

AC1017

10 TO 1000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC1017
High Output Level	+15.2 dBm
High Third Order I.P.	+30.0 dBm
Low Input VSWR	< 1.3:1
Wide Power Supply Range	+5 to 15 Volts
High Performance Thin Film Standard Size TO-8	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)		5-1100 MHz	10-1000 MHz
Small Signal Gain (Min.)	> 12.0 dB	11.5 dB	11.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)	4.2 dB	5.0 dB	5.5 dB
SWR (Max.) Input/Output	1.3:1	1.5:1	1.8:1
Power Output (Min.) @ 1dB comp.	+15.2 dBm	+14.5 dBm	+14.0 dBm
DC Current (Max.)	44.0 mA	47.0 mA	50.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC1017
Second Order Harmonic Intercept Point	+51 dBm
Second Order Two Tone Intercept Point	+45 dBm
Third Order Two Tone Intercept Point	+30 dBm

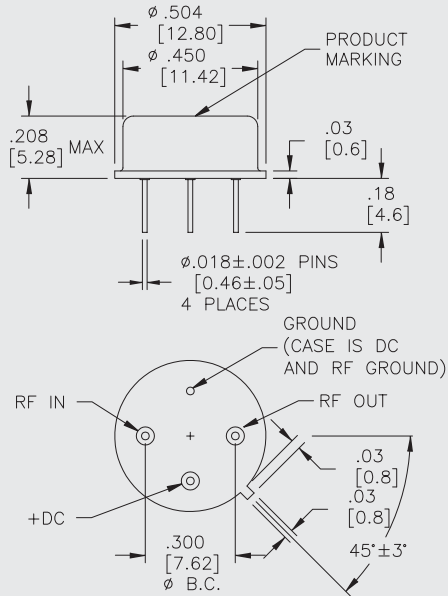
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+18 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	+100 °C
Thermal Resistance ¹ (θjc)	+48 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+34.0 °C

¹Thermal resistance is based on total power dissipation.

