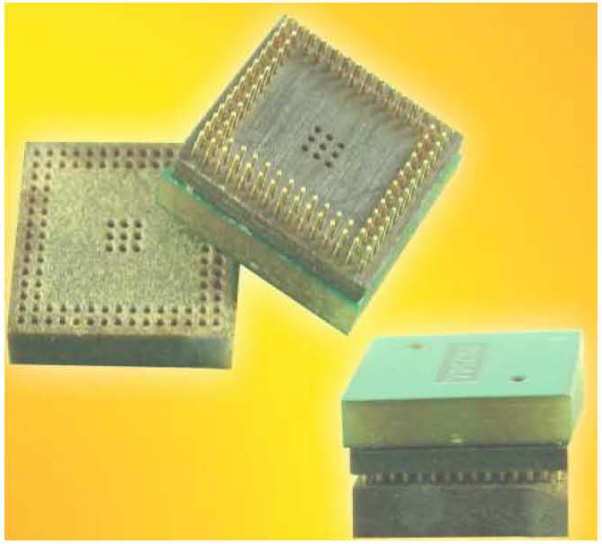
Ironwood Electronics, Inc.



0.5mm, 0.65mm Pitch Giga-snaP™

Emulation, System Development, Field Upgrade, Production Socket Adapters

B.C.E. ELECTRONICS

High Performance IC Sockets And Test Adaptors

Application Need

Ironwood Electronics, Inc.

- *In-circuit emulation of a system board that has 0.5mm and 0.65mm pitch array pattern.*

- *Test and debug of a system development board that has 0.5mm and 0.65mm pitch area array devices such as BGA, LGA.*

- *Debugging production board that has 0.5mm and 0.65mm pitch area array devices such as BGA, LGA.*

- *Reworking 0.5mm and 0.65mm pitch BGA devices by removing from the board (both development and production) and reattaching to the target land pattern.*

- *Upgrading production systems that has 0.5mm and 0.65mm pitch BGA devices.*

Solution – Chip Size Adapters

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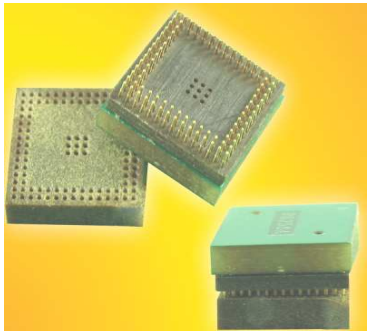
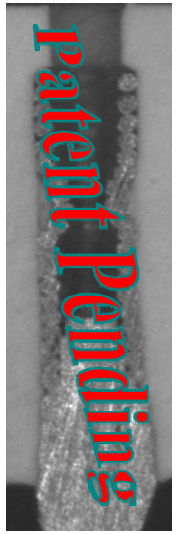
Plug and Play Giga-snaP™ Adapters



- An economical and reliable alternative to soldering BGA devices directly to the motherboard.
- Same footprint as BGA device.
- Compact, low-profile design maximizes PC board space in system development.
- Soldering very similar to IC package using conventional methodology and no external hardware required.
- RoHS compliant materials.
- PCB can be reflowed with Giga-snaP™ assembled (withstands multiple reflow cycles).
- Access to BGA pads for in-circuit emulation, test and interconnection.
- Connection via Gold plated terminals that has optimized insertion/extraction force for reliability and robustness.
- Shortest interconnect length enables high speed applications.



