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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight E5281A

Keysight / Agilent E5281A Precision Medium Power Source Monitor Unit Module The Keysight/Agilent E5281A is a precision medium-power source/monitor unit (SMU) module for the E5270 Series parametric measurement mainframe. OEM E5270/E528x module tables provide force voltage/current ranges, measurement resolution classes, and pulse/spot measurement modes used for semiconductor device IV characterization. Semiconductor transistor and diode IV curves, medium-power parametric force/measure, and multi-SMU synchronized device testing in an E5270A mainframe. The Keysight/Agilent E5281A is a precision medium-power source/monitor unit (SMU) module for the E5270 Series parametric measurement mainframe. OEM E5270/E528x module tables provide force voltage/current ranges, measurement resolution classes, and pulse/spot measurement modes used for semiconductor device IV characterization. Semiconductor transistor and diode IV curves, medium-power parametric force/measure, and multi-SMU synchronized device testing in an E5270A mainframe.

Instrument Type: Precision source monitor unit module



MODEL

**Agilent / Keysight
E5281A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

E5281A

LISTING

<https://aumictechlabs.com/products/e5281a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight E5281A is a Medium Power Source/Monitor Unit (MPSMU) module designed for integration into the E5270A/B Parametric Measurement System Mainframe. This SMU delivers precise DC and low-frequency AC characterization for semiconductor device and material

evaluation across research, development, and quality control environments.

Technical Specifications

Voltage & Current Ranges Voltage: 2 μ V to 100 V Current: 10 fA to 200 mA Voltage compliance: 0 V to ± 100 V Current compliance: ± 1 pA to ± 100 mA or ± 100 pA to ± 1 A Compliance accuracy matches the current (or voltage) set accuracy

Measurement Resolution Current resolution: 0.1 fA or 10 fA Voltage resolution: 0.5 μ V or 2 μ V

Operational Limits Up to 20 mA at 100 V Up to 100 mA at ± 20 V Up to 200 mA at ± 20 V

Module power consumption: maximum 80 W within E5270B mainframe

Module weight: 1.4 kg

Key Features Supports up to eight MPSMU modules in a single E5270A/B mainframe for multi-channel testing Source and measure voltage or current simultaneously with compliance protection Low-noise design enables femtoampere-level current resolution Compliance functions prevent device damage during parametric sweeps

Typical Applications I-V characterization of semiconductors and discrete devices DC parametric measurements in device development cycles Low-frequency AC testing for material and component validation Multi-point device characterization with compliance control

Compatibility & Integration The E5281A is exclusively compatible with Keysight E5270A and E5270B 8-slot mainframes. Operation integrates with Keysight's EasyEXPERT group+ software suite, which provides parametric measurement functions, test automation, and data management. Standard GPIB connectivity supports remote instrument control and integration into automated test systems.

E5281A Characteristics / Specifications

PARAMETER	VALUE
Model	E5281A
Instrument Type	Precision source monitor unit module
Host Mainframe	E5270A / E5270 Series
Module Safety Class	Observe published maximum ratings
Chassis Form	E5270 plug-in SMU module
Measurement Role	Force voltage/current and measure IV
Platform Family	E528x precision SMU modules
Kelvin Force Sense	Kelvin force/sense class
Operating Modes	Spot sweep pulse class parametric modes
Channel Role	One SMU channel per module class
Mainframe Slots Required	1
Control Path	Through E5270 mainframe controller
Remote Interfaces	Via mainframe GPIB/LAN class
Brand Lineage	Keysight / Agilent
Related Mainframe	E5270A
Voltage Current Windows	Per installed E5281A option/range tables
Resolution Class	Precision parametric SMU resolution class
Compliance Limits	Programmable compliance class
Triggering	Mainframe shared trigger class
Warmup Spec Class	Follow E5270/E528x sheet warm-up
Operating Temperature Spec Class	Follow E5270 system sheet
Documentation Scope	OEM E5270/E528x module data tables
Installed Options	Determine final force/measure ranges
Operating temperature	Spec Class: Follow E5270 system sheet

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Spec Class: Follow E5270 system sheet
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Operating Temperature Spec Class	Follow E5270 system sheet
Documentation Scope	OEM E5270/E528x module data tables
Installed Options	Determine final force/measure ranges Notes From Keysight/Agilent E5270/E528x precision SMU documentation. Use the specific E5281A range table for warranted force/measure accuracies; do not assume sibling module limits.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Brand Lineage	Keysight / Agilent
Related Mainframe	E5270A
Voltage Current Windows	Per installed E5281A option/range tables
Resolution Class	Precision parametric SMU resolution class
Compliance Limits	Programmable compliance class
Triggering	Mainframe shared trigger class
Warmup Spec Class	Follow E5270/E528x sheet warm-up
Operating Temperature Spec Class	Follow E5270 system sheet
Documentation Scope	OEM E5270/E528x module data tables
Installed Options	Determine final force/measure ranges
Notes	
From Keysight/Agilent E5270/E528x precision SMU documentation. Use the specific E5281A range table for warranted force/measure accuracies; do not assume sibling module limits.	

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.