

# Leaded ROL<sup>®</sup> 200

FOR QFP, SO, SOIC, SOJ, SOP, PLCC, TSOP, AND SOT APPLICATIONS

## Your Solution for Analog / Mixed Signal / RF Testing

Johnstech's patented ROL<sup>®</sup> 200 technology brings excellent electrical performance and proven mechanical reliability for Precision Analog, Mixed Signal and RF device testing. The *Leaded ROL<sup>®</sup> 200* utilizes two Mixed Signal Contact configurations that were developed specifically for the unique challenges and different device platings.

### ROL<sup>®</sup> Contacts

Gold-Plated  
Low-Force XL-2

### Device Platings

Matte Tin (Sn) & other Tin-Based  
Nickel Palladium Gold (NiPdAu)



Gold-Plated  
Contact Profile



Low-Force XL-2  
Contact Profile



ZMA  
Z-Axis  
Manual Actuator



VMA  
Vertical  
Manual Actuator

## Characterization

*Leaded ROL<sup>®</sup> 200* Contactors are also 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 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**
- **Less Frequent Cleaning**
- **Longer MTBA (Mean Time Between Assists)**
- **Prolonged Load Board Life**
- **Simplified Maintenance & Rebuilding**
- **Footprint Compatible with Leaded Series 2mm**
- **Improved OEE (Overall Equipment Efficiency)**
- **Lower Overall COT (Cost of Test)**



# Leaded ROL<sup>®</sup> 200

Electrical Specifications	Matte Tin Configuration	NiPdAu Configuration
Electrical Length (compressed height):	1.98 mm	2.00 mm
Inductance:	Self: 0.42 nH Mutual: 0.16 nH	Self: 0.45 nH Mutual: 0.16 nH
Capacitance:	Ground: 0.23 pF Mutual: 0.14 pF	Ground: 0.20 pF Mutual: 0.08 pF
S <sub>21</sub> Insertion Loss (GSG):	-1dB @ 20.7 GHz	-1dB @ 21.3 GHz
S <sub>11</sub> Return Loss (GSG):	-20dB @ 4.4 GHz	-20dB @ 3.2 GHz
S <sub>41</sub> Crosstalk (GSSG):	-20dB @ 16.7 GHz	-20dB @ 14.5 GHz
Average CRES:	<60 mOhms	<20 mOhms
Current Carrying Capability*: (Duty cycle 100%, 50%, 1%)	4.3A, 7.3A, 10.1A	4.4A, 5.9A, 9.1A
Current Leakage:	<1pA @ 10V	
Nearest Decoupling Area:	1.80 mm	

Mechanical Specifications	Matte Tin Configuration	NiPdAu Configuration
Physical Compressed Height:	1.34 mm	
Contact Life (# of insertions):	Elastomers = 300,000 Contacts = 500,000+ Housing = 2,000,000	
Contact Compliance:	0.20 mm	
Contact Force (per contact):	60 grams	30 grams
Contact Tip Coplanarity:	0.05 mm	
Temperature:	-40°C to 155°C	
Housing Material:	Torlon <sup>®</sup> 5030	
Contacts:	Gold-plated	Low Force XL-2
Contact Material:	Beryllium Copper 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

VMA (Vertical Manual Actuator)  
ZMA (Z-Axis Manual Actuator)

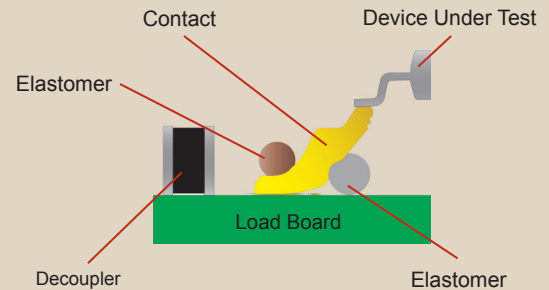
## Housing Options

Housings are offered in standard handler specific sizes with custom sizes also available

## Contact Options

Gold-Plated or Low Force XL-2  
Pitches from 0.40mm – 1.27mm

## 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.

**Johnstech<sup>®</sup>**

Johnstech International Corporation • 1210 New Brighton Boulevard • Minneapolis, MN 55413-1641 USA  
Tel 612.378.2020 • Fax 612.378.2030 • [www.johnstech.com](http://www.johnstech.com) • E-mail [info@johnstech.com](mailto:info@johnstech.com)