

KEYSIGHT TECHNOLOGIES (AGILENT HP)

83020A

The Keysight Technologies (formerly Agilent HP) 83020A is a compact, high-performance microwave system amplifier designed for system designers and integrators. Operating over an ultra-broadband frequency range of 2.0 GHz to 26.5 GHz, this solid-state GaAs amplifier delivers up to 1 watt of output power, eliminating the need for multiple narrow-band amplifiers and crossover networks in RF and microwave automated test equipment (ATE) systems.

SPECIFICATIONS

General

Interfaces	15-pin D-sub (power/bias)
Included Accessories	2 m bias cable (D-sub 15-pin male to D-sub 15-pin male)

Physical

Power Supply	+15 VDC @ 3.2 A (max), -15 VDC @ 50 mA (max); compatible with Keysight 87422A 70W power supply
Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	103 mm × 45 mm × 182 mm mm
Weight	1.5 kg kg

RF & Microwave Performance

Frequency Range	2.0 GHz to 26.5 GHz
Small Signal Gain (2.0 to 20.0 GHz, Minimum)	27 dB
Small Signal Gain (2.0 to 20.0 GHz, Typical)	30 dB
Small Signal Gain (20.0 to 26.5 GHz, Minimum)	23 dB
Small Signal Gain (20.0 to 26.5 GHz, Typical)	27 dB
Gain Flatness (Typical)	±4.5 dB
Output Power at 1 dB Compression (2.0 to 20.0 GHz, Minimum)	+30 dBm (1.0 W)
Output Power at 1 dB Compression (20.0 to 26.5 GHz, Minimum)	+27 dBm (0.5 W)
Saturated Output Power (2.0 to 20.0 GHz, Typical)	+33 dBm
Saturated Output Power (20.0 to 26.5 GHz, Typical)	+30 dBm
Noise Figure (2.0 to 20.0 GHz, Typical)	10 dB
Noise Figure (20.0 to 26.5 GHz, Typical)	13 dB
Input VSWR (2.0 to 20.0 GHz, Maximum)	2.0:1
Input VSWR (2.0 to 20.0 GHz, Typical)	1.5:1
Input VSWR (20.0 to 26.5 GHz, Maximum)	2.5:1
Input VSWR (20.0 to 26.5 GHz, Typical)	1.8:1
Output VSWR (2.0 to 20.0 GHz, Maximum)	2.0:1
Output VSWR (2.0 to 20.0 GHz, Typical)	1.5:1
Output VSWR (20.0 to 26.5 GHz, Maximum)	2.5:1
Output VSWR (20.0 to 26.5 GHz, Typical)	1.8:1
Maximum Input RF Power (Survival Level)	+22 dBm (CW)
Maximum Input DC Voltage (Survival Level)	±10 V
Second-Harmonic Distortion (2.0 to 20.0 GHz, Typical)	-20 dBc (at +30 dBm output)
Second-Harmonic Distortion (20.0 to 26.5 GHz, Typical)	-30 dBc (at +27 dBm output)
Third-Order Intercept Point IP3 (2.0 to 20.0 GHz, Typical)	+40 dBm
Third-Order Intercept Point IP3 (20.0 to 26.5 GHz, Typical)	+37 dBm
Reverse Isolation S12 (Typical)	> 50 dB

RF Interfaces & Ports

RF Input Connector Type	3.5 mm female
RF Output Connector Type	3.5 mm female
RF Connector Impedance	50 Ω nominal

Power Requirements

Positive DC Supply Voltage	+15 VDC
Negative DC Supply Voltage	-15 VDC
Positive DC Current Consumption (Maximum)	3.2 A
Positive DC Current Consumption (Typical)	2.0 A
Negative DC Current Consumption (Maximum)	50 mA
Negative DC Current Consumption (Typical)	30 mA
Power Supply Compatibility	Keysight 87422A (70 W power supply)
Bias Connection Type	15-pin D-sub (female)

Physical Specifications

Form Factor	System module
Cooling Method	Internal fan and heatsink
Width	103 mm
Height	45 mm
Depth	182 mm

Environmental Specifications

Operating Temperature Range	0 °C to +55 °C
Storage Temperature Range	-40 °C to +70 °C

Performance

Non-Harmonic Spurious	<-60 dBc (typical)
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Environmental

Operating Humidity	Up to 95% RH @ 40 °C (non-condensing)
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TECHNOLOGY

GaAs Solid-State

APPLICATIONS

RF & Microwave Signal Amplification / ATE Systems

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