

# AC534

## 5 TO 500 MHz TO-8 CASCADABLE AMPLIFIER

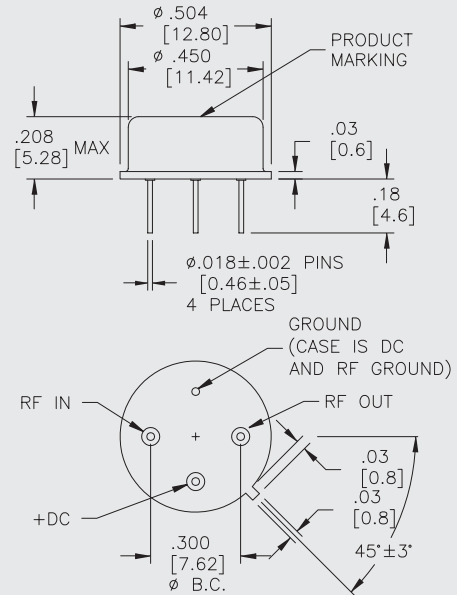
**Typical Values**

<b>Low Noise Figure</b> .....	<b>2.7 dB</b>
<b>High Gain</b> .....	<b>26.5 dB</b>
<b>High Reverse Isolation</b> .....	<b>38 dB</b>
<b>High Performance Thin Film</b>	
<b>Standard Size TO-8 Package</b>	

**AC534**

### AC534

**TO-8 Package for Amplifiers**



## SPECIFICATIONS\*

Parameter	Typical	Guaranteed		
		0 to 50 °C	-55 to +85 °C	5-500 MHz
Frequency (Min.)	5-600 MHz	5-500 MHz	5-500 MHz	
Small Signal Gain (Min.)	26.5 dB	26.0 dB	25.5 dB	
Gain Flatness (Max.)	±0.3 dB	±0.5 dB	±0.8 dB	
Noise Figure (Max.)	2.7 dB	3.3 dB	3.8 dB	
SWR (Max.) Input/Output	<1.5:1	1.7:1	1.8:1	
Power Output (Min.) @ 1dB comp.	+4.0 dBm	+3.5 dBm	+3.0 dBm	
Reverse Isolation	38.0 dB	—	—	
DC Current (Max.)	16.0 mA	20.0 mA	24.0 mA	

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

## INTERMODULATION PERFORMANCE

Typical @ 25 °C; 100 MHz

<b>Second Order Harmonic Intercept Point</b> .....	<b>+36 dBm</b>
<b>Second Order Two Tone Intercept Point</b> .....	<b>+30 dBm</b>
<b>Third Order Two Tone Intercept Point</b> .....	<b>+12 dBm</b>

**AC534**

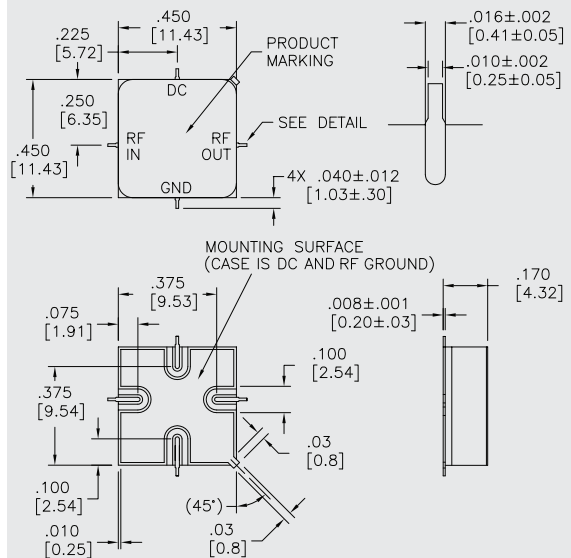
## ABSOLUTE MAXIMUM RATINGS

<b>Storage Temperature</b> .....	<b>-62 to +125 °C</b>
<b>Maximum Case Temperature</b> .....	<b>+125 °C</b>
<b>Maximum DC Voltage</b> .....	<b>+12 Volts</b>
<b>Maximum Continuous RF Input Power</b> .....	<b>+8 dBm</b>
<b>Maximum Short Term Input Power (1 Minute Max.)</b> .....	<b>50 Milliwatts</b>
<b>Maximum Peak Power (3 μsec Max.)</b> .....	<b>0.5 Watt</b>
<b>Burn-in Temperature</b> .....	<b>+125 °C</b>
<b>Thermal Resistance<sup>1</sup> (θjc)</b> .....	<b>+70 °C/Watt</b>
<b>Junction Temperature Rise Above Case (Tjc)</b> .....	<b>+5.9 °C</b>

