

# PAD ROL<sup>®</sup> 200KR2 XT<sup>™</sup>

## KELVIN-READY

FOR QFN, DFN, AND OTHER PAD-STYLE APPLICATIONS

## The Automotive Test Solution That Drives Toward Higher Test Yields

As a designer of high performance devices for the automotive industry, you know that your applications are growing in both numbers and complexity. Since this trend is expected to continue for the next several years, it is more important than ever to require extreme versatility and superior reliability from your test solutions. Whether you are testing Audio & Infotainment, Vehicle Networking, Powertrain, or other automotive device applications, look for the solution that drives your results toward higher test yields and delivers superior production throughput.

Johnstech's *Pad ROL<sup>®</sup> 200KR2 XT* Automotive Contactor is just the product you're looking for! This Xtreme Temperature (XT<sup>™</sup>) capable product is designed to maximize your test results, regardless of your tri-temp testing objectives! Even if you are not testing outside the temperature limits of standard Contactors and sockets, the robust design of the XT<sup>™</sup> Contactor provides additional design margin and certainly satisfies even your roadmap requirements.

Johnstech's *Pad ROL<sup>®</sup> 200KR2 XT* Automotive Contactor improves test yields and increases test reliability through several features, including:

### FEATURES & BENEFITS

FREQUENCY	Force	Force + Sense
	Self: 0.65 nH Mutual: 0.12 nH	Self: 3.9 nH Mutual: 0.24 nH
PITCH	≥ .4mm	
TEMPERATURE	-65°C to 175°C	
CURRENT CARRY CAPABILITY @ 100%	2.0A Force Contact; 0.8A Sense Contact	

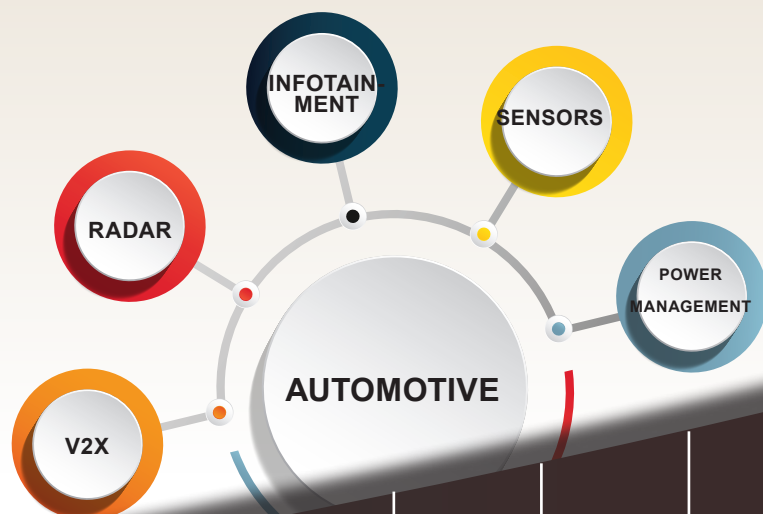
### Electrical Reliability Improves Yields

- Patented, One-Piece ROL<sup>®</sup> Contacts
- Delivers Lowest Contact Resistance (GRES)
- High Current Carrying Capability
- Low Inductance
- Extremely Stable Contact Resistance (GRES)
- High Frequency Capability
- Wiping Contact Clears Debris
- Temperature Test Stability

### Kelvin-Ready<sup>™</sup> Versatility

- Configurable Application Flexibility
- Two Contact Profiles Optimize Performance
- Kelvin Only When And Where Needed
- Superior Load Board Design (see back)
- Determine When To Clean
- Eliminate / Minimize Retests
- Redundant Sense Contact Reliability

## PRECISION ANALOG TO mmRF<sup>™</sup>



1 GHz

20 GHz

30 GHz

40 GHz

50 GHz

60 GHz

70 GHz

80 GHz

90 GHz

100 GHz

**PAD ROL<sup>®</sup> 200KR2 XT<sup>™</sup>**

Electrical Specifications	Force Contact Only (Non-Kelvin I/O's)	Force + Sense (Kelvin I/O's)
Inductance:	Self: 0.65 nH Mutual: 0.12 nH	Self: 3.9 nH Mutual: 0.24 nH
Capacitance:	Ground: 0.13 pF Mutual: 0.04 pF	Ground: 0.30 pF Mutual: 0.13 pF
Average CRES:	40 mΩ Force Contact 330 mΩ Sense Contact	<1 mΩ System
Current Carrying Capacity* (Duty Cycle 100%, 50%, 1%):	2.0 A, 2.3 A, 2.9 A Force Contact 0.8 A, 1.2 A, 1.6 A Sense Contact	
RMS Current Carrying Capacity** (Duty Cycle 100%, 50%, 1%):	2.00 A, 2.83 A, 20.00 A Force Contact 0.80 A, 1.13 A, 8.00 A Sense Contact	
Current Leakage:	<1pA @ 10V	
Nearest Decoupling Area:	1.80 mm	

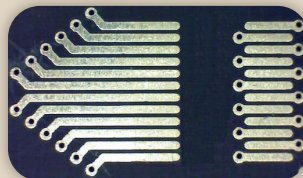
Mechanical Specifications	
Compressed Height:	1.40 mm (Force Contact)
Electrical Length:	2.00 mm (Force Contact)
Contact Force***: Force Contact Only (Force + Sense Contact)	50 grams
Contact Life**** (# of insertions, Typical Performance):	Elastomers = 300,000 Force Contacts = 500,000+ Sense Contacts = 300,000+ Housing =2,000,000+
Contact Compliance:	0.20 mm
Temperature:	-65°C to +175°C
Housing Material:	High Performance Torlon <sup>®</sup>
Force Contacts:	Low-Force XL-2K Fine Tip

NOTE: Specifications for 0.5mm pitch configurations shown here. These specifications are based on a combination of internal and third-party measured testing. \* Test conditions: 300 msec pulse, 20°C temperature rise. Higher currents allowed for higher temperature rises. \*\* RMS current carrying capacity for pulsed applications. Values based on measured steady state current capacity, standardized to 1 Hz test cycle, 20°C temperature rise. Higher currents allowed for higher temperature rises. \*\*\* Typical values based on Johnstech internal testing. \*\*\*\* Contact, elastomer, and housing life values are TYPICAL based on Johnstech internal testing. Actual production life will vary based on a wide range of variables including: handler, Contactor, and load board interface; handler plunge depth and velocity; device presentation; alignment plate condition; package plating material and characteristics; test floor conditions; maintenance activities; mounting/fastening techniques; site-to-site coplanarity; docking coplanarity; and temperature extremes. \*\*\*\*\* Contactor force is dependent on many variables. The contact force listed is typical and may not represent your test solution.

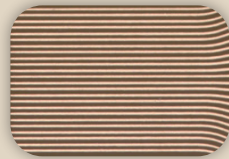
## Kelvin-Ready<sup>™</sup> Load Boards

More Reliable,  
Less Expensive

The Pad ROL<sup>®</sup> 200KR2 Kelvin-Ready<sup>™</sup> 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. The 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<sup>™</sup> Front/Back Design



Spring Pin Side-by-Side Design

## Methodology

