ZIGMA™ PRODUCT FAMILY

PATENTED PATENTED PATENTED

Super High Performance Test Contacting Solutions

[Patent No. 8,952,714 B2]

For Analog / RF / IoT Device Testing

Contactor Lifespan

Socket Housing : ≥ 6M
Contact Pin : 300K~ 900K
Elastomer : ≥ 400K

Brings:
- Sustainable FPY
- Improved OEE
- Lower cost to Test

Advance Contact Finishing (ACF) Technology

Zigma-ACF | Others

ZIGMA™
Sustainability of SPECIFICATION & PERFORMANCE

Short Wiping Stroke (SWS) Technology

Zigma | Others

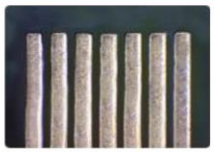
No Pin Engagement with Back-Stopper

Zigma | Others

Error Free in Pin Type & Elastomer Selection

Same pin & elastomer for both **PPF/NiPd & Matte Tin**

Loadboard Protected Against External Debris

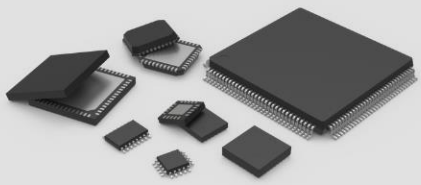


3mm x 3mm & Above Grounding Solution

Less Compression Ratio with Bigger Elastomer

0.2/0.9 mm **22.2%** | 0.2/0.7 mm **28.6%**

XYZ Compatible with Most Socket Platforms



Solution for Leaded & Leadless packages*

* Package Range: SO, SOIC, TSOP, QFP, QFN, DFN
* Min. Pitch: 0.3mm

Most of the images are computer rendered. Some of it may differ from the actual part in terms of colour, size and design due to material composition, design revision and machining tolerance.

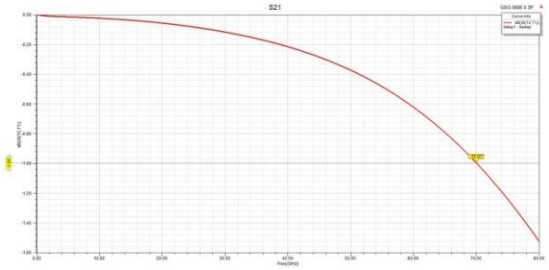
TECHNICAL SPECIFICATIONS

Electrical Specifications	Zigma2	Zigma1	Zigma.5
Self Inductance (nH)	0.42	0.29	0.19
Mutual Inductance (nH)	0.230	0.137	0.08
Ground Capacitance (pF)	0.28	0.061	0.04
Mutual Capacitance (pF)	0.150	0.056	0.02
S21 (Insertion Loss / Bandwidth)	- 1dB @ 14GHz *	- 1dB @ 40GHz *	- 1dB @ 70GHz *
S11 (Return Loss / Bandwidth)	- 20dB @ 3GHz *	- 20dB @ 16GHz *	- 20dB @ 21GHz *
S41 (Crosstalk / Bandwidth)	- 24dB @ 15GHz *	- 20dB @ 12.5GHz *	- 20dB @ 25GHz *
Contact DC Resistance (mΩ)	≤ 25.0	≤ 25.0	≤ 20.0
Current Carrying Capacity (A)	5.00	4.70	3
Current Leakage (pA) @ 10V	≤ 1.0	≤ 1.0	≤ 0.1

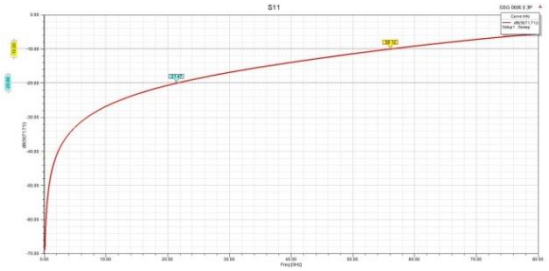
Mechanical Specifications	Zigma2	Zigma1	Zigma.5
Pin Uncompressed Height (mm)	1.60	0.925	0.50
Pin Compliance (mm)	0.20	0.175	0.10
Pin Tip Coplanarity (mm)	0.05	0.05	0.05
Pin Wiping Length (mm)	≤ 0.1	≤ 0.1	≤ 0.08
Gram Force Per Pin (g)	55 ~ 65	25 ~ 35	10 ~ 15
Number of Insertion – Housing	≥ 6M	≥ 6M	≥ 1M
Number of Insertion – Elastomer	≥ 400k	≥ 400k	≥ 100k
Number of Insertion – Pin (Matte Tin)	≥ 800k	≥ 500k	≥ 100k
Number of Insertion – Pin (NiPd)	≥ 500k	≥ 300k	≥ 100k
Operating Temperature (°c)	- 45 ~ 155	- 45 ~ 155	- 45 ~ 155
Socket Material	Torlon® 5030	Torlon® 5030	Torlon® 5030
Pin Material	BeCu - NiAu	BeCu - NiAu	BeCu - NiAu