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

### AS534

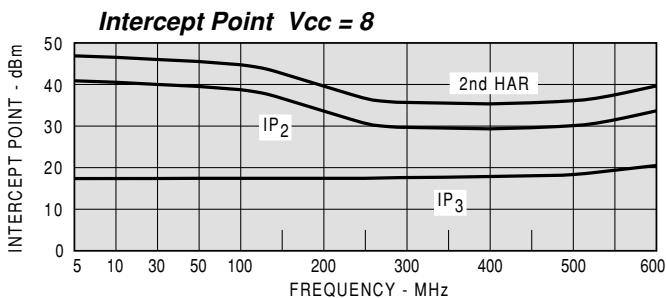
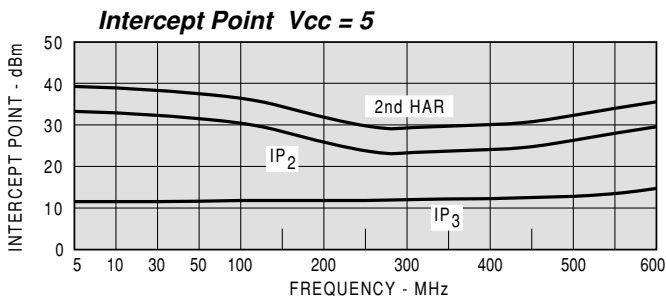
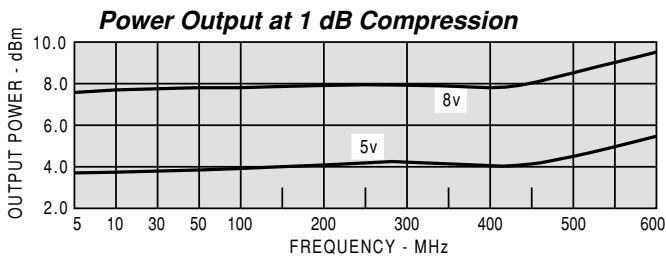
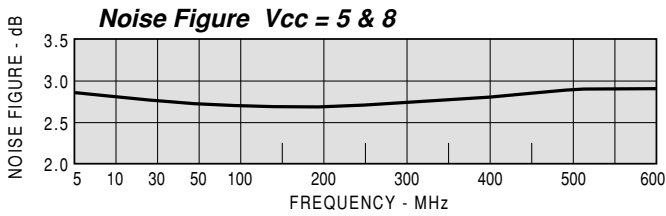
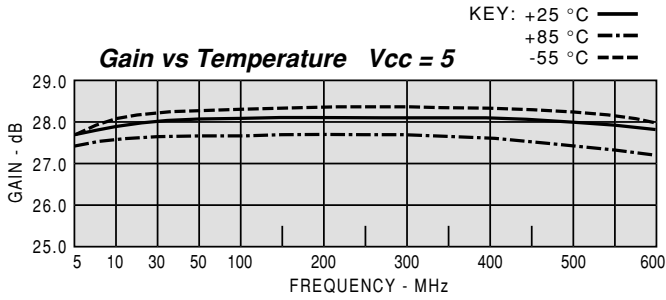
**SMT0-8 Package for Amplifiers**



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC534 Vcc=+5V Icc= 16.50

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
5	1.54	1.27	27.71	23		-39.3
10	1.40	1.22	27.90	9		-39.3
30	1.34	1.21	27.94	-7	1.5	-39.1
50	1.33	1.21	27.95	-16	1.2	-38.7
100	1.32	1.23	27.98	-35	1.1	-38.7
200	1.32	1.28	27.88	-72	1.0	-38.5
300	1.34	1.35	27.93	-110	1.1	-37.4
400	1.42	1.42	27.89	-148	1.1	-37.3
500	1.54	1.48	27.84	-172	1.1	-36.7
600	1.78	1.62	27.85	131	1.2	-36.2

Model: AC534 Vcc=+5V Icc= 16.50

LINEAR S-PARAMETERS

FREQ. MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.21	-119.7	24.31	23.1	0.011	29.6	0.12	-41.1
10	0.16	-146.9	24.82	8.9	0.011	15.7	0.10	-27.4
30	0.15	-178.3	24.96	-6.9	0.011	5.0	0.09	-23.7
50	0.14	168.5	24.98	-15.8	0.012	5.5	0.09	-31.1
100	0.14	144.3	25.05	-35.3	0.012	4.1	0.10	-54.4
200	0.14	100.2	24.78	-72.2	0.012	2.8	0.12	-98.7
300	0.14	52.3	24.92	-109.7	0.013	-1.0	0.15	-136.7
400	0.17	5.0	24.80	-148.0	0.014	-6.7	0.17	-168.8
500	0.21	-36.8	24.66	172.4	0.015	-11.5	0.19	165.9
600	0.28	-74.6	24.69	130.7	0.015	-16.7	0.24	150.1
700	0.37	-111	24.19	82.0	0.017	-25.4	0.35	129.3

Model: AC534 Vcc=+8V Icc= 26.32

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
5	1.93	1.26	30.42	26		-41.6
10	1.81	1.28	30.63	10		-41.1
30	1.76	1.29	30.69	-6	1.40	-41.2
50	1.75	1.29	30.70	-14	1.10	-41.0
100	1.75	1.31	30.77	-33	1.00	-40.9
200	1.74	1.36	30.87	-68	0.99	-40.8
300	1.70	1.45	31.12	-105	1.00	-39.5
400	1.63	1.55	31.21	-144	1.10	-38.7
500	1.55	1.61	31.08	176	1.10	-38.0
600	1.54	1.67	30.85	134	1.20	-37.3

Model: AC534 Vcc=+8V Icc= 26.32

LINEAR S-PARAMETERS

FREQ. MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.32	-136.0	33.21	25.9	0.008	33.7	0.11	-20.6
10	0.29	-157.8	34.02	10.4	0.009	16.0	0.12	-12.6
30	0.28	-178.1	34.23	-5.7	0.009	8.8	0.13	-16.3
50	0.27	174.2	34.27	-14.5	0.009	10.4	0.13	-24.4
100	0.27	161.1	34.54	-33.0	0.009	5.8	0.13	-46.2
200	0.27	136.3	34.96	-68.5	0.009	7.4	0.15	-88.6
300	0.26	108.0	35.96	-105.3	0.011	5.2	0.19	-128.1
400	0.24	73.0	36.36	-143.9	0.012	1.3	0.21	-164.4
500	0.21	30.7	35.81	175.8	0.013	-3.4	0.23	164.1
600	0.21	-22.1	34.89	134.3	0.014	-8.0	0.25	141.9
700	0.28	-77.8	33.59	88.8	0.016	-11.9	0.31	125.7