

AC1088

100 TO 1000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

Low Noise Figure	AC1088 1.1 dB
Medium Output Level	+21.0 dBm
High Gain	18.5 dB
High Performance Thin Film Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	50-1200 MHz	100-1000 MHz	100-1000 MHz
Small Signal Gain (Min.)	18.5 dB	17.5 dB	17.0 dB
Gain Flatness (Max.)	±0.4 dB	±0.6 dB	±0.7 dB
Noise Figure (Max.)	1.1 [^] dB	1.2 [^] dB	1.5 [^] dB
SWR (Max.) Input/Output	1.4:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	+21.0 dBm	+20.5 dBm	+20.0 dBm
Reverse Isolation	24.0 dB	—	—
DC Current (Max.)	80 mA	85 mA	88 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.
^ 0.4 dB higher below 200 MHz

INTERMODULATION PERFORMANCE

Typical @ 25 °C

Second Order Harmonic Intercept Point	AC1088 +56 dBm
Second Order Two Tone Intercept Point	+50 dBm
Third Order Two Tone Intercept Point	+35 dBm

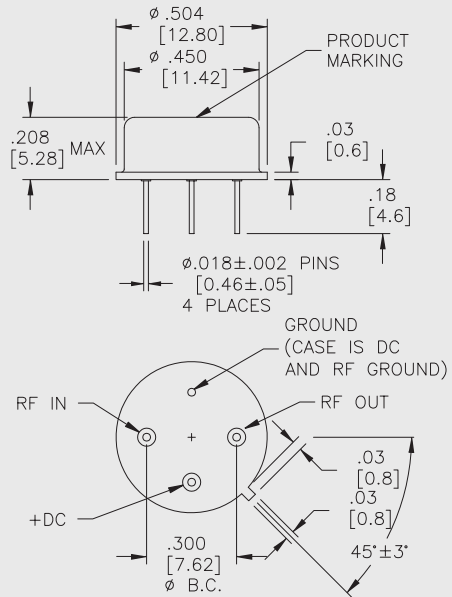
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62° to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+12 Volts
Maximum Continuous RF Input Power	+21 dBm
Maximum Short Term Input Power (1 Minute Max.)	+24 dBm
Maximum Peak Power (3 μsec Max.)	+27 dBm
Burn-in Temperature	+125 °C
Thermal Resistance ¹ (θjc)	+27.2 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+11.0 °C

¹ Thermal resistance is based on total power dissipation.

