

# AS6054

## 1000 TO 6000 MHz SMT0-8 CASCADABLE AMPLIFIER

**Typical Values**

<b>High Gain</b> .....	<b>AS6054</b> 17.5 dB
<b>Low Noise Figure</b> .....	<4.3 dB
<b>High Output Level</b> .....	+19.0 dBm
<b>High Performance Thin Film Standard Size SMT0-8</b>	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
<b>Frequency (Min.)</b>	1.0-6.0 GHz	1.0-6.0 GHz	1.0-6.0 GHz
<b>Small Signal Gain (Min.)</b>	17.5 <sup>^</sup> dB	16.5 <sup>^</sup> dB	16.0 <sup>^</sup> dB
<b>Gain Flatness (Max.)</b>	±0.8 dB	±1.0 dB	±1.4 dB
<b>Noise Figure (Max.)</b>	<4.3 dB	4.8 dB	5.2 dB
<b>SWR (Max.)</b>	Input 1.7:1 Output 1.5:1	1.9:1 1.9:1	2.0:1 2.0:1
<b>Power Output (Min.) @ 1dB comp.</b>	+19.0 dBm	+17.5 dBm	+17.0 dBm
<b>Reverse Isolation</b>	33.0 dB	—	—
<b>DC Current (Max.)</b>	110.0 mA	115.0 mA	120.0 mA

\* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.  
^ 1.0 dB less below 2000 MHz and above 5000 MHz.

### INTERMODULATION PERFORMANCE

<b>Typical @ 25 °C; 3500 MHz</b>	<b>+5 Volts</b>
<b>Second Order Harmonic Intercept Point</b> .....	+64 dBm
<b>Second Order Two Tone Intercept Point</b> .....	+58 dBm
<b>Third Order Two Tone Intercept Point</b> .....	+30 dBm

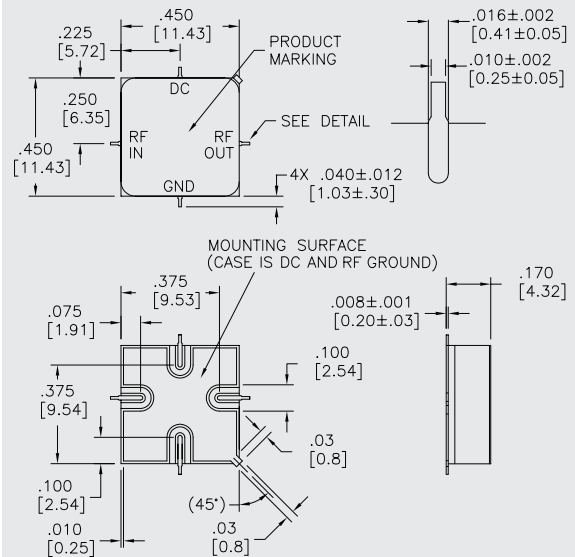
### ABSOLUTE MAXIMUM RATINGS

<b>Storage Temperature</b> .....	-62 to +125 °C
<b>Maximum Case Temperature</b> .....	+125 °C
<b>Maximum DC Voltage</b> .....	+8 Volts
<b>Maximum Continuous RF Input Power</b> .....	+17 dBm
<b>Maximum Short Term Input Power (1 Minute Max.)</b> .....	100 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> .....	+45 °C/Watt
<b>Junction Temperature Rise Above Case (Tjc)</b> .....	+25.7 °C

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

### AS6054

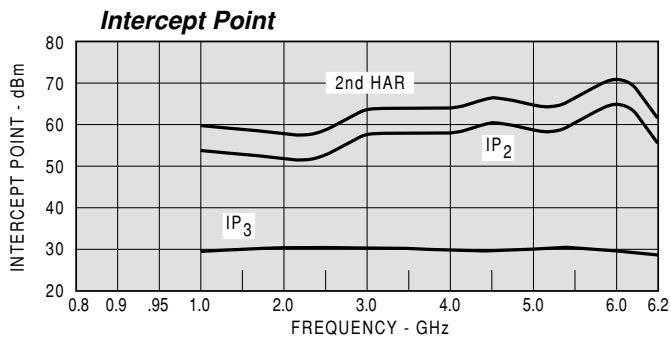
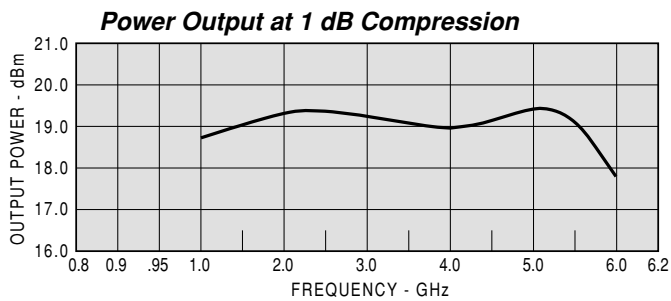
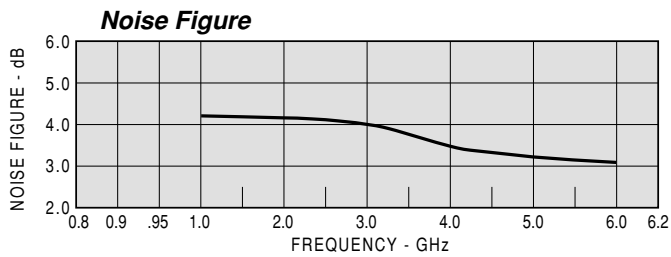
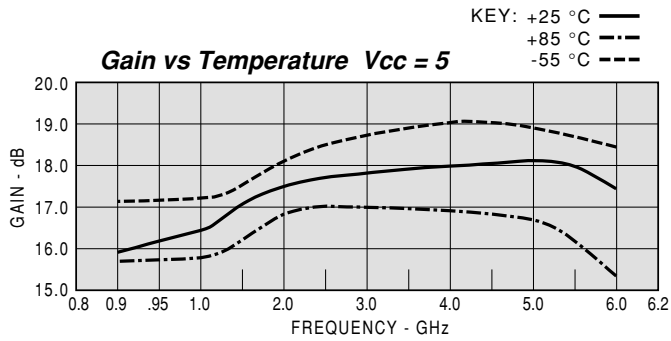
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AS6054 Vcc= +5V Icc= 109.18

