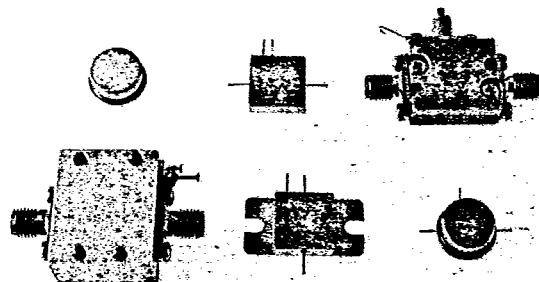


# AH-17

T-74-09-01



## 10 to 1000 MHz TO-8 Cascadable Amplifier

- High Output Level: +15.5dBm
- High Third Order: +27.0dBm
- Various Package Options (see photo)

Surface Mounted (SMT0-8), Flatpack with flange (FPF), Connectorized (CAH), Connectorized Flatpack (CFP), Flatpack (FP), and TO-8 (AH)

### Electrical Specifications

Measured in a 50-ohm system at +15 Vdc nominal

| Characteristic                                      | Typical<br>25°C | Guaranteed<br>0°C to +50°C | Specifications<br>-54°C to +85°C |
|-----------------------------------------------------|-----------------|----------------------------|----------------------------------|
| Frequency (MHz Min.)                                | 10-1000         | 10-1000                    | 10-1000                          |
| Small Signal Gain (dB Min.)                         | +12.5           | +10.5                      | +10.0                            |
| Gain Flatness (dB Max.)                             | ±2.5            | ±0.7                       | ±1.0                             |
| Noise Figure (dB Max.)                              | +5.5            | +7.0                       | +8.0                             |
| Power Output @ 1 dB<br>Compression (dBm Min.)       | +15.5           | +14.0                      | +13.5                            |
| Two Tone 3rd Order Intercept<br>Point (dBm Min.)    | +27.0           | +26.0                      | +24.0                            |
| Two Tone 2nd Order Intercept<br>Point (dBm Min.)    | +42.0           | +38.0                      | +34.0                            |
| One Tone 2nd Harmonic<br>Intercept Point (dBm Min.) | +47.0           | +45.0                      | +39.0                            |
| Input/Output VSWR (Max.)                            | <1.5:1          | 1.8:1                      | 2.0:1                            |
| DC Current at 15 V (mA Max.)                        | +40.0           | +47.0                      | +49.0                            |

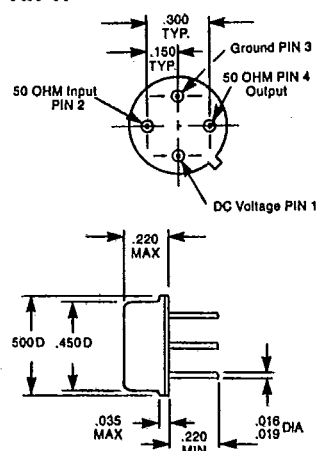
### Maximum Ratings

|                                            |                           |
|--------------------------------------------|---------------------------|
| Ambient Operating<br>Temperature .....     | -54°C to +100°C           |
| Storage Temperature ...                    | -62°C to +125°C           |
| Maximum Case Temperature .....             | +105°C                    |
| Maximum DC Voltage .....                   | +18.0V                    |
| Maximum Continuous RF Input<br>Power ..... | +13.0dBm                  |
| Maximum Short Term RF Input<br>Power ..... | +17.0 dBm (1 minute Max.) |
| Maximum Peak<br>Power .....                | +0.5W (3μseconds Max.)    |
| "X" Series Burn-In<br>Temperature .....    | +100°C                    |
| Weight .....                               | +2.5 grams Max.           |

