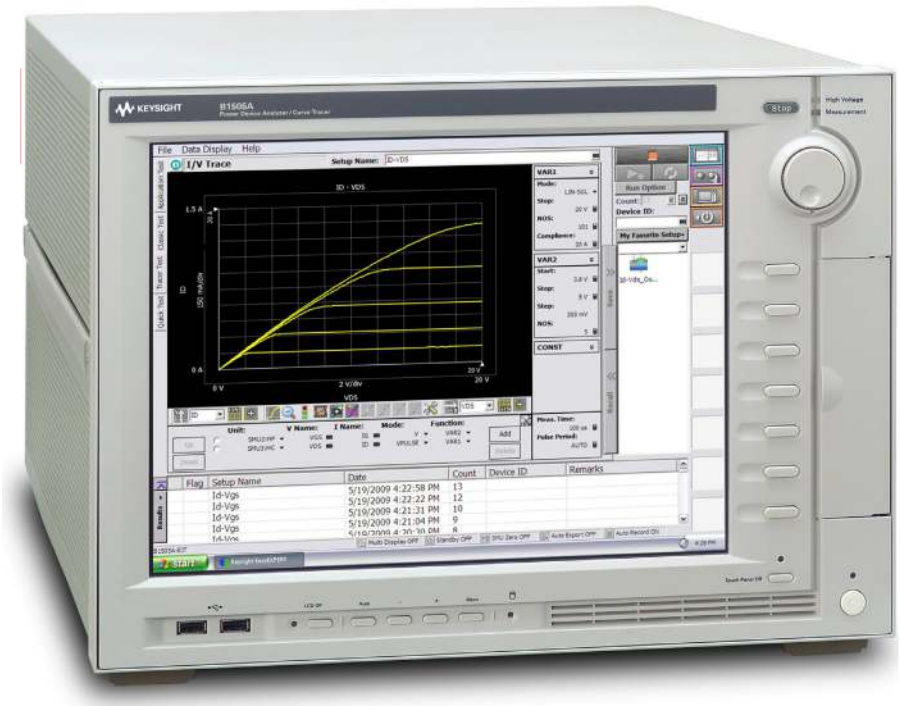
Keysight Technologies
B1505A Power Device Analyzer/Curve Tracer

The all-in-one solution for power device characterization from sub-pA to 1500 A/10 kV



KEYSIGHT TECHNOLOGIES

Can your present equipment solve these key power device evaluation challenges?

Insufficient measurement capability

Power devices require characterization across their entire operating region, which can range from nanoamps or microvolts up to many amps and thousands of volts. Current requirements increase each year as device technologies continue to improve. For example, characterization of present-day LVMOSFETs requires 100 A, while IGBT modules can require over 1000 A. In addition, the ability to perform narrow (microsecond range) pulsed IV measurements is also important to prevent device self-heating that can distort measurement results. While some production power device testers can cover wide current and voltage ranges, they are both user-unfriendly and expensive. Custom-built solutions consisting of individual instruments are difficult and expensive to support, and they often lack essential safety features. Lastly, characterizing the switching speeds of power devices necessitates some means to characterize junction capacitances at biases of several thousand volts. However, until now no measurement equipment existed that could meet all of these requirements.

Quick and easy characterization with medium current at high voltage region

The characterization of high voltage devices near the safe operation area (SOA) is crucial to guarantee their performance specifications. Dynamic testing is typically used for this since the required static power is beyond the capabilities of conventional test equipment. Unfortunately, dynamic test equipment is difficult to use and typically lacks sufficient accuracy. Alternative schemes using multiple SMUs tied together can supply sufficient current, but their pulse widths are too long to prevent device self-heating that causes unreliable measurement data.

Issues with novel new device (SiC, GaN, IGBT) characterization

New wide bandgap materials such as SiC and GaN show great promise for emerging high-power applications because of their ability to withstand large voltages and their fast switching speeds. IGBTs are becoming increasingly important as electronic switches for a variety of applications. Characterization of large breakdown voltages (up to 10 kV), high currents (hundreds of amps), junction capacitances under high voltage DC biases (up to 3000 V) device temperature dependency, and the GaN device current collapse effect are measurement capabilities that are crucial to bringing these new devices to market as quickly as possible.

No curve tracer hardware support or feature enhancements

Until recently, curve tracers have been the de facto standard tool for power device evaluation. However, all major suppliers have stopped producing traditional analog curve tracers. As existing curve tracers age, support and repair will continue to become increasingly difficult. Moreover, conventional analog curve tracers do not possess the capabilities necessary to evaluate modern power devices. They lack transfer curve characterization capability, they cannot generate sufficiently short pulse widths and they do not possess sufficient accuracy. Extracting PC-compatible data from curve tracers is also inconvenient and time consuming.

Safe and efficient packaged device testing

A test fixture that is both safe and easy to use is very important for packaged power device evaluation. However, the lack of a standard test fixture for high-power devices has forced many people to create their own solutions, which become difficult to manage when multiple package types need to be tested. Moreover, additional factors such as safety and measurement performance are often not properly taken into account. All of these issues tend to make user-created test fixtures inefficient, expensive and potentially dangerous.

Power device development costs

The ability to probe devices on-wafer greatly saves both time and money by eliminating the need to package the devices beforehand. However, on-wafer power device measurements have previously not been easy to make. Not only the time and cost of supporting the on-wafer measurement environment but also the safety of the on-wafer measurement environment are big concerns.

The Keysight B1505A meets the most challenging power device evaluation requirements

A one box solution for accurate and easy power device evaluation and analysis

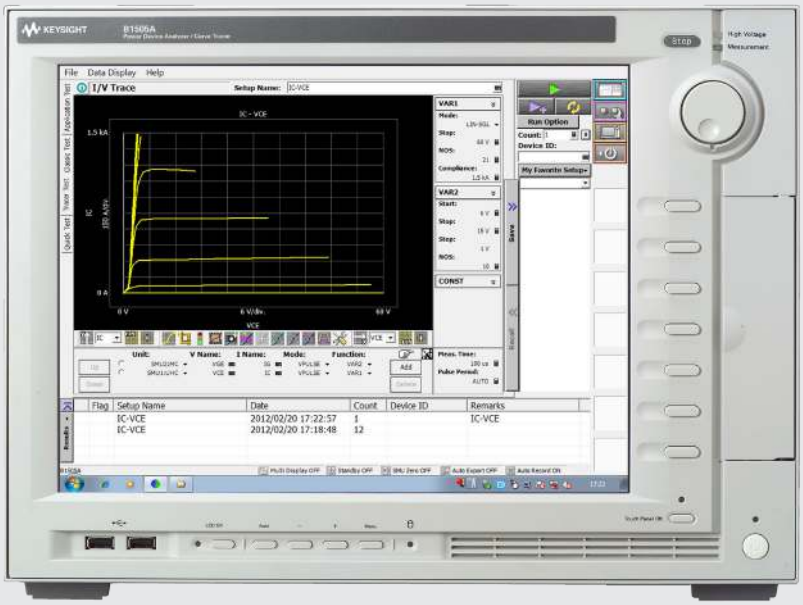
The B1505A meets the measurement challenges posed by state-of-the-art power devices. It is the only single-box solution that can accurately evaluate and characterize power devices from sub-picoamps up to 10 kV and 1500 amps. Moreover, it can also measure capacitance at 3000 V of DC bias.

A built-in curve tracer mode provides traditional and familiar curve tracer functionality, permitting quick device characterization with minimal measurement setup effort. An innovative automatic recording feature prevents data loss even if the device under test (DUT) is inadvertently destroyed.

In addition to these impressive measurement capabilities, the intuitive EasyEXPERT software environment makes data analysis a snap. You can also easily export data into your PC-based work environment and use this data to generate presentations and reports.

