

# AC1066

## 10 TO 1000 MHz TO-8 CASCADABLE AMPLIFIERS

**Typical Values**

<b>High Gain - Two Stages</b> .....	<b>AC1066</b> 27.5 dB
<b>Low Noise</b> .....	< 3.3 dB
<b>High Output Level</b> .....	+15.5 dBm
<b>High Third Order I.P.</b> .....	+28.0 dBm
<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.)		5-1200 MHz	10-1000 MHz	10-1000 MHz
Small Signal Gain (Min.)	27.5 dB	26.5 dB	25.5 dB	25.5 dB
Gain Flatness (Max.)	±0.25 dB	±0.5 dB	±0.8 dB	±0.8 dB
Noise Figure (Max.)		5-500 MHz	3.5 dB	4.0 dB
		500-1000 MHz	4.0 dB	4.5 dB
SWR (Max.)	Input/Output	1.8:1	2.0:1	2.0:1
Power Output (Min.) @ 1dB comp.	+15.5 dBm	+14.5 dBm	+14.0 dBm	+14.0 dBm
Reverse Isolation	36.0 dB	—	—	—
DC Current (Max.)	65.0 mA	69.0 mA	71.0 mA	71.0 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>AC1066</b> +50 dBm
<b>Second Order Two Tone Intercept Point</b> .....	+45 dBm
<b>Third Order Two Tone Intercept Point</b> .....	+28 dBm

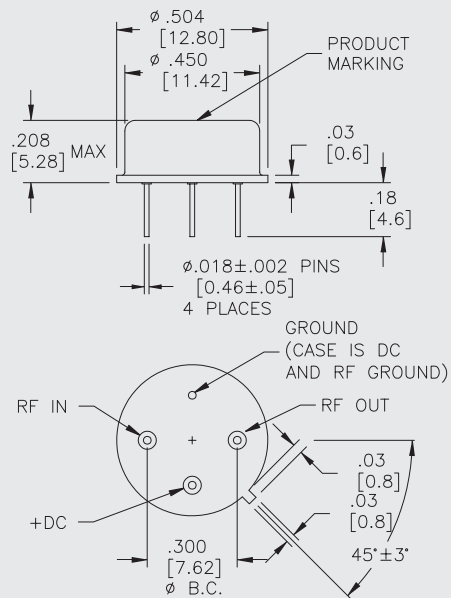
### ABSOLUTE MAXIMUM RATINGS

<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> .....	+38 °C/Watt
<b>Junction Temperature Rise Above Case (Tjc)</b> .....	+39.6 °C

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

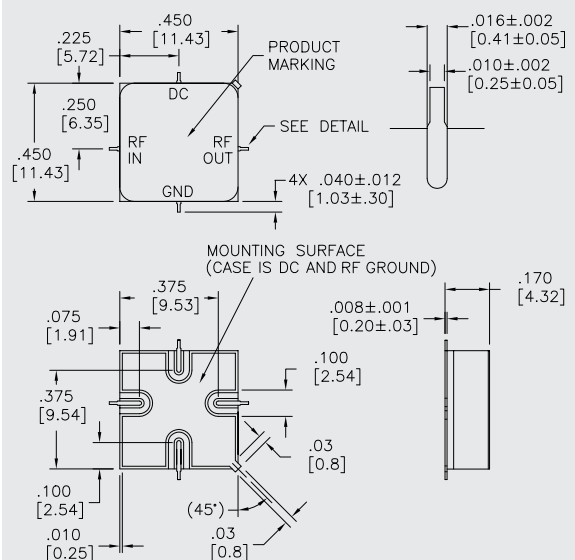
### AC1066

#### TO-8 Package for Amplifiers



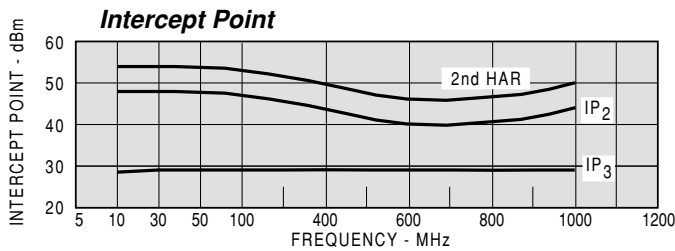
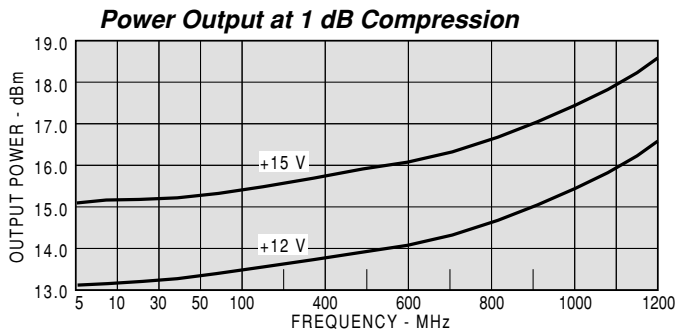
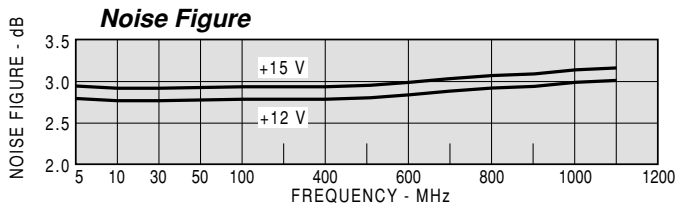
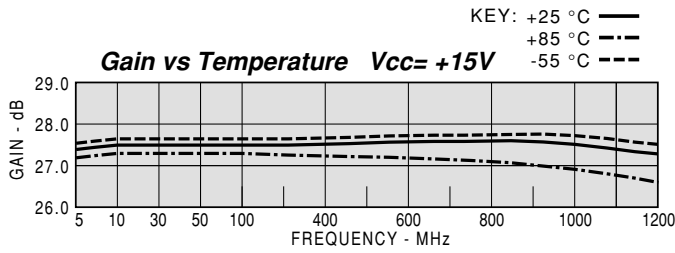
### AS1066

