

AC2088

100 TO 2000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

Low Noise Figure	AC2088 2.3 dB
High Gain	21.0 dB
High Power Output	+22.5 dBm
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	50-2200 MHz	100-2000 MHz	100-2000 MHz
Small Signal Gain (Min.)	21.0 dB	20.0 dB	19.5 dB
Gain Flatness (Max.)	±0.4 dB	±0.7 dB	±0.9 dB
Noise Figure (Max.) 200-2000 MHz	2.3 [^] dB	2.7 [^] dB	3.2 [^] dB
SWR (Max.) Input/Output	1.4:1	2.0:1	2.0:1
Power Output (Min.) @ 1dB comp.	+22.5 dBm	+20.0 dBm	+19.5 dBm
Reverse Isolation	38 dB	—	—
DC Current (Max.)	109 mA	116 mA	119 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
^ 0.5 dB higher below 200 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 1000 MHz

Second Order Harmonic Intercept Point	AC2088 +50 dBm
Second Order Two Tone Intercept Point	+44 dBm
Third Order Two Tone Intercept Point	+34 dBm

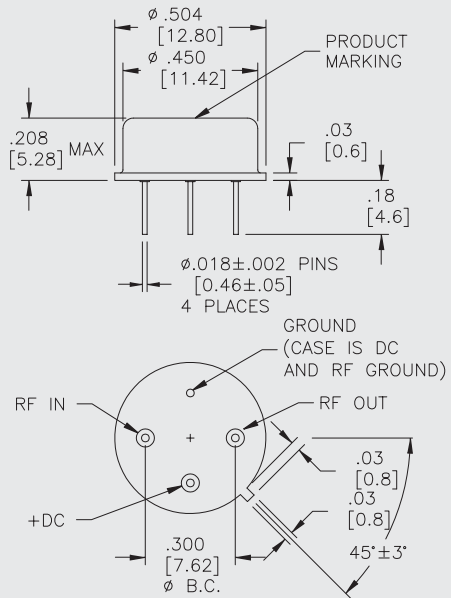
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to 125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+20 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	200 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance¹ (θjc)	+15.6 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+25.7 °C

¹ Thermal resistance is based on total power dissipation.