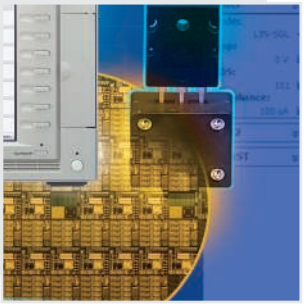
The B1505A supports two standardized test fixture solutions, the N1259A and the N1265A, that are differentiated by their voltage and current ranges. Both solutions are compatible with a variety of different socket types. The B1505A also supports on-wafer testing of power devices, thereby eliminating the need to package the devices first. This capability dramatically improves the turn-around-time (TAT) when testing devices in the lab.

Taken together, these capabilities and features result in revolutionary efficiency improvements in power device evaluation as well as a significant reduction in the cost of test.



Keysight B1505A key feature summary

- A wide sourcing range combined with low-level precision measurement
  - All-in-one solution for power device characterization up to 1500 A / 10 kV
  - Medium current measurement with high voltage bias (e.g. 500 mA at 1200 V).
  - μΩ resistance measurement capability
  - Accurate sub-picoamp level current measurement at high voltage bias
  - Two independent A/D converters on each channel enable simultaneous high-speed current and voltage measurement.
- Extensive device evaluation capabilities
  - Capacitance measurement at up to 3000 V of DC bias
  - High power pulsed measurements down to 10 μs
  - Temperature measurement capability
  - High voltage/high current fast switch option to characterize GaN current collapse effect
- Improved measurement efficiency
  - Switch between high-voltage and high-current measurements without the need to recable
  - Standard test fixtures with interlock for safe packaged power device testing
  - Supported and secure on-wafer high-power testing over 200 A and up to 10 kV
  - True curve tracer functionality with knob sweep capability
  - Oscilloscope view allows verification of applied voltage and current waveforms
  - MS Windows-based EasyEXPERT software facilitates data management and simplifies data analysis
- Upgradable and scalable hardware architecture
  - A wide selection of measurement modules
  - Support for high power devices with up to 6 pins



Unmatched power device coverage

1500 A/10 kV current and voltage capabilities revolutionize power device evaluation

Due to the wide current and voltage ranges required by many modern high power applications, accurate characterization of the devices used in these circuits has not been possible because no equipment existed with sufficient current and voltage measurement capability to characterize these devices across their entire operating range. In addition, power devices require relatively fast pulsed measurements to prevent device self-heating effects that can distort the measurement results. The B1505A meets these challenges by supporting a variety of modules that can address all of these needs. These include a high voltage SMU (HVSMU), a high current SMU (HCSMU), an ultra high current (UHC) module, an ultra high voltage (UHV) module, and a high voltage medium current (HVMC) module.

With these modules it is easy to create a solution that meets your specific testing needs. For example, the HCSMU and HVSMU can supply 40 A and 3000 V to test conventional HVMOS and LVMOS devices. The UHC and HVSMU can supply more than 100 A and 1000 V to characterize advanced LVMOS and super junction MOSFET devices. For extreme test needs the UHV and UHC can supply up to 1500 A and 10 kV, which permits the evaluation of devices such as IGBT modules. An available module selector supports automatic switching not only between an HCSMU or UHC and the HVSMU, but also with either a high power SMU (HPSMU) or medium power SMU (MPSMU). This permits initial low-level voltage and current measurements to be made with an HPSMU or MPSMU, and then the HVSMU or HCSMU can be switched in to measure larger voltages or currents. Moreover, unlike conventional curve tracers the B1505A's SMUs contain feedback circuitry that continuously monitors the output to ensure accuracy. In addition, the HCSMU, medium current SMU (MCSMU), UHC, UHV and HVMC all support fast pulsed measurements down to 10 microseconds. This prevents the device self-heating that prevents accurate power device characterization.

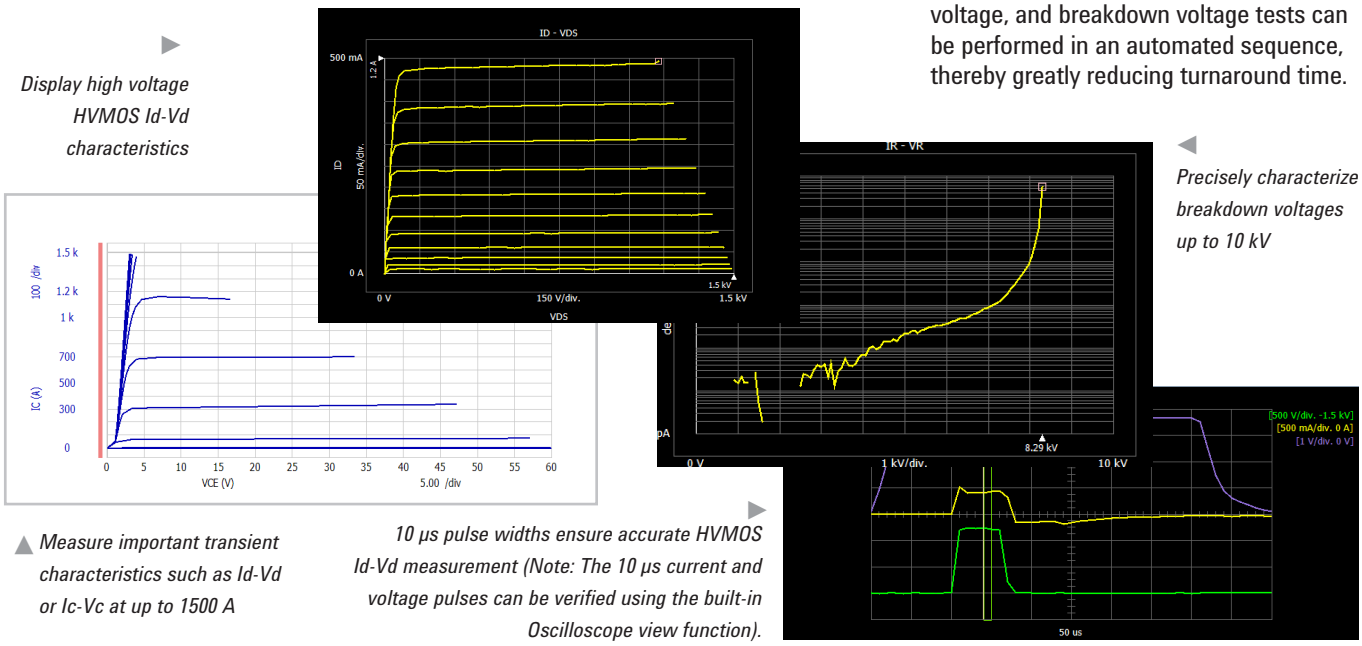
Characterize HMOS devices at hundreds of miliamps and thousands of volts

Static Id-Vd measurements are the best way to verify safe device operation of high power HVMOS devices, and these require fast pulses of 50 µs or less for accurate characterization.

However, until now there has not been any equipment capable of supplying the fast pulsed currents and voltages necessary to characterize these types of devices under these conditions.

The B1505A's HVMC module solves this dilemma. The HVMC module enables you to make an Id-Vd curve that simultaneously applies hundreds of milliamps and thousands of volts using pulses as narrow as 10 µs. Moreover, this is done without sacrificing measurement accuracy or speed.

Unlike TLP (Transmission Line Pulse) testers that are primarily used for ESD (Electrostatic Discharge) testing, IV measurements made by the B1505A are very accurate. Moreover, not only high voltage Id-Vd curves but other measurements such as leakage current, threshold voltage, and breakdown voltage tests can be performed in an automated sequence, thereby greatly reducing turnaround time.



Display high voltage HVMOS Id-Vd characteristics

Precisely characterize breakdown voltages up to 10 kV

Measure important transient characteristics such as Id-Vd or Ic-Vc at up to 1500 A

10 µs pulse widths ensure accurate HVMOS Id-Vd measurement (Note: The 10 µs current and voltage pulses can be verified using the built-in Oscilloscope view function).