Giga-snaP™ Interconnect

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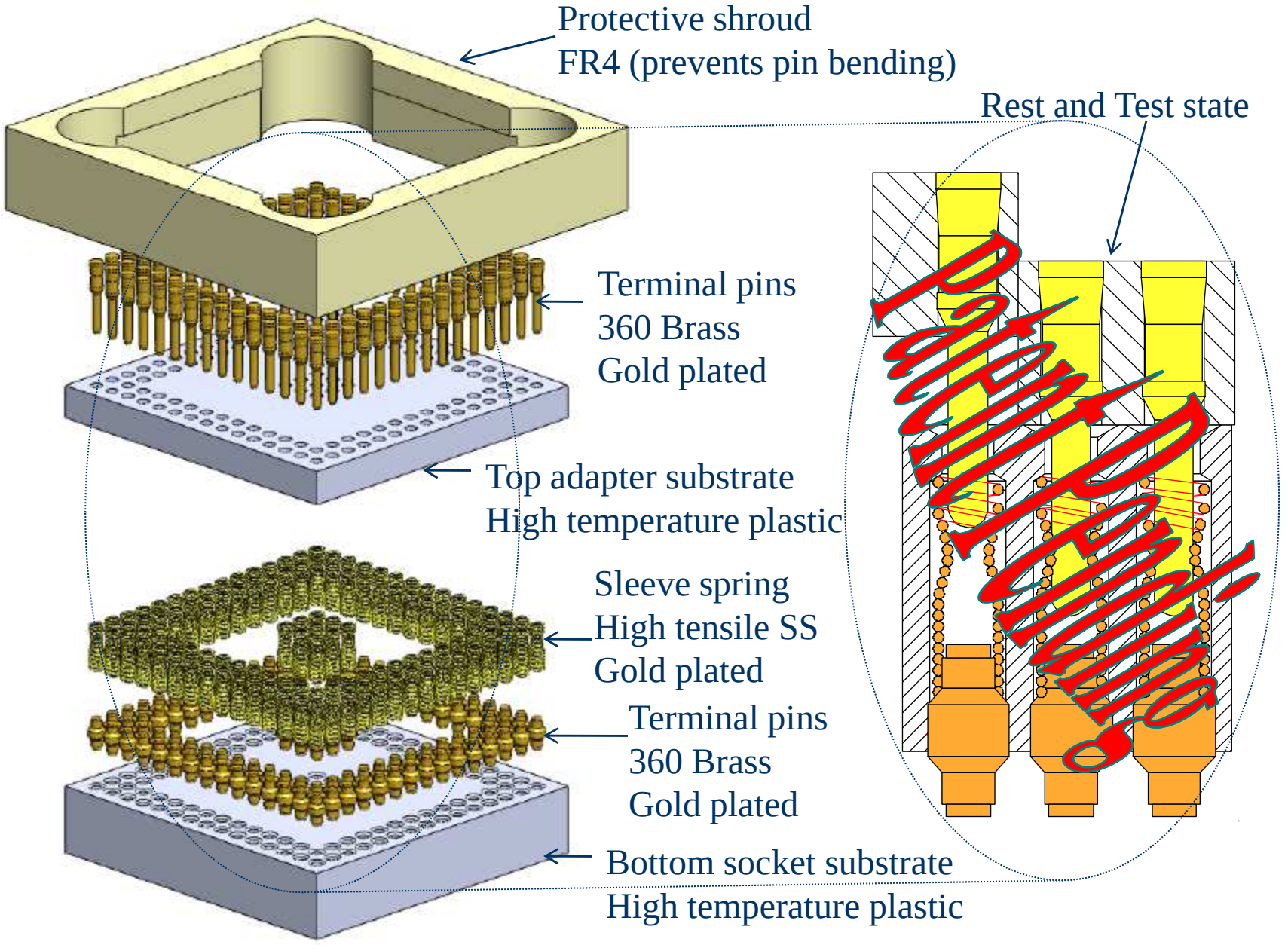