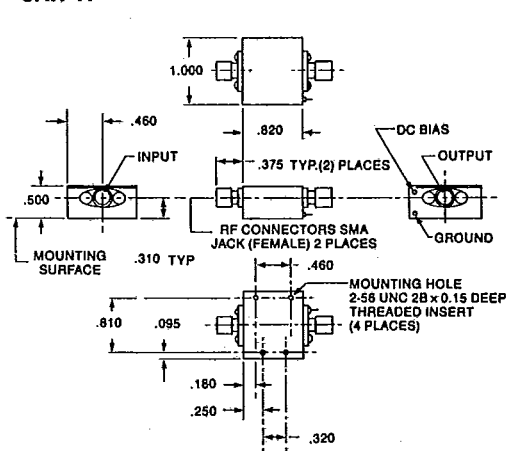
### Outline Drawings

(For additional package configurations, see Section 9)

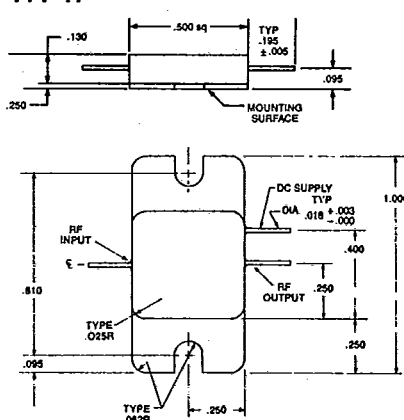
AH-17



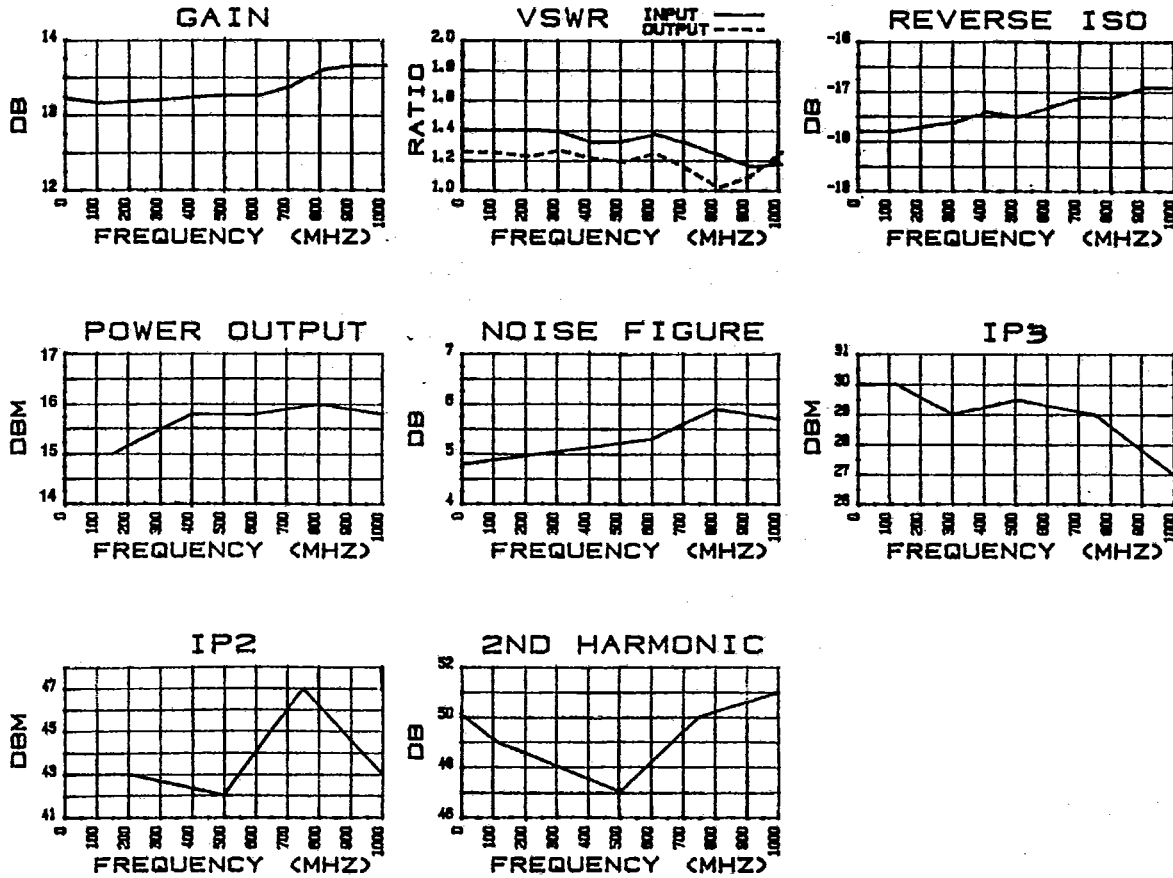
CAH-17



FPF-17



## Typical Performance



### AH-17 40.0 mA @15.0Vdc Linear S-Parameters

| FREQUENCY<br>MHz | RETURN LOSS<br>INPUT (S11) |        | TRANS. GAIN<br>FORWARD (S21) |        | TRANS. GAIN<br>REVERSE (S12) |       | RETURN LOSS<br>OUTPUT (S22) |        |
|------------------|----------------------------|--------|------------------------------|--------|------------------------------|-------|-----------------------------|--------|
|                  | dB                         | ANG    | dB                           | ANG    | dB                           | ANG   | dB                          | ANG    |
| 10.000           | -15.5                      | -166.3 | 13.22                        | -178.0 | -17.80                       | 5.0   | -18.8                       | 148.0  |
| 110.000          | -15.5                      | 178.8  | 13.16                        | 164.0  | -17.80                       | -2.8  | -19.0                       | 149.0  |
| 210.000          | -15.5                      | 168.8  | 13.19                        | 150.0  | -17.70                       | -6.2  | -19.8                       | 123.8  |
| 310.000          | -15.7                      | 166.0  | 13.21                        | 136.0  | -17.60                       | -10.0 | -18.5                       | 104.0  |
| 410.000          | -17.2                      | 162.8  | 13.25                        | 121.2  | -17.40                       | -13.5 | -20.3                       | 71.5   |
| 510.000          | -17.0                      | 151.8  | 13.27                        | 106.8  | -17.50                       | -18.2 | -21.2                       | 74.8   |
| 610.000          | -16.0                      | 161.8  | 13.26                        | 93.0   | -17.30                       | -22.2 | -19.1                       | 43.0   |
| 710.000          | -17.3                      | 174.3  | 13.39                        | 77.3   | -17.10                       | -27.5 | -23.3                       | -25.5  |