Unparalleled power device evaluation accuracy

Elimination of self-heating effects permits accurate on-resistance measurements

Making accurate on-resistance measurement is becoming increasingly important as the efficiency requirements for power applications continue to accelerate. The B1505A meets this challenge with the ability to make accurate on-resistance measurements down to the mΩ and even μΩ levels.

The B1505A's unique architecture allows it to make high-current pulsed sweep measurements while simultaneously making precision voltage measurements. The B1505A's ability to combine short current pulses with long duty cycles ensures highly accurate on-resistance measurement results.

Both the UHC and HCSMU modules allow you to adjust the pulse width from 10 μs to 1 ms, with pulse periods as long as 5 s. These capabilities not only allow you to eliminate device self heating effects, but they also allow you to observe the impact of varying the pulse period on the device characteristics.

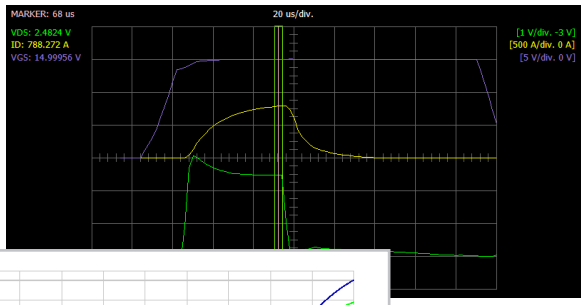
Precise sub-pA characterization

Although power devices generally operate at high currents and voltages, low current measurement capability is also very important for the evaluation of leakage characteristics. The B1505A supports both the MPSMU and HPSMU modules that can perform sub-pA level current measurements with 10 fA resolution. The B1505A allows you to seamlessly combine either the MPSMU or HPSMU with either the UHC or HCSMU to accurately characterize devices across their entire operating ranges (from sub-pA up to 1500 A).

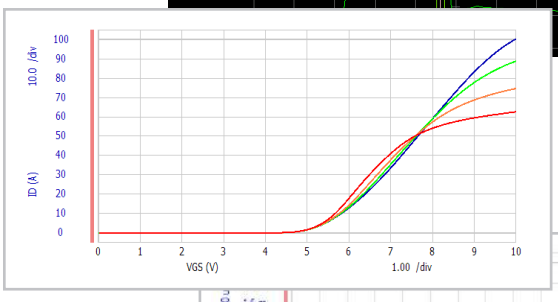
Unique high-voltage (3000 V) capacitance measurement capability

The B1505A supports a multi-frequency capacitance measurement unit (MFCMU) with a 1 kHz to 5 MHz frequency range. The MFCMU can be used in conjunction with an optional high-voltage bias-T and the HVSMU module to perform capacitance versus voltage (CV) measurements at up to 3000 V of DC bias. This industry-first feature permits the accurate characterization of capacitances such as Ciss, Coss, Crss, which are important to correctly predict power device switching characteristics. It also allows material researchers to perform much deeper doping profile characterizations than is possible using conventional equipment. The MFCMU also supports open, short, load, and phase compensation via a user-friendly GUI, making it easy to perform accurate capacitance measurements across the entire voltage bias range.

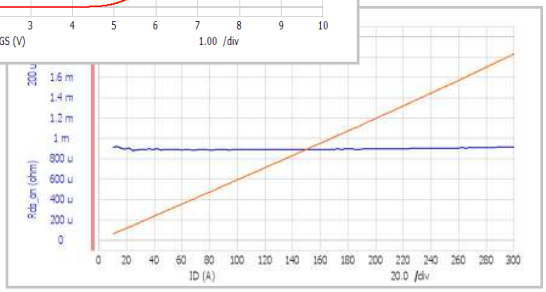
The B1505A's wide IV measurement range allows characterization of low-level current and voltage signals up through the maximum operating range of the DUT



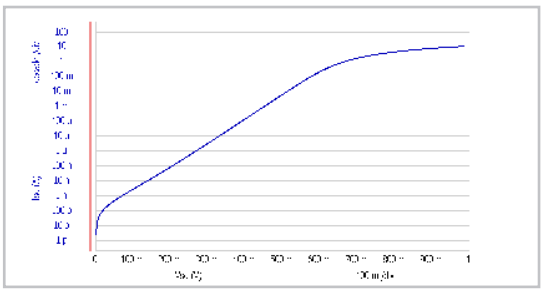
Ultra-high current fast pulsed measurements can be made in 50 μs

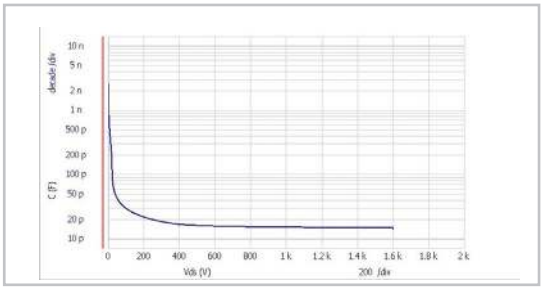


Pulse width dependency can be characterized (50 μs to 500 μs shown in this example)



Accurate (μΩ resolution) on-resistance measurements are easy to make





High-voltage CV plots with the B1505A can be used to perform accurate doping profile characterization

Accelerate your emerging material device development

Accurately characterize SiC, GaN and diamond substrate devices

Devices fabricated using emerging new materials such as SiC and GaN have higher breakdown voltages and smaller leakage currents than conventional power devices. Therefore, the equipment used to characterize these devices needs to have both high breakdown voltage measurement capability as well as the ability to measure leakage currents at high voltage biases. The B1505A has two choices for high voltage characterization. For breakdown voltages up to 3000 V, the HVSMU module offers current measurement capability down to the sub-pA level. For breakdown voltages up to 10 kV, the UHV module can meet this challenge while still providing sub-nA current measurement accuracy.

In addition to high voltage, devices composed of these emerging materials also often require high current measurement for complete characterization. While the current requirements are often relatively low in the development phase (less than 20 A), when used in a practical application device testing can often require 100 A or more of current. The scalability of the B1505A's high-current modules is ideal for this situation, since the HCSMU can be used to supply up to 40 A, and the UHC module can be added later to supply up to 1500 A if necessary.

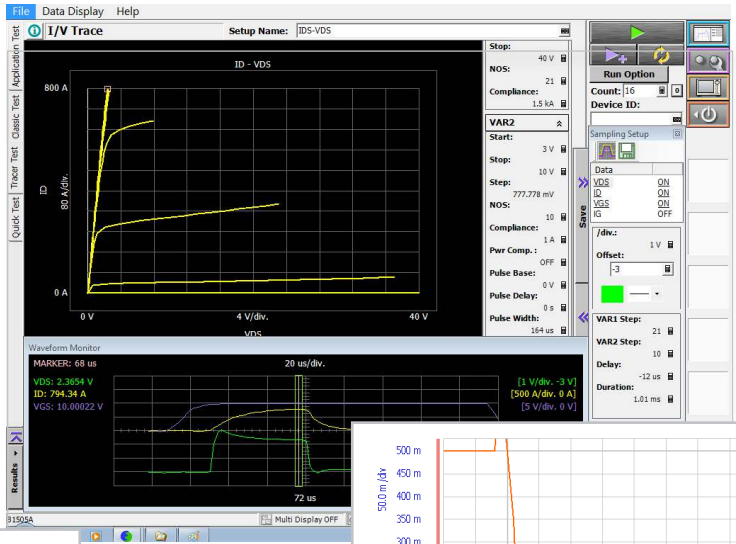
These high voltage and high current measurement capabilities enable researchers to quickly characterize and develop SiC, GaN and other novel new device types.

