

# AC1054

## 5 TO 1000 MHz TO-8 CASCADABLE AMPLIFIER

**Typical Values**

<b>High Reverse Isolation</b> .....	<b>AC1054</b> 60.0 dB
<b>High Efficiency</b> .....	30.0 mA at 15 Vdc
<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.)	5-1100 MHz	5-1000 MHz	5-1000 MHz
Small Signal Gain (Min.)	13.2 dB	12.7 dB	12.0 dB
Gain Flatness (Max.)	±0.3 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)	5.0 dB	5.5 dB	6.0 dB
SWR (Max.) Input/Output	1.6:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+7.0 dBm	+6.0 dBm	+5.5 dBm
Reverse Isolation 5-300 MHz	> 60.0 dB	50.0 dB	48.0 dB
DC Current (Max.)	30.0 mA	34.0 mA	37.0 mA

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

### INTERMODULATION PERFORMANCE

**Typical @ 25 °C**

<b>Second Order Harmonic Intercept Point</b> .....	<b>AC1054</b> +32 dBm
<b>Second Order Two Tone Intercept Point</b> .....	+26 dBm
<b>Third Order Two Tone Intercept Point</b> .....	+20 dBm

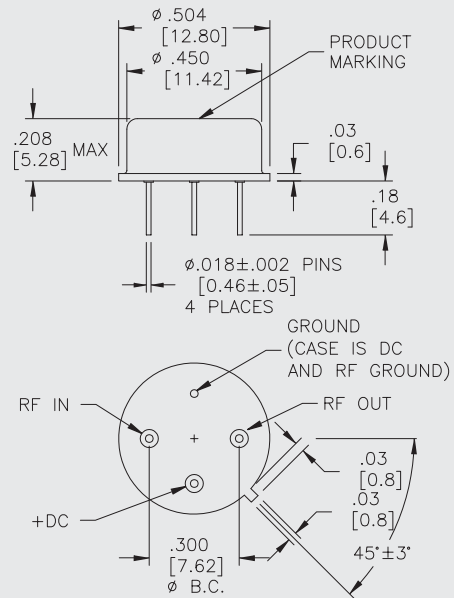
### ABSOLUTE MAXIMUM RATINGS

<b>Storage Temperature</b> .....	-62 to +125 °C
<b>Maximum Case Temperature</b> .....	+125 °C
<b>Maximum DC Voltage</b> .....	+18 Volts
<b>Maximum Continuous RF Input Power</b> .....	+10 dBm
<b>Maximum Short Term Input Power (1 Minute Max.)</b> .....	50 Milliwatts
<b>Maximum Peak Power (3 μsec Max.)</b> .....	0.5 Watt
<b>Burn-in Temperature</b> .....	+125 °C
<b>Thermal Resistance<sup>1</sup> (θjc)</b> .....	+37 °C/Watt
<b>Junction Temperature Rise Above Case (Tjc)</b> .....	+18.7 °C

