

# AC986

## 800 TO 900 MHz TO-8 CASCADABLE AMPLIFIER

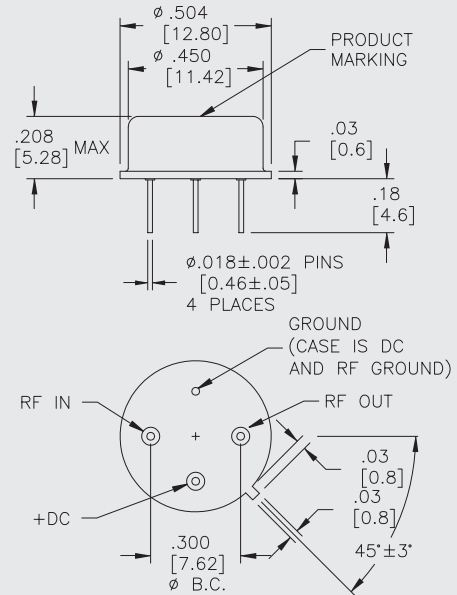
**Typical Values**

Low Noise Figure	<1.3 dB
High Gain	30.3 dB
High Output Power	+22.5 dBm
High Reverse Isolation	44 dB
High Performance Thin Film	
Standard Size TO-8 Package	

**AC986**

### AC986

**TO-8 Package for Amplifiers**



## SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	650-950 MHz	800-900 MHz	800-900 MHz
Small Signal Gain (Min.)	30.3 dB	29.8 dB	29.3 dB
Gain Flatness (Max.)	±0.2 dB	±0.3 dB	±0.4 dB
Noise Figure (Max.)	<1.3 dB	1.8 dB	2.3 dB
SWR (Max.)	Input/Output <1.5:1	1.7:1	1.8:1
Power Output (Min.) @ 1dB comp.	+22.5 dBm	+21.0 dBm	+20.5 dBm
Reverse Isolation	44.0 dB	—	—
DC Current (Max.)	135.0 mA	140.0 mA	145.0 mA

\* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.

## INTERMODULATION PERFORMANCE

Typical @ 25 °C	+12 Volts	+15 Volts
Second Order Harmonic Intercept Point	+55 dBm	+56 dBm
Second Order Two Tone Intercept Point	+49 dBm	+50 dBm
Third Order Two Tone Intercept Point	+32 dBm	+33 dBm

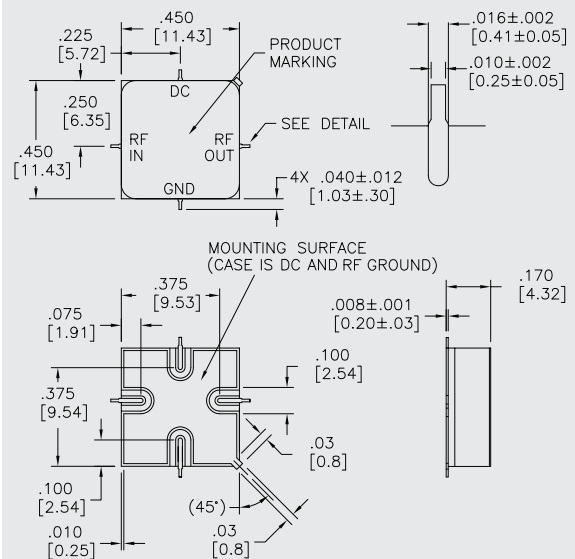
## ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+115 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	200 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+100 °C
Thermal Resistance <sup>1</sup> (θjc)	+22 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+45.9 °C

<sup>1</sup> Thermal resistance is based on total power dissipation.

