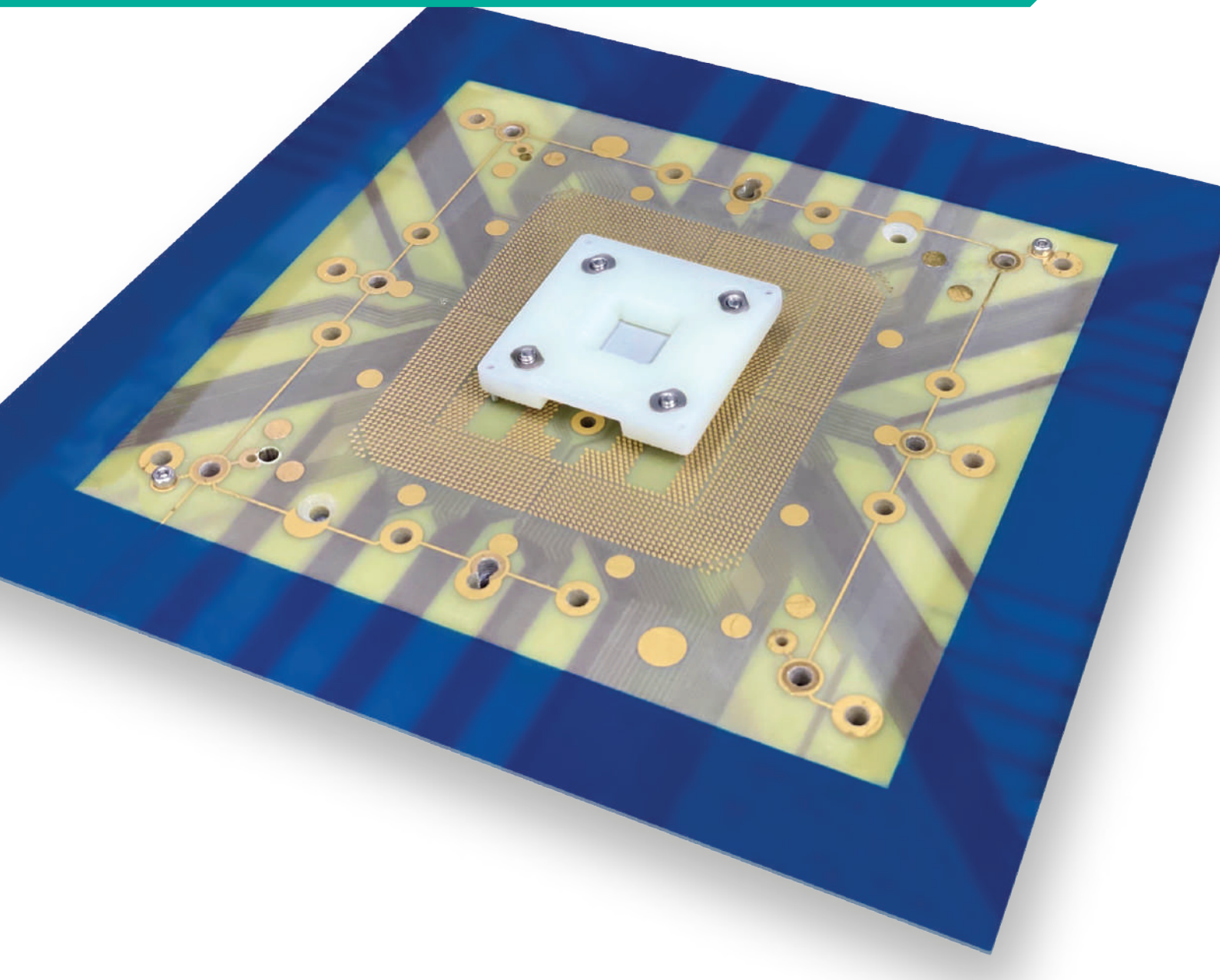
smiths interconnect

Galileo Test Socket

Elastomeric Solutions for Digital High Speed & PoP Test



Galileo Test Socket

As IC development timelines are increasingly compressed and accelerated, device bring up, characterization, and failure analysis activities must happen faster and faster. To support these requirements, Smiths Interconnect introduces the Galileo test socket architecture.

Galileo is an innovative, low-profile test socket engineered to support today's high-performance Digital and RF applications. Using a unique "universal" elastomer contact assembly, Galileo supports almost any standard package pinout, on any pitch (or multiple pitches) at >0.35mm, in any configuration, with no extra tooling charges. A single socket can be re-used across multiple pitches and pad/ball placement. In addition, no contact alignment or registration holes are required in the PCB, enabling quick and easy board integration.

For advanced node devices, solder-down performance is becoming a requirement for characterization, debug, and Failure Analysis testing.

Galileo can also be an ideal replacement for traditional spring probe-based board-to-board interposers, with no tooling or alignment holes required in the PCB.

