

Various Models

- Ultra broadband to 50 GHz
- Up to 1 watt output power
- Compact size

### HP Microwave System Amplifiers

Use these amplifiers to increase output power from microwave sources and to increase test system measurement speed with improved dynamic range. Drive a variety of narrowband travelling wave tubes with a single driver solution that is highly reliable and low in cost to maintain year after year. With excellent noise figure relative to its broad bandwidth and high gain, these amplifiers can make significant improvement to system noise figure. By using feedback to an external source ALC input, system designers can level output power at the test port, negating the effects of post sweeper reflections and losses. Place power where you need it with a remotely-locatable dc power supply. The amplifier and the power supply are provided with a 2-m dc bias cable.



### Specifications (+20° to +30° C)

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| HP Model | Frequency (GHz) | Power out P <sub>sat</sub> (dBm)                                | Power out P <sub>1dB</sub> (dBm)         | Gain dB (min)                         | Noise figure (dB typ.)  | Detected output | DC bias volt/amp                  | RF connectors (Input/Output) |
|----------|-----------------|---|--|---------------------------------------|---|-----------------|-----------------------------------|------------------------------|
| 83006A   | 0.01 to 26.5    | +18 typ. 0.01 to 10<br>+16 typ. 10 to 20<br>+14 typ. 20 to 26.5 | +13, 0.01 to 20<br>+10, 20 to 26.5       | 20                                    | 13, 0.01 to 0.1 GHz<br>8, 0.1 to 18 GHz<br>13, 18 to 26.5 GHz | No              | +12 V at 450 mA<br>-12 V at 50 mA | 3.5 mm (f)                   |
| 83017A   | 0.5 to 26.5     | +20 typ. 0.5 to 20<br>+15 typ. 20 to 26.5                       | +18, 0.5 to 20 GHz<br>+13, 20 to 26.5    | 25                                    | 8, 0.5 to 18 GHz<br>13, 18 to 26.5 GHz                        | Yes             | +12 V at 700 mA<br>-12 V at 50 mA | 3.5 mm (f)                   |
| 83018A   | 2 to 26.5       | +24, 2 to 20 GHz<br>+21, 20 to 26.5 GHz                         | +22, 2 to 20 GHz<br>+17, 20 to 26.5 GHz  | 27, 2 to 20 GHz<br>23, 20 to 26.5 GHz | 10, 2 to 20 GHz<br>13, 20 to 26.5 GHz                         | Yes             | +12 V at 2 A<br>-12 V at 50 mA    | 3.5 mm (f)                   |
| 83020A   | 2 to 26.5       | +30, 2 to 20 GHz<br>+30, 20 to 26.5 GHz*                        | +28, 2 to 20 GHz<br>+28, 20 to 26.5 GHz* | 30, 2 to 20 GHz<br>27, 20 to 26.5 GHz | 10, 2 to 20 GHz<br>13, 20 to 26.5 GHz                         | Yes             | +15 V at 3.2 A<br>-15 V at 50 mA  | 3.5 mm (f)                   |
| 83050A   | 2 to 50         | +20, 2 to 40 GHz<br>+19, 40 to 50 GHz**                         | +15, 2 to 40 GHz<br>+13, 40 to 50 GHz    | 21                                    | 6, 2 to 26.5 GHz<br>10, 26.5 to 50 GHz                        | No              | +12 V at 830 mA<br>-12 V at 50 mA | 2.4 mm (f)                   |
| 83051A   | 0.045 to 50     | +12, .045 to 45 GHz<br>+10, 45 to 50 GHz                        | +8, .045 to 45 GHz<br>+6, 45 to 50 GHz   | 23                                    | 12, 0.045 to 2 GHz<br>6, 2 to 26.5 GHz<br>10, 26.5 to 50 GHz  | No              | +12 V at 425 mA<br>-12 V at 50 mA | 2.4 mm (f)                   |
| 87405A   | 0.01 to 3       | +26 typ.  | +4                                       | 22-27 min./max.                       | 6.5, 0.01 to 2 GHz<br>7.5, 2 to 3 GHz                         | No              | +15 V at 80 mA                    | N (f)/N (m)                  |
| 87415A   | 2 to 8          | +26 typ.  | +23                                      | 25                                    | 13  | No              | +12 V at 900 mA                   | SMA (f)                      |

\* -0.7 dB/GHz (20<f<26.5)

\*\* 19 dBm -0.2 dB/GHz (40<f<50)

#### Dimensions:

HP 83006A, 83017A, 83050A, 83051A, 87415A: 132 mm L x 103 mm W x 45 mm H (4 in x 1.8 in x 5.2 in)

HP 83018A: 212 mm L x 114 mm W x 76 mm H (4.5 in x 3 in x 8.3 in)

HP 83020A: 275 mm L x 202 mm W x 87 mm H (8 in x 3.4 in x 10.8 in)

HP 87405A: 125 mm L x 28 mm W x 28 mm H (4.9 in x 1.1 in x 1.1 in)

#### Weight:

HP 83006A, 83017A, 83050A, 83051A, 87415A: .64 kg (1.4 lb);

HP 83018A: 1.8 kg (4 lb); HP 83020A: 3.9 kg (8.5 lb);

HP 87405A: .27 kg (0.6 lb)

#### Bias Cable:

2-m cable with a connector on one end and bare wires on the other, shipped with the amplifiers below

HP 83006A, 83017A, 83018A, 83050A, 83051A, 87415A:

HP p/n 83006-60004

HP 83020A: HP p/n 83020-60004

2-m cables to connect between amplifier and power supplies, shipped with power supplies below

HP 87421A: HP p/n 83006-60005

HP 87422A: HP p/n 87422-60001, 83006-60005

| HP power supply | AC Input voltage           | DC Output voltage/current   | Output power | Size (H,W,D)                                     |
|-----------------|----------------------------|---|--------------|--|
| HP 87421A       | 100 to 240 VAC<br>50/60 Hz | +12 V at 2.0 A, -12 V at 200 mA                                   | 25 W max     | 57 mm, 114 mm, 176 mm<br>2.3 in, 4.5 in, 6.9 in  |
| HP 87422A       | 100 to 240 VAC<br>50/60 Hz | +15 V at 3.3 A, -15 V at 50 mA<br>+12 V at 2.0 A, -12 V at 200 mA | 70 W max     | 86 mm, 202 mm, 276 mm<br>3.4 in, 8.0 in, 10.9 in |

### Key Literature

Latest *RF & Microwave Test Accessories Catalog*, p/n 5968-4314E

For more information, visit our web site: <http://www.hp.com/go/MTA>