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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 83051A Microwave System Amplifier, 45 MHz to 50 GHz

Agilent Keysight 83051A Microwave System Preamplifier The Agilent/Keysight 83051A is a compact microwave preamplifier covering 45 MHz to 50 GHz. OEM 83000A Series Technical Overview 5963-5110E lists 23 dB minimum small-signal gain, +8 dBm P1dB from 45 MHz to 45 GHz, and +6 dBm from 45 to 50 GHz. Preamplify spectrum analyzers and noise-figure systems to 50 GHz; recover broadband path losses; provide a single gain block from VHF through millimeter-wave. Widest 83000A preamp span: 45 MHz to 50 GHz

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Low 6 dB typical noise figure from 2 to 26.5 GHz



MODEL

**Agilent / Keysight
83051A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

83051A

LISTING

<https://aumictechlabs.com/products/83051a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight 83051A is a microwave system amplifier delivering consistent gain and high output power across 45 MHz to 50 GHz. Engineers and systems integrators use this unit to recover

system losses and enhance available power in RF and microwave ATE systems. Its broad frequency coverage eliminates the need for multiple narrow-band amplifiers, crossover networks, and separate bias supplies - reducing system complexity and footprint.

Technical Specifications

Frequency Range: 45 MHz to 50 GHz Small Signal Gain: >23 dB minimum; ± 3.5 dB flatness maximum Output Power (P1dB): >8 dBm to 45 GHz; 6 dBm to 50 GHz Noise Figure: <12 dB typical (45 MHz–2 GHz); 6 dB typical (to 26.5 GHz); 10–50 GHz typical Third Order Intercept (TOI): 38 dBm typical (2–20 GHz) Harmonics: –20 dBc typical (1–2 GHz at specified max power) Input SWR: 2.1 maximum Output SWR: 2.2 maximum Reverse Isolation: –50 dB typical Survival Input Power: +20 dBm maximum Power Dissipation: 5 W Bias Voltage: +12 V @ 425 mA; –12 V @ 50 mA

Key Features

Single-stage amplification covers 45 MHz through 50 GHz without tuning adjustments Compact form factor enables direct in-line insertion into existing architectures Input/output impedance controlled within specified SWR limits for predictable system integration RF connectors: 2.4 mm (female); DC detector output: BNC (female) Optimized gain flatness (± 3.5 dB) across octave-spanning frequency range

Typical Applications

Radar system test and characterization Telecommunications RF front-end validation Microwave component and subsystem development Multi-frequency ATE signal conditioning

Compatibility & Integration

The 83051A operates with the Keysight 87421A 25 W Power Supply, providing unified bias distribution and eliminating multi-supply complexity. Its ability to replace multiple narrow-band amplifiers reduces component count and improves system reliability.

83051A Characteristics / Specifications

PARAMETER	VALUE
Model	83051A
Instrument Type	Microwave system preamplifier
Series Family	Keysight 83000A Series
Frequency Range	45 MHz to 50 GHz
Small Signal Gain	23 dB minimum
Small Signal Gain Flatness	±3.5 dB maximum
Output Power At Pmax Low	+12 dBm to 45 GHz
Output Power At Pmax High	+10 dBm, 45 to 50 GHz
Output Power At One dB Compression Low	+8 dBm, 45 MHz to 45 GHz
Output Power At One dB Compression High	+6 dBm, 45 to 50 GHz
Noise Figure Low Typical	less than 12 dB typical, 45 MHz to 2 GHz
Noise Figure Mid Typical	less than 6 dB typical, 2 to 26.5 GHz
Noise Figure High Typical	less than 10 dB typical, 26.5 to 50 GHz
Harmonics At P1dB Low Typical	minus 20 dBc typical, 45 MHz to 18 GHz
Harmonics At P1dB High Typical	minus 18 dBc typical, 18 to 25 GHz
Input SWR	2.1 maximum
Output SWR	2.2 maximum
Nonharmonic Spurious Typical	minus 50 dBc typical
Impedance Typical	50 ohm typical
Reverse Isolation Typical	minus 50 dB typical
Survival Input Power	+20 dBm maximum
Power Dissipation	5 W
Rise Time Typical	225 ps typical
Third Order Intercept Typical	27 dBm typical

PARAMETER	VALUE
Positive Bias	12 ±1 Vdc at 314 ±34 mA
Negative Bias	minus 12 ±1 Vdc at 30 ±5 mA
Rf Connectors	2.4 mm female
Net Weight	0.64 kg (1.4 lb)
Operating Temperature	0 C to +55 C
Storage Temperature	minus 40 C to +70 C
Temperature Coefficient Of Gain	minus 0.09 dB perCCompatible Bias Supply: 87421A
Rise Time	Typical: 225 ps typical

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	minus 40 C to +70 C
Operating temperature	0 C to +55 C
Operating Temperature	0 C to +55 C
Temperature Coefficient Of Gain	minus 0.09 dB perCCompatible Bias Supply: 87421A Notes Numeric rows from Agilent/Keysight 83000A Series Microwave System Amplifiers Technical Overview 5963-5110E. Headline Pout at 45 to 50 GHz is +10 dBm.

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	
Technical Specifications	
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Harmonics At P1dB Low Typical	minus 20 dBc typical, 45 MHz to 18 GHz
Harmonics At P1dB High Typical	minus 18 dBc typical, 18 to 25 GHz
Input SWR	2.1 maximum
Output SWR	2.2 maximum
Nonharmonic Spurious Typical	minus 50 dBc typical
Impedance Typical	50 ohm typical
Reverse Isolation Typical	minus 50 dB typical
Survival Input Power	+20 dBm maximum
Power Dissipation	5 W
Rise Time Typical	225 ps typical
Third Order Intercept Typical	27 dBm typical
Positive Bias	12 ±1 Vdc at 314 ±34 mA
Negative Bias	minus 12 ±1 Vdc at 30 ±5 mA

PARAMETER	VALUE
Rf Connectors	2.4 mm female
Net Weight	0.64 kg (1.4 lb)
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Storage Temperature	minus 40 C to +70 C
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Compatible Bias Supply	87421A

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Reverse Isolation Typical	minus 50 dB typical
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Notes
Numeric rows from Agilent/Keysight 83000A Series Microwave System Amplifiers Technical Overview 5963-5110E.
Headline Pout at 45 to 50 GHz is +10 dBm.

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

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NIST-traceable calibration · SAM registered ·
30-day returns
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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.