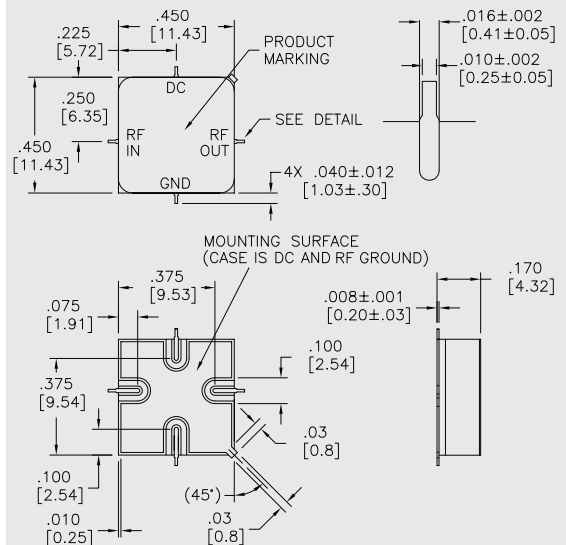
AC2088

TO-8 Package for Amplifiers



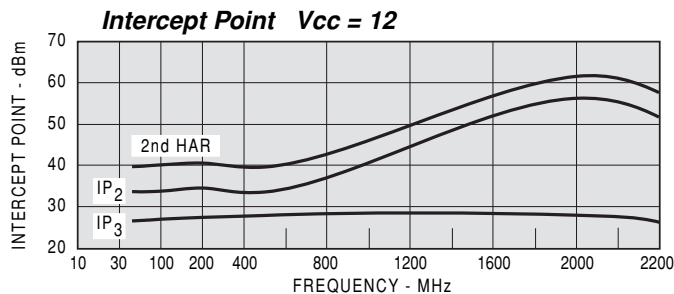
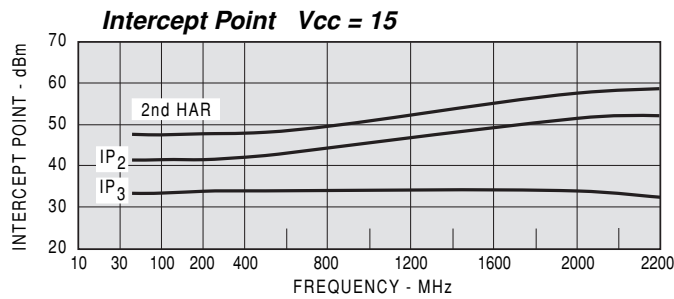
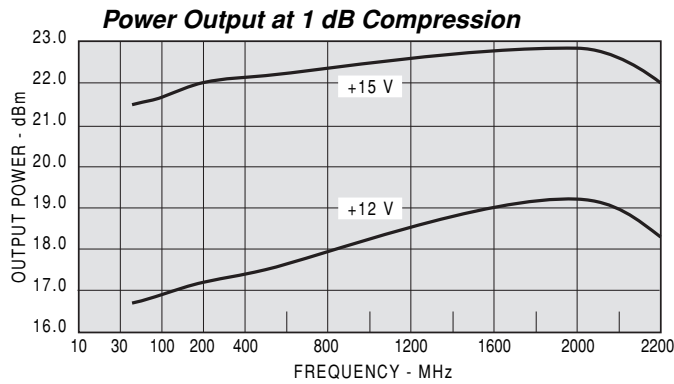
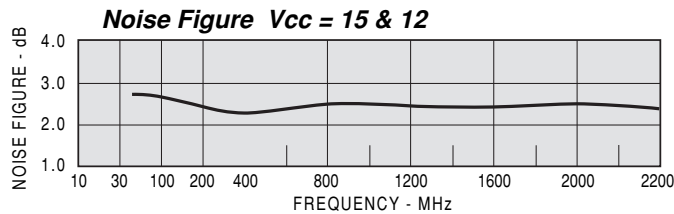
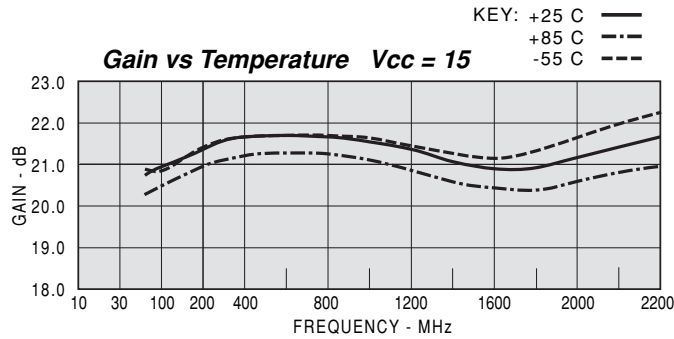
AS2088

SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AC2088			Vcc=+15V				Icc=109.00	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	DB	
MHZ	IN	OUT	DB	DEG	NSEC			
50	1.33	1.44	20.92	13			-39.90	
100	1.40	1.29	21.08	-2	0.85		-39.90	
200	1.36	1.25	21.53	-24	0.56		-39.50	
400	1.33	1.23	21.78	-59	0.48		-39.80	
600	1.31	1.20	21.77	-93	0.47		-39.80	
800	1.27	1.18	21.72	-127	0.47		-39.40	
1000	1.22	1.18	21.60	-160	0.46		-38.90	
1200	1.16	1.22	21.39	167	0.46		-38.20	
1400	1.09	1.27	21.12	134	0.44		-37.60	
1600	1.07	1.34	20.97	102	0.45		-36.90	
1800	1.16	1.45	20.96	68	0.46		-36.40	
2000	1.37	1.66	21.24	33	0.50		-35.40	
2200	1.90	2.10	21.76	-8	0.60		-34.20	