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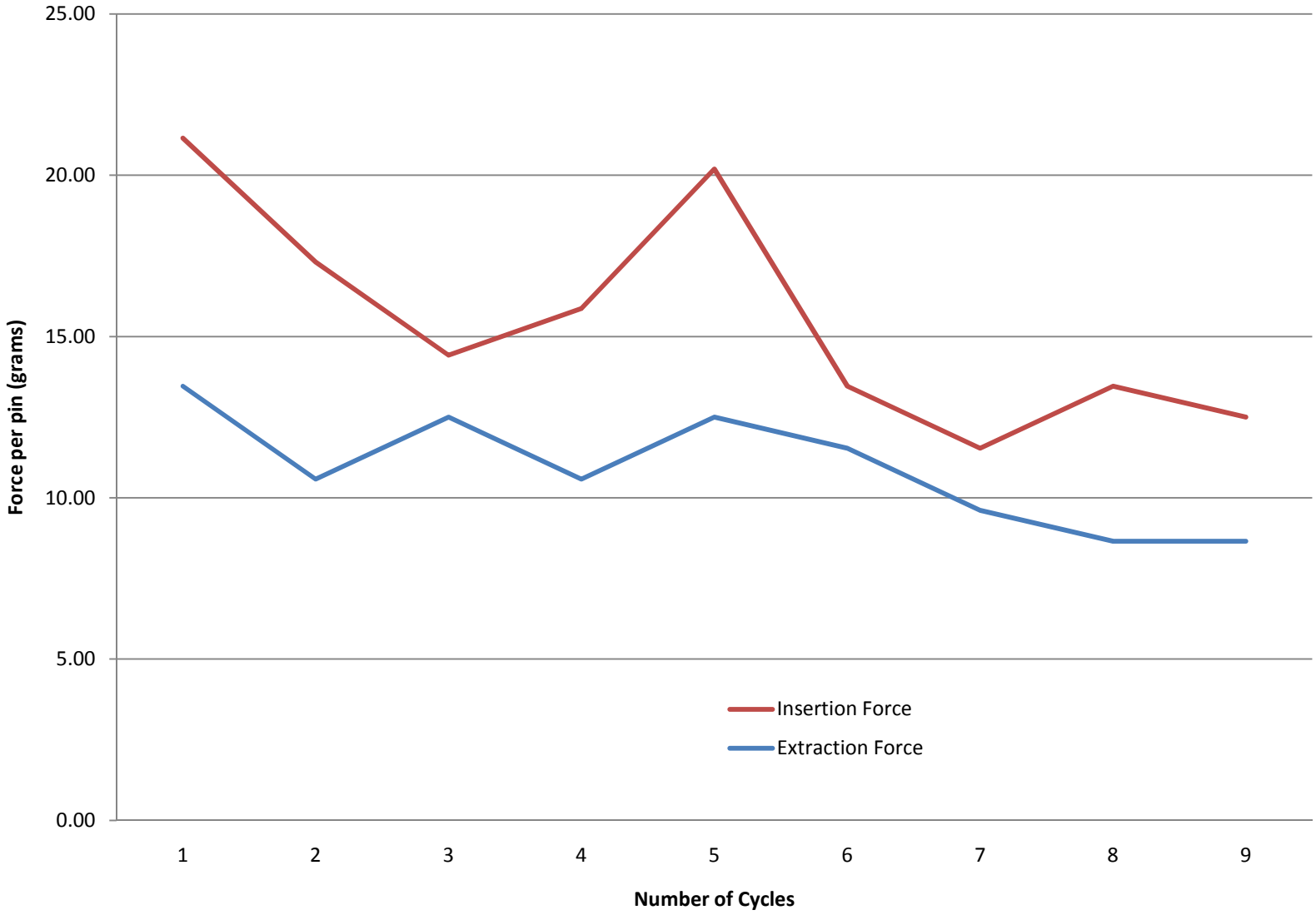
0.5mm Pitch Giga-snaP™ Contact Typical Characteristics

- Contact resistance < 15 mΩ
- Self Inductance <1.4nH
- Bandwidth >7GHz @-1dB
- Mutual Capacitance <0.2pF
- Insertion force 20grams per pin
- Extraction force 15grams per pin
- Operating temperature -55 to +150°C
- Insertion/Extraction cycles >100
- Current rating 1A per contact

Mechanical Characterization

Ironwood Electronics, Inc.

