

KEYSIGHT TECHNOLOGIES (AGILENT HP)

83050A

The Keysight (Agilent) 83050A is an ultra-broadband microwave system amplifier designed for system designers and integrators. Operating over a very wide frequency band of 2 GHz to 50 GHz, it provides high gain and power boost capabilities to recover system losses and increase available power in RF and microwave automated test equipment (ATE) systems. By replacing multiple narrow-band amplifiers with a single unit, it simplifies setup complexity and eliminates the need for crossover networks or multiple bias power supplies.

SPECIFICATIONS

Physical

Power Supply	+12 VDC @ 1.3 A, -12 VDC @ 20 mA (via Keysight 87421A or compatible power supply)
Operating Temperature	0 to 55 °C
Dimensions (W×H×D)	45 mm × 45 mm × 114 mm mm
Weight	0.64 kg

RF Performance Specifications

Frequency Range	2 to 50 GHz
Nominal Gain (2 to 26.5 GHz)	≥ 21 dB
Nominal Gain (26.5 to 50 GHz)	≥ 18 dB
Typical Gain (2 to 26.5 GHz)	25 dB
Typical Gain (26.5 to 50 GHz)	23 dB
Gain Flatness	± 4.5 dB (typical)
Noise Figure (2 to 26.5 GHz)	< 10 dB (6 dB typical)
Noise Figure (26.5 to 50 GHz)	< 13 dB (10 dB typical)
Output Power at 1 dB Compression (2 to 40 GHz)	$\geq +18$ dBm
Output Power at 1 dB Compression (40 to 50 GHz)	$\geq +15$ dBm
Typical Output Power at 1 dB Compression (2 to 40 GHz)	+20 dBm (100 mW)
Typical Output Power at 1 dB Compression (40 to 50 GHz)	+18 dBm (63 mW)
Saturated Output Power (2 to 40 GHz)	+22 dBm (typical)
Saturated Output Power (40 to 50 GHz)	+19 dBm (typical)
Third-Order Intercept Point (IP3, 2 to 40 GHz)	+29 dBm (typical)
Third-Order Intercept Point (IP3, 40 to 50 GHz)	+24 dBm (typical)
Input VSWR (2 to 26.5 GHz)	$< 2.2:1$
Input VSWR (26.5 to 50 GHz)	$< 2.5:1$
Output VSWR (2 to 26.5 GHz)	$< 2.2:1$
Output VSWR (26.5 to 50 GHz)	$< 2.5:1$
Reverse Isolation	> 50 dB (typical)
Second Harmonic at Rated Output Power	< -20 dBc (typical)

Input/Output Characteristics

Input Impedance	50 ohms (nominal)
Output Impedance	50 ohms (nominal)
RF Input Connector Type	2.4 mm (female)
RF Output Connector Type	2.4 mm (female)
Maximum RF Input Power (CW)	+20 dBm

Power Supply and Bias Requirements

DC Bias Voltages	+12 VDC, -12 VDC
DC Current Consumption (+12 V)	1.3 A (nominal)
Power Supply Connector Type	15-pin D-sub (female)
Compatible Power Supply	Keysight 87421A (25W)

Physical and Mechanical

Width	45 mm (1.8 in)
Height	45 mm (1.8 in)
Depth	114 mm (4.5 in)
Enclosure Material	Metal
Cooling Mechanism	Conduction cooling (heatsink recommended)
Form Factor	Compact system module
Mounting Configurations	Integrated threaded mounting holes

Environmental Specifications

Operating Temperature Range	0 to +55 °C
Storage Temperature Range	-40 to +70 °C
Operating Altitude	Up to 4,570 meters (15,000 feet)
Non-Operating Altitude	Up to 15,240 meters (50,000 feet)

Configurable Options and Accessories

External Power Supply Accessory	Keysight 87421A 25W DC power supply (optional)
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Power Requirements

DC Bias Voltage Tolerance	±0.5 V
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Performance

Gain Temperature Coefficient	-0.06 dB/°C (typical)
Non-Harmonic Spurious	<-60 dBc
Second Harmonic (2 to 20 GHz)	<-20 dBc (at +18 dBm output)

Compliance

EMC Compliance	Conforms to EN 55011 / CISPR 11, Group 1, Class A
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TECHNOLOGY

GaAs MMIC

APPLICATIONS

RF & Microwave ATE Systems, Signal Path Loss Recovery, Signal Boosting

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.