

Pad ROL™100A

PAD ROL™100A SERIES CONTACTOR

For QFN, DFN, and Other Pad-Style Applications

Your Solution for Best-in-Class RF/Wireless Testing

The Pad ROL™100A offers the best-in-class electrical performance for testing your most demanding RF/microwave communications devices to 40 GHz. Whether you're performing engineering tests on high gain RF amplifiers, RF transceivers, the latest WiMAX or 3G 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, and lower cost of test. New contact designs for 0.4mm and $\geq 0.5\text{mm}$ pitches provide longer contact life and longer MTBA for testing your QFN and DFN matte tin and NiPdAu packages.

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

 (Actual Size)



Gold-Plated
Contact Profile
Matte Tin Configuration
 $\geq 0.5\text{mm}$ Pitch

 (Actual Size)



Low-Force XL-2
Contact Profile
NiPdAu Configuration
 $\geq 0.5\text{mm}$ Pitch



DL-VCMA
Double-Latch Vertically
Compliant Manual
Actuator



SL-VCMA
Single-Latch Vertically
Compliant Manual
Actuator

ROL™100A

Contacts	Device Platings
Gold-Plated	Matte Tin & Tin-Based
Low-Force XL-2	Nickel Palladium Gold

Your Contact For Higher Performance

Johnstech®

PAD ROL™ 100A SPECIFICATIONS

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: 0.05 pF
S_{21} Insertion Loss/Bandwidth (Ground-Signal-Ground):	-1dB @ 40 GHz	-1dB @ 40 GHz
S_{11} Return Loss/Bandwidth (Ground-Signal-Ground):	-20dB @ 14.5 GHz	-20dB @ 18.3 GHz
S_{41} Crosstalk/Bandwidth (Ground-Signal-Signal-Ground):	-20dB @ 32 GHz	-20dB @ 33.5 GHz
Average Contact DC Resistance:	50 mOhms	25 mOhms
Current Carrying Capability:	4 A	2.6 A
Current Leakage:	<1pA @ 10V	<1pA @ 10v
Nearest Decoupling Area:	1.25 mm	1.25 mm

Mechanical Specifications	Matte Tin Configuration	NiPdAu Configuration
Physical Contact Length:	1.44 mm	1.42 mm
Physical Compressed Height:	0.75 mm	0.75 mm
Contact Life (# of insertions):	Elastomers = 300,000 Contacts = 500,000+ Housing = 1,000,000	Elastomers = 300,000 Contacts = 500,000+ Housing = 1,000,000
Contact Compliance:	0.175 - 0.200 mm	0.175 - 0.200 mm
Contact Wipe on Pad:	0.12 mm	0.16 mm
Contact Force (per contact):	60 grams	20 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

Standard Housings = 38.1mm x 38.1mm and 25mm x 25mm. Custom designs are available. Contact Johnstech for assistance.

Contact Options

Gold-Plated Fine Tip (≥0.5mm pitch) - matte tin
Gold-Plated Full 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

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

Engineering Services

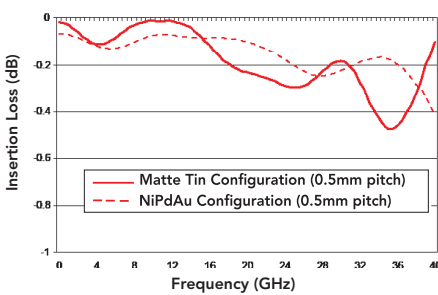
Load Board Evaluation & Testing; HFSS 3D Modeling; Electrical Performance Analysis; PCB/Contact/Device Optimization; Contactor S Parameter Data; Thermal Conductivity Analysis and Advanced Design System (ADS) Simulation, Analysis & Optimization.

Website (www.johnstech.com)

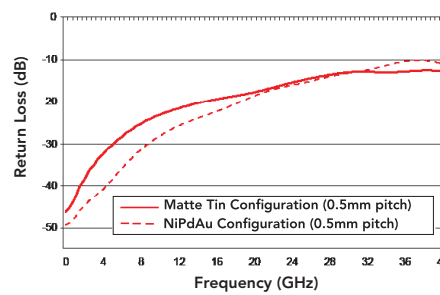
Product, Test, Industry Support Information; Downloadable, Product Spec Sheets; Maintenance and Inspection Guides; Tech Papers and Application Notes.

PAD ROL™ 100A PERFORMANCE

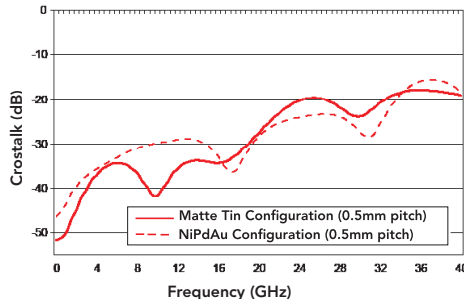
S_{21} Insertion Loss



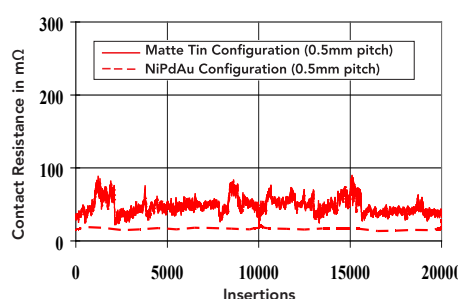
S_{11} Return Loss



S_{41} Crosstalk

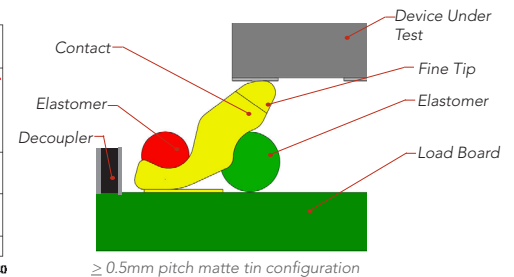


Contact Resistance



METHODOLOGY

Pad ROL™ 100A Series Methodology



Grounding Options

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