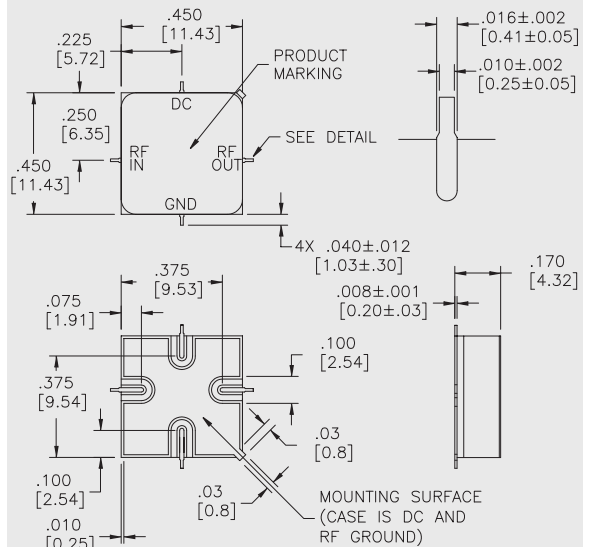
AC1088

TO-8 Package for Amplifiers



AS1088

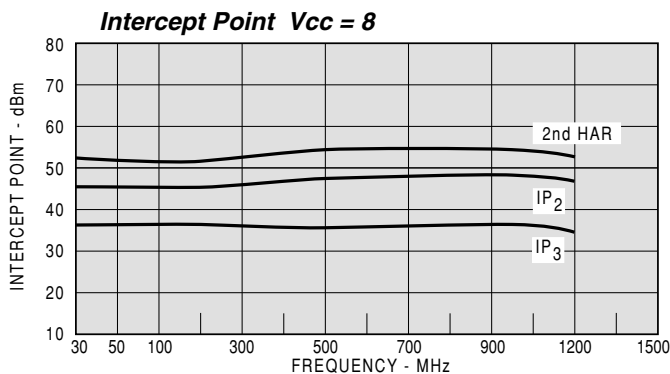
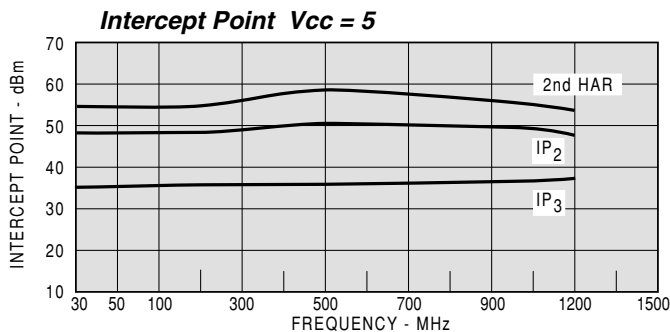
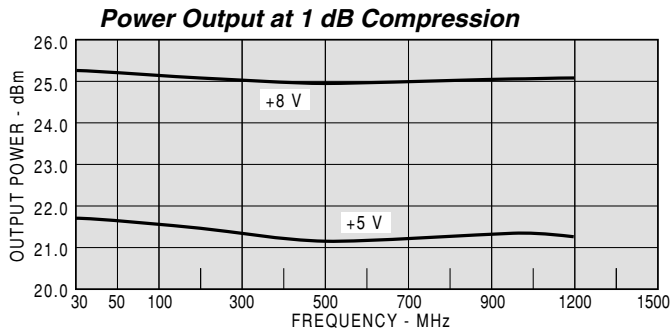
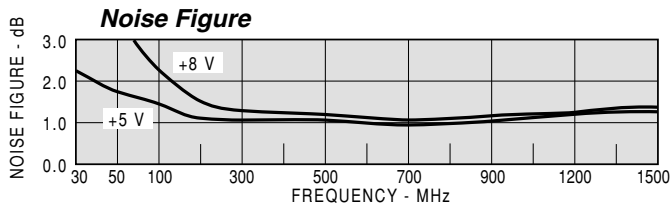
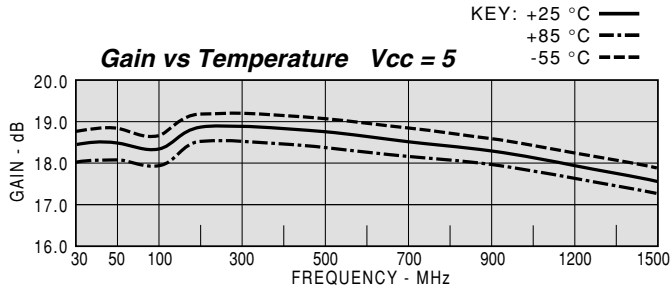
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC1088			Vcc=+5V			Icc=79.85	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
30	1.66	1.29	18.15	-165.0		-24.40	
50	1.64	1.27	18.23	-173.0	0.88	-24.40	
100	1.58	1.32	18.53	179.0	0.38	-24.60	
200	1.47	1.40	18.89	165.0	0.38	-24.90	
300	1.44	1.41	18.89	154.0	0.32	-24.80	
400	1.42	1.41	18.83	143.0	0.29	-24.80	
500	1.40	1.41	18.73	133.0	0.29	-24.60	
600	1.38	1.41	18.62	123.0	0.27	-24.30	
700	1.36	1.41	18.49	113.0	0.27	-24.20	
800	1.34	1.41	18.38	103.0	0.27	-24.00	
900	1.32	1.42	18.23	94.0	0.27	-23.70	
1000	1.30	1.42	18.10	84.0	0.25	-23.50	
1100	1.28	1.41	17.95	75.0	0.27	-23.40	
1200	1.25	1.42	17.81	66.0	0.26	-23.00	
1300	1.23	1.42	17.67	56.0	0.26	-22.80	
1400	1.20	1.43	17.49	47.0	0.26	-22.50	
1500	1.16	1.44	17.35	38.0	0.25	-22.30	
1600	1.13	1.47	17.20	28.0	0.26	-22.00	