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

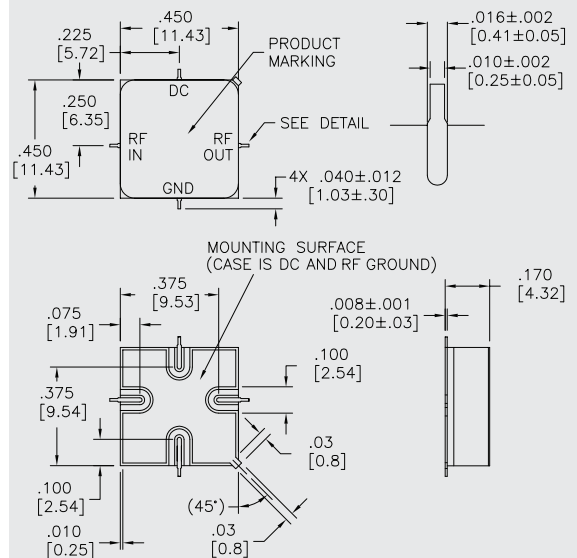
### AC1054

#### TO-8 Package for Amplifiers



### AS1054

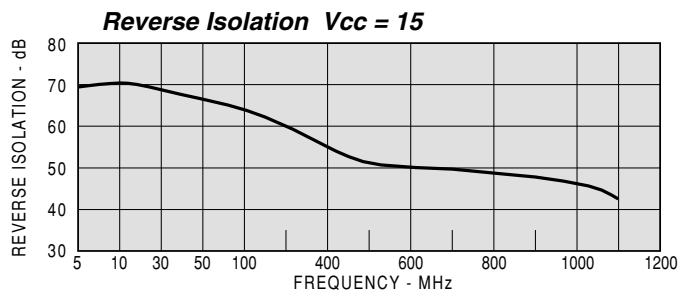
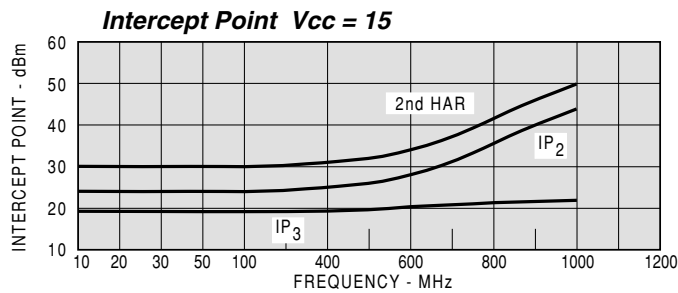
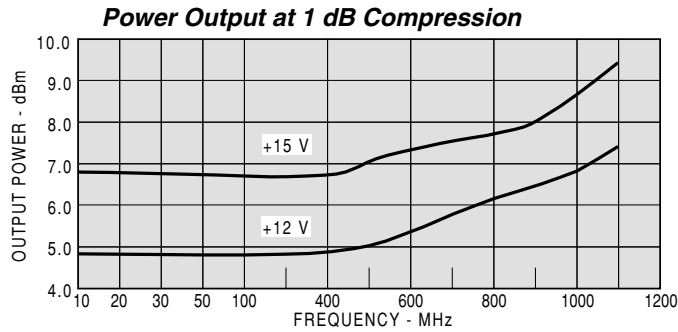
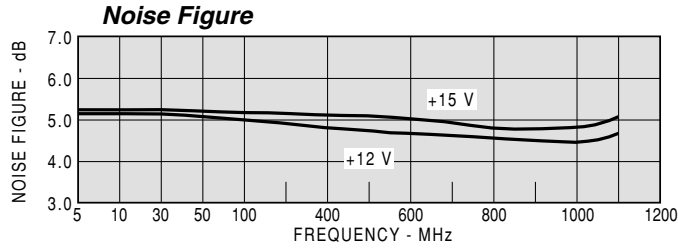
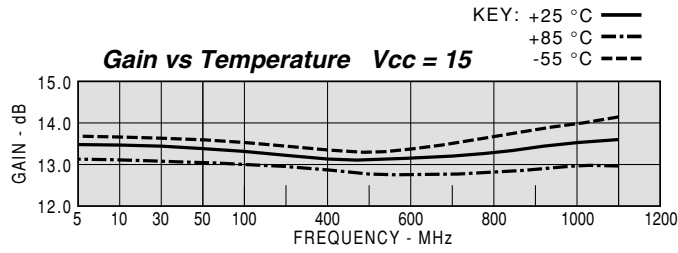
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC1054		Vcc=+15V		Icc=29.87	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
5	1.54	1.58	13.8		-81.3
10	1.51	1.40	13.8		-75.3
20	1.49	1.35	13.8	0.899	-75.0
50	1.50	1.34	13.8	0.614	-73.7
100	1.51	1.34	13.7	0.555	-67.5
200	1.55	1.37	13.6	0.537	-62.1
300	1.60	1.39	13.5	0.530	-58.6
400	1.64	1.41	13.4	0.519	-55.7
500	1.63	1.42	13.3	0.515	-53.0
600	1.60	1.41	13.3	0.522	-51.1
700	1.54	1.38	13.4	0.535	-48.5
800	1.45	1.35	13.5	0.555	-48.5
900	1.41	1.32	13.7	0.592	-48.1
1000	1.57	1.29	13.9	0.640	-47.5
1100	2.09	1.19	13.8	0.740	-44.6
1200	3.15	1.18	13.0	0.747	-46.8

