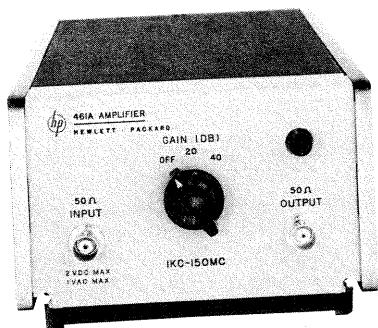


AMPLIFIERS

General purpose amplifiers

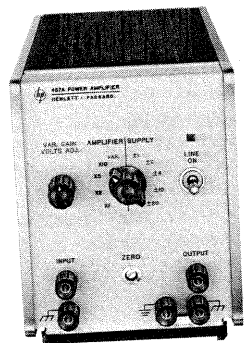
Model 461A, 462A, 465A, 467A



461A



465A



467A

461A, 462A Description

These general purpose amplifiers can be used as preamplifiers to raise the level of a signal or as a buffer. Solid-state HP amplifiers, Models 461A and 462A, provide stable 20 and 40 dB gain over a wide frequency range with fast rise time.

461A Specifications

Frequency response: ± 1 dB, 1 kHz to 150 MHz when operating into a 50 Ω resistive load (500 kHz reference).
Gain at 500 kHz: 40 dB ± 0.5 dB or 20 dB ± 1.0 dB, selected by front-panel switch (inverting).
Input impedance: nominal 50 Ω .
Maximum input: 1 V rms or 2 V p-p pulse.
Maximum dc input: ± 2 V.
Maximum output: 0.5 V rms into 50 Ω resistive load.
Equivalent wide-band input noise level: $< 40 \mu\text{V}$ in 40 dB position when loaded with 50 Ω .
Distortion: $< 5\%$ at maximum output and rated load.
Overload recovery: $< 1 \mu\text{s}$ for 10 times overload.

Dimensions: 130 mm wide \times 76 mm high \times 279 mm deep ($5\frac{1}{8}$ " \times 3" \times 11").
Weight: net, 1.8 kg (4 lb). Shipping, 2.7 kg (6 lb).

462A Specifications

Pulse response: leading edge and trailing edge: rise time, < 4 ns; overshoot, $< 5\%$.
Pulse overload recovery: $< 1 \mu\text{s}$ for 10 times overload.
Pulse duration for 10% droop: 30 μs .
Pulse delay: nominally 12 to 14 ns.
Equivalent input noise level: $< 40 \mu\text{V}$ in 40 dB position (50 Ω load).
Input impedance: nominal 50 Ω .
Maximum input: 1 V rms or 2 V p-p pulse.
Maximum dc input: ± 2 V.
Gain: 20 or 40 dB selected by front panel switch (inverting).
Output: 1 V p-p into 50 Ω resistive load.
Dimensions: 130 mm wide \times 76 mm high \times 279 mm deep ($5\frac{1}{8}$ " \times 3" \times 11").
Weight: net, 1.8 kg (4 lb). Shipping, 2.7 kg (6 lb).

465A Description

HP's 465A amplifier provides 20 dB or 40 dB gain (X10 or X100) with flat frequency response from 5 Hz to 1 MHz with floating inputs.

465A Specifications

Voltage gain: 20 dB (X10) or 40 dB (X100), open circuit.
Gain accuracy: ± 0.1 dB ($\pm 1\%$) at 1 kHz.
Frequency response: ± 0.1 dB, 100 Hz to 50 kHz; < 2 dB down at 5 Hz and 1 MHz.
Output: > 10 V rms open circuit; > 5 V rms into 50 Ω (0.5 W).
Distortion: $< 1\%$, 10 Hz to 100 kHz; $< 2\%$, 5 Hz to 10 Hz and 100 kHz to 1 MHz.
Input impedance: 10 M Ω shunted by < 20 pF.
Output impedance: 50 Ω .
Noise: $< 25 \mu\text{V}$ rms referred to input (with 1 M Ω source resistance).
Dimensions: 130 mm wide \times 76 mm high \times 279 mm deep ($5\frac{1}{8}$ " \times 3" \times 11").
Weight: net, 1.8 kg (4 lb). Shipping, 3.2 kg (7 lb).

467A Description

HP's 467A Power Amplifier/Supply is a 10 watt peak power amplifier and -20 V (to $+20$ V) dc power supply. The wide band width offers low dc drift from dc to 1 MHz and 0.3% gain. With continuously variable gain and floating inputs, HP's 467A can also be used as a power supply.

467A Specifications

Power amplifier

Voltage gain (non-inverting): fixed steps: X1, X2, X5, X10. Variable: 0-10, resolution is better than 0.1% of full output.
Accuracy: $\pm 0.3\%$ from dc to 10 kHz; $\pm 1.0\%$ from 10 kHz to 100 kHz; $\pm 10\%$ from 100 kHz to 1 MHz with load of $> 40\Omega$.
Output: ± 20 V p at 0.5 A p.
Distortion: $< 0.01\%$ at 1 kHz; $< 1\%$ at 100 kHz; $< 3\%$ at 1 MHz.
Input impedance: 50 k Ω shunted by 100 pF.

DC power supply

Voltage range: $> \pm 20$ V, ± 10 V, ± 4 V, ± 2 V, ± 1 V with adjustable vernier. Resolution: better than 0.1% of full output.
Current: ± 0.5 A p.
Load regulation: (front panel) < 10 mV, no load to full load.
Line regulation: < 10 mV for a $\pm 10\%$ change in line voltage.

General

Output impedance: (front panel): 5 m Ω in series with 1 μH .
Current limit: < 800 mA.
Dimensions: 130 mm wide \times 159 mm high \times 279 mm deep ($5\frac{1}{8}$ " \times $6\frac{1}{4}$ " \times 11").
Weight: net, 4.5 kg (10 lb). Shipping, 6.8 kg (15 lb).

Model number and name

HP 461A Amplifier
HP 462A Amplifier
HP 465A Amplifier
HP 467A Power Amplifier/Supply