

# AC4088

## 800 TO 4000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC4088
High Output Level .....	+21.5 dBm
High Gain .....	+19.5 dB
High Second Order I.P. ....	+52 dBm
Low Noise Figure .....	<4.3 dB
High Performance Thin Film Standard Size TO-8 Package	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed		
		0 to 50 °C	-55 to +85 °C	
Frequency (Min.)	800-4000 MHz	800-4000 MHz	800-4000 MHz	
Small Signal Gain (Min.)	19.5 dB	19.0 dB	18.5 dB	
Gain Flatness (Max.)	±0.4 dB	±0.7 dB	±0.9 dB	
Noise Figure (Max.)	<4.3 dB	4.8 dB	5.2 dB	
SWR (Max.)	Input Output	1.8:1 1.8:1	1.9:1 1.9:1	
Power Output (Min.) @ 1dB comp.	+21.5 dBm	+20.5 dBm	+20.0 dBm	
Reverse Isolation	38.0 dB	—	—	
DC Current (Max.)	92 mA	97.0 mA	103.0 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 .....	+57 dBm	+56 dBm
Second Order Two Tone Intercept Point .....	+51 dBm	+52 dBm
Third Order Two Tone Intercept Point .....	+33 dBm	+34 dBm

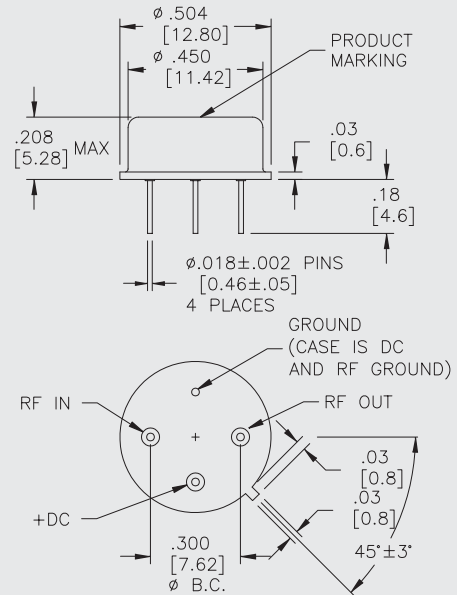
### ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to +125 °C
Maximum Case Temperature .....	+105 °C
Maximum DC Voltage .....	+17 Volts
Maximum Continuous RF Input Power .....	+17 dBm
Maximum Short Term Input Power (1 Minute Max.) .....	100 Milliwatts
Maximum Peak Power (3 μsec Max.) .....	0.5 Watt
Burn-in Temperature .....	+85 °C
Thermal Resistance <sup>1</sup> (θ <sub>jc</sub> ) .....	+41 °C/Watt
Junction Temperature Rise Above Case (T <sub>jc</sub> ) .....	+59.4 °C