Integrated voltage and current waveform monitoring capability

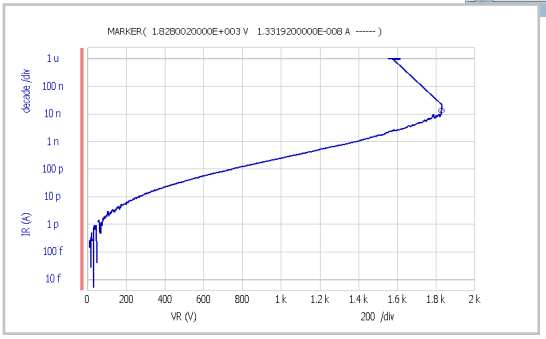
It is clear that accurate device characterization requires the application of precise voltages and currents. Unfortunately, power device measurements suffer more from the effects of residual and stray capacitance and inductance than do traditional low-power semiconductor device measurements due to the high currents and voltages that power devices require. The only way to ensure measurement integrity is to visually verify the applied waveforms, which until now has required the use of an oscilloscope. However, the B1505A has a built-in waveform monitoring capability with a 2 µs sampling rate that eliminates the need for additional instrumentation. This feature allows you to quickly and easily verify if an applied voltage or current pulse is correctly reaching its programmed value, and to adjust parameters such as wait time accordingly.

Off-the-shelf GaN current collapse measurement

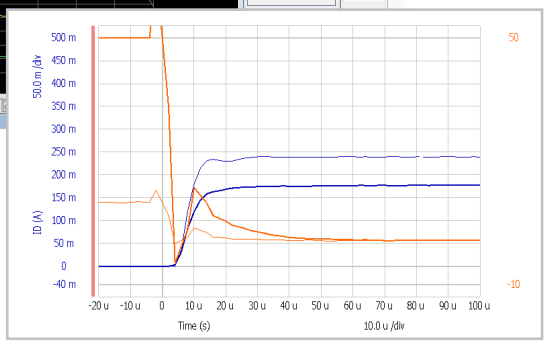
The study and characterization of the gallium nitride (GaN) current collapse effect is crucial for researchers working on these types of devices. However, the characterization of this phenomenon is difficult since it requires measuring currents of several Amps immediately after halting high-voltage stress. The B1505A's high voltage / high current fast switch unit meets this challenge by enabling fast switching between the HCSMU and HVSMU modules. Using the fast switch along with the B1505A's overlay feature in Tracer Test mode, it is easy to graphically display the current collapse effect. Moreover, the B1505A's 2 µs sampling rate provides the speed necessary to determine transient device behavior.



Oscilloscope View eliminates the need to use an external oscilloscope to verify the waveform being applied to the DUT.



The HVSMU can accurately measure breakdown voltages with less than 1 pA of leakage current.



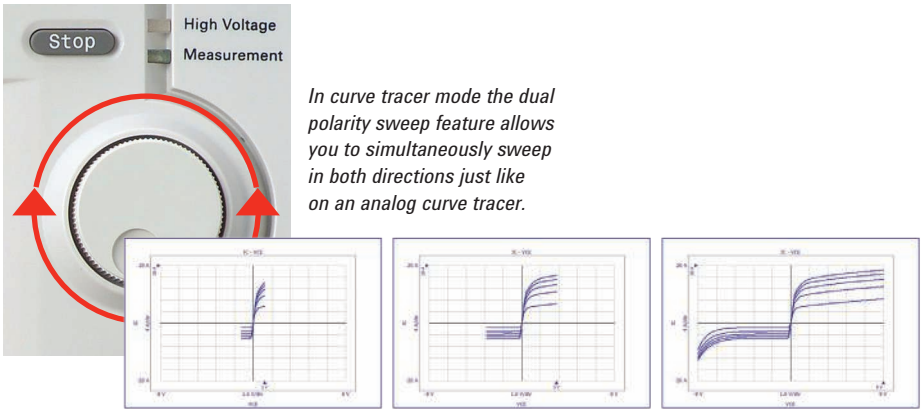
The B1505A can quantitatively evaluate current collapse phenomena.

The logical choice for curve tracer replacement

Next generation curve tracer functions boost productivity

The B1505A's Tracer Test mode offers traditional curve tracer knob sweep control enhanced with the convenience and flexibility of a modern GUI. Just like an analog curve tracer, you can sweep in only one direction (useful for R&D device analysis) or in both directions (useful in failure analysis applications). Besides these traditional curve tracer capabilities, the B1505A has additional features that make device evaluation more efficient than ever before.
You can easily export measurement data into PC-compatible formats (both graphical and numerical), making it simple to create presentations and reports. You can also automatically or selectively save setup information and measurement results to the built-in hard disk drive as well as to any other available storage location (USB memory stick, network drive, etc.).

A snapshot feature allows you to save and display multiple data traces so that you can easily compare them with data from the current measurement. A stoplight feature allows you to graphically define forbidden regions (either voltage or current based) such that the measurement immediately ceases if the trace enters the forbidden area. Best of all, an auto-record feature keeps a running record of the most recent trace changes so that you can replay and save measurement trace data even if your device is inadvertently damaged or destroyed. Taken together these improvements represent a truly revolutionary advance in curve tracer design that can significantly reduce device characterization cycle times.

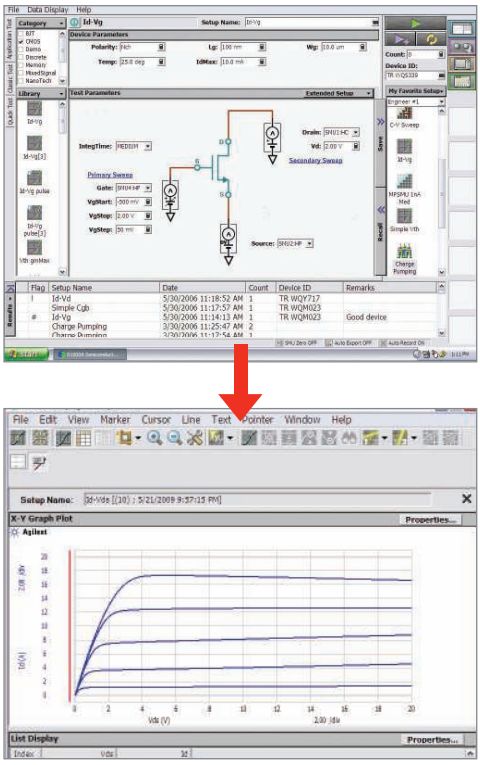


In curve tracer mode the dual polarity sweep feature allows you to simultaneously sweep in both directions just like on an analog curve tracer.

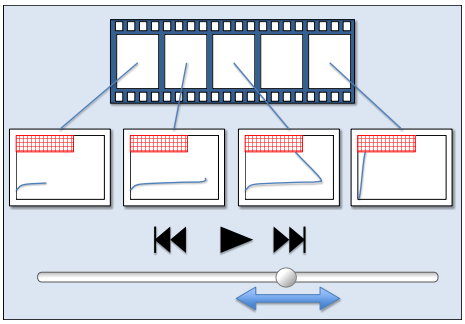
Advanced features outperform traditional alternatives

The Keysight Technologies, Inc. EasyEXPERT software, which is resident on the B1505A, represents a paradigm shift from previous generations of test solutions. EasyEXPERT's Application Test mode supports over 40 user-modifiable high power application tests, which provide a convenient and visually intuitive alternative to conventional curve tracer operation. Parameters such as threshold voltage or breakdown voltage can easily be extracted automatically using EasyEXPERT's built-in auto analysis capabilities. In addition, a test set up and results done in Tracer test mode can seamlessly and instantaneously be transferred to Classic Test mode for further detailed measurement and analysis. Powerful auto-analysis functions available in both Application Test and Tracer Test modes allow graphical data analysis to be performed as a measurement is made. This includes the ability to display parameters calculated from user-defined functions in real time. Measurement data can also be displayed in a variety of formats, including semi-log and log-log graphs.

