Mentor Graphics offers many products but all with the same aim: to enable companies to develop better electronic products faster and more cost-effectively. This extends to the MicReD product range, specialising in Thermal Characterization and Testing of electronic components from LEDs to IGBTs. Mentor Graphics offers the T3Ster®, enabling thermal characterization of semiconductor device packages including digital ICs, stacked dies, and MCMs, and power electronics devices, including MOSFETs and IGBTs which can be tested at high power. Together with T3Ster, TeraLED® enables the full thermal, photometric and radiometric characterization of power and HBLEDs. The DynTIM®, provides a cutting-edge solution for measuring thermal performance of thermal interface materials (TIMs). With DynTIM® the thermal conductivity of greases, pastes, phase-change materials, adhesives and solid samples can be measured with high accuracy.

REAL-TIME FAILURE DIAGNOSIS:
MicReD Power Tester 1800A and 3600A are the only machines built for manufacturing as well as laboratory environments that do automated power cycling while producing analytical data for real-time failure-in-progress diagnosis. They are designed to perform lifetime testing to test the reliability of applications that use power electronic modules. The Power Tester series is unique in that it provides fully automated transient thermal resistance and cycling at the same time, on the same machine, without having to remove the device under test during the process. The Power Tester 1800A and 3600A sense current, voltage, and die temperature while using structure function analysis to record changes or failures in the package structure. While running power cycles, the real-time structure function analysis shows the failure in progress, the number of cycles, and the cause of the failure, eliminating the need for a lab post-mortem. The testing and characterization data produced by the Power Tester series can be used to calibrate and validate detailed models in FloTHERM and FloEFD thermal simulation software.

Test a Wide Range of Power Electronics: Includes metal-oxide semiconductor field-effect transistors (MOSFETs), insulated-gate bipolar transistors (IGBTs), and power diodes.
Conduct Continuous Power Cycling until Failure: Component can be left on the tester.
User-Friendly Touch-Screen Interface: Records a broad range of information during test including detailed structure function analysis to record changes in the package’s thermal structure.
Apply Different Powering Strategies during Operation: Constant power on/off time, with constant case temperature swing, constant junction temperature rise, or constant applied power.