| 810.000          | -19.4                      | 177.3  | 13.61                        | 62.3   | -17.10                       | -32.0 | -39.4                       | -70.3  |
| 910.000          | -22.6                      | 179.5  | 13.67                        | 46.3   | -16.90                       | -38.0 | -26.5                       | -148.0 |
| 1010.000         | -21.6                      | 171.0  | 13.67                        | 28.8   | -16.90                       | -43.7 | -18.8                       | 155.3  |

### Deviation from Linear Phase, Gain, Group Delay, and VSWR

| FREQUENCY<br>(MHz) | VSWR<br>INPUT | DEV. LIN. 0<br>(DEG.) | GAIN DEV.<br>(dB) | GROUP DELAY<br>(n-SEC) | VSWR<br>OUTPUT |
|--------------------|---------------|-----------------------|-------------------|------------------------|----------------|
| 10.000             | 1.404         | 1.034                 | -0.135            | 0.000                  | 1.259          |
| 110.000            | 1.404         | -2.000                | -0.195            | 0.500                  | 1.253          |
| 210.000            | 1.404         | -1.034                | -0.165            | 0.389                  | 1.228          |
| 310.000            | 1.393         | -0.068                | -0.145            | 0.389                  | 1.270          |
| 410.000            | 1.320         | 0.148                 | -0.105            | 0.410                  | 1.214          |
| 510.000            | 1.329         | 0.614                 | -0.085            | 0.403                  | 1.191          |
| 610.000            | 1.377         | 1.830                 | -0.095            | 0.382                  | 1.250          |
| 710.000            | 1.316         | 1.045                 | 0.035             | 0.438                  | 1.147          |
| 810.000            | 1.240         | 1.011                 | 0.255             | 0.417                  | 1.022          |
| 910.000            | 1.160         | -0.023                | 0.315             | 0.444                  | 1.099          |
| 1010.000           | 1.181         | -2.557                | 0.315             | 0.486                  | 1.259          |