

# AC936

## 10 TO 900 MHz TO-8 CASCADABLE AMPLIFIER

**Typical Values**

<b>Low Noise Figure</b> .....	<b>AC936</b> <b>&lt;3.3 dB</b>
<b>High Gain</b> .....	<b>27.5 dB</b>
<b>High Output Level</b> .....	<b>+10 dBm</b>
<b>High Reverse Isolation</b> .....	<b>38 dB</b>
<b>High Performance Thin Film</b>	
<b>Standard Size TO-8 Package</b>	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-1000 MHz	10-900 MHz	10-900 MHz
Small Signal Gain (Min.)	27.5 dB	27.0 dB	26.5 dB
Gain Flatness (Max.)	±0.4 dB	±0.6 dB	±0.8 dB
Noise Figure (Max.)	3.3 dB	3.8 dB	4.5 dB
SWR (Max.) Input/Output	<1.4:1	1.6:1	1.8:1
Power Output (Min.) @ 1dB comp.	+10.0 dBm	+9.0 dBm	+8.5 dBm
Reverse Isolation	38.0 dB	—	—
DC Current (Max.)	35.0 mA	38.0 mA	41.0 mA

\* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.

### INTERMODULATION PERFORMANCE

Typical @ 25 °C	+5 Volts	+8 Volts
Second Order Harmonic Intercept Point .....	+46 dBm	+43 dBm
Second Order Two Tone Intercept Point .....	+40 dBm	+37 dBm
Third Order Two Tone Intercept Point .....	+22 dBm	+27 dBm

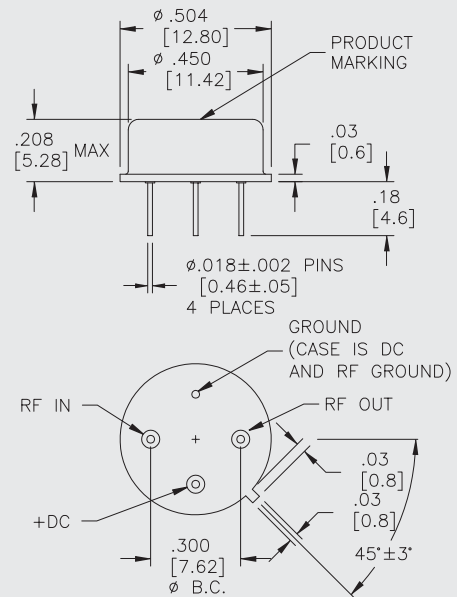
### ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to +125 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+9 Volts
Maximum Continuous RF Input Power .....	+6 dBm
Maximum Short Term Input Power (1 Minute Max.) .....	50 Milliwatts
Maximum Peak Power (3 μsec Max.) .....	0.5 Watt
Burn-in Temperature .....	+105 °C
Thermal Resistance <sup>1</sup> (θjc) .....	+75 °C/Watt
Junction Temperature Rise Above Case (Tjc) .....	+14.6 °C

