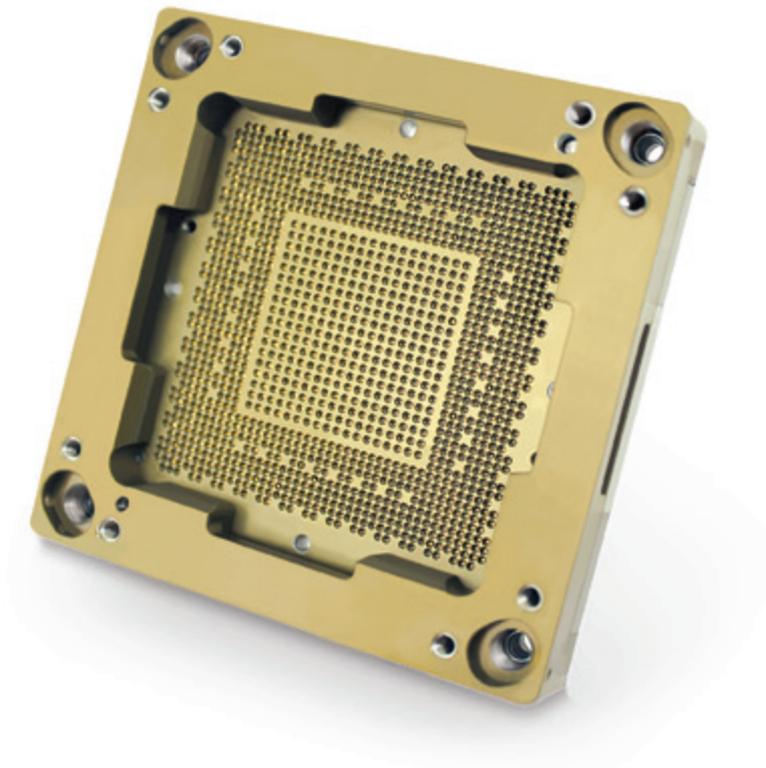


# DaVinci Series Test Sockets

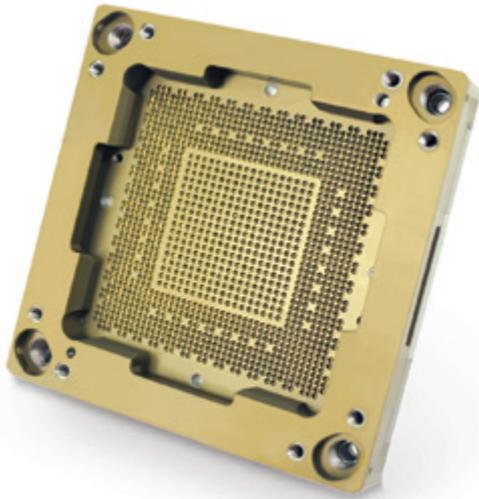
High Speed Test

Impedance Controlled Coaxial Solution for High Speed Test



# DaVinci Series Test Sockets

The Next Generation of High Speed Test Solutions



Smiths Interconnect's DaVinci 56 Test Socket is a high performance coaxial socket developed for reliable IC testing up to 67 GHz Analog RF & 56 Gbps NRZ Digital.

Consumer demands for next generation technologies such as IoT, 5G, Artificial Intelligence (AI), Deep Learning, vehicle-to-vehicle communication and self-driving vehicles fuel a need for high speed data transfer and processing technologies. High reliability testing is essential for the higher speed, multi-function digital and analog devices driving these technologies.

DaVinci 56 is the next generation of Smiths Interconnect's patented DaVinci technology which integrates spring probe technology and a proprietary insulated material resulting in a high speed solution that offers these benefits:

- Matched coaxial impedance.
- Spring probes with reduced test length for low power inductance, high current carrying capacity and low contact resistance.
- Reliable performance, simple in-house probe replacement and system maintenance.

Smiths Interconnect's design team utilizes extensive system simulation models throughout product development to ensure an optimal solution for each test environment. We also perform design validation and RF measurements which exceed the industry's stringent test requirements ensuring excellent out of the box performance and quick test system implementation.

DaVinci Test Sockets using spring probe technology in an IM material coaxial structure ensure high reliability testing of next generation IC packages.

