



# PAD ROL® 100A

FOR QFN, DFN, AND OTHER PAD-STYLE APPLICATIONS

## Your Solution for Best-in-Class RF / Microwave Testing

The *Pad ROL® 100A* offers the best-in-class electrical performance for testing your most demanding RF and microwave communications devices to 40 GHz. Whether you're performing engineering tests on high gain RF amplifiers, RF transceivers, or other 3G/4G devices, the *Pad ROL® 100A* delivers. Engineered with robust mechanical performance, the *Pad ROL® 100A* meets your most demanding production needs for higher First Pass Yield, longer MTBA, resulting in lower cost of test. New contact designs for 0.4mm and  $\geq 0.5$ mm pitches provide longer contact life and longer MTBA for testing your QFN and DFN matte tin and NiPdAu packages.

### ROL® 100A Contacts

Gold-Plated  
Low-Force XL-2

### Device Platings

Matte Tin & Tin-Based  
Nickel Palladium Gold

## Characterization

*Pad ROL® 100A* Contactors are ideal for Manual Device Evaluation, Lab Testing, Prototyping and Characterization

- **Designed to test to 40 GHz**
- **Reliable and repeatable results.**
- **Lab Performance correlates to Production Test Floor**
- **Robust Manual Actuator life of 10k+ insertions**

## Production Test

The self-cleaning wipe action of the "rolling contact" design provides many benefits for Production Test:

- **Consistent Contact Resistance**
- **Optimized Electrical Performance**
- **Higher First Pass Yield**
- **Repeatable Site-to-Site Performance**
- **Longer MTBA (Mean Time Between Assists)**
- **Prolonged Load Board Life**
- **Simple Maintenance & Rebuilding**
- **Improved OEE (Overall Equipment Efficiency)**
- **Lower Overall Cost of Test**



Gold-Plated  
Contact Profile  
Matte Tin  
Configuration



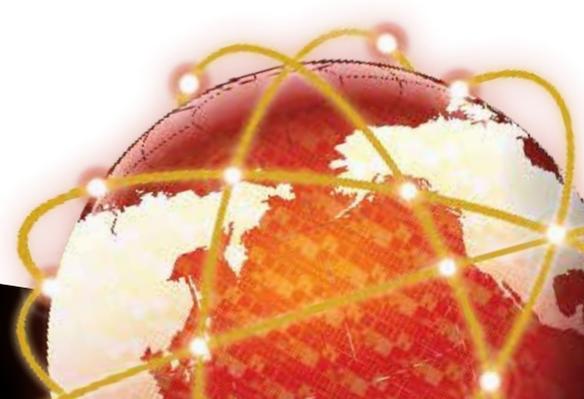
Low-Force XL-2  
Contact Profile  
NiPdAu  
Configuration



DL-VCMA Plus™  
Double-Latch Vertically  
Compliant Manual  
Actuator



SL-VCMA  
Single-Latch Vertically  
Compliant Manual  
Actuator



SMART. CONNECTED. GLOBAL.

# Pad ROL® 100A

Electrical Specifications	Matte Tin Configuration	NiPdAu Configuration
Electrical Length (compressed height):	1.10 mm	1.14 mm
Inductance:	Self: 0.23 nH Mutual: 0.14 nH	Self: 0.37 nH Mutual: 0.15 nH
Capacitance:	Ground: 0.16 pF Mutual: 0.05 pF	Ground: 0.17 pF Mutual: 0.03 pF
S <sub>21</sub> Insertion Loss (GSG):	-1dB @ 40 GHz	
S <sub>11</sub> Return Loss (GSG):	-20dB @ 14.5 GHz	-20dB @ 3.2 GHz
S <sub>41</sub> Crosstalk (GSSG):	-20dB @ 32 GHz	-20dB @ 14.5 GHz
Average CRES:	50 mOhms	<20 mOhms
Current Carrying Capability*: (Duty cycle 100%, 50%, 1%)	3.1A, 5.0A, 6.1A	4.4A, 5.9A, 9.1A
Current Leakage:	<1pA @ 10V	
Nearest Decoupling Area:	1.25 mm	

Mechanical Specifications	Matte Tin Configuration	NiPdAu Configuration
Physical Compressed Height:	0.75 mm	
Contact Life (# of insertions):	Elastomers = 300,000 Contacts = 500,000+ Housing = 1,000,0000+	
Contact Compliance:	0.175 - 0.200 mm	
Contact Force (per contact):	60 grams	20 grams
Contact Tip Coplanarity:	0.05 mm	
Temperature:	-40°C to 155°C	
Housing Material:	Torlon® 5030	
Contacts:	Gold-plated	Low-Force XL-2
Contact Material:	BeCuNiAu	Gold-plated Alloy

Results for 0.5mm pitch configurations. Specifications provided here are based on internal testing at Johnstech, customer production sites, and third party electrical testing. Actual individual results may vary based on a wide range of variables including: handler/contacter/load board interface, handler plunge depth and velocity, device presentation, alignment plate condition, package plating characteristics, test floor conditions, maintenance activities, mounting/fastening techniques, non-coplanarity from site to site, non-coplanar docking, and temperature extremes.

\* Test conditions: 300 msec pulse, 20°C temperature rise.

## Manual Actuator

Double-Latch (DL-VCMA *Plus*™) and Single-Latch (SL-VCMA) Vertically Compliant Manual Actuators are available. Manual Actuator Material is Ultem® 2300.

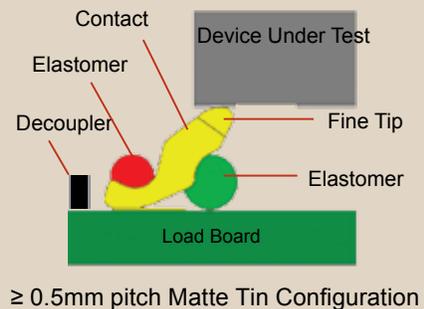
## Housing Options

Housing are offered in standard handler specific sizes with custom sizes also available. Contact Johnstech for assistance.

## Contact Options

Gold-Plated Fine Tip, ≥ 0.5mm pitch, Matte Tin  
 Gold-Plated Fine Tip, 0.4mm pitch, Matte Tin  
 Low-Force XL-2 Fine Tip, ≥ 0.5mm pitch, NiPdAu  
 Low-Force XL-2 Fine Tip, 0.4mm pitch, NiPdAu  
 Low-Force XL-2 Fine Tip, 0.3mm pitch, NiPdAu

## Methodology



## Johnstech Services and Contact Information

### Johnstech Services/Resource Options

Test Floor Technical Support - Worldwide Field Service Offices; First-Pass Yield Enhancement; Performance Audits; Customized Training and Applications Engineering. Online Tech Support at [www.johnstech.com/support](http://www.johnstech.com/support)

### Engineering Services

Mobile RF Modeling, Wafer Level Thermal Analysis, Die Shrink Test Planning, Test Signal Integrity Optimization, Test Cell Integration, and Probe Card PCB Evaluation.

### Website ([www.johnstech.com](http://www.johnstech.com))

Product, Test, Industry Support Information; Downloadable, Product Spec Sheets; Maintenance and Inspection Guides; Tech Papers and Application Notes.

All products and technology herein covered by U.S. and/or International patents.

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