Zigma.5 Performance②

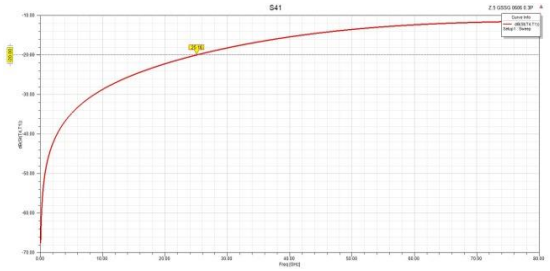
S_{21} Insertion Loss



S_{11} Return Loss



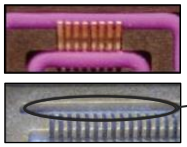
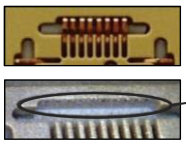
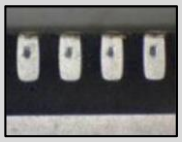
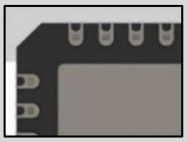
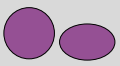
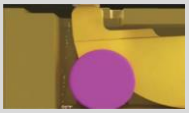
S_{41} Crosstalk



① Specifications of this product is based on laboratory results at JF Microtechnology and field testing. The results may vary subject to variables of test environment conditions including hardware mechanism set-up. DUT conditions and other maintenance activities. Results for 0.5mm pitch configurations on matte tin finishing devices at ambient.

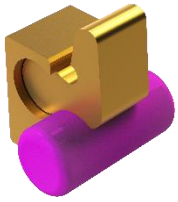
② Simulated Results

FEATURES & BENEFITS

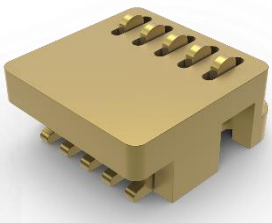
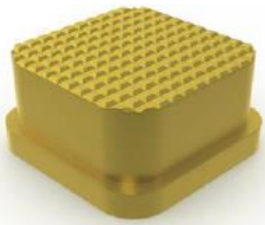
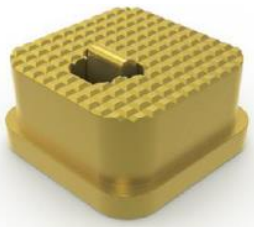
Design Feature	Illustration	Benefit
No Pin Engagement with Back Stopper	 ZIGMA No Wearing  Others Progressive Wearing	• Socket lifespan**: ≥ 6M insertions**
Short Wiping Stroke (SWS) Technology	 Typical wiping length 0.17 ~ 0.22mm  Short chamfered corner pads  ZIGMA wiping length 50~100% shorter length  Wettable flank / Dimple pad	• Ideal for short pads: **chamfered corner** and **wettable flank** / **dimple pad** • Retains more solderability area • Less debris generation • Ideal for multiple testing insertion
Advance Contact Finishing (ACF) Technology	 ZIGMA-ACF  Others' Pin	• Loadboard friendly • **Less cleaning frequency**
Bigger Elastomer Diameter (Less Compression Ratio)	 0.2/0.9 mm **22.2%** vs.  0.2/0.7 mm **28.6%**	• **≥ 33% longer lifespan** than typical elastomer • Sustainable test performance
XYZ Compatible with Most Socket	 	• **Low or zero** hardware investment
Debris Protection Design	 Debris blocked by front elastomer	• Less loadbroad cleaning frequency • Prolong loadboard lifespan
Single Pin Type for Matte Tin & NiPd Finishing Devices Single Elastomer type for front and back slots	 Same pin & elastomer for both **PPF/NiPd & Matte Tin**	• Error free in pin type & elastomer selection • Less inventory

ZIGMA ACCESSORIES

ZIGMA Grounding Pin Solutions

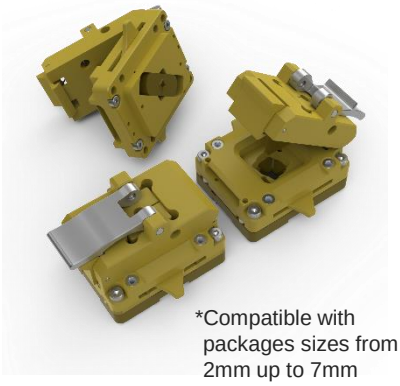
Bell Contact (BC) Patented	Hinged Contact Insert (HCI) Patented	ZIGMA Short Pin (ZSP)	ZIGMA Pin (ZP)
			
For Package: ≥ 2x2	For Package: ≥ 3x3	For Package: ≥ 4x4	For Package: ≥ 5x5

ZIGMA Grounding Block Solutions

Ground Block	Ground Block with Pins	Spike Ground Block	Spike Ground Block with Pins
			
For Package: ≥ 2x2	For Package: ≥ 3x3	For Package: ≥ 4x4	For Package: ≥ 5x5

ZIGMA Grounding Block Solutions

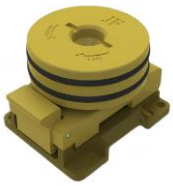
Auto Centering Manual Actuator (ACMA)*
Patent Pending



*Compatible with packages sizes from 2mm up to 7mm

Single Latch Vertical Clamp Shell

Single Latch Turn Knob with Spring Loaded



Double Latch Vertical Clamp Shell

Double Latch Turn Knob with Spring Loaded

Note * : *The stated specifications are based on JF Microtechnology's Laboratory Test; the results may vary subjected to the test environment conditions. Information furnished by JF Microtechnology is believed to be accurate and reliable. However, no responsibility is assumed by JF Microtechnology for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of JF Microtechnology. Trademarks and registered trademarks are the property of their respective owners.*

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