

ACS Basic Edition Semiconductor Parametric Test Software for Component and Discrete Devices Datasheet



KEITHLEY
A Tektronix Company

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.

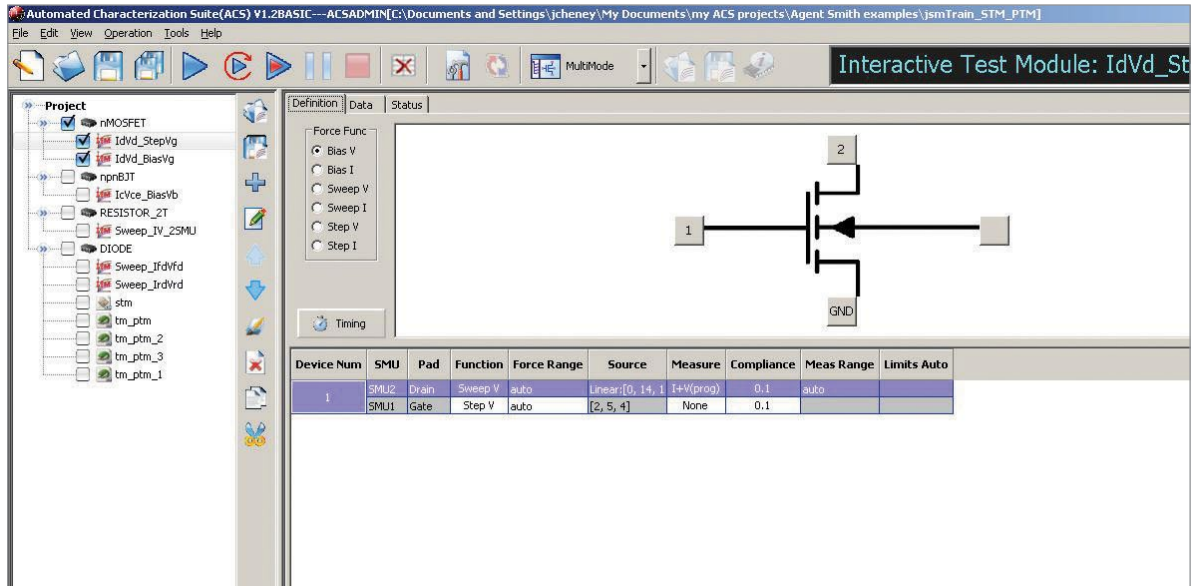
Key Features

- 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 10 compatible

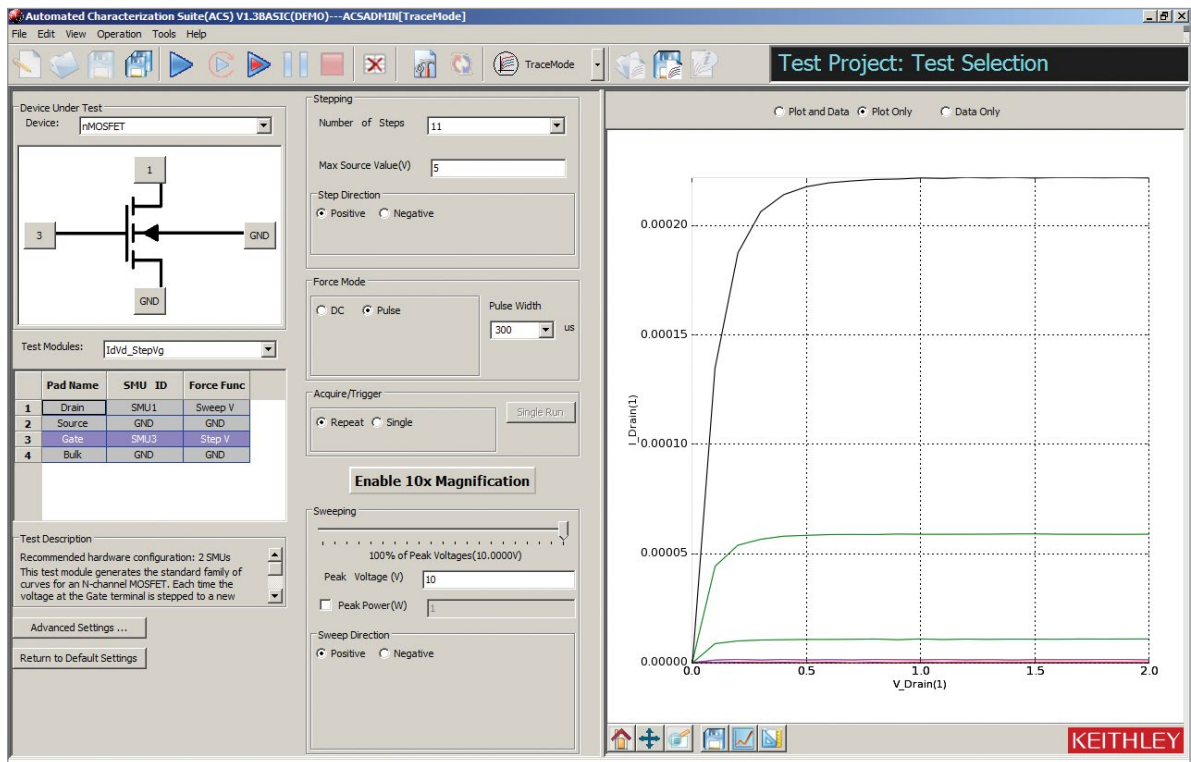
The built-in data analysis tools allow users to quickly analyze the parametric data. For example, place device curves developed from newly collected data over "golden" curves for fast comparisons. To perform specialized calculations on raw data, use the mathematical formulor tool to create customized 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



