

# AC1008

## 5 TO 1000 MHz TO-8 CASCADABLE AMPLIFIER

**Typical Values**

Medium Output Power .....	<b>AC1008</b> <b>+18.5 dBm</b>
Medium Gain .....	<b>+16.2 dB</b>
High Third Order I.P. ....	<b>+33.0 dBm</b>
High Performance Thin Film Standard Size TO-8	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5-1000 MHz	5-1000 MHz	5-1000 MHz
Small Signal Gain (Min.)	15.5 dB	14.8 dB	14.3 dB
Gain Flatness (Max.)	±0.2 dB	±0.4 dB	±0.5 dB
Noise Figure (Max.)	4.5 dB	5.5 dB	6.0 dB
SWR (Max.)	Input/Output 5-10 MHz 10-1000 MHz	1.8:1 1.7:1	1.9:1 1.8:1
Power Output (Min.) @ 1dB comp.	+18.5 dBm	+18.0 dBm	+17.5 dBm
DC Current (Max.)	85 mA	88.0 mA	93.0 mA

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

### INTERMODULATION PERFORMANCE

Typical @ 25 °C	+12 Volts	+15 Volts
Second Order Harmonic Intercept Point .....	+44 dBm	+50 dBm
Second Order Two Tone Intercept Point .....	+38 dBm	+44 dBm
Third Order Two Tone Intercept Point .....	+26 dBm	+33 dBm

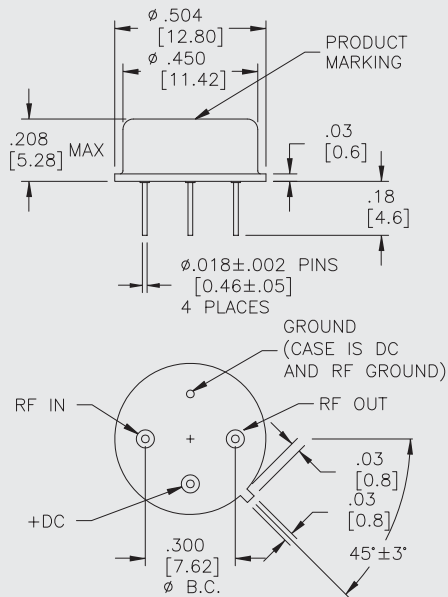
### ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to +125 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+17 Volts
Maximum Continuous RF Input Power .....	+13 dBm
Maximum Short Term Input Power (1 Minute Max.) .....	100 Milliwatts
Maximum Peak Power (3 μsec Max.) .....	0.5 Watt
Burn-in Temperature .....	+105 °C
Thermal Resistance <sup>1</sup> (θjc) .....	+32 °C/Watt
Junction Temperature Rise Above Case (Tjc) .....	+44.2 °C

