

# Pad ROL™ 200

PAD ROL™ 200 SERIES CONTACTOR

For QFN, DFN, and Other Pad-Style Applications

## Your Solution for RF/Analog Testing

 (Actual Size)



Gold-Plated Contact Profile  
Matte Tin Configuration  
≥ 0.5mm Pitch

 (Actual Size)



Low-Force XL-2 Contact Profile  
NiPdAu Configuration  
≥ 0.5mm Pitch



DL-VCMA  
Double-Latch Vertically Compliant Manual Actuator



SL-VCMA  
Single-Latch Vertically Compliant Manual Actuator

Johnstech's patented ROL™ technology provides excellent electrical performance and proven mechanical reliability for applications including Precision Analog and RF. The ROL™200 Series provides Contact/Elastomer configurations for the unique challenges of matte tin and NiPdAu packages.

### ROL™200

#### Contacts

Gold-Plated  
Low-Force XL-2

#### Device Platings

Matte Tin & Tin-Based  
Nickel Palladium Gold

### Characterization

ROL™200 Contactors are ideal for Manual Device Evaluation, Lab Testing, Prototyping and Characterization

- Designed to test to 20 GHz
- Reliable and repeatable results
- Lab Performance correlates to Production Test Floor
- Robust Manual Actuator life of 10k+ insertions

### Production Test

The "rolling contact" design of the ROL™ Contactor, which creates a self-cleaning wipe action, provides extensive Production Test benefits:

- 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

Your Contact For Higher Performance

**Johnstech®**

# PAD ROL™ 200 SPECIFICATIONS

Electrical Specifications	Matte Tin Configuration	NiPdAu Configuration
Electrical Length (compressed height):	2.00 mm	2.07 mm
Inductance:	Self: 0.42 nH Mutual: 0.24 nH	Self: 0.55 nH Mutual: 0.24 nH
Capacitance:	Ground: 0.35 pF Mutual: 0.13 pF	Ground: 0.35 pF Mutual: 0.12 pF
$S_{21}$ Insertion Loss/Bandwidth (Ground-Signal-Ground):	-1dB @ 24 GHz	-1dB @ 18.5 GHz
$S_{11}$ Return Loss/Bandwidth (Ground-Signal-Ground):	-20dB @ 4 GHz	-20dB @ 5.8 GHz
$S_{41}$ Crosstalk/Bandwidth (Ground-Signal-Signal-Ground):	-20dB @ 18 GHz	-20dB @ 29.5 GHz
Average Contact DC Resistance:	30 mOhms	20 mOhms
Current Carrying Capability:	4 A	2.8A
Current Leakage:	<1pA @ 10V	<1pA @ 10v
Nearest Decoupling Area:	1.58 mm	1.58 mm

Mechanical Specifications	Matte Tin Configuration	NiPdAu Configuration
Physical Contact Length:	2.63 mm	2.58 mm
Physical Compressed Height:	1.40 mm	1.40 mm
Contact Life (# of insertions):	Elastomers = 300,000 Contacts = 500,000+ Housing = 2,000,000	Elastomers = 300,000 Contacts = 500,000+ Housing = 2,000,000
Contact Compliance:	0.20 mm	0.20 mm
Contact Wipe on Pad:	0.22 mm	0.17 mm
Contact Force (per contact):	70 grams	30 grams
Contact Tip Coplanarity:	0.05 mm	0.05 mm
Environmental:	-40°C to 155°C	-40°C to 155°C
Housing Material:	Torlon® 5030	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/contact/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.

## Manual Actuator

Double-Latch (DL-VCMA) 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 customer sizes also available. Contact Johnstech for assistance.

## Contact Options

Gold-Plated Fine Tip ( $\geq 0.5$ mm pitch) - matte tin  
Gold-Plated Fine Tip (0.4mm pitch) - matte tin  
Low-Force XL-2 Fine Tip ( $\geq 0.5$ mm pitch) - NiPdAu  
Low-Force XL-2 Fine Tip (0.4mm pitch) - NiPdAu

## 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.johnstechhelp.com](http://www.johnstechhelp.com)

## Engineering Services

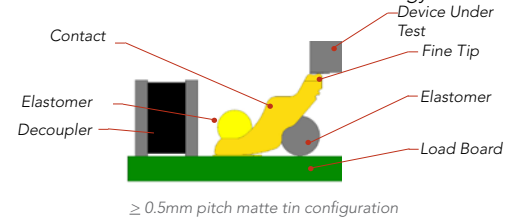
Load Board Evaluation & Testing; HFSS 3D Modeling; Electrical Performance Analysis; PCB/Contact/Device Optimization; Contactor S Parameter Data; Thermal Conductivity Analysis and Advanced Design System (ADS) Simulation, Analysis & Optimization.

## 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.

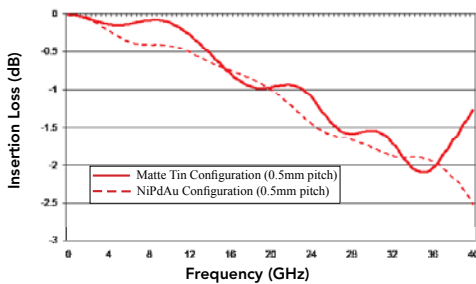
## METHODOLOGY

### Pad ROL™ 200 Series Methodology

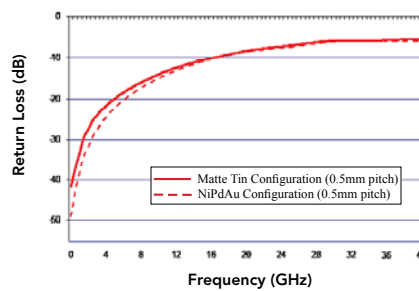


# PAD ROL™ 200 PERFORMANCE

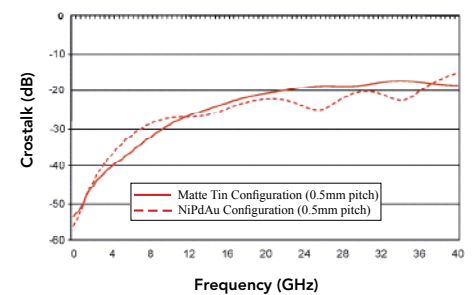
## $S_{21}$ Insertion Loss



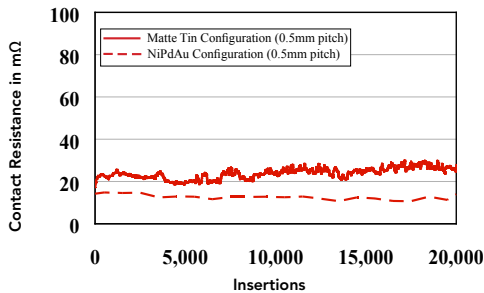
## $S_{11}$ Return Loss



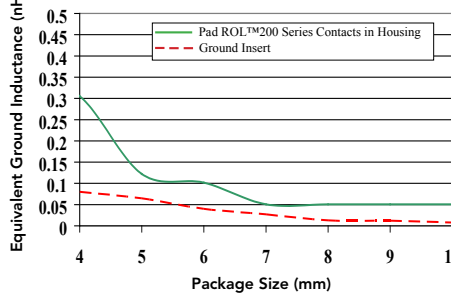
## $S_{41}$ Crosstalk



## Contact Resistance



## Ground Inductance



## Grounding Options

RTH - ROL™ Contacts in Housing is one of Johnstech's recommended Grounding Options (shown on front). Other available options shown here.