Model: AC1054		Vcc=+15V		Icc=29.97	
FREQ.	S11	S21	S12	S22	
MHZ	MAG	ANG	MAG	ANG	MAG
5	0.21	-18.3	4.90	-176.5	0.000
10	0.20	-12.3	4.90	-179.7	0.000
20	0.20	-11.7	4.90	177.2	0.000
50	0.20	-18.5	4.89	170.8	0.000
100	0.20	-34.0	4.86	161.3	0.000
200	0.22	-63.3	4.79	142.8	0.001
300	0.23	-88.9	4.71	124.7	0.001
400	0.24	-111.8	4.65	107.0	0.002
500	0.24	-134.0	4.62	89.2	0.002
600	0.23	-156.1	4.64	71.4	0.003
700	0.21	-179.9	4.66	53.1	0.003
800	0.18	147.3	4.74	33.9	0.004
900	0.17	100.5	4.83	13.5	0.004
1000	0.22	47.9	4.93	-8.6	0.004
1100	0.35	8.4	4.88	-34.4	0.006
1200	0.52	-23.4	4.45	-60.4	0.005

Model: AC1054		Vcc=+12V		Icc=24.10	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
5	1.52	1.58	13.3		-75.7
10	1.49	1.40	13.4		-73.0
20	1.48	1.35	13.4	0.868	-71.0
50	1.47	1.34	13.3	0.602	-71.1
100	1.48	1.34	13.3	0.543	-66.1
200	1.53	1.37	13.2	0.523	-63.1
300	1.59	1.39	13.1	0.520	-58.3
400	1.63	1.41	13.1	0.517	-55.5
500	1.64	1.42	13.1	0.508	-52.9
600	1.63	1.40	13.2	0.521	-50.5
700	1.58	1.37	13.3	0.537	-49.0
800	1.50	1.34	13.6	0.561	-48.4
900	1.45	1.31	13.9	0.597	-48.2
1000	1.59	1.27	14.2	0.670	-45.1
1100	2.17	1.17	14.1	0.773	-43.9
1200	3.32	1.18	13.4	0.772	-47.0

Model: AC1054		Vcc=+12V		Icc=24.10	
FREQ.	S11	S21	S12	S22	
MHZ	MAG	ANG	MAG	ANG	MAG
5	0.21	-19.2	4.65	-176.6	0.000
10	0.20	-12.9	4.65	-179.8	0.000
20	0.19	-11.7	4.66	177.1	0.000
50	0.19	-18.3	4.64	170.6	0.000
100	0.19	-33.5	4.62	160.8	0.000
200	0.21	-62.7	4.57	141.9	0.001
300	0.23	-88.2	4.53	123.2	0.001
400	0.24	-111.7	4.51	104.8	0.002
500	0.24	-133.7	4.52	86.3	0.002
600	0.24	-155.5	4.57	67.6	0.003
700	0.22	-179.5	4.64	48.4	0.004
800	0.20	149.5	4.78	28.2	0.004
900	0.18	104.7	4.95	6.6	0.004
1000	0.23	51.8	5.14	-17.6	0.006
1100	0.37	5.5	5.05	-45.4	0.006
1200	0.54	-30.1	4.66	-73.2	0.004