FREQ. MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
900	1.51	1.38	16.46	-40	0.43	-34.2
1000	1.46	1.32	16.72	-54	0.37	-34.0
1200	1.39	1.26	17.02	-78	0.33	-34.0
1400	1.34	1.26	17.22	-101	0.31	-33.8
1600	1.31	1.28	17.33	-123	0.30	-33.7
1800	1.26	1.30	17.45	-143	0.29	-33.6
2000	1.20	1.33	17.56	-163	0.27	-33.5
2200	1.18	1.37	17.74	177	0.29	-33.4
2400	1.21	1.38	17.93	155	0.31	-33.3
2600	1.25	1.37	17.89	135	0.29	-33.3
2800	1.32	1.34	17.76	115	0.27	-33.0
3000	1.40	1.30	17.90	96	0.28	-33.3
3200	1.46	1.30	18.09	77	0.28	-33.6
3400	1.58	1.31	18.02	57	0.26	-33.8
3600	1.68	1.31	18.00	36	0.28	-33.7
3800	1.69	1.31	18.11	16	0.29	-33.9
4000	1.74	1.35	18.28	-4	0.27	-34.1
4200	1.76	1.40	18.36	-25	0.29	-33.9
4400	1.71	1.45	18.45	-47	0.32	-34.0
4600	1.70	1.45	18.49	-69	0.31	-34.0
4800	1.61	1.48	18.25	-89	0.25	-33.6
5000	1.51	1.50	18.14	-112	0.29	-33.3
5200	1.55	1.47	18.42	-135	0.34	-33.0
5400	1.55	1.39	18.46	-159	0.34	-32.8
5600	1.42	1.26	18.52	176	0.34	-31.9
5800	1.37	1.18	18.66	148	0.40	-31.7
6000	1.29	1.13	18.32	118	0.42	-32.1

Model: AS6054 Vcc= +5V Icc= 109.18

LINEAR S-PARAMETERS

FREQ. MHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
900	0.20	174.8	6.65	-40.3	0.019	-8.4	0.16	91.0
1000	0.19	168.5	6.86	-53.6	0.020	-15.3	0.14	95.7
1200	0.16	155.8	7.10	-78.3	0.020	-28.6	0.11	106.1
1400	0.14	142.5	7.26	-100.9	0.020	-41.6	0.11	114.5
1600	0.13	136.2	7.36	-122.5	0.021	-52.0	0.12	116.8
1800	0.12	131.9	7.46	-143.2	0.021	-65.8	0.13	114.3
2000	0.09	131.9	7.55	-162.8	0.021	-76.6	0.14	107.6
2200	0.08	131.2	7.71	176.6	0.021	-88.3	0.15	95.1
2400	0.09	131.3	7.88	155.5	0.022	-98.9	0.16	79.1
2600	0.11	138.4	7.85	135.2	0.022	-112.6	0.16	66.3
2800	0.14	146.7	7.73	115.4	0.022	-125.5	0.14	50.8
3000	0.16	142.3	7.85	96.1	0.022	-136.4	0.13	32.2
3200	0.19	131.6	8.03	76.7	0.021	-148.7	0.13	13.9
3400	0.23	122.0	7.96	56.6	0.020	-160.9	0.13	-12.9
3600	0.25	109.4	7.94	35.5	0.021	-174.5	0.13	-34.0
3800	0.26	99.3	8.04	15.8	0.020	-175.2	0.14	-59.4
4000	0.27	87.3	8.20	-3.5	0.020	-164.7	0.15	-90.8
4200	0.28	69.9	8.28	-25.1	0.020	-154.5	0.17	-109.4
4400	0.26	55.7	8.37	-47.4	0.020	-141.1	0.18	-128.0
4600	0.26	41.5	8.41	-68.7	0.020	-132.4	0.19	-149.0
4800	0.23	17.5	8.18	-89.5	0.021	-117.4	0.19	-163.5
5000	0.20	-10.0	8.07	-112.2	0.022	-105.8	0.20	-177.9
5200	0.22	-33.2	8.33	-135.3	0.022	-92.7	0.19	-165.6
5400	0.22	-58.5	8.37	-158.5	0.023	-80.1	0.16	-155.7
5600	0.17	-90.9	8.43	176.4	0.025	-64.3	0.12	-141.3
5800	0.15	-114.2	8.57	147.9	0.026	-46.1	0.08	-137.5
6000	0.13	-130.6	8.24	117.6	0.025	-24.6	0.06	-163.1