

AC508

10 TO 500 MHz TO-8 CASCADABLE AMPLIFIER

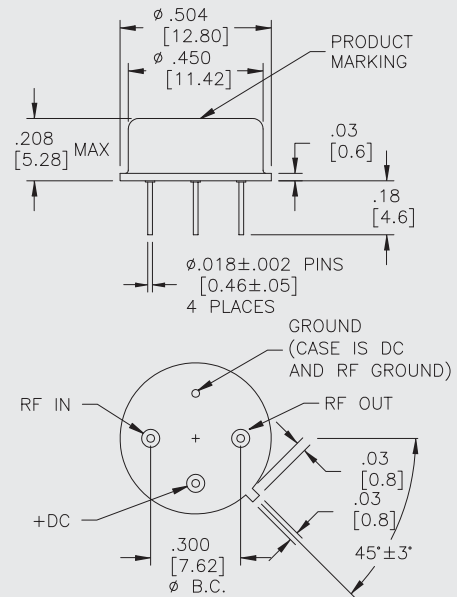
Typical Values

Medium Gain	13.5 dB
Medium Output Level	+19.5 dBm
High Reverse Isolation	18.0 dB
High Performance Thin Film Standard Size TO-8 Package	

AC508

AC508

TO-8 Package for Amplifiers



SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-500 MHz	10-500 MHz	10-500 MHz
Small Signal Gain (Min.)	13.5 dB	13.0 dB	12.5 dB
Gain Flatness (Max.)	±0.4 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)	3.5 dB	5.0 dB	5.5 dB
SWR (Max.) Input/Output	1.5:1	1.7:1	1.9:1
Power Output (Min.) @ 1dB comp.	+19.5 dBm	+18.5 dBm	+18.0 dBm
Reverse Isolation	18.0 dB	—	—
DC Current (Max.)	65 mA	68 mA	70 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 300 MHz

Second Order Harmonic Intercept Point	+52 dBm
Second Order Two Tone Intercept Point	+46 dBm
Third Order Two Tone Intercept Point	+33 dBm

AC508

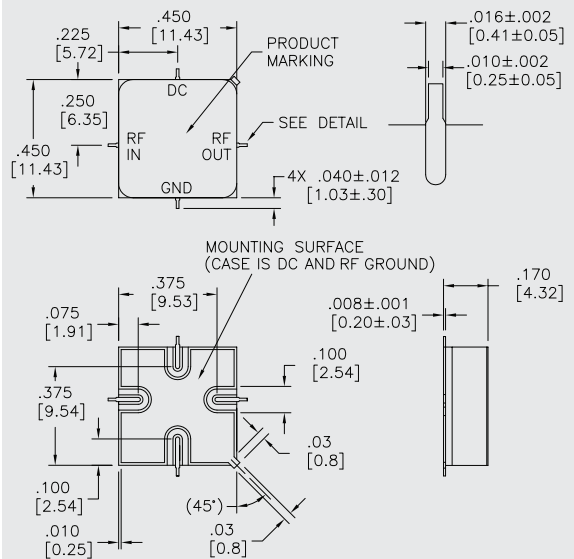
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to 150 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+18 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	+125 °C
Thermal Resistance ¹ (θjc)	29.0 °C/Watt
Junction Temperature Rise Above Case (Tjc)	29.0 °C

¹ Thermal resistance is based on total power dissipation.

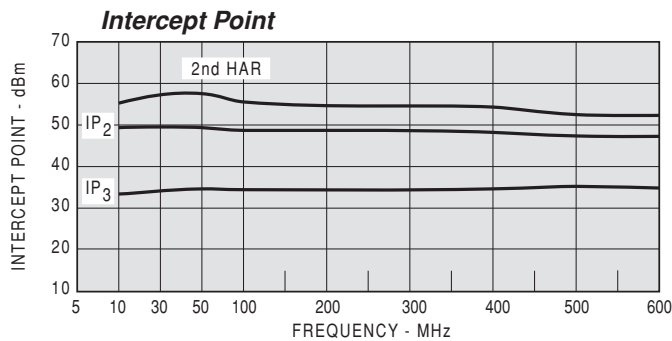
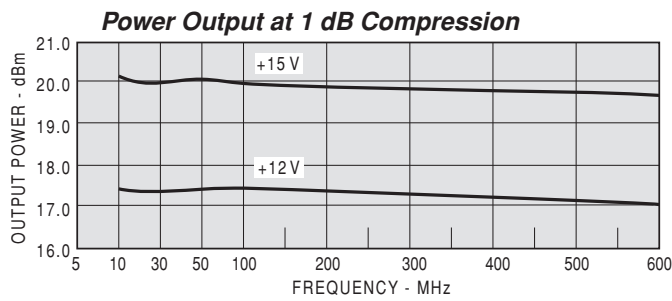
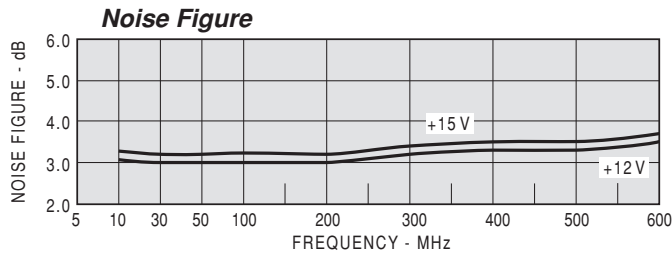
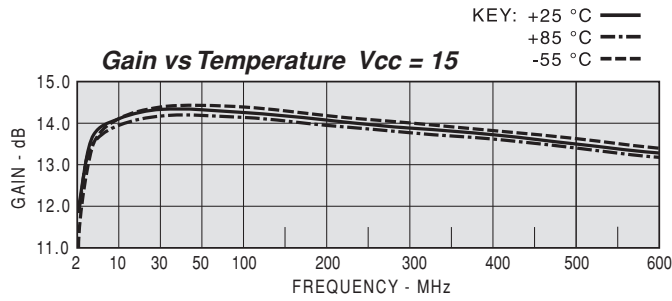
AS508

SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AC508		Vcc=+15V				Icc=65.67	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
2	3.26	2.10	12.09	-116	35.00	-19.4	
5	1.50	1.32	13.74	-154	35.00	-18.6	
10	1.25	1.21	14.09	-168	7.70	-18.4	
30	1.12	1.16	14.30	179	1.80	-18.3	
50	1.10	1.15	14.29	173	0.83	-18.3	
100	1.09	1.14	14.22	161	0.64	-18.3	
200	1.09	1.12	14.04	141	0.56	-18.2	
300	1.10	1.09	13.87	122	0.54	-18.0	
400	1.09	1.11	13.72	103	0.53	-17.8	
500	1.05	1.19	13.54	83	0.54	-17.3	
600	1.03	1.33	13.35	64	0.55	-17.0	

Model: AC508		LINEAR S-PARAMETERS								Icc=65.67	
		Vcc=+15V									
FREQ.	S11	S21		S12		S22					
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
2	0.53	-74.6	4.02	-116.2	0.107	63.1	0.35	-110.0			
5	0.20	-92.7	4.86	-154.0	0.118	23.7	0.14	-131.0			
10	0.11	-105.8	5.06	-167.8	0.120	11.4	0.09	-151.3			
30	0.06	-137.2	5.19	178.9	0.122	2.0	0.07	-172.6			
50	0.05	-150.8	5.18	172.9	0.121	-1.2	0.07	-176.5			
100	0.04	-160.5	5.14	161.4	0.121	-6.6	0.07	178.1			
200	0.04	-152.6	5.03	141.2	0.123	-14.9	0.06	175.2			
300	0.05	-153.0	4.94	121.9	0.126	-22.9	0.04	-174.4			
400	0.04	-163.5	4.85	102.7	0.129	-31.4	0.05	-144.3			
500	0.02	-178.8	4.75	83.3	0.136	-41.2	0.09	-133.9			
600	0.01	12.1	4.65	63.6	0.141	-51.2	0.14	-140.4			

Model: AC508		Vcc=+12V				Icc=51.91	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
2	3.21	2.04	11.98	-117	35.00	-19.3	
5	1.50	1.29	13.61	-154	35.00	-18.5	
10	1.24	1.18	13.98	-168	7.70	-18.3	
30	1.11	1.13	14.17	179	1.80	-18.1	
50	1.09	1.13	14.18	173	0.84	-18.2	
100	1.08	1.12	14.11	161	0.65	-18.2	
200	1.10	1.11	13.91	141	0.57	-18.1	
300	1.13	1.10	13.72	121	0.54	-17.9	
400	1.12	1.14	13.56	102	0.53	-17.6	
500	1.08	1.24	13.38	82	0.55	-17.2	
600	1.02	1.39	13.19	62	0.55	-16.8	

Model: AC508		LINEAR S-PARAMETERS								Icc=51.91	
		Vcc=+12V									
FREQ.	S11	S21		S12		S22					
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
2	0.52	-74.1	3.97	-116.6	0.109	62.7	0.34	-109.4			
5	0.20	-90.3	4.79	-154.0	0.119	23.5	0.13	-128.2			
10	0.11	-101.7	5.00	-168.0	0.121	11.4	0.08	-148.3			
30	0.05	-130.1	5.11	178.8	0.123	2.0	0.06	-169.5			
50	0.04	-142.3	5.11	172.8	0.123	-1.1	0.06	-173.6			
100	0.04	-148.9	5.08	161.1	0.123	-6.3	0.06	-175.6			
200	0.05	-140.9	4.96	140.7	0.124	-14.7	0.05	-174.1			
300	0.06	-147.1	4.85	121.2	0.128	-22.7	0.05	-157.7			
400	0.06	-160.5	4.77	102.0	0.132	-31.3	0.07	-135.8			
500	0.04	-179.7	4.67	82.3	0.138	-40.4	0.11	-133.6			
600	0.01	86.5	4.56	62.5	0.144	-50.9	0.16	-142.0			