

AC1082

10 TO 1000 MHz TO-8 CASCADABLE AMPLIFIERS

Typical Values

Low Noise	AC1082 3.5 dB
Wide Voltage Range	+5 to +8 Volts
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5-1100 MHz	10-1000 MHz	10-1000 MHz
Small Signal Gain (Min.)	14.8 dB	14.0 dB	13.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)	3.5 dB	4.5 dB	5.0 dB
SWR (Max.) Input/Output	< 1.6:1	1.8:1	1.8:1
Power Output (Min.) @ 1dB comp.	+12.8 dBm	+12.0 dBm	+11.5 dBm
Reverse Isolation	18.0 dB	—	—
DC Current (Max.)	30.0 mA	32.0 mA	34.0 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25 °C

Second Order Harmonic Intercept Point	AC1082 +43 dBm
Second Order Two Tone Intercept Point	+37 dBm
Third Order Two Tone Intercept Point	+26.5 dBm

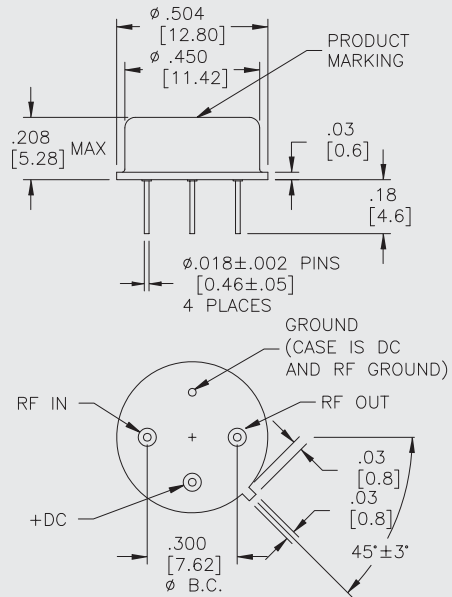
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+10 Volts
Maximum Continuous RF Input Power	+10 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance¹ (θjc)	+78 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+12.1 °C

¹Thermal resistance is based on total power dissipation.

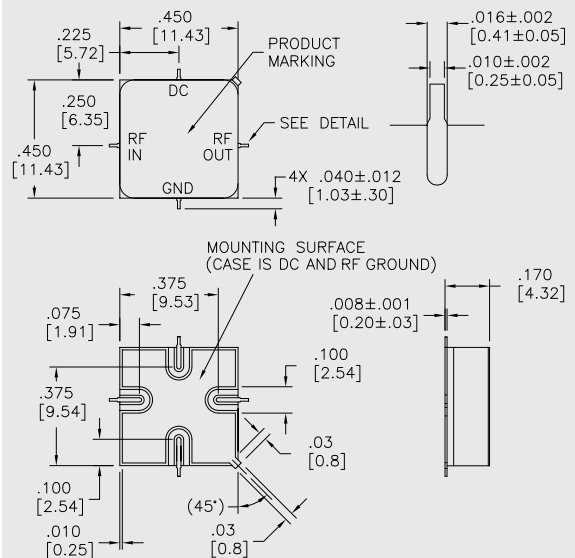
AC1082

TO-8 Package for Amplifiers



AS1082

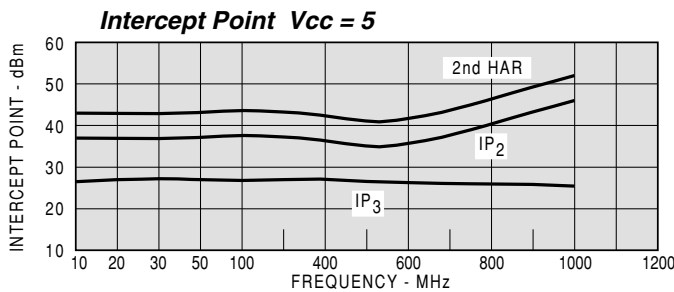
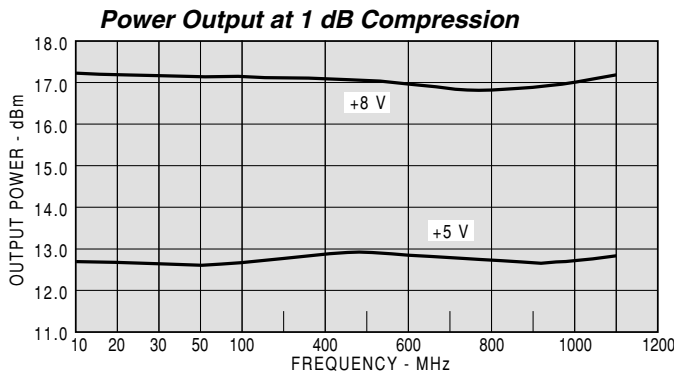
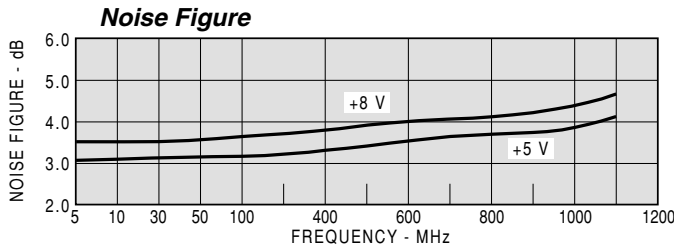
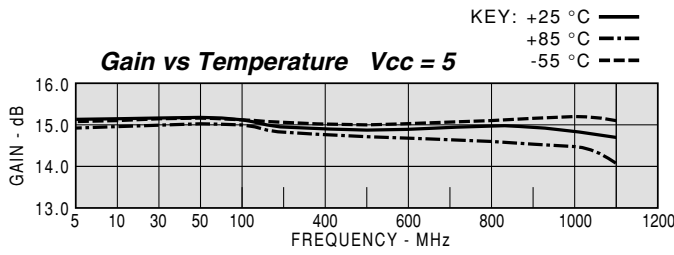
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC1082			Vcc=+5V			Icc=29.52	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT	DB	NSEC			
5	1.28	1.29	15.0				-19.4
10	1.19	1.15	15.0				-19.4
20	1.14	1.10	15.1				-19.3
50	1.14	1.08	15.1	0.713			-19.3
100	1.14	1.07	15.0	0.489			-19.3
200	1.20	1.08	14.9	0.500			-19.3
300	1.25	1.10	14.9	0.489			-19.1
400	1.30	1.13	14.9	0.489			-18.9
500	1.33	1.16	14.9	0.497			-18.5
600	1.37	1.20	14.8	0.510			-18.2
700	1.40	1.26	14.9	0.516			-17.7
800	1.44	1.33	14.9	0.550			-17.3
900	1.48	1.42	15.0	0.579			-16.7
1000	1.59	1.56	15.0	0.645			-16.3
1100	1.90	1.78	14.8	0.697			-15.9