The auto record function allows you to view and export graphs even if a device is accidentally destroyed.

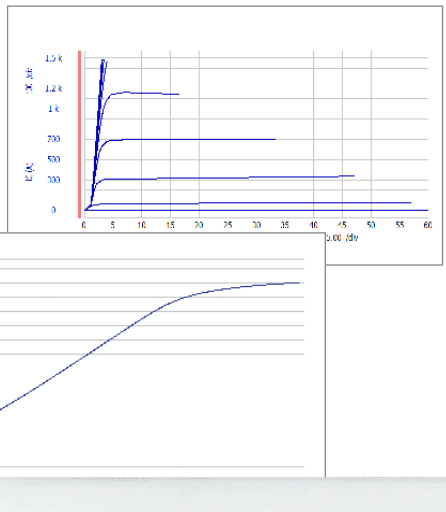


The furnished EasyEXPERT application tests allow even inexperienced users to become productive quickly without the need for extensive instrument training.

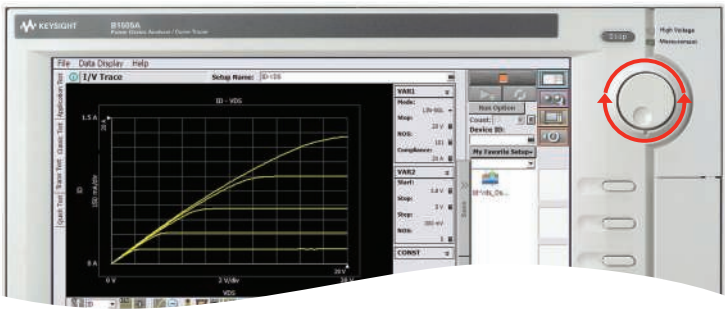


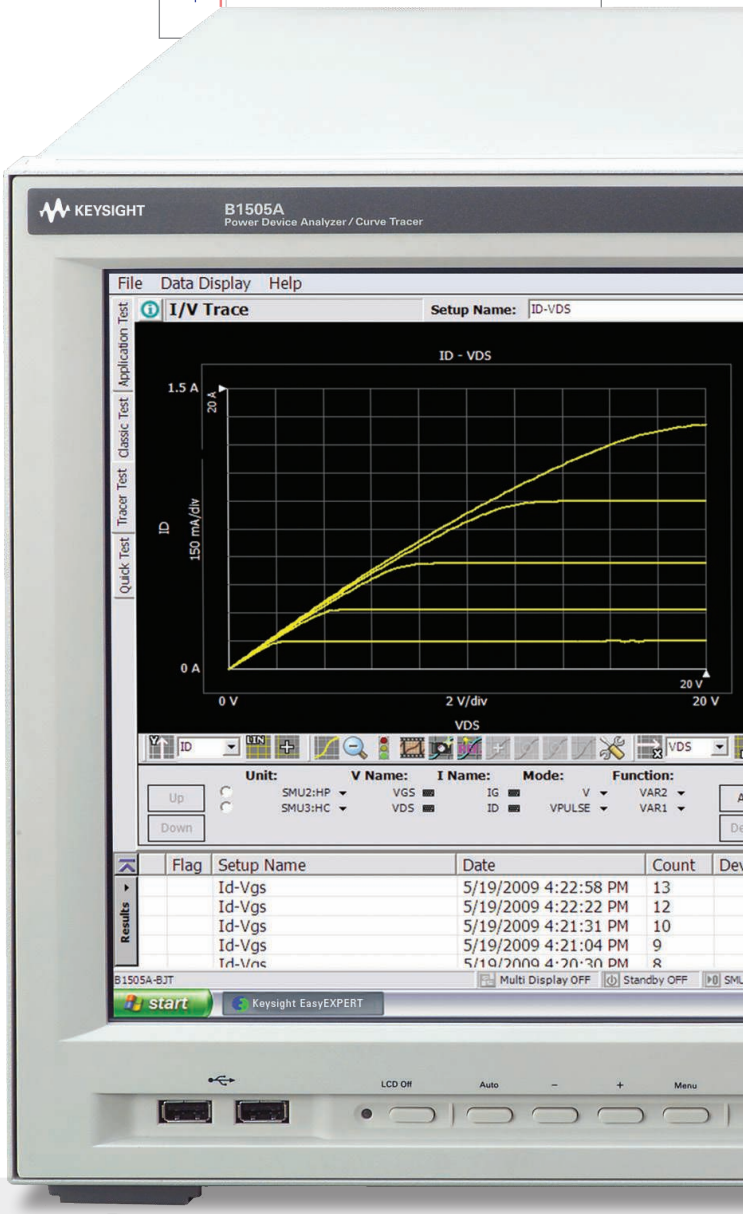
The simplicity of a curve tracer combined with the power of an analyzer provide unrivaled ease-of-use and efficiency

IV / CV all in one box



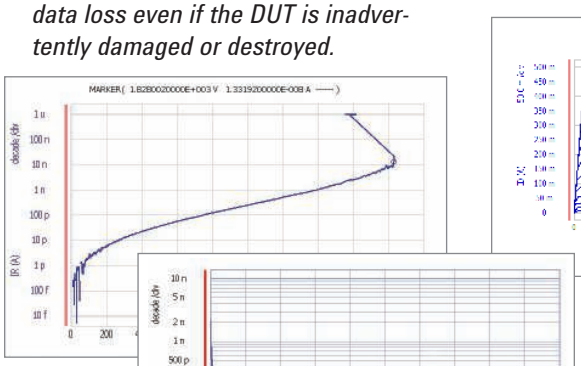
True knob-sweep curve tracer functionality — intuitive and real time

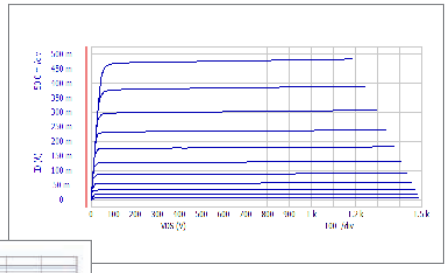


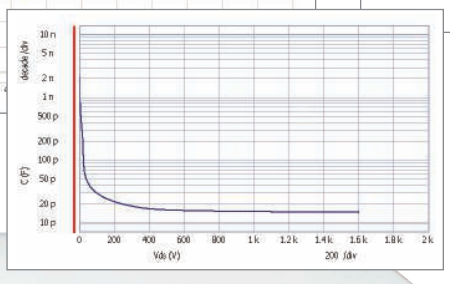


High-power wafer prober control

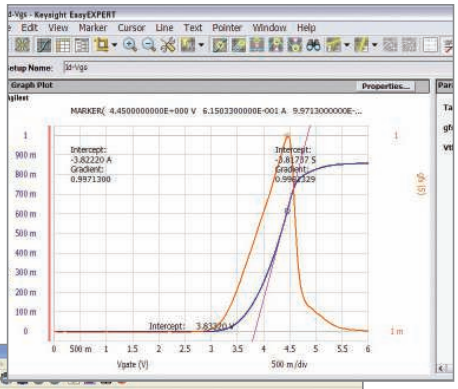
Auto data recording feature prevents data loss even if the DUT is inadvertently damaged or destroyed.