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

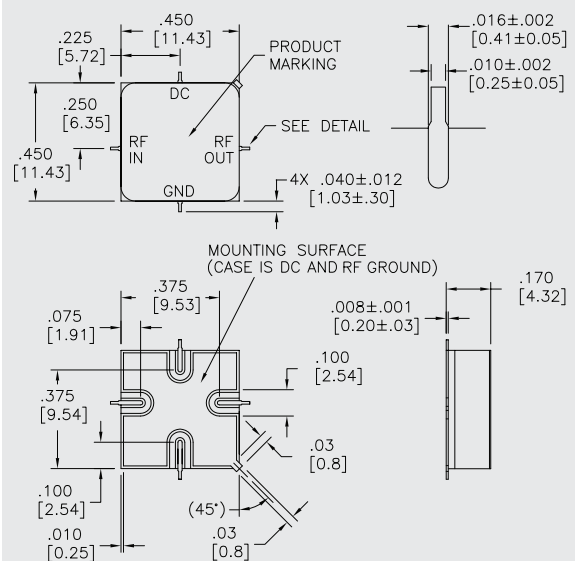
### AC4088

#### TO-8 Package for Amplifiers



### AS4088

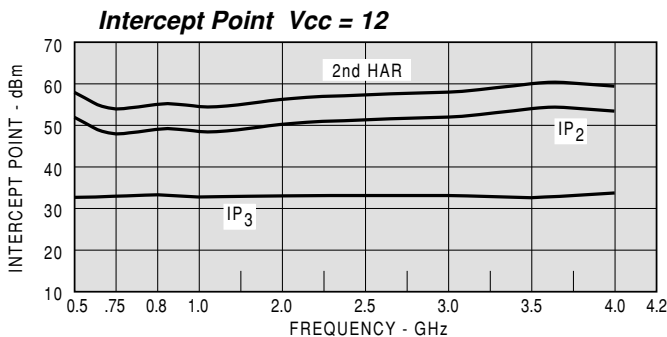
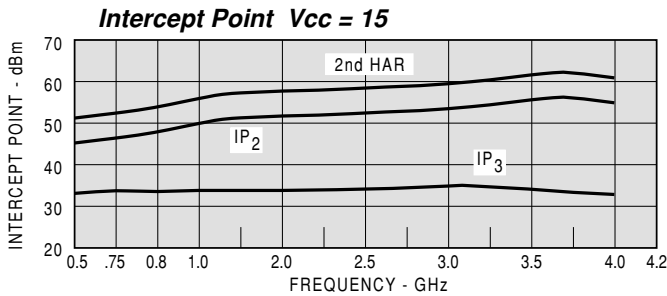
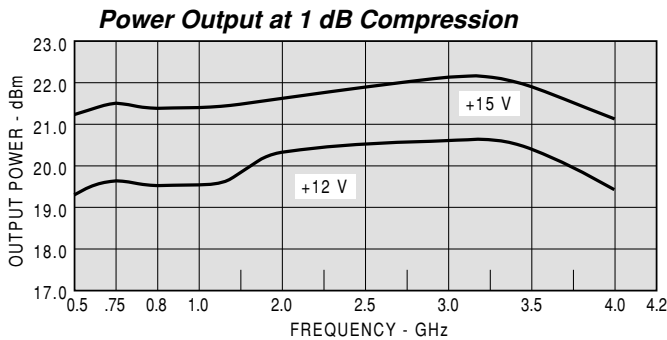
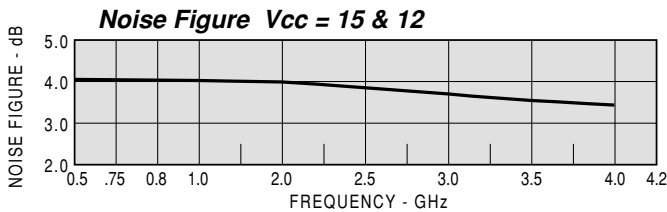
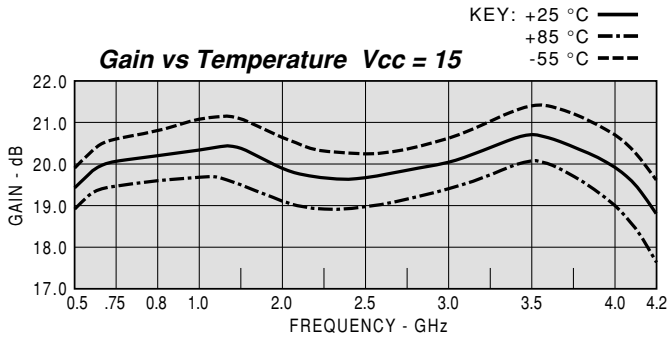
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC4088				Vcc= +15V			icc= 89.12
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
500	1.49	1.25	19.70	3	0.69	-38.3	
700	1.23	1.09	20.18	-35	0.49	-37.7	
900	1.11	1.02	20.34	-66	0.41	-37.6	
1000	1.09	1.03	20.43	-80	0.39	-37.8	
1200	1.12	1.05	20.54	-107	0.37	-38.4	
1400	1.19	1.04	20.40	-133	0.34	-38.5	
1600	1.26	1.05	20.46	-158	0.35	-40.2	
1800	1.31	1.04	20.35	178	0.34	-39.9	
2000	1.38	1.07	20.11	154	0.33	-40.9	
2200	1.44	1.11	19.95	131	0.32	-41.9	
2400	1.45	1.15	19.76	110	0.30	-41.6	
2600	1.40	1.23	19.72	88	0.30	-41.1	
2800	1.39	1.35	19.91	66	0.30	-39.6	
3000	1.37	1.43	19.98	44	0.31	-38.7	
3200	1.35	1.52	20.27	19	0.37	-38.3	
3400	1.30	1.54	20.62	-5	0.37	-36.9	
3600	1.25	1.56	20.70	-31	0.36	-35.7	
3800	1.23	1.61	20.64	-59	0.40	-35.1	
4000	1.23	1.50	20.32	-89	0.41	-34.4	
4200	1.23	1.40	19.54	-120	0.44	-33.9	

