servers
  - Storage Systems
- Industrial
  - Medical
  - Test & Measurement

TECHNICAL INFORMATION

MATERIALS

- Contacts: Copper alloy
- Plating:
  - Performance-based plating at separable interface (Telcordia GR-1217 CORE Central Office)
  - Tin-lead or tin over nickel on press-fit tails
- Housings: High-temperature thermoplastic, UL 94V-0
- IMLA organizer: Stainless steel

MECHANICAL PERFORMANCE

- Mating force: 0.45N maximum per contact
- Unmating force: 0.15N minimum per contact
- Press-fit insertion force: 25N maximum per tail

ENVIRONMENTAL

- Telcordia GR-1217-CORE, Central Office qualification pending

SPECIFICATIONS

- Product specification: GS-12-452
- Application specification: GS-20-094

APPROVALS AND CERTIFICATIONS

- UL and CSA approvals

ELECTRICAL PERFORMANCE

- Backplane connectors
  - Differential impedance: 100 ± 10Ω @ 60 ps (20-80%) risetime
  - Differential insertion loss
    - < 1.5 dB through 6.25 Gb/s (3.125 GHz)
    - < 2.5 dB through 12.5 Gb/s (6.25 GHz)
  - NEXT: 3.25% @ 60 ps (20-80%) risetime
  - FEXT: 2.5% @ 60 ps (20-80%) risetime
  - In-pair skew: ≤ 4 ps
- Orthogonal midplane connectors
  - Differential impedance: 100 ± 15Ω @ 60 ps (20-80%) risetime
  - Differential insertion loss
    - < 2.0 dB through 6.25 Gb/s (3.125 GHz)
    - < 5.0 dB through 12.5 Gb/s (6.25 GHz)
  - NEXT
    - < -30 dB through 6.25 Gb/s (3.125 GHz)
    - < -25 dB through 12.5 Gb/s (6.25 GHz)
  - FEXT
    - < -30 dB through 6.25 Gb/s (3.125 GHz)
    - < -25 dB through 12.5 Gb/s (6.25 GHz)
- Contact resistance
  - Signal contact: ≤ 130 mΩ initial
  - Power contact: ≤ 4 mΩ initial
- Current rating (with ≤30°C temperature rise above ambient):
  - Signal contact: 0.25A/contact with all contacts powered
  - 6-contact power wafer: 6A/contact (36A/wafer) with single wafer powered, 4.5A/contact (27A/wafer) with 2 adjacent wafers powered, 2.25A/contact (13.5A/wafer) with 12 adjacent wafers powered

PART NUMBERS

Application	Description	Vertical Header	Right-Angle Receptacle
Backplane	6 pairs/column x 12 columns (72 differential pairs), 2-wall header	10076197-101LF	10076209-101LF
Backplane	6 pairs/column x 12 columns (72 differential pairs), 4-wall header	10080638-101LF	10076209-101LF
Backplane	1 power wafer + 6 pairs/column x 11 columns (66 differential pairs), 2-wall header	10084166-101LF	10084164-101LF
Backplane	2 power wafers + 6 pairs/column x 10 columns (60 differential pairs), 2-wall header	10084166-103LF	10084164-102LF
Orthogonal Midplane	6 pairs/column x 12 columns (72 differential pairs), 2-wall header	10076222-101LF	10076209-101LF
Orthogonal Midplane	6 pairs/column x 12 columns (72 differential pairs), 4-wall header	10080640-101LF	10076209-101LF
Orthogonal Midplane	6 pairs/column x 16 columns (72 orthogonal pass-through pairs + 24 backplane pairs), 2-wall header	10084160-101LF	10084155-101LF
Orthogonal Midplane	6 pairs/column x 6 columns (36 differential pairs), 2-wall header	10078557-101LF	10078550-101LF

Use web link www.fci.com/zipline to obtain product drawings and additional technical information or contact us at zipline@fci.com.

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