

# AC4066

## 800 TO 4000 MHz TO-8 CASCADABLE AMPLIFIER

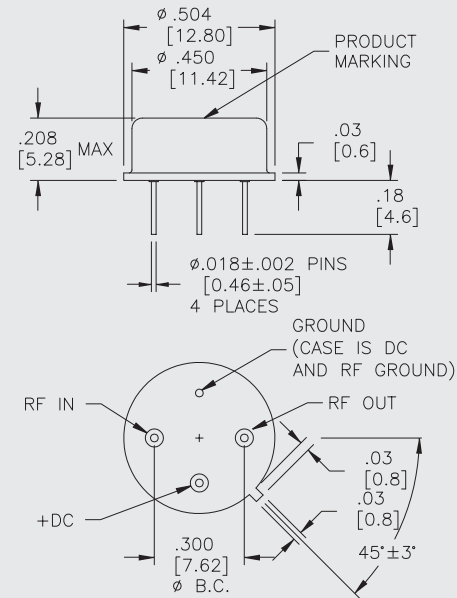
**Typical Values**

<b>Ultra Broad Bandwidth</b> .....	<b>800-4000 MHz</b>
<b>High Gain</b> .....	<b>20.0 dB</b>
<b>High Output Power</b> .....	<b>+20.0 dBm</b>
<b>High Second Order I.P.</b> .....	<b>+54 dBm</b>
<b>Low Noise Figure</b> .....	<b>3.3 dB</b>
<b>High Performance Thin Film</b>	
<b>Standard Size TO-8</b>	

**AC4066**

### AC4066

**TO-8 Package for Amplifiers**



## SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	0.8-4.2 GHz	0.8-4.0 GHz	0.8-4.0 GHz
Small Signal Gain (Min.)	20.0 dB	19.0 dB	17.5 dB
Gain Flatness (Max.)	±0.6 dB	±0.7 dB	±0.9 dB
Noise Figure (Max.)	3.3 dB	4.0 dB	4.5 dB
SWR (Max.) Input/Output	1.5:1	1.7:1	1.9:1
Power Output (Min.) @ 1dB comp.	+20.0 <sup>^</sup> dBm	+19.5 <sup>^</sup> dBm	+19.0 <sup>^</sup> dBm
DC Current (Max.)	135 mA	145 mA	155 mA

\* Measured in a 50-ohm system at +15.0 Vdc unless otherwise specified.  
<sup>^</sup> 0.5 dBm lower above 3800 MHz.

## INTERMODULATION PERFORMANCE

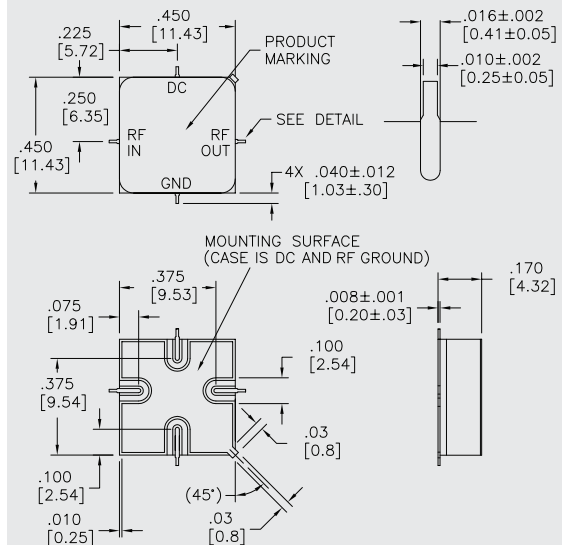
**Typical @ 25 °C; 3000 MHz**

<b>Second Order Harmonic Intercept Point</b> .....	<b>+60 dBm</b>
<b>Second Order Two Tone Intercept Point</b> .....	<b>+54 dBm</b>
<b>Third Order Two Tone Intercept Point</b> .....	<b>+31 dBm</b>

