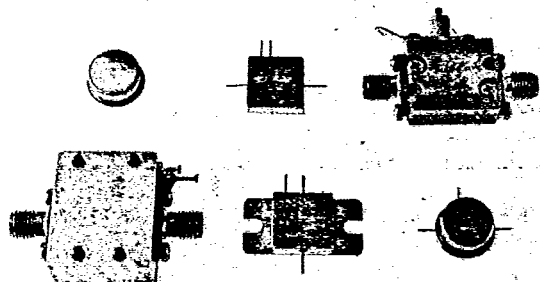


# AH-15

T-74-09-01



## 5 to 1000 MHz TO-8 Cascadable Amplifier

- Medium Gain: +14.5dB
- Medium Output: +9.0dBm
- Medium Noise: +5.0dB
- 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.)                                | 5-1000          | 5-1000                     | 5-1000                           |
| Small Signal Gain (dB Min.)                         | +14.5           | +14.0                      | +13.0                            |
| Gain Flatness (dB Max.)                             | ±0.3            | ±1.0                       | ±1.2                             |
| Noise Figure (dB Max.)                              | +5.0            | +6.5                       | +7.0                             |
| Power Output @ 1 dB<br>Compression (dBm Min.)       | +9.0            | +7.0                       | +6.5                             |
| Two Tone 3rd Order Intercept<br>Point (dBm Min.)    | +22.0           | +20.0                      | +17.0                            |
| Two Tone 2nd Order Intercept<br>Point (dBm Min.)    | +31.0           | +29.0                      | +27.0                            |
| One Tone 2nd Harmonic<br>Intercept Point (dBm Min.) | +39.0           | +37.0                      | +32.0                            |
| Input/Output VSWR (Max.)                            | <1.5:1          | 1.9:1                      | 2.0:1                            |
| DC Current at 15 V (mA Max.)                        | +24.0           | +27.0                      | +30.0                            |

### Maximum Ratings

Ambient Operating  
Temperature ..... -54°C to +100°C

Storage Temperature ... -62°C to +125°C

Maximum Case Temperature ..... +125°C

Maximum DC Voltage ..... +18.0V

Maximum Continuous RF Input  
Power ..... +13.0dBm

Maximum Short Term RF Input  
Power ..... +50.0 mW (1 minute Max.)

Maximum Peak  
Power ..... +0.5W (3μseconds Max.)

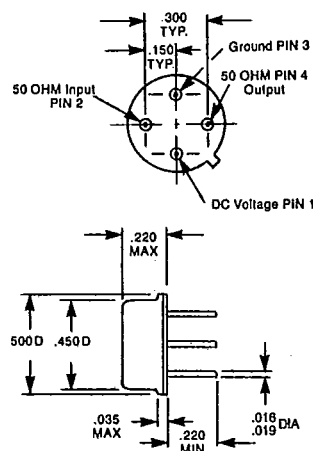
"X" Series Burn-In  
Temperature ..... +125°C

Weight ..... +2.5 grams Max.

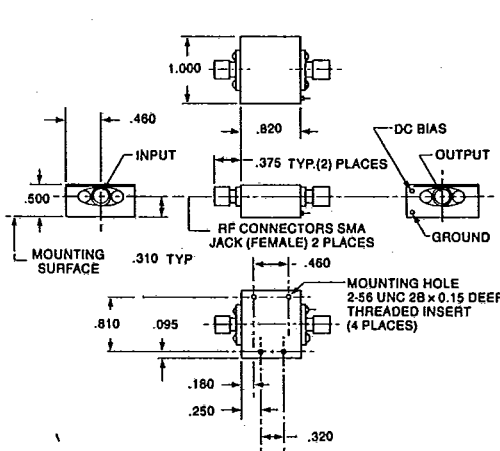
### Outline Drawings

(For additional package configurations, see Section 9)