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

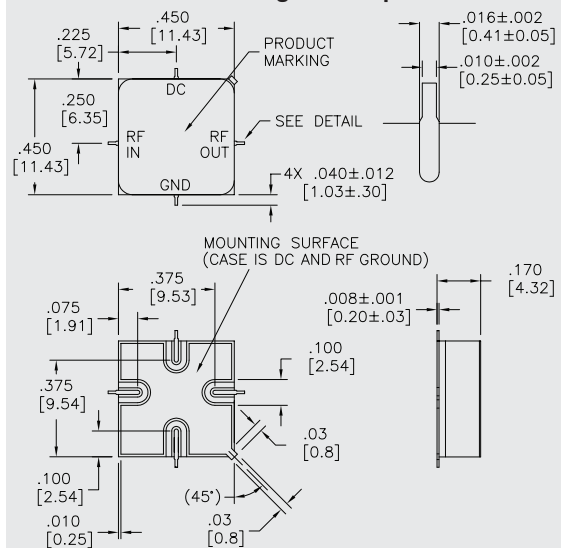
### AC1008

#### TO-8 Package for Amplifiers



### AS1008

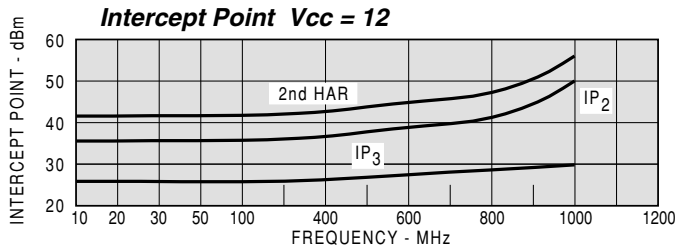
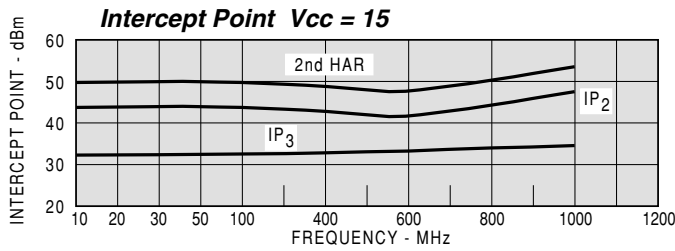
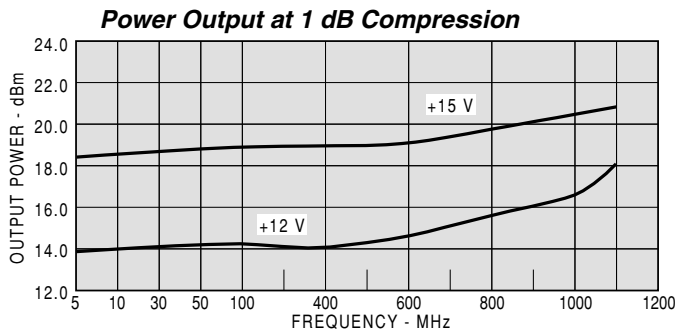
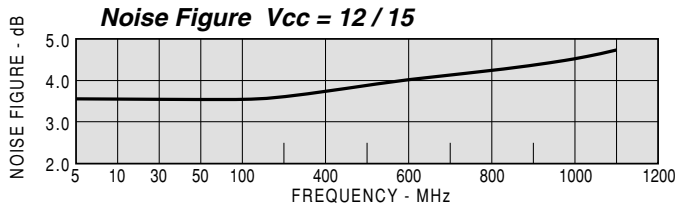
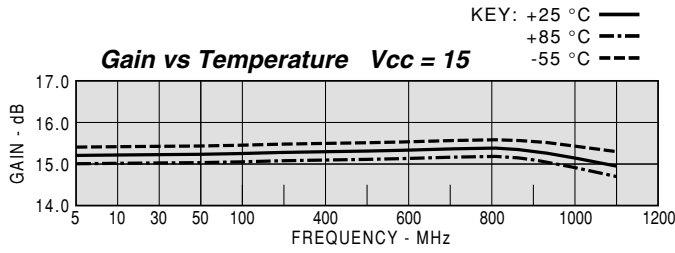
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC1008		Vcc=+15V				Icc=83.96	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.53	1.52	15.09	-154		-20.2	
10	1.26	1.36	15.30	-168		-19.9	
30	1.15	1.29	15.46	-180	1.60	-19.8	
50	1.14	1.27	15.49	176	0.69	-19.7	
100	1.13	1.26	15.48	167	0.50	-19.6	
200	1.14	1.27	15.42	151	0.43	-19.7	
300	1.17	1.28	15.37	136	0.41	-19.7	
400	1.20	1.28	15.36	122	0.40	-19.6	
500	1.23	1.27	15.38	107	0.41	-19.5	
600	1.26	1.25	15.37	92	0.42	-19.4	
700	1.29	1.23	15.38	77	0.43	-19.3	
800	1.30	1.21	15.35	61	0.43	-19.2	
900	1.31	1.22	15.26	45	0.45	-19.0	
1000	1.32	1.26	15.10	29	0.45	-18.9	
1100	1.33	1.35	14.89	12	0.46	-18.8	