### AS986

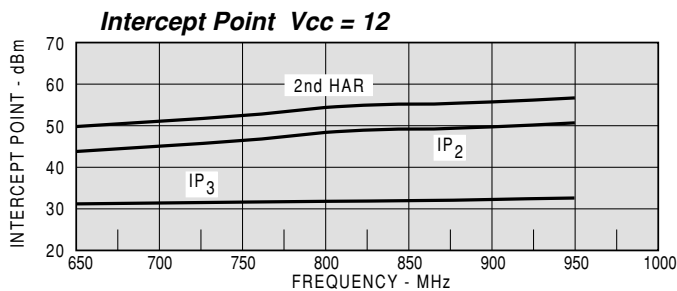
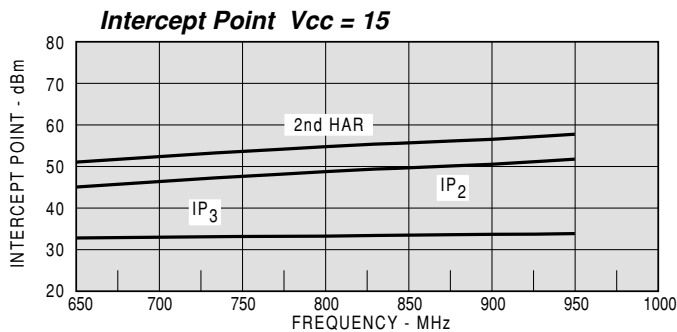
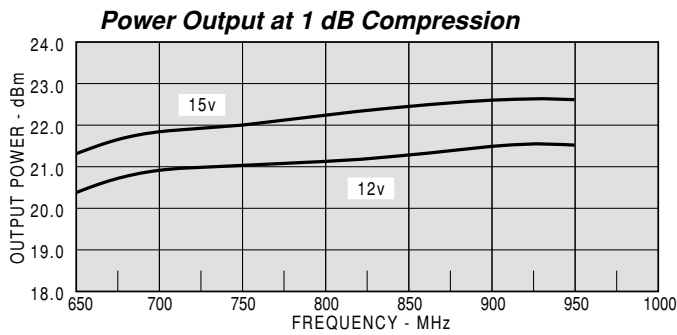
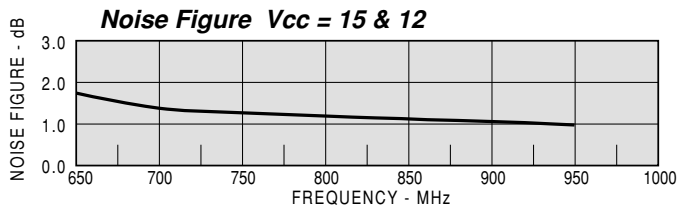
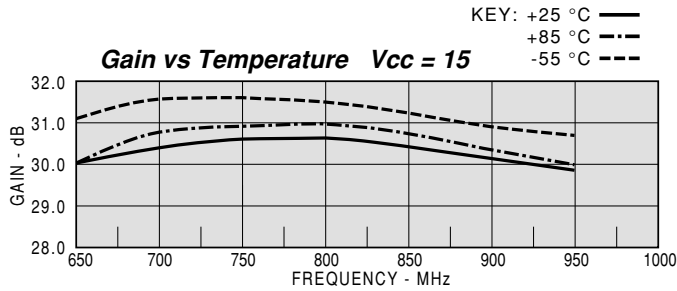
**SMT0-8 Package for Amplifiers**



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC986 Vcc=+15V Icc=135.98

FREQ. (MHZ)	SWR IN	SWR OUT	GAIN (DB)	PHASE (DEG)	DELAY (NSEC)	REV/ISO (DB)
650	3.36	1.38	30.14	-109	1.0	-48.8
700	2.45	1.35	30.53	-128	1.1	-46.9
750	1.80	1.31	30.74	-148	1.1	-47.9
800	1.39	1.26	30.74	-167	1.1	-44.7
850	1.28	1.20	30.53	175	1.0	-45.2
900	1.46	1.18	30.22	157	0.97	-43.2
950	1.74	1.21	29.87	140	0.94	-42.9

Model: AC986 Vcc=+15V Icc=135.98

LINEAR S-PARAMETERS

FREQ. (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
650	0.54	74.2	32.13	-108.9	0.004	99.9	0.16	99.2
700	0.42	57.5	33.62	-128.1	0.005	91.2	0.15	79.0
750	0.29	36.5	34.45	-147.6	0.004	84.0	0.13	60.9
800	0.16	1.8	34.43	-166.7	0.006	80.6	0.11	43.3
850	0.12	-67.0	33.61	174.7	0.006	78.9	0.09	19.7
900	0.19	-118.6	32.43	157.2	0.007	65.5	0.08	-11.8
950	0.27	-144.7	31.16	140.2	0.007	56.1	0.09	-38.1
1000	0.34	-164.7	29.90	124.0	0.006	49.1	0.11	-50.6

Model: AC986 Vcc=+12V Icc=132.13

FREQ. (MHZ)	SWR IN	SWR OUT	GAIN (DB)	PHASE (DEG)	DELAY (NSEC)	REV/ISO (DB)
650	3.38	1.52	29.82	-108	1.0	-47.2
700	2.50	1.47	30.22	-127	1.1	-48.5
750	1.87	1.41	30.46	-147	1.1	-47.1
800	1.45	1.33	30.51	-166	1.1	-44.2
850	1.31	1.24	30.37	176	1.0	-44.2
900	1.47	1.17	30.13	158	0.98	-43.5
950	1.75	1.17	29.81	141	0.96	-41.4

Model: AC986 Vcc=+12V Icc=132.13

LINEAR S-PARAMETERS

FREQ. (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
650	0.54	75.2	30.98	-108.5	0.004	104.9	0.21	105.0
700	0.43	58.9	32.45	-127.5	0.004	95.4	0.19	87.9
750	0.30	38.6	33.35	-146.6	0.004	82.3	0.17	72.7
800	0.18	6.2	33.54	-165.6	0.006	85.0	0.14	58.3
850	0.13	-56.7	33.01	175.7	0.006	71.0	0.11	41.6
900	0.19	-109.4	32.09	158.0	0.007	65.5	0.08	14.6
950	0.27	-137.5	30.94	140.8	0.008	49.9	0.08	-17.2
1000	0.35	-158.5	29.86	124.2	0.007	49.2	0.09	-37.5