#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**



**TYPICAL AUTOMATIC TEST DATA**

Model: AC1066				Vcc=+15V			Icc=63.72	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO			
MHZ	IN	OUT	DB	NSEC	DB			
10	1.10	1.16	27.0		-37.1			
20	1.12	1.12	27.1		-36.9			
50	1.11	1.12	27.2	1.158	-36.7			
100	1.11	1.14	27.1	0.733	-36.9			
200	1.10	1.16	27.2	0.650	-36.3			
300	1.10	1.19	27.3	0.655	-36.0			
400	1.09	1.22	27.5	0.665	-36.4			
500	1.05	1.25	27.7	0.689	-36.0			
600	1.03	1.29	27.8	0.716	-35.9			
700	1.06	1.33	27.8	0.715	-35.6			
800	1.08	1.37	27.7	0.732	-35.4			
900	1.13	1.41	27.6	0.748	-35.5			
1000	1.25	1.50	27.4	0.733	-35.5			
1100	1.46	1.61	27.3	0.775	-34.9			

Model: AC1066				Vcc=+15V				Icc=63.72	
FREQ.	S11		S21		S12		S22		
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
10	0.05	-22.0	22.42	14.7	0.014	20.0	0.07	-171.0	
20	0.05	-9.9	22.68	4.2	0.014	8.0	0.06	-177.1	
50	0.05	-9.2	22.79	-8.4	0.015	0.0	0.06	180.0	
100	0.05	-12.2	22.63	-21.4	0.014	-2.0	0.06	176.0	
200	0.05	-23.2	22.85	-45.0	0.015	-8.0	0.07	166.0	
300	0.05	-26.4	23.21	-68.4	0.016	-13.0	0.09	151.5	
400	0.04	-32.4	23.81	-92.5	0.015	-15.0	0.10	139.4	
500	0.03	-22.3	24.21	-117.3	0.016	-24.0	0.11	123.2	
600	0.01	23.6	24.42	-142.9	0.016	-31.0	0.13	107.8	
700	0.03	70.4	24.55	-168.7	0.017	-36.0	0.14	91.9	
800	0.04	93.0	24.29	164.9	0.017	-42.0	0.15	77.9	
900	0.06	116.5	23.87	138.0	0.017	-52.0	0.17	66.0	
1000	0.11	126.0	23.42	111.6	0.017	-60.0	0.20	53.4	
1100	0.19	122.1	23.12	83.6	0.018	-72.0	0.23	39.8	
1200	0.29	108.3	22.48	54.5	0.018	-86.0	0.27	24.4	
1300	0.42	86.1	21.32	22.4	0.018	-104.0	0.33	7.0	

Model: AC1066				Vcc=+12V			Icc=50.66	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO			
MHZ	IN	OUT	DB	NSEC	DB			
10	1.14	1.16	26.7		-36.8			
20	1.14	1.13	26.8		-36.5			
50	1.15	1.13	26.8	1.156	-36.1			
100	1.14	1.14	26.7	0.726	-36.5			
200	1.13	1.16	26.8	0.650	-36.2			
300	1.12	1.19	27.0	0.656	-35.8			
400	1.11	1.21	27.2	0.667	-36.2			
500	1.07	1.24	27.4	0.693	-35.5			
600	1.02	1.28	27.5	0.722	-35.9			
700	1.02	1.30	27.6	0.725	-35.2			
800	1.08	1.34	27.5	0.746	-34.9			
900	1.17	1.40	27.4	0.758	-35.3			
1000	1.32	1.51	27.2	0.748	-35.3			
1100	1.59	1.64	27.1	0.800	-35.0			

Model: AC1066				Vcc=+12V				Icc=50.66	
FREQ.	S11		S21		S12		S22		
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
10	0.06	-18.1	21.54	14.3	0.014	20.0	0.07	-168.4	
20	0.07	-9.8	21.76	4.0	0.015	10.0	0.06	-175.9	
50	0.07	-11.7	21.93	-8.4	0.016	4.0	0.06	-179.2	
100	0.07	-13.9	21.74	-21.5	0.015	0.0	0.07	176.5	
200	0.06	-24.4	21.99	-44.9	0.016	-8.0	0.08	165.3	
300	0.06	-35.5	22.35	-68.5	0.016	-8.0	0.08	152.5	
400	0.05	-42.6	23.03	-92.5	0.016	-13.0	0.10	140.1	
500	0.03	-52.0	23.50	-117.5	0.017	-23.0	0.11	125.6	
600	0.01	-55.6	23.75	-143.5	0.016	-27.0	0.12	112.1	
700	0.01	127.3	23.96	-169.6	0.017	-33.0	0.13	98.1	
800	0.04	130.1	23.73	163.6	0.018	-43.0	0.15	86.9	
900	0.08	135.5	23.38	136.3	0.017	-50.0	0.17	77.3	
1000	0.14	135.3	22.99	109.4	0.017	-62.0	0.20	63.6	
1100	0.23	123.3	22.66	80.6	0.018	-72.0	0.24	49.9	
1200	0.34	107.3	21.88	50.5	0.020	-86.0	0.29	34.0	
1300	0.48	83.6	20.51	17.7	0.020	-105.0	0.37	13.5	