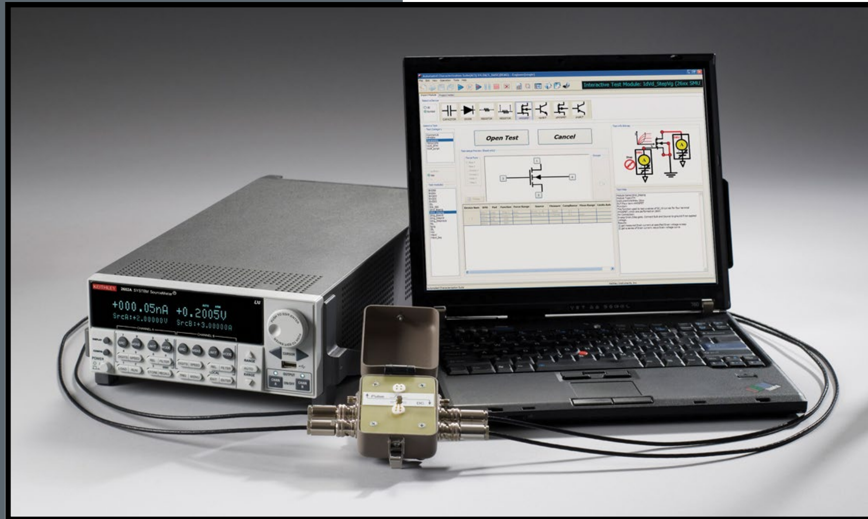
ACS Basic Edition

Semiconductor Parametric Test Software for Component and Discrete Devices



Optimized for parametric testing of component and discrete (packaged) semiconductor devices, ACS Basic Edition maximizes the productivity of technicians and engineers in research and development. The versatile architecture of this software allows it to meet the wide ranging and ever changing requirements of semiconductor device testing. It supports Keithley's source and measure instrument products, including Series 2600B (not 2604B, 2614B, or 2634B), Series 2400, 2651A, and 2657A SourceMeter® SMU instruments.

This powerful, yet cost effective solution includes Keithley's rich set of proven parametric libraries. Simply choose the desired test and begin running it to immediately start gathering data and analyzing it. Users also have the option of customizing any test with the embedded script editor.

The built-in data analysis tools allow users to quickly analyze the parametric data. For example, place device curves developed from newly collected data over "golden" curves for fast comparisons. To perform specialized calculations on raw data, use the mathematical formulator tool to create customized parameter calculations. Data can be easily saved in graphical and/or tabular formats.

ACS Basic offers three modes of operation:

- Single Test Mode—for single device, single test operations
- Multi Test Mode—for multiple test operations on a single device
- Trace Mode—for mapping out the operating range and characteristics of a semiconductor device while minimizing the risk of damage to it. This mode offers an interactive method of controlling the voltage level of a sweep with a slide bar or the arrow keys on the PC keyboard.

Related Products

For applications requiring wafer level testing, use ACS Integrated Test Systems or ACS Wafer Level Reliability Systems. These systems supply a wafer map, prober automation capabilities, and analysis options for yield monitoring as well as related statistical calculations for maximizing productivity in wafer level test environments.

- **Designed for packaged devices (MOSFETs, BJTs, IGBTs, diodes, resistors, etc.)**
- **Rich set of test libraries for fast and easy test setup and execution without programming**
- **Built-in data analysis tools for quick analysis of parametric data**
- **Supports Keithley's Series 2600B (not 2604B, 2614B, or 2634B), Series 2400, 2651A, and 2657A System SourceMeter SMU instruments**
- **FREE optional off-line version for developing test setups on a different PC**
- **Windows® 7, XP, and 10 compatible**

Ordering Information

ACS-BASIC Component Characterization Software

ACS-BASIC-UPGRADE (available for existing ACS Basic customers)

ACCESSORIES AVAILABLE

2600-FIX-TRX	Grounded Phoenix-to-Triax Cable Adapter
8101-4TRX	Leaded Component Test Fixture
ACS-COMP	PC for Installed and Bench-top ACS Systems
KUSB-488A	IEEE-488.2 USB-to-GPIB Interface Adapter for USB Port
LR:8028	DIP Component Test Fixture

KEY APPLICATIONS

- **Materials and device development**
- **Quality assurance**
- **Device inspection**