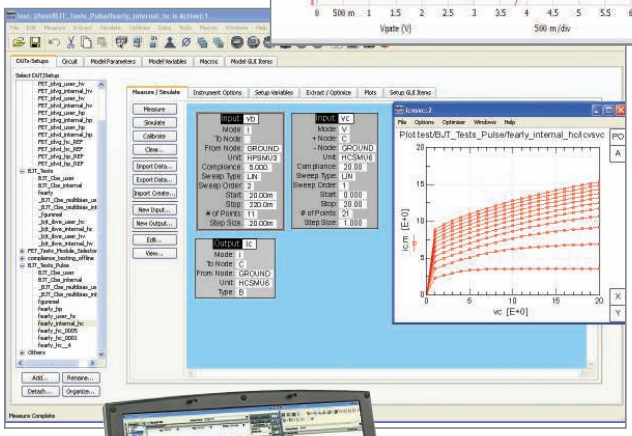


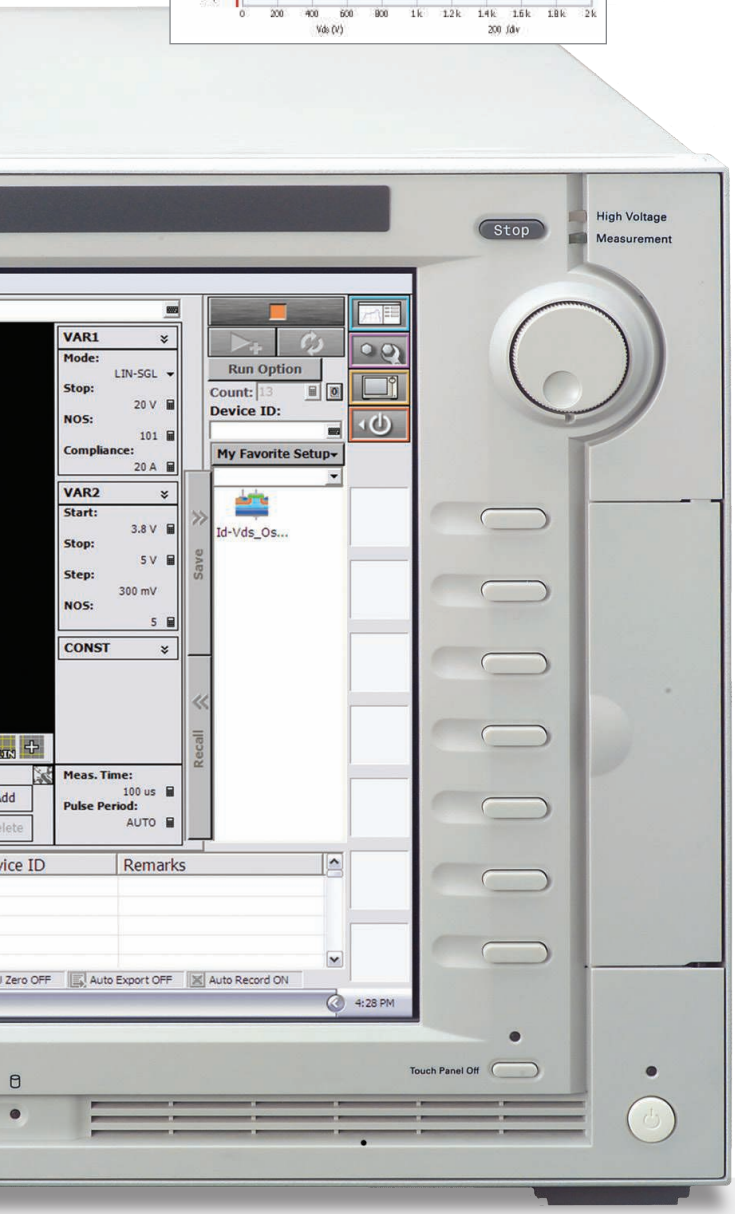


Easy data analysis and parameter extraction



Supported by popular modeling software





Offline test development and data analysis

Safe package device testing

Standard solutions improve efficiency and reduce costs

Safe and supported packaged device testing

Connecting to a wide variety of power device package types has always been a challenging issue when making measurements at high voltages and currents. Many users have had to waste valuable resources creating their own customized test fixtures just to be able to test their devices. Even when completed, concerns often arose about the safety of these home-grown solutions. The B1505A supports two standardized test fixtures (the N1259A and N1265A) that solve these issues. Both test fixtures have a modular configuration that supports a variety of different package types, including a universal socket adapter that can be used to create solutions for custom package types. Moreover, a test adapter socket module is available that enables you to use legacy interfaces designed for the Tektronix 370B and 371B curve tracers. Both test fixtures also have a safety interlock that prevents measurements at dangerous voltage levels unless the lid is closed. In addition, optional protection adapters and resister boxes are available to work with the test fixtures to ensure that lower-power modules (such as the MPSMU) are not inadvertently damaged. These new features and capabilities make packaged power device testing easier than ever before.

Easy characterization across temperature

The B1505A's N1265A ultra-high current expander/test fixture supports temperature measurements made using thermo-couples. Using the B1505A's EasyEXPERT software, it is easy to analyze device characteristics versus temperature. It is also a simple matter to automate temperature triggered testing using EasyEXPERT's quick test mode.

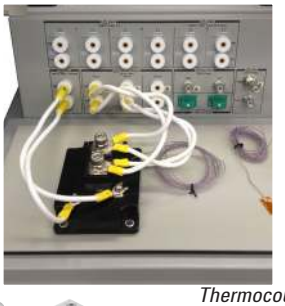
Supported modeling software reduces development times

Many popular device modeling software solutions support the B1505A (including Keysight IC-CAP).

The B1505A's superb accuracy and resolution combined with IC-CAP's powerful 85194Q HiSIM_HV** extraction package provide a turnkey solution that enables you to extract extremely accurate modeling parameters for high power devices. This reduces device development times and improves time to market.

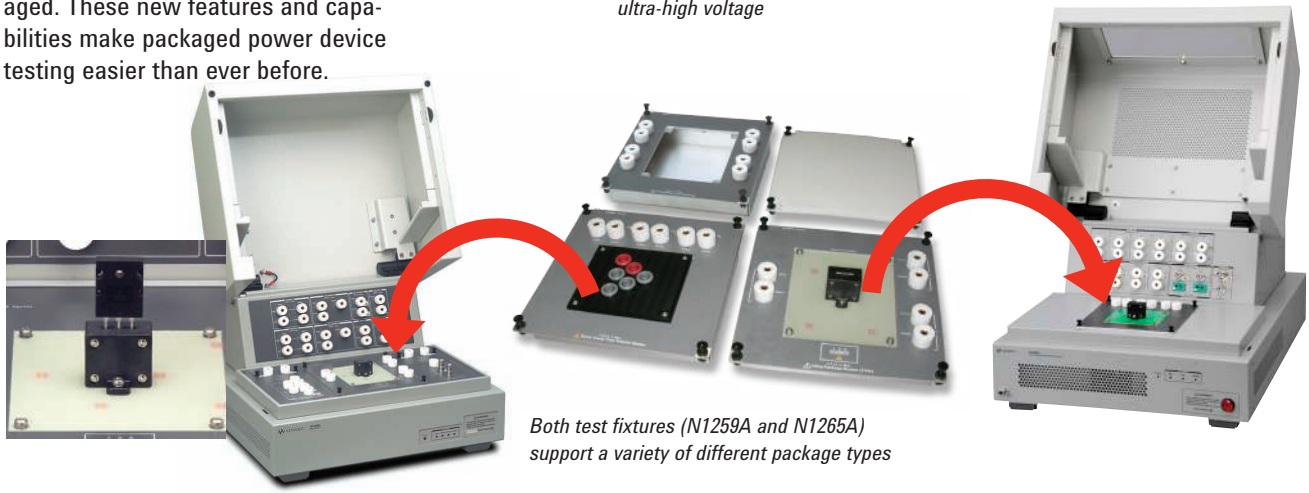
Ultra-high current and voltage measurements traceable to international standards

To be absolutely certain of your measurement results you need to know that the instrumentation being used is traceable to international standards. However, until now it has not been possible to purchase high power test equipment with this type of traceability. The B1505A sets a new standard for high power measurement instrumentation, with traceability to international standards for current and voltage levels up to 1500 A and 10 kV.