Model: AC1082			LINEAR S-PARAMETERS						Icc=29.52	
			Vcc=+5V				S22			
FREQ.	S11		S21		S12		S22		MAG	ANG
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
5	0.12	-53.1	5.62	-169.7	0.107	12.0	0.13	92.4		
10	0.09	37.7	5.65	-176.0	0.107	6.0	0.07	72.7		
20	0.07	-30.7	5.66	179.1	0.108	2.0	0.05	45.4		
50	0.07	-26.0	5.70	171.5	0.109	-3.0	0.04	3.9		
100	0.07	-41.8	5.63	162.6	0.108	-7.0	0.03	-27.4		
200	0.09	-74.9	5.56	144.8	0.108	-14.0	0.04	-63.3		
300	0.11	-97.1	5.55	127.1	0.111	-22.0	0.05	-84.4		
400	0.13	-112.1	5.55	109.7	0.114	-29.0	0.06	-105.5		
500	0.14	-130.2	5.56	91.5	0.118	-38.0	0.07	-128.8		
600	0.16	-151.8	5.50	73.1	0.123	-47.0	0.09	-156.0		
700	0.17	-171.1	5.57	54.6	0.130	-57.0	0.11	179.3		
800	0.18	166.3	5.57	34.7	0.137	-68.0	0.14	153.5		
900	0.19	135.0	5.64	13.9	0.146	-81.0	0.17	124.1		
1000	0.23	94.0	5.59	-9.3	0.154	-96.0	0.22	90.5		
1100	0.31	48.6	5.51	-34.2	0.161	-113.0	0.28	53.3		
1200	0.45	8.9	5.07	-62.6	0.160	-133.0	0.35	13.0		

Model: AC1082			Vcc=+8V			Icc=48.59	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	DB	DB
MHZ	IN	OUT	DB	NSEC			
5	1.27	1.31	15.3				-19.6
10	1.18	1.15	15.3				-19.5
20	1.11	1.08	15.3				-19.5
50	1.11	1.04	15.4	0.694			-19.4
100	1.12	1.03	15.2	0.485			-19.5
200	1.14	1.03	15.2	0.486			-19.5
300	1.20	1.04	15.2	0.477			-19.4
400	1.24	1.07	15.1	0.478			-19.2
500	1.25	1.08	15.2	0.488			-18.9
600	1.28	1.10	15.2	0.493			-18.6
700	1.33	1.14	15.2	0.505			-18.3
800	1.35	1.19	15.3	0.521			-17.9
900	1.37	1.25	15.4	0.562			-17.5
1000	1.39	1.35	15.5	0.616			-17.0
1100	1.57	1.53	15.5	0.662			-16.6

Model: AC1082			LINEAR S-PARAMETERS						Icc=48.59	
			Vcc=+8V				S22			
FREQ.	S11		S21		S12		S22		MAG	ANG
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
5	0.12	-50.0	5.80	-169.0	0.105	12.0	0.13	101.5		
10	0.08	-47.9	5.82	-175.6	0.106	6.0	0.07	88.9		
20	0.05	-38.5	5.82	179.4	0.106	2.0	0.04	69.7		
50	0.05	-30.0	5.88	171.8	0.107	-3.0	0.02	28.1		
100	0.05	-42.5	5.79	163.0	0.106	-7.0	0.01	-11.6		
200	0.07	-72.1	5.73	145.6	0.106	-15.0	0.01	-46.4		
300	0.09	-92.0	5.72	128.4	0.108	-23.0	0.02	-59.3		
400	0.11	-102.6	5.71	111.5	0.110	-31.0	0.03	-79.9		
500	0.11	-118.9	5.73	93.9	0.113	-40.0	0.04	-103.2		
600	0.12	-137.2	5.72	75.9	0.117	-49.0	0.05	-135.1		
700	0.14	-153.3	5.77	57.9	0.122	-59.0	0.06	-164.8		
800	0.15	-173.3	5.81	38.9	0.127	-70.0	0.09	165.7		
900	0.16	156.5	5.90	19.0	0.134	-82.0	0.11	131.9		
1000	0.16	115.6	5.97	-3.3	0.141	-95.0	0.15	93.6		
1100	0.22	64.1	5.93	-27.2	0.148	-112.0	0.21	54.2		
1200	0.36	20.1	5.69	-55.2	0.150	-131.0	0.30	12.9		