Model: AC1088

Vcc=+5V

Icc=79.85

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG.
30	0.25	-21.00	8.08	-165.10	0.06	11.70	0.13	-140.80
50	0.24	-16.80	8.15	-173.10	0.06	4.70	0.12	-152.20
100	0.22	-18.20	8.44	178.70	0.06	-2.20	0.14	-162.60
200	0.19	-16.90	8.80	165.10	0.06	-5.30	0.17	170.10
300	0.18	-15.80	8.80	153.50	0.06	-6.40	0.17	150.80
400	0.17	-15.80	8.74	142.90	0.06	-9.20	0.17	135.30
500	0.17	-17.40	8.64	132.60	0.06	-11.40	0.17	121.50
600	0.16	-18.60	8.53	122.70	0.06	-14.70	0.17	108.70
700	0.15	-20.00	8.40	113.00	0.06	-17.10	0.17	97.50
800	0.15	-22.40	8.30	103.40	0.06	-20.80	0.17	86.70
900	0.14	-24.20	8.16	93.70	0.07	-23.20	0.17	76.30
1000	0.13	-26.70	8.04	84.50	0.07	-27.50	0.17	66.30
1100	0.12	-28.90	7.90	74.90	0.07	-31.50	0.17	56.60
1200	0.11	-30.50	7.77	65.50	0.07	-36.40	0.17	47.10
1300	0.10	-31.20	7.65	56.20	0.07	-40.10	0.18	38.60
1400	0.09	-31.00	7.49	46.80	0.08	-44.70	0.18	30.10
1500	0.08	-28.90	7.37	37.70	0.08	-49.70	0.18	21.70
1600	0.06	-23.70	7.24	28.40	0.08	-55.20	0.19	14.50

Model: AC1088			Vcc=+8V			Icc=86.55	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
30	1.67	1.17	18.04	-165.0		-24.00	
50	1.64	1.14	18.13	-173.0	0.87	-23.90	
100	1.58	1.17	18.45	179.0	0.39	-24.00	
200	1.47	1.23	18.82	165.0	0.38	-24.30	
300	1.43	1.24	18.83	154.0	0.32	-24.30	
400	1.41	1.25	18.77	143.0	0.29	-24.30	
500	1.39	1.26	18.67	133.0	0.28	-24.10	
600	1.37	1.28	18.56	123.0	0.27	-24.10	
700	1.34	1.29	18.43	114.0	0.27	-24.00	
800	1.32	1.31	18.32	104.0	0.27	-23.90	
900	1.30	1.32	18.17	94.0	0.27	-23.80	
1000	1.28	1.33	18.05	85.0	0.26	-23.70	
1100	1.26	1.34	17.88	76.0	0.26	-23.70	
1200	1.24	1.35	17.74	66.0	0.26	-23.60	
1300	1.22	1.36	17.58	57.0	0.26	-23.40	
1400	1.20	1.37	17.39	48.0	0.25	-23.30	
1500	1.18	1.38	17.25	39.0	0.25	-23.10	
1600	1.16	1.40	17.09	30.0	0.25	-23.00	

Model: AC1088

Vcc=+8V

Icc=86.55

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG.
30	0.25	-20.70	7.98	-164.90	0.06	11.90	0.08	-132.60
50	0.24	-16.80	8.06	-172.80	0.06	5.20	0.06	-142.60
100	0.22	-18.60	8.37	178.90	0.06	-1.80	0.08	-155.30
200	0.19	-17.70	8.73	165.40	0.06	-6.80	0.10	167.60
300	0.18	-16.60	8.74	153.80	0.06	-10.00	0.11	142.40
400	0.17	-16.60	8.68	143.20	0.06	-12.50	0.11	122.60
500	0.16	-17.70	8.58	133.00	0.06	-16.10	0.12	105.60
600	0.15	-18.40	8.48	123.20	0.06	-19.20	0.12	90.90
700	0.15	-19.80	8.35	113.50	0.06	-22.20	0.13	77.90
800	0.14	-21.00	8.24	103.90	0.06	-26.60	0.13	65.10
900	0.13	-22.10	8.10	94.30	0.07	-29.20	0.14	53.70
1000	0.12	-22.90	7.99	85.10	0.07	-34.30	0.14	42.80
1100	0.11	-23.60	7.84	75.60	0.07	-38.80	0.14	31.40
1200	0.11	-23.60	7.71	66.40	0.07	-42.60	0.15	21.00
1300	0.10	-22.10	7.57	57.10	0.07	-46.50	0.15	11.30
1400	0.09	-19.50	7.41	48.00	0.07	-50.70	0.16	1.90
1500	0.08	-15.00	7.28	38.90	0.07	-55.10	0.16	-7.40
1600	0.07	-7.20	7.15	29.90	0.07	-60.10	0.17	-15.00