LINEAR S-PARAMETERS

Model: AC1008		Vcc=+15V				Icc=83.96		
FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.21	-97.5	5.68	-154.4	0.098	28.9	0.21	-166.6
10	0.11	-110.4	5.82	-168.0	0.101	14.4	0.15	-179.2
30	0.07	-140.0	5.93	-179.5	0.103	3.5	0.13	171.1
50	0.06	-152.5	5.95	175.5	0.104	0.2	0.12	168.2
100	0.06	-163.6	5.94	166.5	0.104	-4.7	0.11	161.8
200	0.07	-167.3	5.90	151.2	0.103	-11.8	0.12	148.2
300	0.08	-171.0	5.87	136.4	0.104	-17.7	0.12	133.0
400	0.09	179.7	5.86	121.9	0.104	-24.1	0.12	118.7
500	0.10	168.1	5.87	107.2	0.106	-30.1	0.12	108.0
600	0.12	155.0	5.87	92.10	0.107	-36.6	0.11	100.5
700	0.13	140.9	5.87	76.80	0.109	-43.3	0.10	98.2
800	0.13	125.6	5.85	61.10	0.110	-50.5	0.10	102.4
900	0.14	107.7	5.79	45.00	0.112	-58.2	0.10	111.1
1000	0.14	88.70	5.69	28.70	0.113	-65.2	0.12	119.5
1100	0.14	69.90	5.56	12.30	0.114	-73.1	0.15	122.8
1200	0.15	53.60	5.36	-4.40	0.116	-80.5	0.19	122.1

Model: AC1008		Vcc=+12V				Icc=66.48	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.50	1.44	14.86	-155		-19.9	
10	1.23	1.30	15.03	-168		-19.7	
30	1.12	1.23	15.19	-180	1.60	-19.5	
50	1.10	1.21	15.22	175	0.69	-19.4	
100	1.10	1.20	15.21	166	0.50	-19.4	
200	1.13	1.21	15.14	151	0.43	-19.5	
300	1.17	1.21	15.09	136	0.41	-19.5	
400	1.21	1.22	15.07	121	0.41	-19.4	
500	1.25	1.21	15.07	106	0.42	-19.3	
600	1.29	1.21	15.06	91	0.42	-19.1	
700	1.32	1.21	15.02	76	0.43	-19.0	
800	1.35	1.24	14.97	60	0.44	-18.9	
900	1.36	1.29	14.84	44	0.45	-18.7	
1000	1.37	1.37	14.64	28	0.45	-18.6	
1100	1.38	1.48	14.41	11	0.45	-18.5	

LINEAR S-PARAMETERS

Model: AC1008		Vcc=+12V				Icc=66.48		
FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.20	-93.0	5.53	-154.7	0.101	28.6	0.18	-168.0
10	0.10	-101.2	5.64	-168.1	0.103	14.3	0.13	179.3
30	0.05	-125.8	5.75	-179.6	0.106	3.5	0.10	169.6
50	0.05	-138.2	5.77	175.4	0.107	0.1	0.09	167.7
100	0.05	-148.8	5.76	166.4	0.107	-4.6	0.09	163.0
200	0.06	-149.0	5.72	150.8	0.106	-11.6	0.09	152.0
300	0.08	-155.3	5.68	135.9	0.106	-17.5	0.10	138.5
400	0.10	-167.0	5.67	121.3	0.108	-23.8	0.10	126.4
500	0.11	179.5	5.67	106.3	0.109	-30.0	0.10	119.2
600	0.13	164.7	5.66	91.1	0.110	-36.4	0.09	116.7
700	0.14	149.4	5.64	75.6	0.112	-43.1	0.10	119.0
800	0.15	133.2	5.60	59.9	0.113	-50.4	0.11	124.2
900	0.15	115.2	5.52	43.7	0.116	-57.8	0.12	128.1
1000	0.16	95.9	5.39	27.5	0.117	-65.2	0.16	128.1
1100	0.16	76.7	5.25	11.2	0.119	-72.9	0.19	124.7
1200	0.17	59.6	5.05	-5.4	0.121	-80.5	0.24	120.2