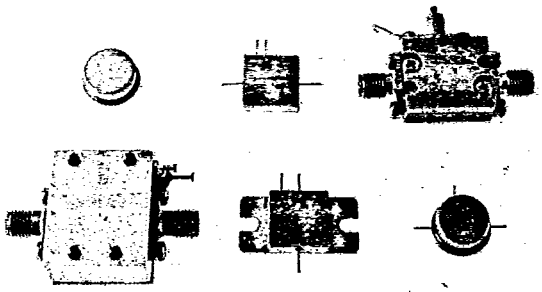
AH-511

B-74-09-51



10 to 1000 MHz TO-8 Cascadable Amplifier

- Low Noise: +2.5dB
- High Gain: +16.5dB
- **Various Package Options (see photo)**
  Surface Mounted (SMTO-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 25°C	Guaranteed 0°C to +50°C	Specifications −54°C to +85°C
Frequency (MHz Min.)	10-1000	10-1000	10-1000
Small Signal Gain (dB Min.)	+16.5	+16.0	+15.0
Gain Flatness (dB Max.)	±0.5	±1.0	±1.0
Noise Figure (dB Max.)	+2.5	+3.0	+3.0
Power Output @ 1 dB Compression (dBm Min.)	−0.3	−2.0	−3.0
Two Tone 3rd Order Intercept Point (dBm Min.)	+12.0	+9.0	+8.0
Two Tone 2nd Order Intercept Point (dBm Min.)	+21.0	+19.0	+18.0
One Tone 2nd Harmonic Intercept Point (dBm Min.)	+26.0	+24.0	+22.0
Input/Output VSWR (Max.)	1.8:1	2.0:1	2.0:1
DC Current at 15 V (mA Max.)	+9.0	+12.0	+15.0

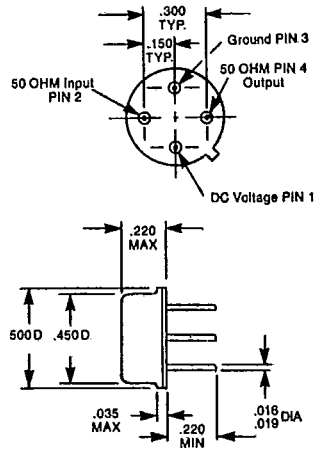
Maximum Ratings

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.

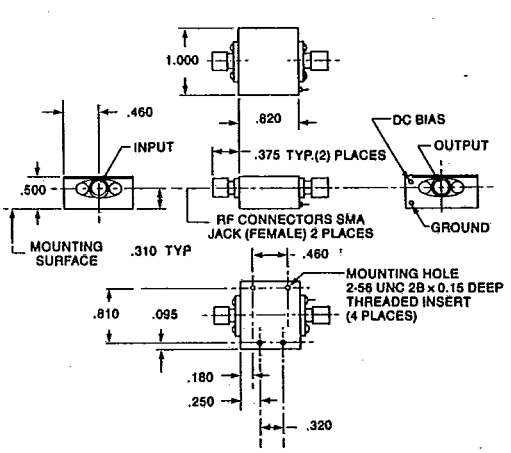
Outline Drawings

(For additional package configurations, see Section 9)