## End Product Markets

- Communication
- Computer
- Automobile
- Defense
- Industrial & Medical
- Game Consoles
- AI & Deep Learning
- Optical & Silicon Photonics

# Value Proposition

## DaVinci Technology

- Improved coaxial socket structure
- Proprietary insulated metal socket
- Spring probe simplicity
- Easily configurable
- Field maintainable

## Superior Durability

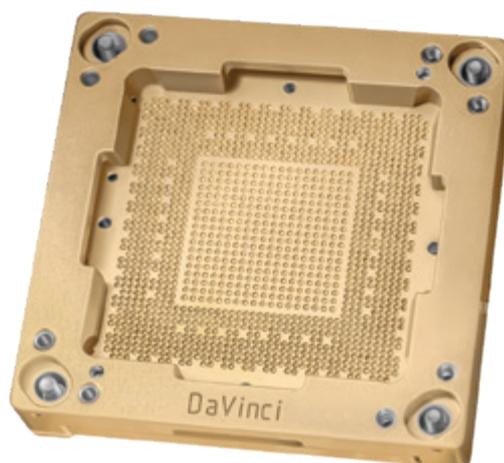
- Entire signal path shielded
- Impervious to temperature and humidity fluctuations
- Extreme rigidity
- Very low deflection rate

## Optimized Design

- Single-ended spring probe design for extended compliance
- Low contact resistance
- Reduced test height
- High current carrying capacity

## Exceptional Performance

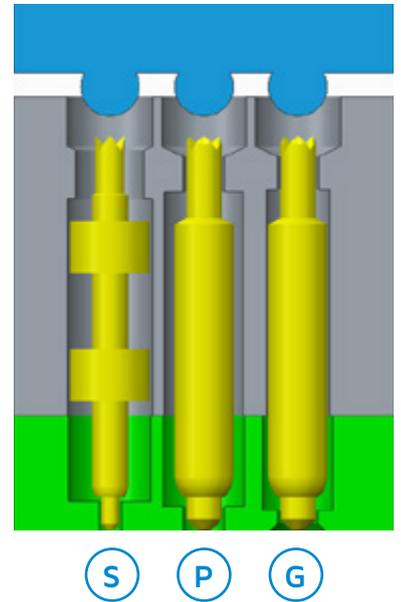
- High Speed: >67 GHz / 56 Gbps
- >3 Amp current carrying capacity
- Exceptional thermal properties with socket frame acting as a heat sink



# Technical Characteristics

	DaVinci 45G		DaVinci 56
<b>Mechanical &amp; Environmental</b>			
Minimum Pitch	>0.7mm	0.65mm	0.8mm*
Compliance / Travel	0.50mm	0.40mm	0.50mm
Operating Temperature	-55° to +120°C		-55° to +120°C
Life Span	>200,000 cycles		200,000 cycles
<b>Electrical</b>			
Loop Inductance	0.2 nH		0.22 nH
Mutual Capacitance	0.15 pF		0.13 pF
Contact Resistance	80 mΩ		<80 mΩ
Current Carrying Capacity	3.0 A		3.0 A
Bandwidth (-1dB)	45 GHz / 26 Gbps		67 GHz / 56 Gbps

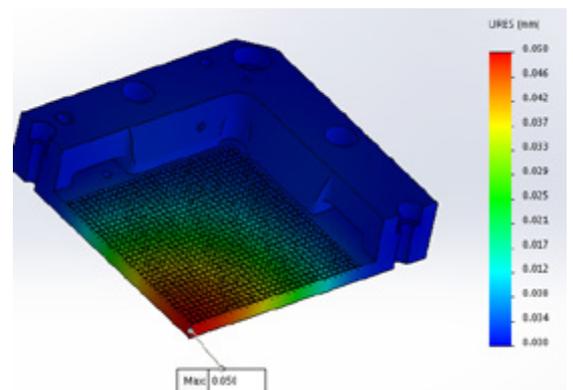
\* DaVinci 56 for 0.65 and 0.7 mm pitches under development



# IM Mechanical Performance

- Proprietary insulated IM Material exhibits least deflection as illustrated by below Max Deflection rates.

