

## Gate resistance (R<sub>g</sub>) generator



The ipTEST stand-alone R<sub>g</sub> generator is designed to measure MOSFET and IGBT Gate resistance and capacitance.

The generator applies a programmable AC voltage up to 2V pk-pk at a nominal frequency of 1MHz across the device under test gate-source junction and resolves the resulting current and phase angle into the DUT gate resistance and capacitance.

Designed to be small and compact to take minimal space on a rotary handler, the generator features a programmable Gate bias of up to  $\pm 10V$  and Drain bias up to  $\pm 30V$ .

Go/no-go Kelvin tests are also performed by the R<sub>g</sub> generator as well as provision for a low-capacitance adaptor for testing dual devices in a single package.

### FEATURES

Accurate measurement of MOS gate resistance and capacitance

Fast DSP analysis of current and voltage/ current phase angle

Opens/shorts Kelvin test

Drain-source shorting relay

Rapid test time, typically <25ms

Dual-device application adaptor available

8 additional relay drive outputs

Compact dimensions

## SPECIFICATION SUMMARY

Current measure	Low	High
Current range	1.0mA max	10.0mA max
Resolution	12 bit	
Accuracy	1%	

Voltage force	
Frequency	0.9766MHz
Maximum voltage	2.0v pk-pk
Resolution	12 bit
Accuracy	1%

Resistance measurement	Low	High
Range	163.8Ω	1638Ω
Accuracy	<5% ±1.0Ω when 47pF < Cg < 100pF ±0.5Ω when Cg > 100pF	<1% ±0.1Ω when 220pF < Cg < 500pF ±0.05Ω when Cg > 500pF

Capacitance measurement	Low	High
Range	1pF to 20nF	
Accuracy	47pF < Cg < 220pF: better than 1% of reading ±1pF	220pF < Cg < 1nF: better than 1% of value ±10pF 1nF < Cg < 5nF: better than 3% of value ±10pF Cg > 5nF: typically 10%

DC voltage bias	Drain	Gate
Range	±30V	±10V
Resolution	12 bit	
Accuracy	1%	

Dimensions	
Height	200mm
Width	40mm
Length	300mm

## TESTS PERFORMED

Cg	AC capacitance measurement
Rg	AC resistance measurement
RgBias	Applies a DC bias to the selected Drain or Gate pin or to the external output
RgCal CgCal	Calibration test mode used to null out parasitic resistance and capacitance
RRELAY	Remote relay drive line

## ORDERING CODES

770-690-03	Gate resistance generator with bias
770-745-00	Dual-device adaptor
770-713-00	Calibration kit