**AC4066**

### AS4066

**SMT0-8 Package for Amplifiers**



## ABSOLUTE MAXIMUM RATINGS

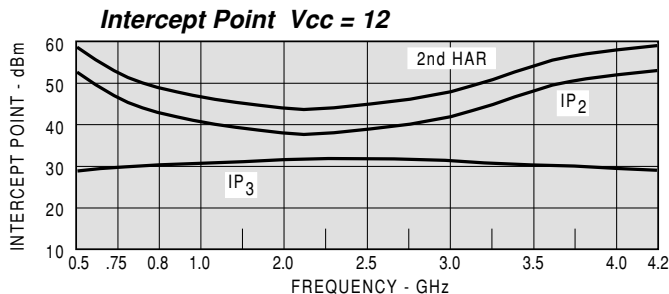
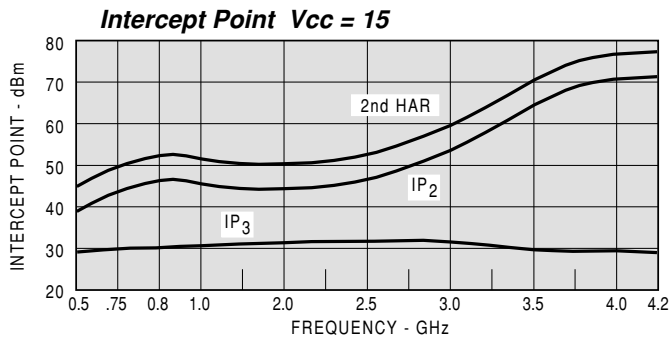
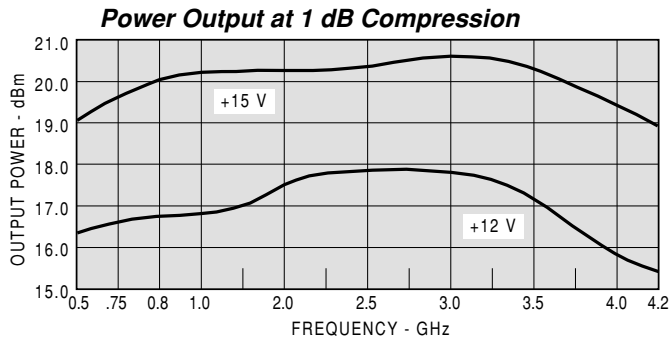
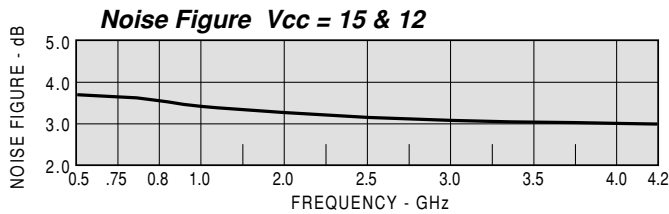
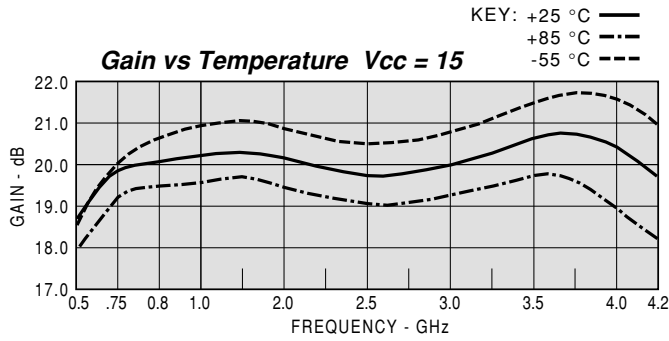
<b>Storage Temperature</b> .....	<b>-62 to +125 °C</b>
<b>Maximum Case Temperature</b> .....	<b>+100 °C</b>
<b>Maximum DC Voltage</b> .....	<b>+17 Volts</b>
<b>Maximum Continuous RF Input Power</b> .....	<b>+13 dBm</b>
<b>Maximum Short Term Input Power (1 Minute Max.)</b> .....	<b>125 Milliwatts</b>
<b>Maximum Peak Power (3 µsec Max.)</b> .....	<b>0.5 Watt</b>
<b>Burn-in Temperature</b> .....	<b>+105 °C</b>
<b>Thermal Resistance<sup>1</sup> (θjc)</b> .....	<b>+20 °C/Watt</b>
<b>Junction Temperature Rise Above Case (Tjc)</b> .....	<b>+43.1 °C</b>

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

DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



MODEL: AC4066 Vcc = +15V Icc = 134.12 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
750	1.59	1.20	19.9	0.536	-38.6
800	1.54	1.19	20.0	0.536	-38.7
1000	1.44	1.25	20.3	0.477	-39.3
1250	1.41	1.36	20.4	0.417	-40.6
1500	1.40	1.44	20.5	0.384	-42.1
1750	1.41	1.46	20.4	0.367	-43.5
2000	1.39	1.42	20.0	0.344	-45.7
2250	1.40	1.33	19.8	0.325	-46.2
2500	1.39	1.21	19.8	0.317	-45.1
2750	1.39	1.10	19.8	0.313	-43.1
3000	1.38	1.01	19.9	0.315	-41.5
3250	1.37	1.09	20.2	0.328	-39.9
3500	1.34	1.16	20.5	0.354	-38.6
3750	1.30	1.18	20.6	0.371	-37.5
4000	1.29	1.16	20.3	0.390	-36.3
4250	1.34	1.09	19.7	0.406	-35.5