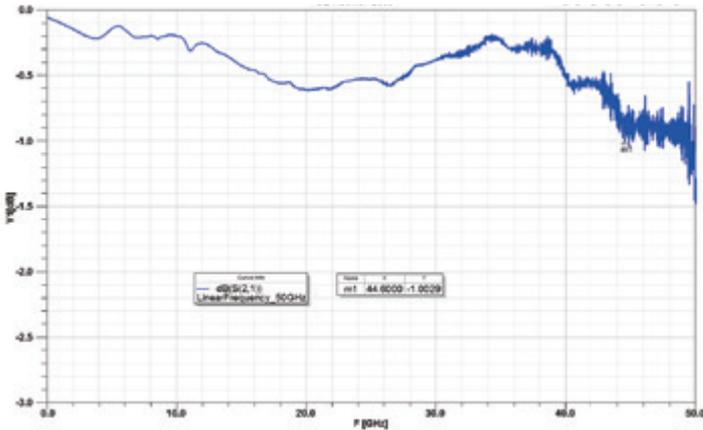
Material Type	IM Material	Peak Ceramic	MDS-100
DaVinci 45G 1745 pin BGA	0.009mm	0.085mm	0.046mm
DaVinci 56 4096 pin BGA	0.050mm	0.210mm	0.168mm



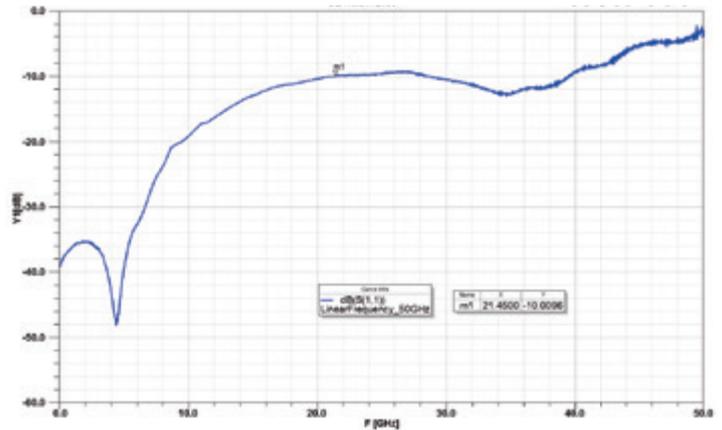
# Bandwidth & Frequency Measured Data

DaVinci 45G Single Ended 0.8mm pitch probes - 8A Pattern (3x3 Array)

Insertion Loss



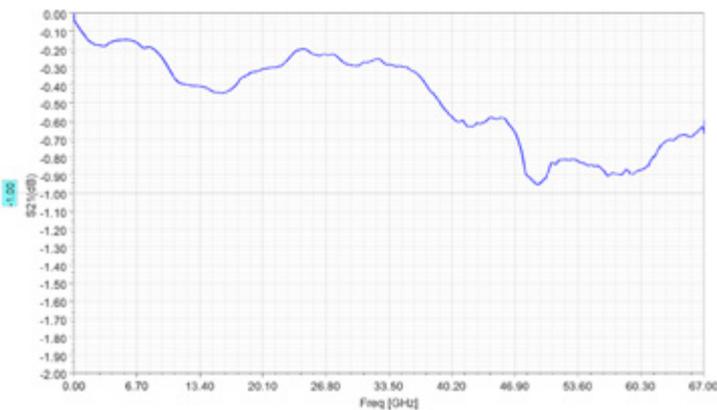
Return Loss



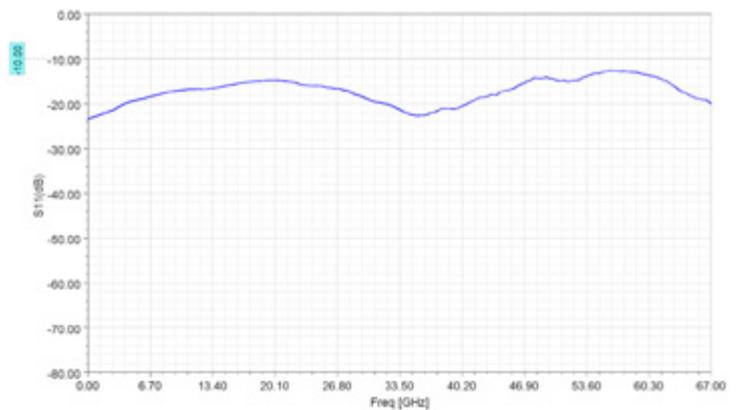
- Impedance 43 Ohm
- Linear Frequency 50 GHz

DaVinci 56 Single Ended 0.8mm pitch probes - 8A Pattern (3x3 Array)

Insertion Loss



Return Loss



- Impedance 43 Ohm
- Linear Frequency 67 GHz

# Global Support

## Americas

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