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

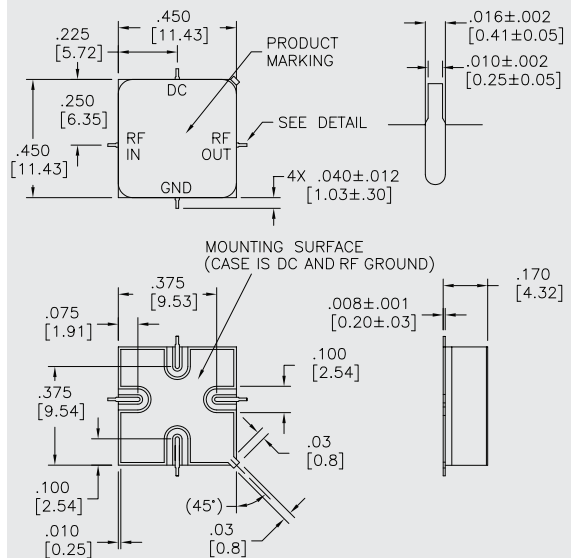
### AC936

#### TO-8 Package for Amplifiers



### AS936

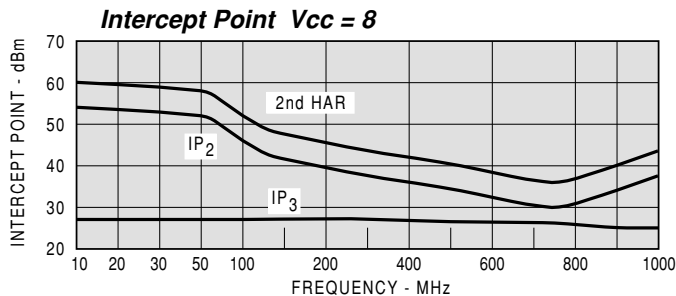
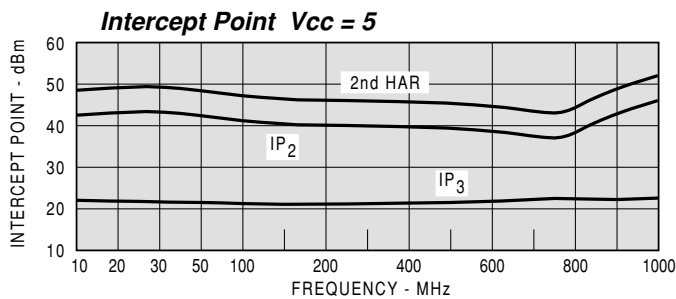
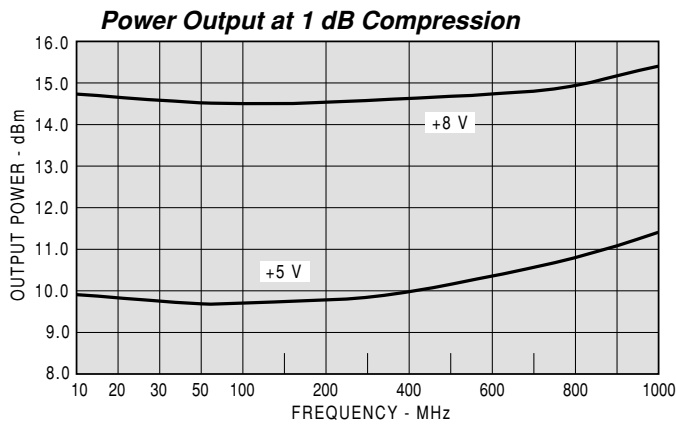
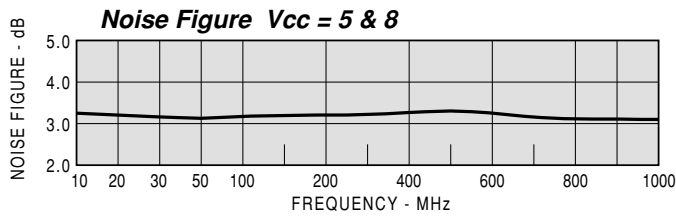
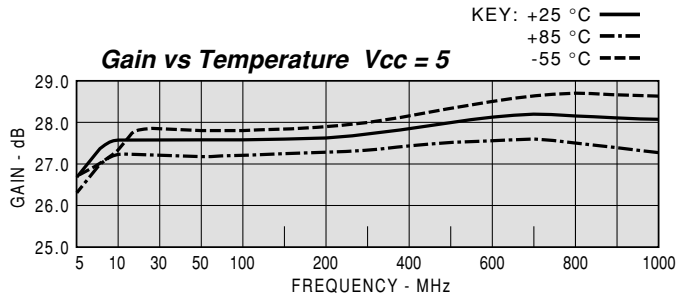
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC936		Vcc=+5V					lcc=35.78
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.11	2.29	27.36	54		-39.5	
10	1.11	1.42	28.10	24		-38.2	
30	1.17	1.10	28.11	0	1.6	-37.3	
50	1.17	1.07	28.08	-8	1.1	-38.2	
100	1.18	1.05	28.11	-24	0.87	-37.5	
200	1.19	1.06	28.21	-52	0.77	-38.2	
300	1.19	1.08	28.37	-80	0.78	-38.0	
400	1.17	1.11	28.51	-108	0.79	-38.1	
500	1.14	1.16	28.65	-137	0.82	-38.2	
600	1.09	1.21	28.67	-167	0.83	-38.7	
700	1.03	1.27	28.64	163	0.84	-38.7	
800	1.06	1.33	28.47	132	0.84	-38.4	
900	1.12	1.35	28.38	102	0.86	-39.2	
1000	1.16	1.32	28.31	71	0.86	-38.5	

