Flexible Parametric Curve Tracer Solutions Suits Power Device Characterization

Keithley has introduced seven instrumentation, software, and test fixture configurations for parametric curve tracing applications for characterizing high power devices at up to 3,000 V and 100 A, including those based on silicon carbide (SiC) and gallium nitride (GaN) technology. According to the company, these systems offer the power required for the vast majority of high power device design and development applications, and are optimized to address the characterization and test needs of research, reliability, failure analysis, and power device applications engineers; power device designers; incoming inspection technicians; and many others. All seven configurations offer the ability to add new measurement channels as users' needs evolve, with no need to return the system to the factory to install new hardware. For example, someone could start with an entry level Parametric Curve Tracer, then add the capabilities of additional System SourceMeter instruments, such as higher voltage and/or higher current, at a later date. Six different System SourceMeter instrument models can be mixed and matched to create the optimum combination of voltage, current and power for the user's specific needs. All seven configurations include the latest version of Keithley's ACS (Automated Characterization Suite) Basic Edition software, which supports Keithley's newest SMUs and takes maximum advantage of the Series 2600B's TSP-Link connection trigger model, which allows for 500ns trigger synchronization between instruments. This tighter synchronization capability maximizes the high speed pulse mode capabilities of the new Model 2651A and Model 2657A High Power System SourceMeter instruments.

The Windows-compatible ACS Basic Edition package provides control and analysis tools well-suited for high power device characterization, including complete

parametric test libraries for MOSFETs, BJTs, triacs, diodes, IGBTs, and other device types. The software's "trace" mode, which uses an on-screen slider control that works much like the power control knob on a traditional analog curve tracer, allows users to control the level of voltage and current levels sourced interactively and to see how the power device responds in real time. The software's "parametric" mode provides a "fill-in-the-blanks" GUI to configure a test precisely and a comprehensive set of tools for precise parameter extraction. All seven bundles also include all cabling and adapters required for system assembly, as well as a number of sample power devices useful for training and demonstration purposes.

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