

KEYSIGHT TECHNOLOGIES (AGILENT HP)

83051A

The Keysight 83051A (formerly Agilent) is a high-performance, ultra-broadband microwave system preamplifier designed for systems designers and integrators. Operating from 45 MHz to 50 GHz, it provides a minimum of 23 dB gain and up to 16 mW (+12 dBm) of output power, making it ideal for recovering system losses and boosting available power in demanding RF and microwave automatic test equipment (ATE) systems. Its compact, modular form factor eliminates the need for multiple narrow-band amplifiers, simplifying system design and integration.

SPECIFICATIONS

General

Interfaces	3-pin DC bias connector
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Physical

Power Supply	+12 VDC @ 330 mA, -12 VDC @ 30 mA nominal (requires external supply, fully compatible with Keysight 87421A)
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Operating Temperature	0 to +55 °C °C
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Dimensions (W×H×D)	103 mm × 45 mm × 167 mm mm
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Weight	0.64 kg
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RF & Microwave Performance

Frequency Range	45 MHz to 50 GHz
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Small Signal Gain	23 dB (minimum)
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Gain Flatness	±5 dB
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Output Power at 1 dB Compression (P1dB)	+12 dBm (16 mW) minimum
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Noise Figure (0.045 to 26.5 GHz)	< 12 dB
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Noise Figure (26.5 to 50 GHz)	< 13 dB
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Input VSWR	2.5:1 (maximum)
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Output VSWR	2.5:1 (maximum)
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Maximum RF Input Power (CW Survival)	+15 dBm
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Maximum RF Input Power (Pulsed)	+22 dBm
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Maximum DC Input Voltage	±10 V
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Third-Order Intercept Point (IP3)	+21 dBm (typical at 26.5 GHz)
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RF Interfaces & Ports

RF Input Connector Type	2.4 mm (female)
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RF Output Connector Type	2.4 mm (female)
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RF Connector Impedance	50 Ω nominal
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Power Requirements

Compatible Power Supply	Keysight 87421A (25W)
Positive DC Bias Input	+12 VDC ±0.5 V
Positive DC Bias Current	330 mA (nominal)
Negative DC Bias Input	-12 VDC ±0.5 V
Negative DC Bias Current	30 mA (nominal)

Performance

Reverse Isolation	> 50 dB
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Inputs & Outputs

Bias Connector Type	3-pin
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TECHNOLOGY

Solid State / MMIC

APPLICATIONS

Microwave system preamplification, ATE system loss recovery, signal boosting

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