Model: AC936 Vcc=+5V lcc=35.78

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.05	-147.9	23.33	54.5	0.011	58.6	0.39	153.0
10	0.05	13.3	25.41	24.1	0.012	27.3	0.18	116.2
30	0.08	-6.8	25.43	0.2	0.014	6.8	0.05	100.4
50	0.08	-13.5	25.35	-8.5	0.012	2.5	0.03	97.7
100	0.08	-28.9	25.44	-24.1	0.013	-5.4	0.02	87.6
200	0.09	-58.8	25.73	-52.2	0.012	-12.9	0.03	63.2
300	0.08	-88.7	26.21	-80.0	0.013	-18.0	0.04	44.1
400	0.08	-117.8	26.65	-108.3	0.012	-24.4	0.05	24.3
500	0.06	-148.8	27.06	-137.4	0.012	-34.7	0.07	6.3
600	0.04	178.0	27.14	-167.1	0.012	-40.4	0.10	-14.6
700	0.02	119.3	27.05	162.8	0.012	-49.5	0.12	-35.5
800	0.03	-1.6	26.53	132.3	0.012	-58.8	0.14	-57.1
900	0.05	-46.9	26.25	101.9	0.011	-63.1	0.15	-80.0
1000	0.07	-81.1	26.04	71.0	0.012	-74.6	0.14	-105.2
1100	0.08	-130.9	26.54	38.2	0.013	-82.2	0.11	-143.7

Model: AC936 Vcc=+8V lcc=59.40

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
5	1.21	2.33	28.10	54		-40.5
10	1.04	1.44	28.83	24		-38.8
30	1.08	1.11	28.89	0		-38.9
50	1.09	1.07	28.93	-9	1.1	-38.8
100	1.10	1.05	28.96	-25	0.88	-38.4
200	1.11	1.06	29.01	-54	0.79	-38.3
300	1.11	1.09	29.09	-82	0.79	-39.1
400	1.10	1.14	29.20	-111	0.80	-39.3
500	1.09	1.20	29.29	-140	0.82	-39.3
600	1.09	1.28	29.19	-170	0.83	-39.5
700	1.12	1.37	29.08	160	0.82	-39.9
800	1.18	1.45	28.89	130	0.83	-39.5
900	1.23	1.51	28.70	101	0.83	-40.8
1000	1.26	1.51	28.62	71	0.84	-41.0

Model: AC936 Vcc=+8V lcc=59.40

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.09	-158.3	25.41	54.4	0.009	62.0	0.40	153.5
10	0.02	43.4	27.65	24.2	0.011	31.2	0.18	116.4
30	0.04	-4.5	27.83	-0.2	0.011	5.9	0.05	99.8
50	0.04	-14.9	27.97	-9.1	0.011	1.7	0.03	100.5
100	0.05	-35.5	28.07	-25	0.012	-1.8	0.03	91.5
200	0.05	-72.9	28.2	-53.8	0.012	-13.7	0.03	70.3
300	0.05	-110.2	28.47	-82.2	0.011	-16.5	0.04	55.0
400	0.05	-150.5	28.86	-110.7	0.011	-27.4	0.06	38.7
500	0.04	164.1	29.13	-140.2	0.011	-32.8	0.09	18.5
600	0.04	106.3	28.80	-170.0	0.011	-40.8	0.12	-4.3
700	0.06	47.8	28.44	160.3	0.010	-48.0	0.16	-25.4
800	0.08	7.4	27.83	130.4	0.011	-58.4	0.18	-47.3
900	0.10	-26.0	27.21	100.9	0.009	-67.3	0.20	-68.2
1000	0.12	-55.1	26.97	70.8	0.009	-74.1	0.20	-88.7
1100	0.11	-95.8	27.59	39.1	0.009	-82.7	0.18	-113.3