Model: AC4088				Vcc 15V				icc= 89.12	
FREQ.	S11		S21		S12		S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
500	0.20	-120.6	9.66	2.6	0.012	19.9	0.11	76.4	
700	0.10	-136.3	10.21	-35.1	0.013	3.3	0.04	53.7	
900	0.05	-136.7	10.40	-66.0	0.013	-12.8	0.01	161.1	
1000	0.04	-124.1	10.51	-80.0	0.013	-17.1	0.01	-160.0	
1200	0.06	-100.0	10.64	-107.2	0.012	-29.0	0.03	-172.8	
1400	0.09	-93.4	10.48	-132.9	0.012	-45.0	0.02	146.7	
1600	0.12	-107.8	10.55	-157.7	0.010	-60.5	0.02	143.7	
1800	0.13	-121.5	10.41	177.8	0.010	-74.4	0.02	166.0	
2000	0.16	-132.8	10.13	153.9	0.009	-94.8	0.03	-96.7	
2200	0.18	-140.7	9.95	131.4	0.008	-113.1	0.05	-76.8	
2400	0.18	-147.2	9.73	109.6	0.008	-131.6	0.07	-83.1	
2600	0.17	-156.8	9.69	87.8	0.009	-154.0	0.10	-90.2	
2800	0.16	-168.3	9.90	66.4	0.010	-170.3	0.15	-98.4	
3000	0.16	-175.9	9.98	43.7	0.012	174.2	0.18	-104.6	
3200	0.15	179.9	10.32	19.2	0.012	165.3	0.21	-107.7	
3400	0.13	174.4	10.74	-4.8	0.014	157.0	0.21	-121.7	
3600	0.11	167.7	10.84	-30.7	0.016	155.2	0.22	-131.5	
3800	0.10	151.5	10.76	-59.4	0.018	143.6	0.23	-135.2	
4000	0.10	135.7	10.37	-88.7	0.019	137.5	0.20	-137.6	
4200	0.10	109.9	9.49	-119.9	0.020	136.0	0.17	-142.7	

Model: AC4088				Vcc= +12V			icc= 85.41
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
500	1.50	1.22	19.55	2	0.68	-39.3	
700	1.24	1.08	20.05	-35	0.48	-38.2	
900	1.12	1.07	20.24	-65	0.41	-38.3	
1000	1.11	1.08	20.34	-79	0.39	-38.4	
1200	1.12	1.11	20.50	-106	0.37	-38.5	
1400	1.18	1.11	20.38	-132	0.34	-39.0	
1600	1.24	1.13	20.47	-157	0.35	-39.3	
1800	1.29	1.12	20.39	179	0.34	-41.0	
2000	1.35	1.05	20.17	155	0.33	-41.6	
2200	1.42	1.01	20.00	132	0.32	-42.1	
2400	1.43	1.05	19.84	110	0.30	-42.3	
2600	1.40	1.12	19.79	88	0.31	-41.1	
2800	1.38	1.22	19.93	67	0.30	-40.6	
3000	1.37	1.30	20.02	44	0.31	-39.2	
3200	1.36	1.39	20.32	20	0.36	-37.7	
3400	1.30	1.40	20.62	-4	0.36	-36.3	
3600	1.24	1.41	20.73	-30	0.35	-35.2	
3800	1.21	1.49	20.67	-59	0.40	-34.5	
4000	1.19	1.44	20.35	-88	0.41	-33.4	
4200	1.19	1.39	19.65	-119	0.45	-33.4	