MODEL: AC4066 Vcc = +15V Icc = 134.12 mA

LINEAR S-PARAMETERS

FREQ. MHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
750	0.23	-99.4	9.88	-5.4	0.012	10	0.09	122.0
800	0.21	-100.4	10.00	-14.3	0.012	6	0.09	133.9
1000	0.18	-104.2	10.30	-45.8	0.011	-6	0.11	159.7
1250	0.17	-110.1	10.48	-79.7	0.009	-20	0.15	160.8
1500	0.17	-117.7	10.54	-110.6	0.008	-34	0.18	152.4
1750	0.17	-129.0	10.42	-140.1	0.007	-55	0.19	141.6
2000	0.16	-138.2	10.01	-167.4	0.005	-79	0.17	127.8
2250	0.17	-145.2	9.76	166.9	0.005	-105	0.14	120.3
2500	0.16	-152.9	9.73	142.0	0.006	-130	0.10	114.1
2750	0.16	-160.5	9.76	117.5	0.007	-145	0.05	105.6
3000	0.16	-167.2	9.89	92.8	0.008	-158	0.00	172.0
3250	0.16	-174.3	10.23	66.9	0.010	-165	0.04	-108.1
3500	0.14	178.4	10.54	38.6	0.012	-170	0.07	-118.4
3750	0.13	172.4	10.68	8.8	0.013	-173	0.08	-125.8
4000	0.13	162.2	10.41	-22.7	0.015	-175	0.08	-131.0
4250	0.14	135.2	9.65	-55.7	0.017	-178	0.04	-111.0

MODEL: AC4066 Vcc = +12V Icc = 123.81 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
750	1.59	1.25	19.8	0.524	-39.6
800	1.54	1.27	19.9	0.524	-39.7
1000	1.43	1.38	20.1	0.472	-40.3
1250	1.38	1.53	20.3	0.413	-41.4
1500	1.37	1.65	20.4	0.382	-42.6
1750	1.38	1.71	20.3	0.368	-44.1
2000	1.36	1.69	19.9	0.345	-46.9
2250	1.37	1.60	19.7	0.324	-48.1
2500	1.37	1.47	19.7	0.319	-47.6
2750	1.37	1.34	19.8	0.317	-45.3
3000	1.36	1.24	19.8	0.316	-42.9
3250	1.34	1.18	19.9	0.327	-40.6
3500	1.29	1.19	20.2	0.348	-38.9
3750	1.21	1.24	20.2	0.369	-37.1
4000	1.16	1.30	19.8	0.392	-35.6
4250	1.19	1.35	19.1	0.397	-34.3

MODEL: AC4066 Vcc = +12V Icc = 123.81 mA

LINEAR S-PARAMETERS

FREQ. MHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
750	0.23	-102.2	9.72	-6.7	0.010	13	0.11	145.6
800	0.21	-103.7	9.83	-15.4	0.010	10	0.12	153.7
1000	0.18	-108.6	10.15	-46.5	0.010	1	0.16	166.7
1250	0.16	-114.0	10.35	-80.1	0.009	-19	0.21	163.5
1500	0.16	-121.1	10.44	-110.9	0.007	-18	0.24	153.5
1750	0.16	-132.0	10.34	-140.4	0.006	-35	0.26	141.1
2000	0.15	-141.6	9.89	-167.8	0.005	-51	0.26	126.3
2250	0.16	-149.5	9.61	166.6	0.004	-74	0.23	114.8
2500	0.16	-158.1	9.65	141.4	0.004	-103	0.19	101.7
2750	0.16	-166.8	9.74	116.5	0.005	-125	0.14	82.8
3000	0.15	-175.9	9.77	91.7	0.007	-140	0.11	57.7
3250	0.15	174.1	9.92	65.8	0.009	-150	0.08	22.4
3500	0.13	163.0	10.19	38.1	0.011	-155	0.09	-15.0
3750	0.09	154.2	10.25	8.5	0.014	-161	0.11	-40.2
4000	0.08	150.0	9.82	-23.2	0.017	-165	0.13	-57.3
4250	0.09	130.5	9.02	-55.4	0.019	-169	0.15	-63.3