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



Trace Mode supports interactive testing of a device.

a sweep with a slide bar or the arrow keys on the PC keyboard.

Key Applications

- Materials and device development
- Quality assurance
- Device inspection

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.

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, VDFIFD, 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

ACS Basic V2.1.5 Pre-installation Software Requirements

Minimum Configuration for a Computer

Operating System	Windows 7 × 86 (32-bit), or Windows 7 × 64 (64-bit), Windows 10 × 86 (32 bit), or Windows 10 × 64 (64 bit)
CPU	2 cores or higher, 1 gigahertz (GHz) or faster processor or System on a Chip (SoC)
System Memory (RAM)	1 gigabyte (GB) for 32-bit or 2 GB for 64-bit
Hard Disk	16 GB for 32-bit OS 32 GB for 64-bit OS
Graphics Card	DirectX 9 or later with WDDM 1.0 driver
Screen Display	1024 × 768, 32-bit True Color

Recommended Configuration for a Computer

Operating System	Windows 10 × 86 (32 bit), or Windows 10 × 64 (64 bit)
CPU	4 cores or higher, at least 2 gigahertz (GHz) or faster processor
System Memory (RAM)	2 gigabyte (GB) for 32-bit or 4 GB for 64-bit
Hard Disk	32 GB for 32-bit OS 64 GB for 64-bit
Graphics Card	DirectX 9 or later with WDDM 1.0 driver
Screen	1280 × 1024, 32-bit True Color

Available Accessories

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-488B	IEEE-488.2 USB-to-GPIB Interface Adapter for USB Port

Ordering Information

ACS-BASIC	Component Characterization Software
ACS-BASIC-UPGRADE	(available for existing ACS Basic customers)

Contact Information:

- Australia*** 1 800 709 465
- Austria** 00800 2255 4835
- Balkans, Israel, South Africa and other ISE Countries** +41 52 675 3777
- Belgium*** 00800 2255 4835
- Brazil** +55 (11) 3759 7627
- Canada** 1 800 833 9200
- Central East Europe / Baltics** +41 52 675 3777
- Central Europe / Greece** +41 52 675 3777
- Denmark** +45 80 88 1401
- Finland** +41 52 675 3777
- France*** 00800 2255 4835
- Germany*** 00800 2255 4835
- Hong Kong** 400 820 5835
- India** 000 800 650 1835
- Indonesia** 007 803 601 5249
- Italy** 00800 2255 4835
- Japan** 81 (3) 6714 3010
- Luxembourg** +41 52 675 3777
- Malaysia** 1 800 22 55835
- Mexico, Central/South America and Caribbean** 52 (55) 56 04 50 90
- Middle East, Asia, and North Africa** +41 52 675 3777
- The Netherlands*** 00800 2255 4835
- New Zealand** 0800 800 238
- Norway** 800 16098
- People's Republic of China** 400 820 5835
- Philippines** 1 800 1601 0077
- Poland** +41 52 675 3777
- Portugal** 80 08 12370
- Republic of Korea** +82 2 565 1455
- Russia / CIS** +7 (495) 6647564
- Singapore** 800 6011 473
- South Africa** +41 52 675 3777
- Spain*** 00800 2255 4835
- Sweden*** 00800 2255 4835
- Switzerland*** 00800 2255 4835
- Taiwan** 886 (2) 2656 6688
- Thailand** 1 800 011 931
- United Kingdom / Ireland*** 00800 2255 4835
- USA** 1 800 833 9200
- Vietnam** 12060128

* European toll-free number. If not accessible, call: +41 52 675 3777



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