

MEMS Applications

Pad ROL™ 200 MEMS Test Solution

Highly Accurate, Repeatable Test Results and Robust Mechanical Performance for Micro-Electro Mechanical Systems (MEMS) Device Testing

The level of MEMS testing depends upon the functionality of the MEMS device. Some MEMS devices can be tested with traditional IC test handlers, while many others require special test handlers that can supply high G-forces, rotation, and temperature extremes.

Here are some of the factors that need to be considered in MEMS testing:

- Mechanical stability of the package
- Clamping mechanism for physical agitation
- Vibration/acceleration tolerance
- Rotational tolerance
- Humidity tolerance
- Pressure tolerance
- Consistent continuity and force during physical tests
- Low capacitance for sensors

MEMS Contactor Solution

A MEMS Contactor solution must be a robust test platform. It is subjected to the same rigorous conditions as the MEMS package itself. The Pad ROL™200 MEMS solution utilizes its robust Torlon housing and solid contact technology to meet the stringent robust mechanical and repeatable electrical performance necessary for testing MEMS devices.

The Johnstech Pad ROL™ 200 MEMS Test Solution

Mechanically Robust

- Constant low-force across all Contacts
- Minimal Contact bounce during mechanical vibration and motion
- Minimal mechanical movement to prevent stressing the package during mechanical activation
- Adjustable manual actuator available to lock-in specific force for optimum setting
- Resilience to vibration, acceleration and 360 degree X, Y, and Z angular motion
- Long contact life and MTBA
- Resilience to pressure, vacuum, and humidity
- Resilience to temperature variations on mechanical and electrical performance
- Compatibility with clamping mechanisms on rotating multi-axis test handlers

Electrically Repeatable and Stable

- High frequency range
- Low inductance
- High current carrying capacity
- Low and stable contact resistance

Your Contact For Higher Performance

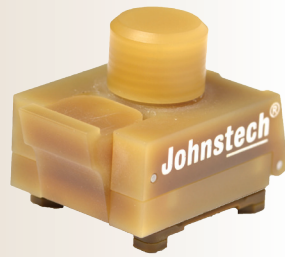
Johnstech®

**20
YEARS**

Manual Test



MEMS Manual Actuator lid open showing Johnstech Pad ROL™ 200 Contactor.



MEMS Manual Actuator lid closed. Force can be adjusted and locked for optimum setting.

Electrical Performance

Electrical Length (compressed height): 2.07 mm
Inductance: Self: 0.55 nH
S21 Insertion Loss (GSG): -1dB @ 18.5 GHz
Average Contact DC Resistance: NiPdAu: <20 mOhms
Current Carrying Capacity: 2.8 A

Refer to the Pad ROL™ 200 Specification Sheet for more complete performance specifications and for other device platings. Data subject to change.

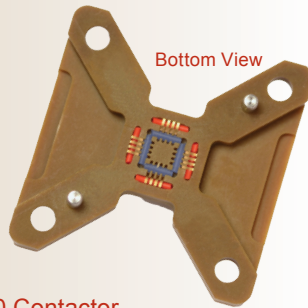
Mechanical Performance

Physical Contact Length: 2.58 mm
Physical Contact Compressed Height: 1.4 mm
Contact Life (# of insertions): 500,000+
Contact Compliance: 0.20 mm
Contact Force (per contact): NiPdAu or Gold pads: < 30 grams
Environmental: -40°C to 155°C
Contacts: Low-Force XL-2

Automated Test



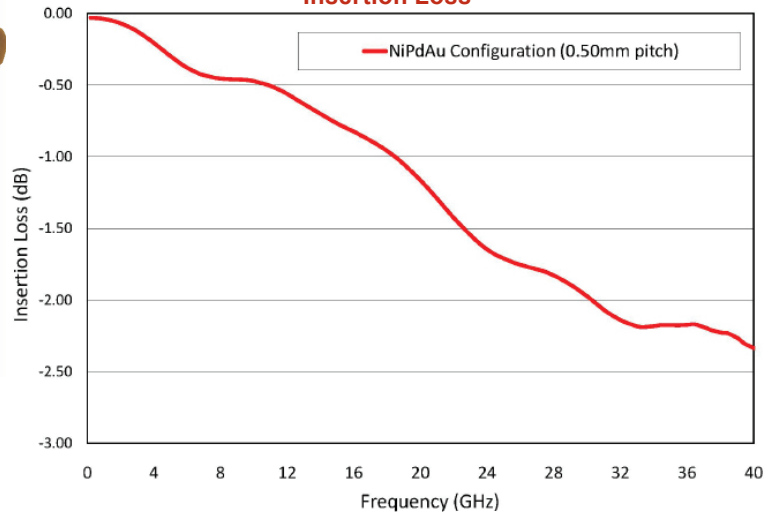
Top View



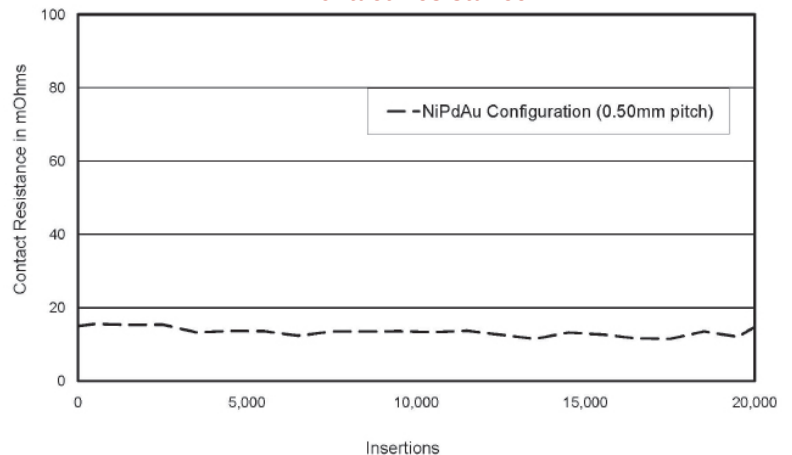
Bottom View

Pad ROL™ 200 Contactor with Alignment Plate for automated handler test.

Insertion Loss



Contact Resistance



Contact Johnstech

To learn more about Johnstech's patented solutions and services that maximize your MEMS testing performance, reduce your engineering risk, and provide repeatable production test results, contact your local Johnstech Sales Representative.

Also learn more about Johnstech products and services at www.johnstech.com.