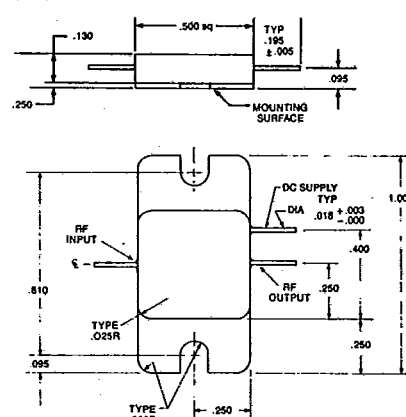
AH-15



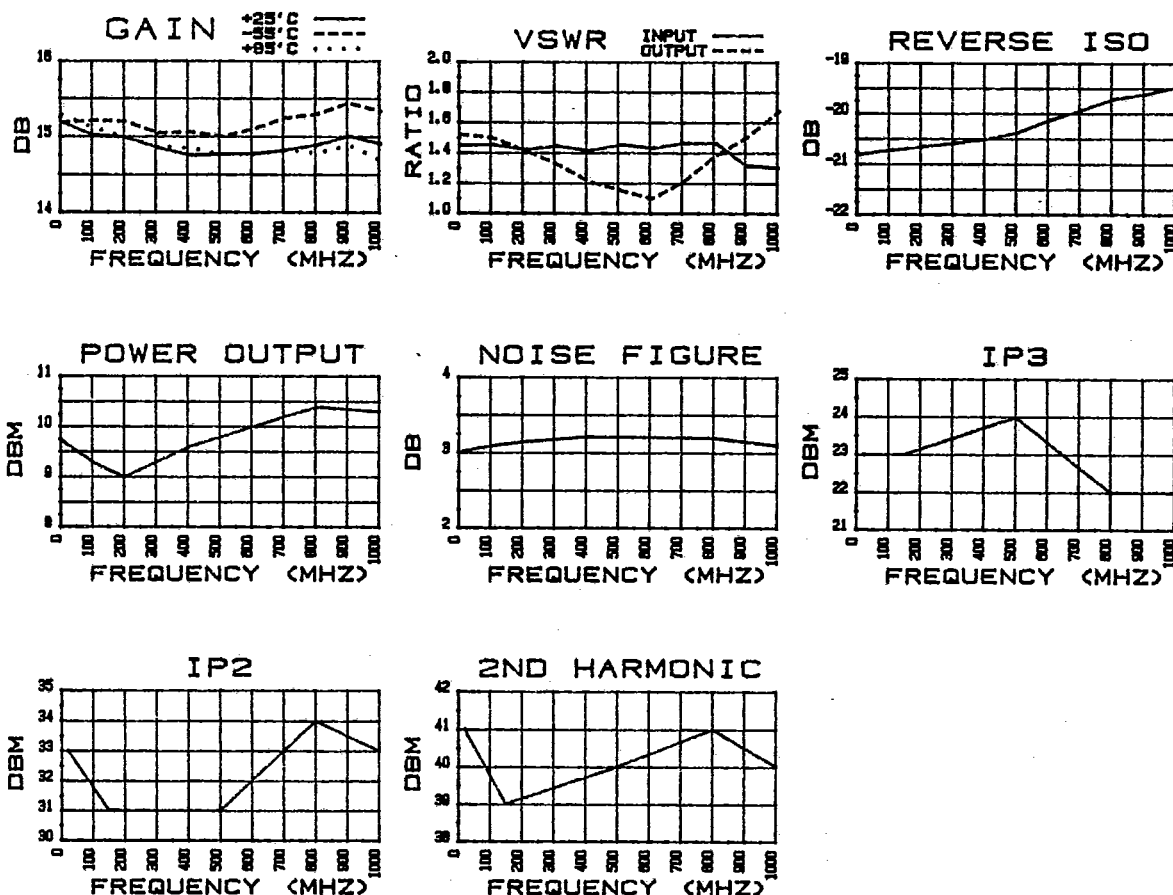
CAH-15



FPF-15



# Typical Performance



## AH-15 23.8 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    |
| 5.000            | -14.7                      | -169.1 | 15.18                        | -174.3 | -20.80                       | 6.0   | -13.7                       | -171.1 |
| 105.000          | -14.6                      | -179.1 | 15.00                        | 164.2  | -20.72                       | -3.0  | -14.0                       | 168.6  |
| 205.000          | -15.2                      | 172.6  | 14.98                        | 145.2  | -20.64                       | -5.9  | -15.3                       | 149.1  |
| 305.000          | -14.8                      | 175.0  | 14.84                        | 132.0  | -20.58                       | -9.9  | -17.0                       | 145.6  |
| 405.000          | -15.3                      | 168.9  | 14.74                        | 113.7  | -20.50                       | -13.0 | -20.3                       | 132.0  |
| 505.000          | -14.6                      | 164.6  | 14.77                        | 101.0  | -20.36                       | -17.3 | -23.0                       | 140.0  |
| 605.000          | -15.0                      | 159.1  | 14.77                        | 82.3   | -20.12                       | -21.1 | -26.6                       | -166.9 |
| 705.000          | -14.5                      | 150.0  | 14.82                        | 69.2   | -19.92                       | -25.8 | -20.4                       | -152.8 |
| 805.000          | -14.4                      | 135.6  | 14.88                        | 52.0   | -19.71                       | -27.9 | -15.9                       | -160.5 |
| 905.000          | -17.3                      | 114.5  | 15.00                        | 34.5   | -19.61                       | -37.0 | -13.9                       | -162.1 |
| 1005.000         | -17.6                      | 74.5   | 14.90                        | 14.9   | -19.46                       | -44.3 | -11.9                       | 178.9  |

## 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 |
|--------------------|---------------|-----------------------|-------------------|------------------------|----------------|
| 5.000              | 1.449         | 3.921                 | 0.278             | 0.000                  | 1.517          |
| 105.000            | 1.455         | -1.143                | 0.105             | 0.598                  | 1.497          |
| 205.000            | 1.422         | -3.659                | 0.080             | 0.527                  | 1.416          |
| 305.000            | 1.448         | -0.380                | -0.054            | 0.366                  | 1.327          |
| 405.000            | 1.414         | -2.280                | -0.156            | 0.510                  | 1.213          |
| 505.000            | 1.456         | 1.523                 | -0.132            | 0.351                  | 1.153          |
| 605.000            | 1.432         | -0.726                | -0.128            | 0.519                  | 1.098          |
| 705.000            | 1.467         | 2.541                 | -0.080            | 0.366                  | 1.212          |
| 805.000            | 1.468         | 1.814                 | -0.017            | 0.477                  | 1.382          |
| 905.000            | 1.315         | 0.732                 | 0.102             | 0.487                  | 1.505          |
| 1005.000           | 1.303         | -2.342                | 0.001             | 0.542                  | 1.676          |