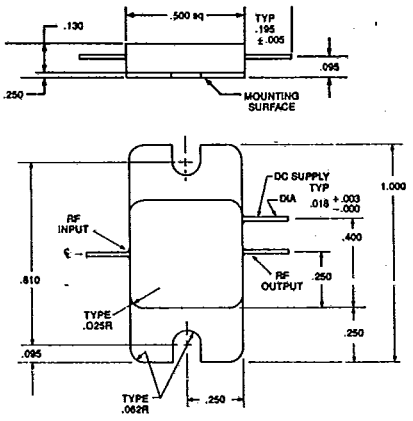
AH-511



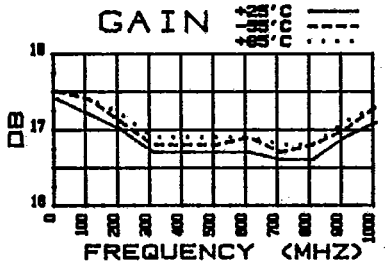
CAH-511

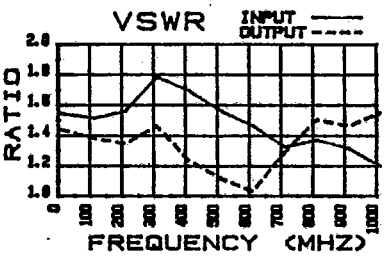


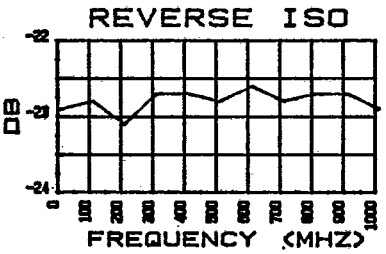
FPF-511

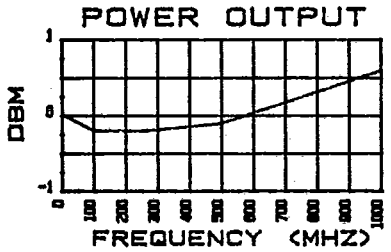


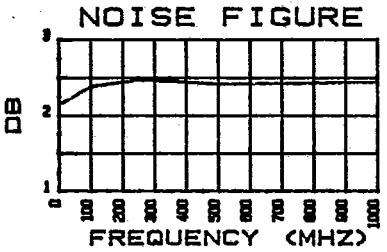
Typical Performance

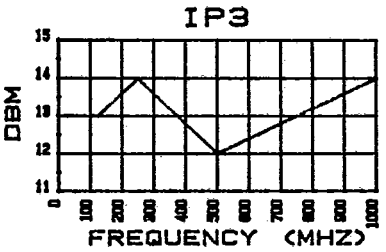


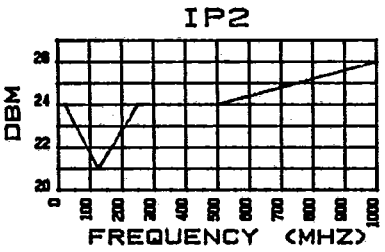


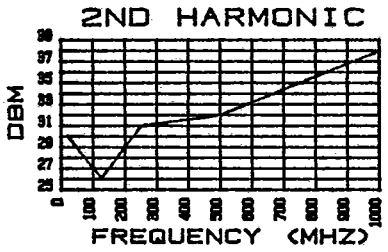












AH-511 *8.8 mA* @15.0Vdc

Linear S-Parameters

FREQUENCY	RETURN LOSS INPUT (S11)		TRANS. GAIN FORWARD (S21)		TRANS. GAIN REVERSE (S12)		RETURN LOSS OUTPUT (S22)	
MHz	dB	ANG	dB	ANG	dB	ANG	dB	ANG
10.000	-13.4	86.3	17.40	179.0	-22.90	1.0	-14.9	54.2
110.000	-13.8	139.5	17.20	151.3	-22.80	-15.2	-15.9	153.5
210.000	-13.2	110.3	17.00	127.3	-23.10	-26.8	-16.6	129.8
310.000	-11.0	92.5	16.70	103.8	-22.70	-39.5	-14.5	110.8
410.000	-11.8	58.5	16.70	79.5	-22.70	82.5	-19.5	81.0
510.000	-13.2	32.8	16.70	56.0	-22.80	-66.0	-25.0	94.0
610.000	-14.5	14.5	16.70	31.2	-22.60	-82.5	-35.9	144.0
710.000	-17.1	-43.7	16.60	7.0	-22.80	-95.5	-18.0	-177.0
810.000	-16.1	-101.8	16.60	-18.2	-22.70	-113.5	-13.9	169.8
910.000	-17.3	-119.8	16.90	-44.0	-22.70	-123.8	-14.5	155.8
1010.000	-20.9	-155.0	17.10	-70.5	-22.90	-140.2	-13.3	127.5

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

FREQUENCY (MHz)	VSWR INPUT	DEV. LIN. 0 (DEG.)	GAIN DEV. (dB)	GROUP DELAY (n-SEC)	VSWR OUTPUT
10.000	1.544	1.216	0.527	0.000	1.439
110.000	1.513	-1.927	0.327	0.771	1.382
210.000	1.560	-1.320	0.127	0.667	1.347
310.000	1.785	-0.214	-0.173	0.653	1.464
410.000	1.692	0.143	-0.173	0.674	1.237
510.000	1.560	1.250	-0.173	0.653	1.119
610.000	1.464	1.107	-0.173	0.688	1.033
710.000	1.325	1.464	-0.273	0.674	1.288
810.000	1.372	0.820	-0.273	0.701	1.506
910.000	1.316	-0.323	0.027	0.715	1.464
1010.000	1.198	-2.216	0.227	0.736	1.552