Insertion and Extraction Force Data



Electrical Characterization

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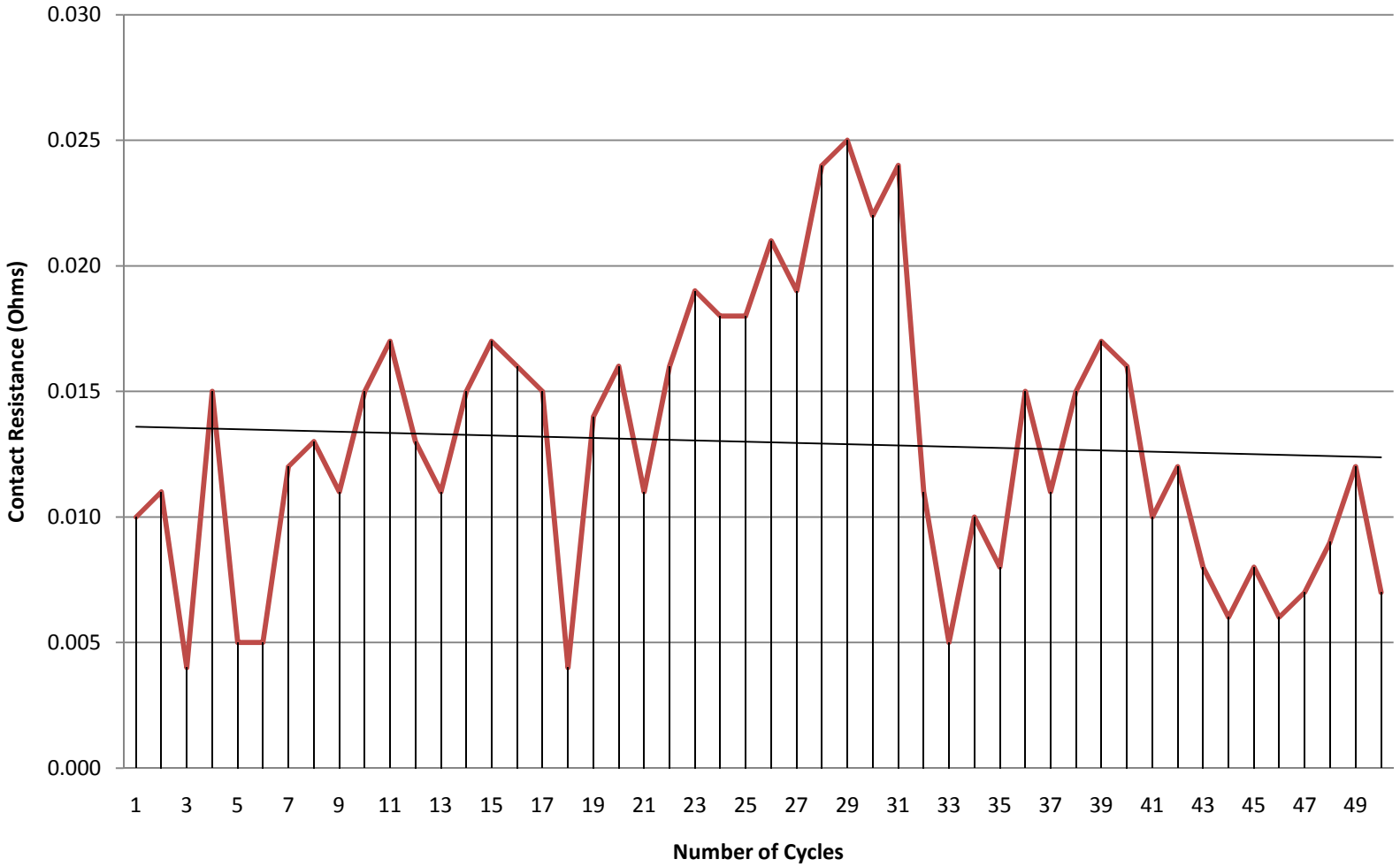
Contact Resistance Data



