

PAD ROL[®] 200KR Kelvin-Ready[™]

FOR QFN, DFN, AND OTHER PAD-STYLE APPLICATIONS

More Than Just Precision Measurements. Add System Monitoring Feedback, Field Configurability, and Load Board Friendly. That's Kelvin-Ready[™].

The Johnstech *Pad ROL[®] 200KR Kelvin-Ready[™]* Contactor provides test engineers with unprecedented test objective versatility for their pad devices. When populated with only force contacts, it has all the high performance features of the industry-leading, standard Pad ROL[®] 200 Contactor.

But it's Kelvin-Ready[™] design that accommodates field configurable sense contacts to be used for any given I/O, enabling precision Kelvin measurements and test system monitoring feedback loops to improve a wide variety of test objectives. Test engineers are now using Kelvin for improved characterization and removing it when their devices go to production.

All of these advantages come without the requirement to narrow load board traces like other Kelvin technologies do. Standard size load board traces helps to minimize manufacturing expenses while maintaining production test reliability.

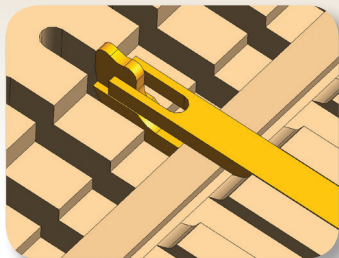
Delivers Precision Measurements

- Simplified Kelvin Testing
- Enhanced Characterization
- Accommodates RF Signals
- Faster High Power Testing

Configurable, System Feedback Loops

- DUT-Only Measurements Increase Yields
- Determine Cleaning / Increase MTBA
- Eliminate False Failures / Retests
- Troubleshooting

Only **Kelvin-Ready[™]** technology can optimize test system parameters for precision analog, high speed digital, RF, mixed signal, high current and high power devices, all with a single contactor.



The Kelvin-Ready[™] contact design is optimized using a unique combination of our traditional high current, high frequency Force contact and a redundant-touch Sense contact to ensure a good connection regardless of device variations. The design also provides for a dual self-cleaning wipe action to remove debris build-up from the contact tip and from between the two contacts. The wipe function provides long MTBA and lowers the overall cost of test

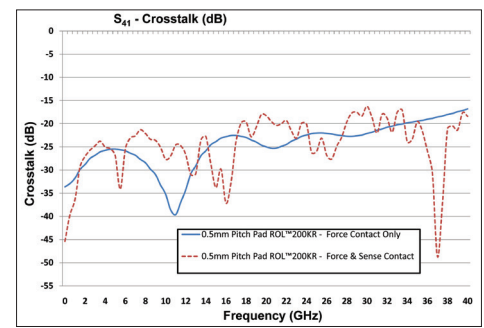
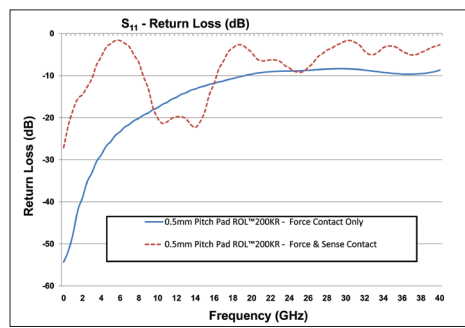
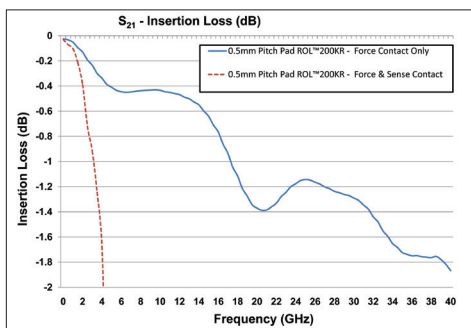


Pad ROL[®] 200KR Kelvin-Ready[™]

Electrical Specifications	For Contact Only (Non-Kelvin I/O's)	Force + Sense (Kelvin I/O's)
Inductance:	Self: 0.47 nH Mutual: 0.10 nH	Self: 3.5 nH Mutual: 0.72 nH
Capacitance:	Ground: 0.16 pF Mutual: 0.06 pF	Ground: 0.78 pF Mutual: 0.25 pF
S ₂₁ Insertion Loss (GSG):	-1 dB @ 17.1 GHz	-1dB @ 3.0 GHz
S ₁₁ Return Loss (GSG):	-20 dB @ 8.0 GHz	-20dB @ 0.8 GHz
S ₄₁ Crosstalk (GSSG):	-20 dB @ 33.5 GHz	-20dB @ 17.3 GHz
Average DC Contact Resistance (CRES):	40 mΩ Force Force Contact Contact 330 mΩ Sense Contact	<1 mΩ System
Current Carrying Capacity * (Duty Cycle 100%, 50%, 1%):	2.8 A, 4.0A, 5.8A Force Contact 0.8A, 1.3A, 1.7A Sense Contact	
Current Leakage:	<1pA @ 10V	
Nearest Decoupling Area:	1.58 mm	

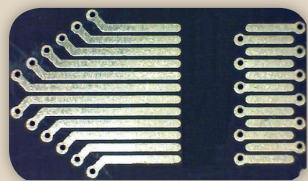
Mechanical Specifications	
Compressed Height:	1.40 mm
Electrical Length:	2.00 mm
Contact Force:	
Force Contact Only (Force + Sense Contact)	30 grams (60 grams)
Component Life (# of insertions):	Elastomers = 300,000 Force Contacts = 500,000+ Sense Contacts = 300,000+ Housing = 2,000,000+
Contact Compliance:	0.20 mm
Contact Tip Coplanarity:	0.05 mm
Temperature:	-40°C to +155°C
Housing Material:	Torlon [®] 5030
Force Contacts:	Low-Force XL-2 Kelvin Fine Tip

* Steady state conditions for a 20°C temperature rise. Higher currents allowed for lower duty cycles and higher temperature rises. Force Contact manages test signal current.



Kelvin-Ready[™] Load Boards More Reliable, Less Expensive

The Pad ROL[®] 200KR load board solution separates the Force and Sense load board traces in a front and back format, allowing standard size load board traces to route test signals. These relatively larger traces maintain testing reliability and simplify load board design, reducing load board manufacturing expenses relative to other socket designs. For I/Os where Kelvin is not needed, removing the Sense line creates additional load board real estate and can also provide a straight line path to high speed connectors when testing RF and other high speed signals.

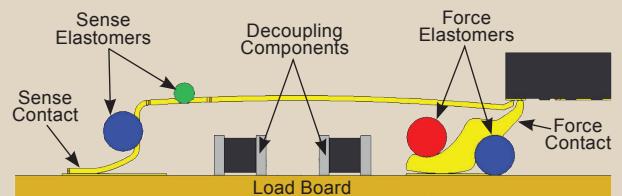


Kelvin-Ready[™] Front/Back Design



Spring Pin Side-by-Side Design

Methodology



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

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)

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

Johnstech[®]

Johnstech International Corporation • 1210 New Brighton Boulevard • Minneapolis, MN 55413-1641 USA
Tel 612.378.2020 • Fax 612.378.2030 • www.johnstech.com • E-mail info@johnstech.com