Thermocouple support allows quick and easy temperature measurement

Calibration standards traceable to international standards ensure accurate measurement results for both ultra-high current and ultra-high voltage



Both test fixtures (N1259A and N1265A) support a variety of different package types

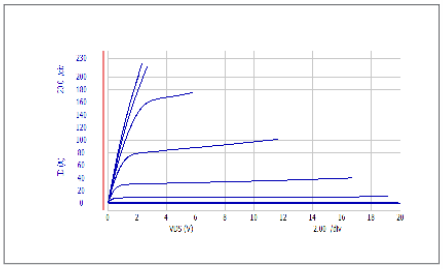
On-wafer measurement and automation capabilities reduce cycle times

More than 200 A and up to 10 kV on-wafer measurement capability

It is more efficient to perform high power device testing on-wafer than on packaged devices. However, power device on-wafer measurement has always been problematic due to the voltages and currents involved.

The B1505A supports cables with low residual resistance along with connectors and adapters that interface with all of the major high-power analytical wafer probers. You can now use the B1505A to make previously unobtainable high current and high voltage on-wafer measurements up to 200 A and 10 kV. Moreover, the B1505A also supports a wide variety of wafer prober interlock schemes to ensure safe on-wafer device testing.

These abilities permit the acquisition of valuable process information without the need to first package the devices, thereby greatly saving both time and money.

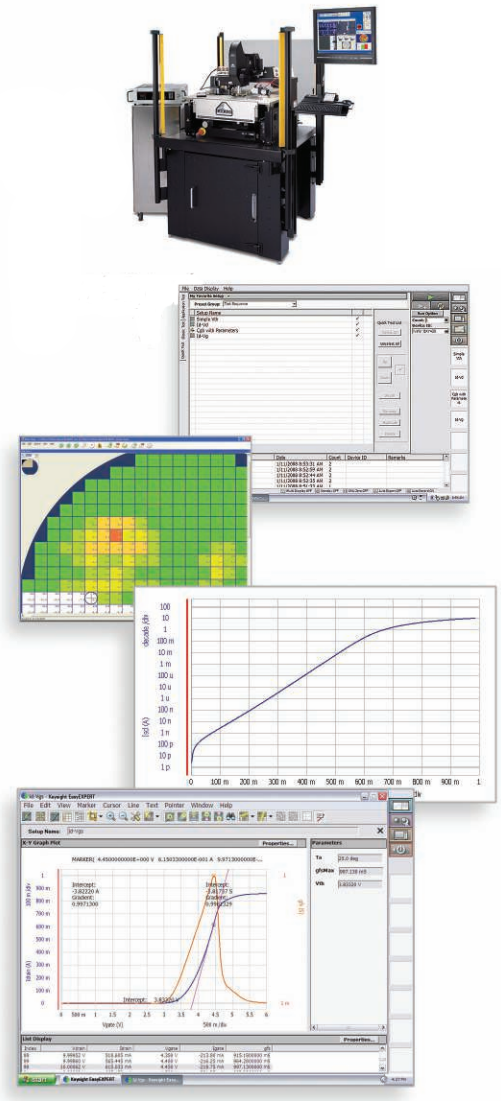


On-wafer measurements at more than 200 A are now possible using the B1505A

Multiple parameters measurement in a single sequence

It is extremely easy to automate testing across an entire wafer using EasyEXPERT's built-in Quick Test mode. Simply arrange the tests you want to run using Quick Test's GUI and select the Keysight furnished wafer prober drivers corresponding to your wafer prober. A single mouse click will then enable you to test across the entire wafer and automatically save your test data to any available storage location. In addition, the module selector unit's ability to switch as needed between a high voltage measurement resource (HVSMU or HVMC), a high current measurement resource (HCSMU or UHC) and a standard SMU resource (MPSMU or HPSMU) permits such varied parameters as leakage current, on-resistance and breakdown voltage to be measured in a single measurement sequence.

Module selector units are available for both on-wafer and packaged device measurements



The Quick Test feature and module selector unit allow you to automate on-wafer testing without having to do any programming or recabling, thereby reducing your overall measurement cycle time.

Flexible and expandable architecture protects your investment

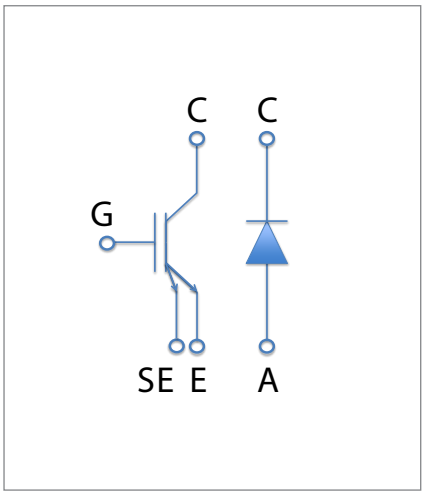
Scalable and upgradable platform

The B1505A's modular construction and a wide selection of available power measurement modules make it a scalable platform that can cover a wide variety of devices. For example, the HCSMU, HVSMU, and HVMC modules are sufficient for HVMOS characterization, while the UHC and UHV modules can be added for IGBT characterization. This scalability allows you to select the configuration that best meets your needs.

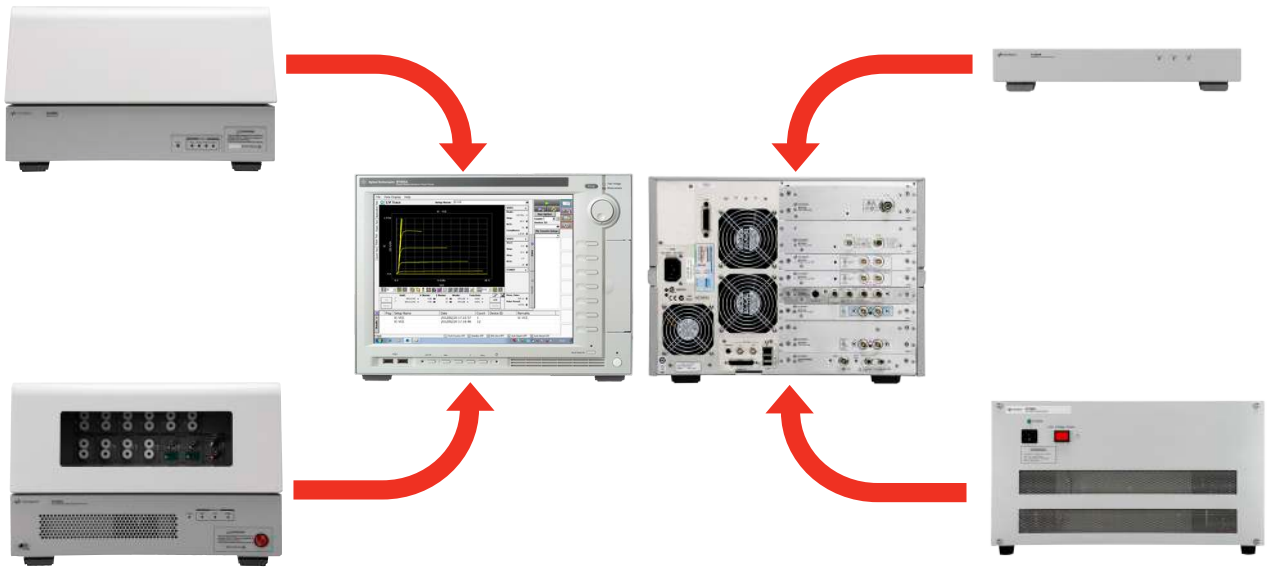
Most power devices are pursuing the twin goals of withstanding higher voltages while also minimizing device on-resistance. This means that the currents and voltages applied during testing need to increase as the devices become more advanced. The B1505A's architecture makes it an ideal choice for this type of development environment. For example, a B1505A with an HCMSU and 20 A current measurement capability can easily be upgraded to support either 500 A or 1500 A by simply adding a UHC module.