Model: AC2088			LINEAR S-PARAMETERS						Icc=109.00	
			Vcc=+15V		S11		S12		S22	
FREQ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
50	0.14	-19.60	11.12	12.80	0.01	15.10	0.18	-25.50		
100	0.17	-24.10	11.32	-2.50	0.01	3.40	0.12	-28.90		
200	0.15	-37.30	11.93	-23.70	0.01	-1.30	0.11	-31.20		
400	0.14	-62.10	12.28	-59.50	0.01	-6.20	0.10	-50.80		
600	0.13	-86.20	12.26	-93.30	0.01	-13.00	0.09	-81.70		
800	0.12	-111.50	12.19	-126.70	0.01	-21.00	0.08	-120.60		
1000	0.10	-136.30	12.03	-160.10	0.01	-31.00	0.08	-159.70		
1200	0.08	-162.40	11.74	166.80	0.01	-42.60	0.10	165.60		
1400	0.04	160.20	11.37	134.20	0.01	-59.70	0.12	135.90		
1600	0.03	84.00	11.18	101.50	0.01	-78.00	0.14	112.50		
1800	0.08	43.60	11.17	68.20	0.02	-101.60	0.18	90.60		
2000	0.16	27.80	11.53	32.90	0.02	-127.50	0.25	67.50		
2200	0.31	11.90	12.24	-7.90	0.02	-158.80	0.36	38.50		

Model: AC2088			Vcc=+12V				Icc=106.00	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	DB	
MHZ	IN	OUT	DB	DEG	NSEC			
50	1.48	1.36	19.76	13			-41.20	
100	1.55	1.22	19.97	-3	0.87		-41.00	
200	1.52	1.20	20.42	-25	0.57		-40.60	
400	1.49	1.19	20.63	-61	0.50		-40.90	
600	1.46	1.20	20.74	-96	0.47		-40.30	
800	1.43	1.24	20.61	-130	0.48		-38.80	
1000	1.38	1.30	20.46	-164	0.48		-37.60	
1200	1.33	1.40	20.30	161	0.48		-36.10	
1400	1.27	1.54	20.10	128	0.46		-35.10	
1600	1.28	1.73	20.03	93	0.47		-34.00	
1800	1.41	2.07	20.12	57	0.51		-32.90	
2000	1.83	2.82	20.22	17	0.58		-31.70	
2200	2.97	4.25	20.11	-30	0.69		-30.70	

Model: AC2088			LINEAR S-PARAMETERS						Icc=106.00	
			Vcc=+12V		S11		S12		S22	
FREQ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
50	0.19	-16.90	9.73	12.80	0.01	14.90	0.15	-31.50		
100	0.21	-22.90	9.97	-2.90	0.01	8.40	0.10	-35.80		
200	0.21	-37.90	10.49	-24.60	0.01	2.10	0.09	-36.70		
400	0.20	-68.20	10.75	-61.30	0.01	3.30	0.09	-60.90		
600	0.19	-96.40	10.88	-95.90	0.01	0.70	0.09	-95.30		
800	0.18	-125.90	10.72	-130.10	0.01	-6.40	0.11	-131.50		
1000	0.16	-155.40	10.55	-164.30	0.01	-18.70	0.13	-162.10		
1200	0.14	174.50	10.36	161.50	0.02	-29.30	0.17	171.40		
1400	0.12	139.70	10.12	127.70	0.02	-47.20	0.21	147.20		
1600	0.12	101.30	10.04	93.00	0.02	-68.10	0.27	125.70		
1800	0.17	67.30	10.13	57.10	0.02	-92.80	0.35	102.70		
2000	0.29	40.30	10.26	16.90	0.03	-123.40	0.48	75.20		
2200	0.50	10.90	10.13	-29.90	0.03	-161.20	0.62	39.20		