



Dynamic Switching Measurements for MOSFET, GaN & SiC

ipTEST DS5 Features

- Selectable inductive loads
- Programmable gate drive
- Programmable gate resistance
- High speed waveform capture

Key Specs

- 1.2kV/1000A dynamic switch tests
- Double-pulse inductive load and Diode Recovery testing up to 1000A
- Short circuit testing up to 1700A

Principal Tests

- Single & Double Pulse Test**
 - On/Off times
 - Rise/Fall times
 - Switching Energy
- Diode Recovery**
 - T_{rr} , I_{rr} , Q_{rr}
- Short Circuit**
 - I_{sc}

SiC and GaN devices are revolutionising power electronics due to their faster switching times and lower energy losses.

The DS5 Dynamic Switch Generator has been built with the lowest parasitics to test the most demanding devices in production environments.

DS5 Dynamic Switching Test Generator

The M2 DS5 dynamic switch generator is one of the Mostrak-2 (M2) family of test generators from ipTEST. The DS5 generator provides the architecture for a complete dynamic switch test cell.

GaN and SiC devices can provide up to 10x the performance of silicon devices due to lower conduction and switching losses. This enables higher switching frequencies resulting in smaller and more efficient end products.

ipTEST are meeting the challenge of testing these leading edge products with the DS5 test generator.

Our engineering team works closely with our customers and we can provide DS5 application adaptors to measure high speed switching waveforms for today's most challenging GaN and SiC devices.

The fastest power discrete semiconductor testers in the world

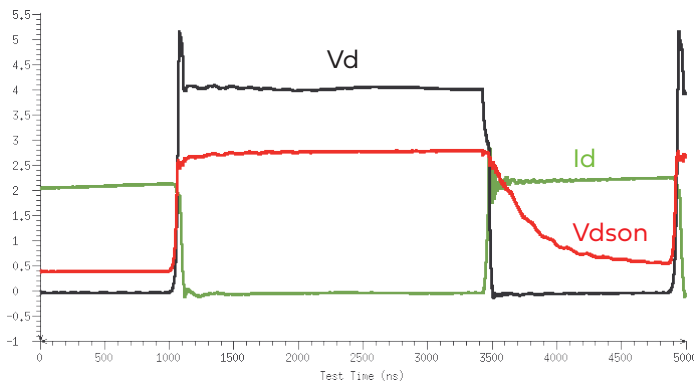
ipTEST DS5

Dynamic Switching Test Generator

Advanced Waveform Capture

On the M2 systems it is possible to look at a waveform for each test. This allows engineers to qualify a test program before running a lot in production. The waveform capture is a powerful tool for assisting engineers in developing the test programs in the fastest time possible.

Captured waveforms can be saved so that they can be viewed and analysed offline using the interactive ipView tools on Linux or Windows platforms.



Dynamic RDSon

Dynamic RDSon is a critical measurement for GaN devices. After a GaN HEMT device switches on, the RDSon is higher for a short time due to charge trapping in the device. This can lead to higher than expected energy losses.

This can be seen in this waveform where the red trace shows Vds clamped to 10V. When the device switches on, RDSon takes 1-2 μ s to return to the level it was at before the device was turned off.



ipTEST Mostrak M2 Test System

The DS5 test generator is part of the Mostrak M2 test system. The fastest and most productive power discrete semiconductor testers on the market.

High Voltage
Off-state tests

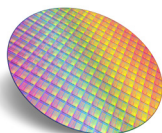
Low Voltage
On-state tests

Dynamic
Switching tests

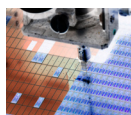
Avalanche
UIS tests

Gate Resistance
& Capacitance

Thermal
Die-Attach tests



Wafer



Die



Discrete



Module

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