Flexible configurations for sophisticated power devices

The B1505A's 10-slot mainframe supports a wide variety of both single-slot (MCSMU, MPSMU and MFCMU) and double-slot (HCSMU, HVSMU and HPSMU) modules. This enables a great deal of flexibility and expandability in configuring power device test solutions. For example, the single-slot MCSMU modules can be used by themselves, but they can also function as the control interface for the external UHC, UHV, and HVMC modules. Moreover, the availability of the single-slot MPSMU module for use with low power device nodes insures that you do not run out of slots and enables the testing of five and six pin count power devices.
One such example is intelligent IGBTs, which typically have a sense emitter and temperature sensing diode in addition to the standard gate, collector and emitter terminals. Using the available B1505A modules, you can easily create a configuration that can measure these devices.



Five and six pin count devices (as shown above) can be measured with the B1505A



Scalable and upgradable architecture allows you to configure solutions for today's needs and also permits expansion in the future

Mainframe characteristics and module information

Mainframe characteristics	
Available slots	10
Ground unit sink capability	4.2 A
USB 2.0 ports	2 front and 2 rear
Instrument control	GPIB
Networking	100 BASE-TX / 10 BASE-T LAN Port
External trigger inputs/outputs	1 BNC Trigger In; 1 BNC Trigger Out; 8 Programmable Trigger In / Out

Module	HPSMU	MPSMU	HCSMU*	HVSMU	MCSMU
Maximum force voltage	±200 V	±100 V	±40 V (DC) ±20 V (Pulse)	±3000 V	±30 V
Maximum force current	±1 A at ±20 V	±100 mA at ±20 V	±1 A (DC) ±20 A (Pulse)*	±8 mA at ±1500 V ±4 mA at ±3000 V	±100 mA (DC) ±1 A (Pulse)
V measurement resolution	2 µV	2 µV	200 nV	200 µV	200 nV
I measurement resolution	10 fA	10 fA	10 pA	10 fA	10 pA

Note: If two HCSMUs are combined using either the Dual HCSMU combination adapter or the Dual HCSMU Kelvin combination adapter, then the maximum current ranges are ±2 A (DC) and ±40A (Pulsed).

Module	UHC (N1265A)	HVMC (N1266A)	UHV (N1268A)
Max voltage	±60 V	±2200 V	±10 kV
Max current	±500 A ±1500 A (optional)	±2.5 A	±10 mA (DC) ±20 mA (pulse)
V measure resolution	100 µV	3 mV	
I measure resolution	1 mA (500 A), 4 mA (1500 A)	200 nA	

MFCMU (B1520A) Key Specifications	
Frequency range	1 kHz to 5 MHz
Maximum DC bias	±25 V, ±3000 V*
Supported measurements	Cp-G, Cp-D, Cp-Q, Cp-Rp
	Cs-Rs, Cs-D, Cs-Q, Lp-G, Lp-D
	Lp-Q, Lp-Rp, Ls-Rs, Ls-D, Ls-Q
	R-X, G-B, Z-θ, Y-θ

** Using high voltage bias-tee (N1259A-020 or N1260A) and HVSMU*

The B1505A 10-slot mainframe supports a variety of modules for high power test.

EasyEXPERT Software features and options

Data acquisition and control	
User interface	Windows GUI
User interface options	Clickable knob, 15-inch touch screen, softkeys, USB keyboard and mouse
Operation mode	Tracer Test mode (Curve Tracer mode), Application Test mode, Classic Test mode, Quick Test mode
Data viewing	View multiple graphs in tile, tab or overlay display formats
Data storage	Data and test settings automatically or selectively saved after each measurement
Test sequencing	Test sequencing without programming via Quick Test mode
Wafer prober control	Integrated semiautomatic wafer prober control supports die/sub-die moves
Supported wafer probers	Cascade Microtech, SUSS MicroTec, Vector Semiconductor
CV measurement	Integrated capacitance compensation
Furnished application libraries	High power device, Utility
Application test management	Workspace feature allows creation of public / private application test libraries
Plotting and reporting	
Data analysis	Automated real-time graphical data analysis
Data comparison	Append feature displays multiple measurements on same graph. Tracer Test mode snapshot feature saves and displays multiple data traces.
Data export	Automatic data export to any available drive
Printing	Print to any Windows-supported printer (via LAN or USB)
Environment and connectivity	
Operating system	Windows 7
Hardcopy media	DVD-ROM / CD-ROM / CD-RW Drive
Networking	Windows 7
Supported peripherals	Any PC peripheral using USB

Order Information

B1505A Power Device Analyzer Curve Tracer

Supported modules	Slots occupied	Max number
High power SMU (HPSMU)	2	4
Medium Power SMU (MPSMU)	1	10
High current SMU (HCSMU)	2	2
High voltage SMU (HVSMU)	2	1
Medium Current SMU (MCSMU)	1	6
Multi Frequency CMU (MFCMU)	1	1

External modules		Required number of MCSMU
N1265A	Ultra High Current Expander /Fixture	2
N1265A Opt 015	1500 A option	
N1266A	HVSMU Current Expander	2
N1267A	High Voltage/High Current Fast Switch	1
N1268A	High Voltage Expander	2

Accessories	
N1258A	Module Selector
N1259A	Test Fixture
N1260A	High Voltage Bias-T
N1261A	Protection adapter
N1269A	Ultra High Voltage Connection Adapter

B1505AP Pre-configured products

Option	Max V	Max I	CV
H20	3 kV	20 A	N
H21	3 kV	20 A	Y
H50	3 kV	500 A	N
H51	3 kV	500 A	Y
H70	3 kV	1500 A	N
H71	3 kV	1500 A	Y
U50	10 kV	500 A	N
U70	10 kV	1500 A	N

Upgrade product

B1505AU	For adding SMU/CMU modules
N1259AU	For adding test fixture modules/Bias-T/Module selector
N1265AU	For adding test fixture modules/1500 A option

myKeysight

myKeysight

www.keysight.com/find/mykeysight
A personalized view into the information most relevant to you.

Three-Year Warranty

www.keysight.com/find/ThreeYearWarranty
Keysight's commitment to superior product quality and lower total cost of ownership. The only test and measurement company with three-year warranty standard on all instruments, worldwide.

Keysight Assurance Plans

www.keysight.com/find/AssurancePlans
Up to five years of protection and no budgetary surprises to ensure your instruments are operating to specification so you can rely on accurate measurements.

www.keysight.com/go/quality
Keysight Technologies, Inc.
DEKRA Certified ISO 9001:2008
Quality Management System

Keysight Channel Partners

www.keysight.com/find/channelpartners
Get the best of both worlds: Keysight's measurement expertise and product breadth, combined with channel partner convenience.

www.keysight.com/find/b1505a

Keysight B1500A Semiconductor Device Analyzer

www.keysight.com/find/B1500A

Keysight B2900A Series Precision Source/Measure Unit

www.keysight.com/find/B2900A

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at:
www.keysight.com/find/contactus

Americas

Canada	(877) 894 4414
Brazil	55 11 3351 7010
Mexico	001 800 254 2440
United States	(800) 829 4444

Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Other AP Countries	(65) 6375 8100

Europe & Middle East

Austria	0800 001122
Belgium	0800 58580
Finland	0800 523252
France	0805 980333
Germany	0800 6270999
Ireland	1800 832700
Israel	1 809 343051
Italy	800 599100
Luxembourg	+32 800 58580
Netherlands	0800 0233200
Russia	8800 5009286
Spain	0800 000154
Sweden	0200 882255
Switzerland	0800 805353 Opt. 1 (DE) Opt. 2 (FR) Opt. 3 (IT)
United Kingdom	0800 0260637

For other unlisted countries:
www.keysight.com/find/contactus
(BP-09-04-14)

KEYSIGHT TECHNOLOGIES

Published in USA, August 2, 2014
5990-4158EN
www.keysight.com