Features & Benefits

- **Patented, low profile contact**
  - Solderless memory replacement
  - Short signal path
  - Conformal to recessed LGAs
- **High speed signal integrity**
  - Electrically transparent contact
  - High frequency bandwidth > 40GHz
  - Low inductance
- **Durability**
  - No PCB or solder ball damage
  - Minimal labor and tester downtime
- **Engineering expertise**
  - Monte Carlo Analysis
  - Thermal Analysis
  - RF Simulation

Technical Characteristics

High Performance Contact Sheet

Package Types	BGA, LGA, QFN, TQFP
Package Size	4mm to 75mm
Package Pitch	0.35mm to 1.27mm

Mechanical Properties

Compliance/Travel	0.1mm to 0.21mm/35% of overall thickness
Operating Temperature	-55°C to 125°C
Force Range	10g Min to 100g Max

Electrical Specification

Capacitance (Self/Mutual)	0.075pF
Contact Resistance	<25mΩ
Current Carrying Capacity	1.5A (per column)
Bandwidth	-1.0dB @ >40Ghz

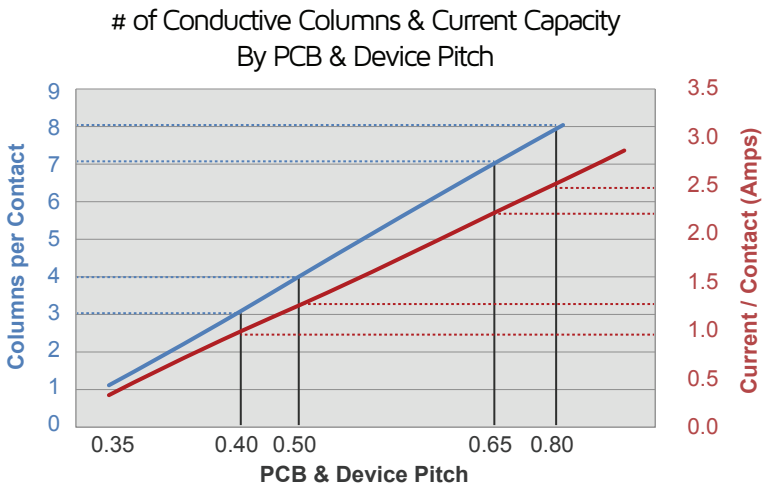
Note: All data is subject to change without notice.

Performance

Electrical Properties

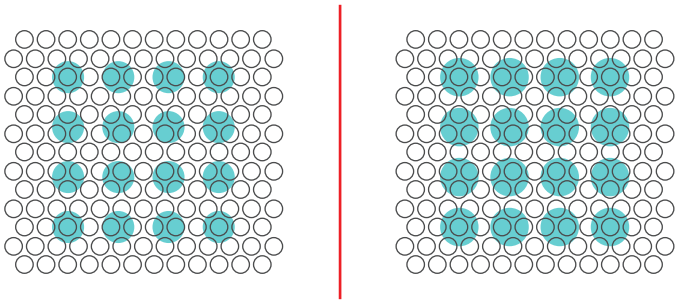
- Continuous current (per lead*): 5.3A @ 20°c heat rise
- Pulse current 1% duty cycle (per lead*): 5.3A @ 20°c heat rise
- Insertion Loss (S21): 40Ghz @ -1dB
- Impedance: 0.080nH
- Rise Time Delay (TDT): 3 pieces (per 4mm x 4mm area)
- Thermal Resistance: 188.1K/W

* Based on measured pad diameter of 0.28mm



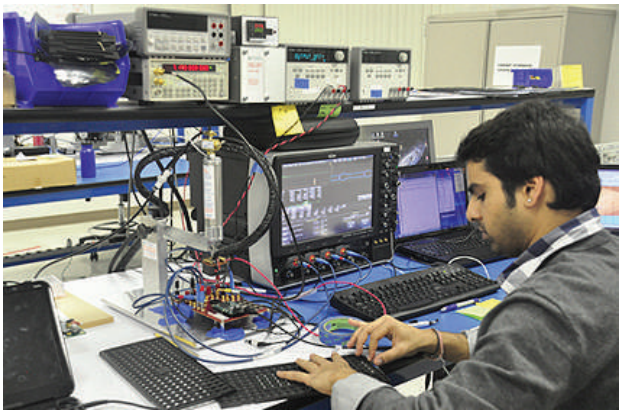
Contact Resistance

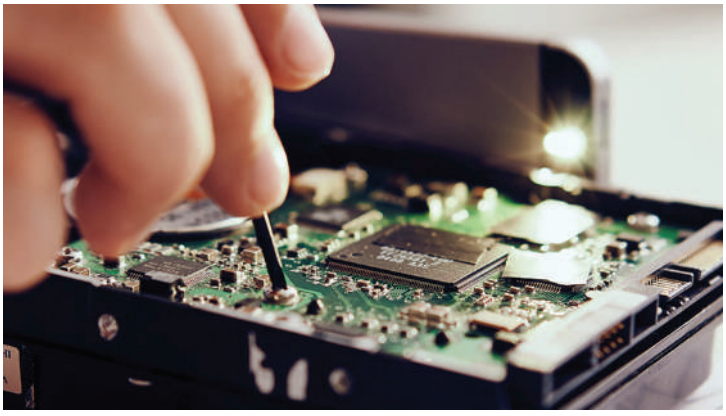
- 25mΩ average BGA/LGA/QFN (per column, lumped resistance based on device pitch)



Applications

- Bench Test
- Characterization
- Failure Analysis / RMA
- System Level Test





Note: 1) Lab measured data. All data is subject to change without notice.