Electrical Characterization

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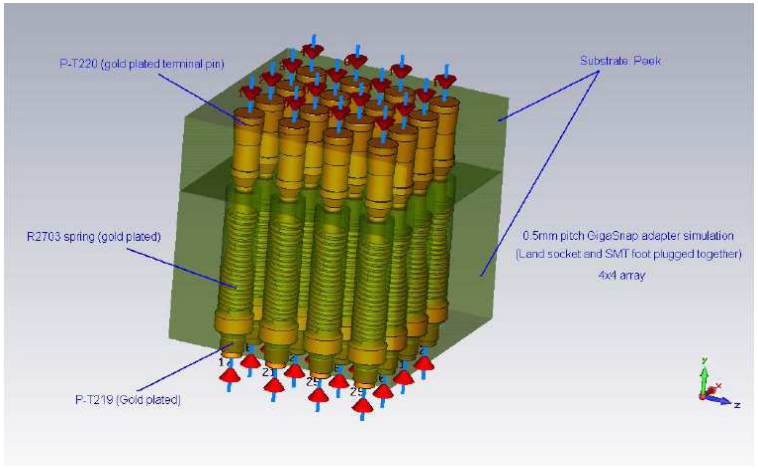
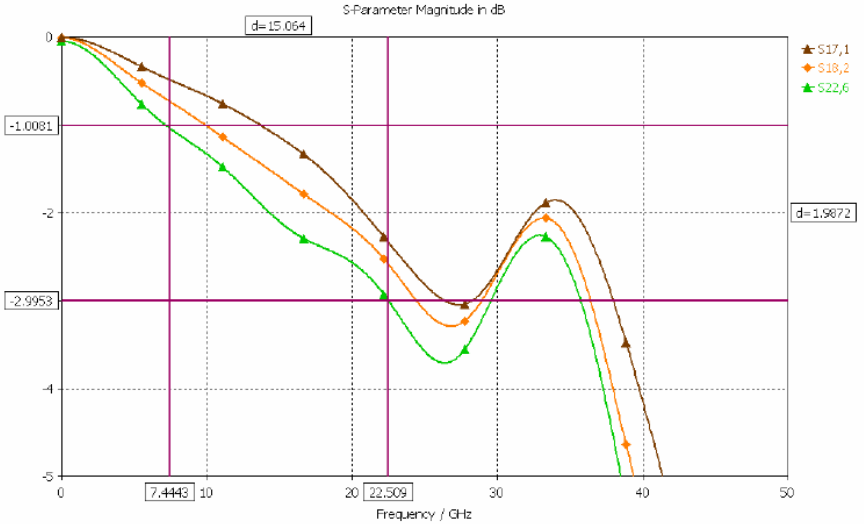
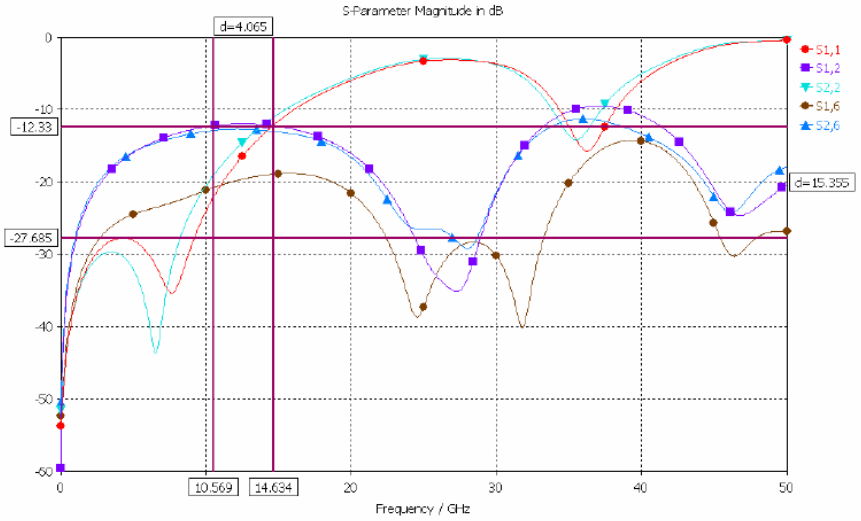
Product Model



Bandwidth Data



Return loss & Cross talk



Mutual Capacitance

0.197	0.132	0.132	0.197
0.132	0.034	0.034	0.132
0.102	0.034	0.034	0.132
0.197	0.132	0.132	0.197

Mutual Inductance

Pin1	L_{12}=0.0333	L_{13}=0.01153	L_{14}=0.00393
L_{56}=0.3994	Pin6	L_{67}=0.4160	L_{68}=0.1560
L_{911}=0.1546	L_{1011}=0.4160	Pin11	L_{1112}=0.3994
L_{1316}=0.0392	L_{1416}=0.1152	L_{1516}=0.3372	Pin16

High Volume Manufacturing

Ironwood Electronics, Inc.

Pick & Place SMT Line, Reflow Oven

Stencil/Screen Printer, Tape & Reel Packaging

CNC & Screw Machines

Optical Inspection Unit

Value Proposition

Ironwood Electronics, Inc.

- Proven solution for automobile applications due to extreme temperature capability.
- Shortest electrical path, proven solution for high speed digital and RF applications (excellent bandwidth >7GHz).
- Reliable and Robust due to low and stable contact resistance throughout life cycle.
- Low insertion and extraction force for ease of operation.
- Complete automation using SolidWorks® CAD, GibbsCAM® and High speed CNC & screw machines for component fabrication.
- Complete automation of pin loading, assembly and inspection of Giga-snap™ product.
- Full traceability built into process.
- Established lean/six sigma process eliminates non-value added steps in the manufacturing sequence which enables low cost for end customers.
- Established “Pull” system and “Kanban” allow flexible manufacturing flow which enables short lead time for various order sizes.
- Pick & Place, Tape & Reel support for end users.
- No substrate warping, No CTE mismatch, Co-planarity <100µm.
- Component heat dissipation does not affect solder connection.
- Solders same as the IC it emulates.

B.C.E. ELECTRONICS

Valued Quality. Delivered.

Tack
Vielen Dank
Obrigado
Merci
ありがとうございます
Bedankt
Takk
感謝您
谢谢
Grazie
Спасибо
Thank You
Kiitos
Tak
감사합니다
Gracias
Σας ευχαριστούμε
Dziękujemy

Email: bce@bce.it

Website: www.bce.it