KEITHLEY
A Tektronix Company

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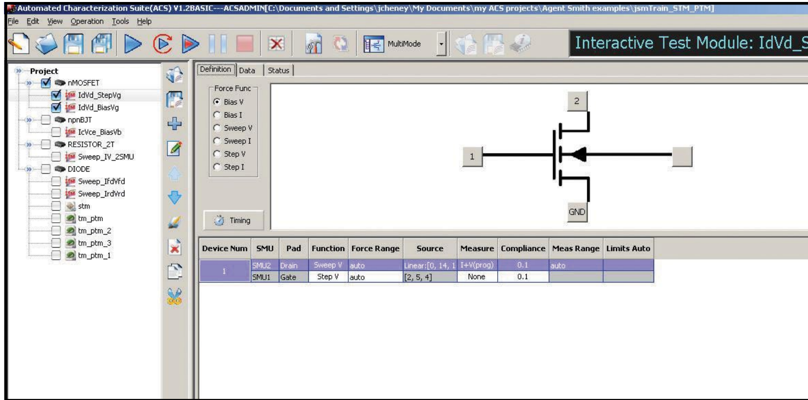
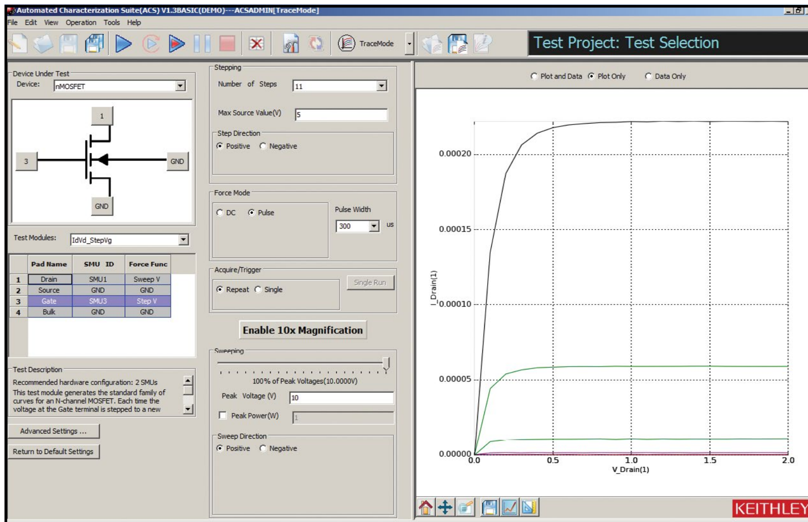
ACS systems optimized for component characterization applications



Multi Test Mode allows multiple tests to be performed on a device.



Trace Mode supports interactive testing of a device.

SUMMARY OF TYPICAL TESTS

Device	Leakage	Breakdown	Gain	On-State
Bipolar Junction Transistor	IEBO, IECO, IEVEB, ICVCB	BVCBO, BVCEI, BVCEO, BVCEV, BVEBO, BVECO	HFE	IBCO, IBEO, IBICVBE, IBVBE, ICBO, ICEV, ICVCE_BiasIB, ICVCE_BiasVB, ICVCE_StepIB, ICVCE_StepVB, VBCO, VCE
MOSFET	IDL, IDS_ISD, IGL, ISL	BVDSS, BVDSV, BVGDO, BVGDS, BVGSO	GM	IDVD_BiasVG, IDVD_StepVG, IDVG_BiasVD, IDVG_StepVD, IDVG_StepVSUB, IGVG, VTCI, VTEXT, VTEXT_IISQ
Diode	IRDVRD	VBRIRD	NA	DYNAMICZ, IFDVFD, VFDIFD, VRDIRD
Resistor	NA	NA	NA	IV
Capacitor	IV		NA	

FORMULATOR FUNCTION SUMMARY

Type	
Math	ABS, AVG, DELTA, DIFF, EXP, LN, LOG, LOG10, SQRT
Parametric Extractions	GMMAX, RES, RES_4WIRE, RES_AVG, SS, SSVTCI, TTF_DID_LGT,TTF_LGDID_T, TTF_DID_T, TTF_LGDID_LGT, VTCI, VTLINGM, VTSATGM
Fitting	EXPFIT, EXPFITA, EXPFITB, LINFIT, LINFITSLP, LINFITXINT, LINFITYINT, REGFIT, REGFITSLP, REGFITXINT, REGFITYINT, REGFIT_LGX_LGY, REGFIT_LGX_Y, REGFIT_X_LGY, TANFIT, TANFITSLP,TANFITXINT, TANFITYINT
Manipulation	AT, FINDD, FINDLIN, FINDU, FIRSTPOS, JOIN, LASTPOS, MAX, MAXPOS, MIN, MINPOX, POW, SMOOTH

SEMICONDUCTOR