



COUGAR COMPONENTS

9/01

AC1508 10 TO 1500 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

Medium Gain	AC1508 12.5 dB
Medium Output Level	+16.5 dBm
High Performance Thin Film Standard Size TO-8	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50° C	-55 to +85° C
Frequency (Min.)	5-1700 MHz	10-1500 MHz	10-1500 MHz
Small Signal Gain (Min.)	12.5 dB	11.5 dB	11.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.4 dB	±0.6 dB
Noise Figure (Max.)			
10-1000 MHz	4.0 dB	4.5 dB	5.0 dB
1000-1500 MHz	4.5 dB	5.0 dB	5.5 dB
SWR (Max.)	Input/Output	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+16.5 dBm	+15.5 dBm	+15.0 dBm
DC Current (Max.)	50 mA	55 mA	60 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25° C; 600 MHz

Second Order Harmonic Intercept Point	AC1508 +51 dBm
Second Order Two Tone Intercept Point	+45 dBm
Third Order Two Tone Intercept Point	+30 dBm

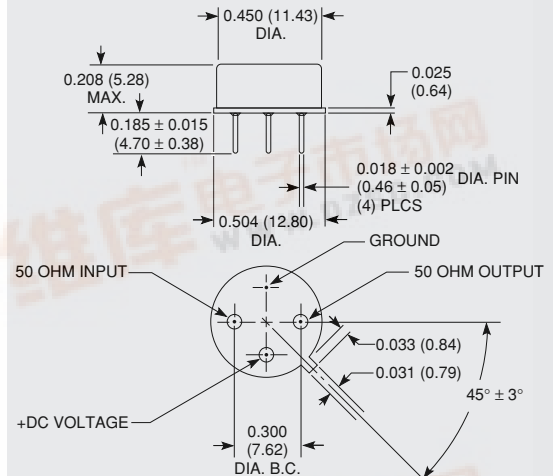
ABSOLUTE MAXIMUM RATINGS

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.)	50 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature	+105° C
Thermal Resistance ¹ (θjc)	+41.5° C/Watt
Junction Temperature Rise Above Case (Tjc)	+39.2° C

¹ Thermal resistance is based on total power dissipation.

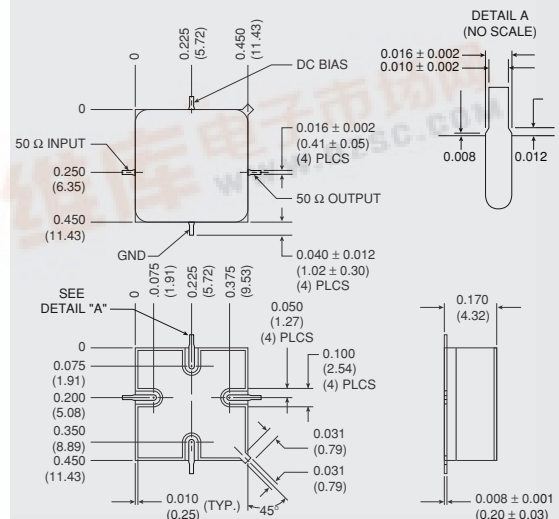
AC1508

TO-8 Package for Amplifiers



AS1508

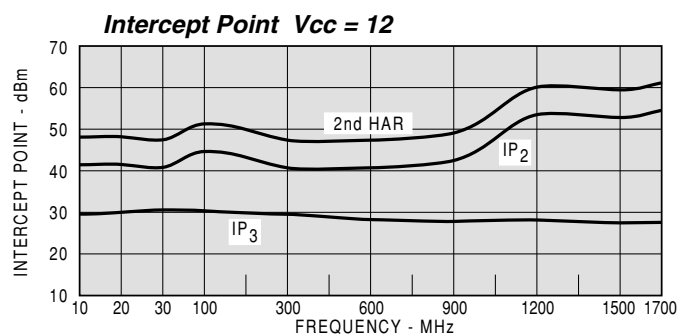
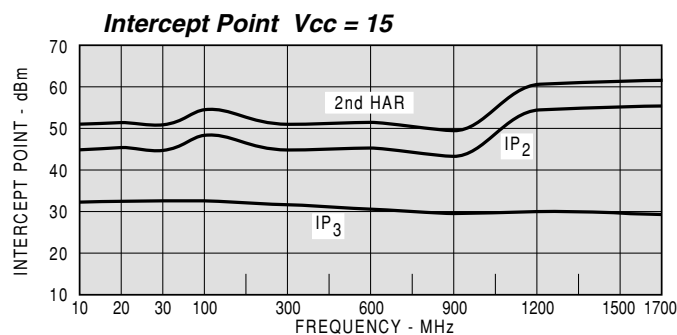
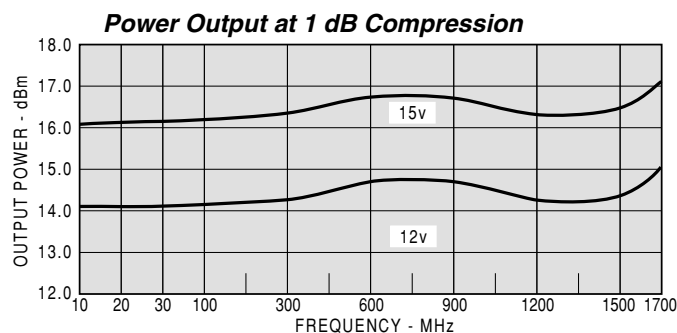
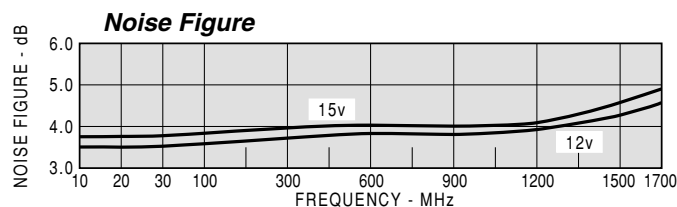
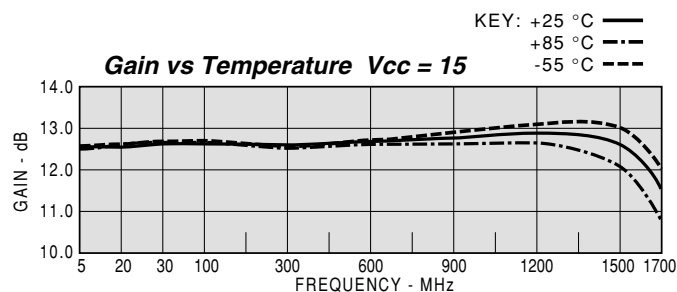
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES (MILLIMETERS)



TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AC1508			Vcc= +15V			Icc= 48.18	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.37	1.43	12.39	-172		-17.5	
10	1.34	1.39	12.41	-177		-17.5	
20	1.34	1.37	12.45	179	0.91	-17.4	
50	1.35	1.35	12.50	174	0.47	-17.4	
100	1.35	1.34	12.51	165	0.45	-17.4	
200	1.33	1.34	12.42	151	0.41	-17.4	
300	1.33	1.34	12.38	136	0.40	-17.5	
400	1.36	1.36	12.41	122	0.40	-17.5	
500	1.37	1.36	12.48	107	0.41	-17.5	
600	1.37	1.34	12.53	92	0.42	-17.4	
700	1.39	1.35	12.59	77	0.43	-17.4	
800	1.44	1.30	12.66	61	0.43	-17.4	
900	1.49	1.25	12.72	46	0.43	-17.3	
1000	1.52	1.29	12.76	29	0.46	-17.3	
1100	1.54	1.29	12.80	13	0.46	-17.2	
1200	1.59	1.32	12.80	-4	0.48	-17.3	
1300	1.56	1.35	12.80	-22	0.51	-17.3	
1400	1.47	1.34	12.73	-41	0.53	-17.1	
1500	1.42	1.41	12.55	-61	0.56	-17.0	
1600	1.44	1.43	12.15	-82	0.59	-16.9	
1700	1.72	1.40	11.42	-104	0.62	-16.9	

Model: AC1508			Vcc= +15V			Icc= 48.18	
FREQ	S11	S21	S12	S22			
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	
5	0.16	-145.8	4.16	-171.9	0.133	9.3	166.2
10	0.14	-160.0	4.17	-176.7	0.134	4.4	168.7
20	0.14	-168.6	4.19	179.5	0.135	1.3	167.8
50	0.15	-174.1	4.22	173.6	0.135	-3.2	163.9
100	0.15	-176.7	4.22	165.4	0.135	-7.7	155.0
200	0.14	-175.7	4.18	150.5	0.134	-16.0	135.3
300	0.14	-174.7	4.16	136.0	0.133	-23.5	113.1
400	0.15	-172.1	4.17	121.6	0.134	-31.5	90.8
500	0.16	-170.1	4.21	107.0	0.134	-39.1	71.4
600	0.15	-167.5	4.23	91.9	0.135	-47.3	47.0
700	0.16	-168.2	4.26	76.8	0.136	-55.7	25.7
800	0.18	-167.5	4.30	61.4	0.135	-64.3	6.80
900	0.20	-165.0	4.33	45.6	0.136	-73.0	-30.9
1000	0.21	-166.9	4.35	29.3	0.136	-82.5	-62.4
1100	0.21	-175.7	4.36	12.7	0.138	-90.9	-88.4
1200	0.23	174.4	4.36	-4.30	0.137	-100.8	-120.4
1300	0.22	163.3	4.37	-22.2	0.137	-109.8	-145.2
1400	0.19	141.0	4.33	-41.0	0.139	-119.8	-175.4
1500	0.17	105.7	4.24	-60.8	0.140	-130.0	157.3
1600	0.18	57.3	4.05	-82.0	0.142	-140.6	138.6
1700	0.26	7.80	3.72	-103.9	0.143	-152.6	121.6
1800	0.40	-24.8	3.27	-126.0	0.138	-166.3	116.0

Model: AC1508			Vcc= +12V			Icc= 38.16	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.36	1.41	12.28	-172		-17.5	
10	1.32	1.37	12.32	-177		-17.4	
20	1.32	1.34	12.36	180	0.86	-17.3	
50	1.33	1.32	12.41	173	0.48	-17.3	
100	1.34	1.31	12.40	165	0.45	-17.3	
200	1.32	1.32	12.32	150	0.41	-17.4	
300	1.33	1.31	12.27	136	0.40	-17.4	
400	1.36	1.32	12.30	121	0.41	-17.4	
500	1.38	1.31	12.36	107	0.41	-17.4	
600	1.39	1.28	12.43	91	0.43	-17.2	
700	1.42	1.29	12.47	76	0.43	-17.3	
800	1.48	1.23	12.54	61	0.44	-17.2	
900	1.53	1.18	12.60	45	0.44	-17.2	
1000	1.55	1.22	12.62	28	0.46	-17.2	
1100	1.57	1.22	12.67	12	0.47	-17.0	
1200	1.62	1.26	12.68	-5	0.48	-17.0	
1300	1.57	1.30	12.66	-24	0.52	-16.9	
1400	1.48	1.31	12.57	-42	0.54	-16.7	
1500	1.44	1.39	12.37	-62	0.57	-16.5	
1600	1.49	1.40	11.90	-84	0.60	-16.4	
1700	1.81	1.37	11.13	-106	0.61	-16.3	