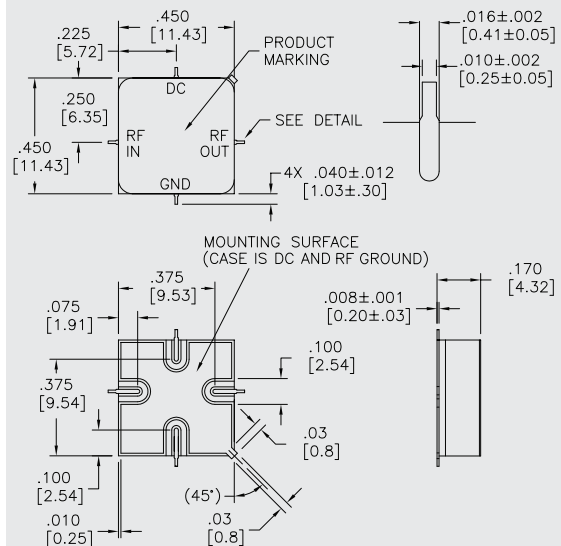
AC1017

TO-8 Package for Amplifiers



AS1017

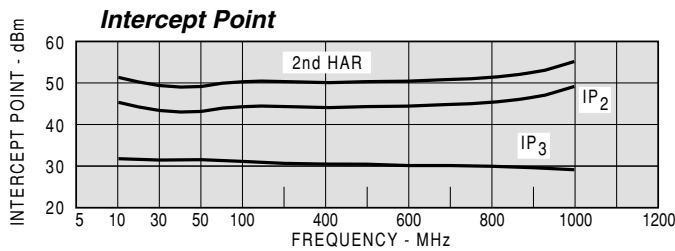
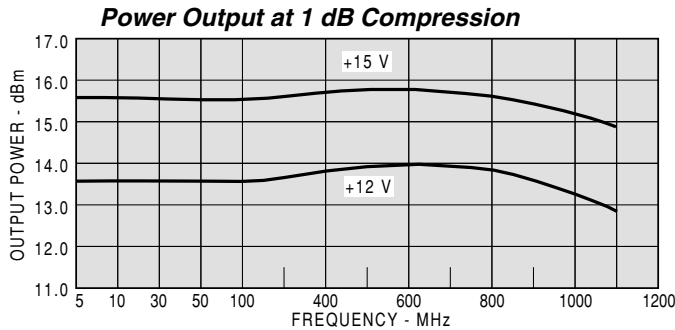
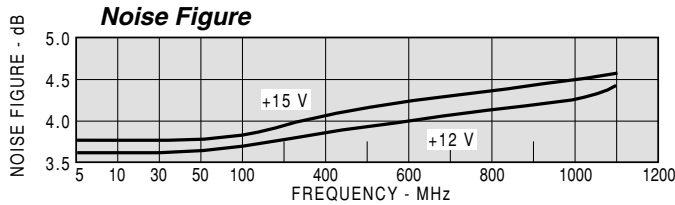
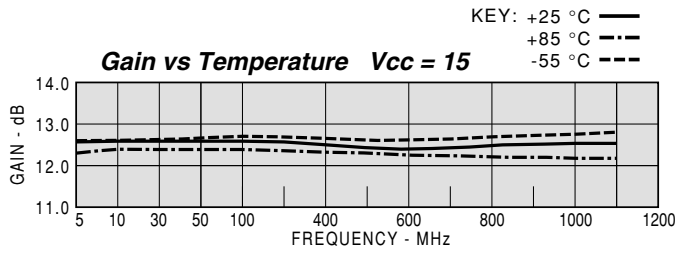
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC1017			Vcc=+15V		Icc=43.57	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	
MHZ	IN	OUT	DB	NSEC	DB	
5	1.21	1.20	12.4		-17.3	
10	1.13	1.11	12.4		-17.3	
20	1.09	1.06	12.4	1.101	-17.2	
50	1.09	1.03	12.5	0.541	-17.2	
100	1.09	1.02	12.5	0.428	-17.2	
200	1.12	1.02	12.3	0.394	-17.3	
300	1.13	1.04	12.3	0.363	-17.2	
400	1.15	1.05	12.3	0.391	-17.2	
500	1.15	1.08	12.3	0.393	-17.1	
600	1.17	1.10	12.3	0.305	-17.1	
700	1.19	1.12	12.3	0.415	-17.0	
800	1.20	1.16	12.3	0.398	-17.0	
900	1.22	1.19	12.3	0.401	-16.9	
1000	1.23	1.23	12.3	0.411	-16.9	
1100	1.23	1.26	12.3	0.424	-16.8	

Model: AC1017			LINEAR S-PARAMETERS						Icc=43.57	
			Vcc=+15V							
FREQ.	S11		S21		S12		S22		MAG	ANG
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
5	0.09	-58.6	4.15	-171.3	0.137	10.0	0.09	109.1		
10	0.06	-44.9	4.16	-176.7	0.137	5.0	0.05	103.5		
20	0.04	-26.7	4.17	179.7	0.138	2.0	0.03	91.0		
50	0.04	-30.8	4.19	173.8	0.138	-3.0	0.01	67.5		
100	0.04	-33.2	4.21	165.8	0.138	-7.0	0.01	36.7		
200	0.06	-52.6	4.12	151.8	0.137	-14.0	0.01	6.5		
300	0.06	-67.9	4.13	139.0	0.138	-22.0	0.02	-21.6		
400	0.07	-81.4	4.11	124.7	0.138	-29.0	0.03	-41.4		
500	0.07	-92.3	4.11	110.6	0.139	-37.0	0.04	-55.7		
600	0.08	-105.3	4.13	96.7	0.140	-44.0	0.05	-73.4		
700	0.09	-115.0	4.13	81.7	0.141	-53.0	0.06	-92.2		
800	0.09	-128.0	4.13	67.5	0.141	-61.0	0.07	-109.4		
900	0.10	-141.6	4.12	53.1	0.143	-69.0	0.09	-125.9		
1000	0.10	-162.8	4.12	38.1	0.143	-78.0	0.10	-141.1		
1100	0.10	-179.1	4.11	23.0	0.144	-87.0	0.11	-154.0		
1200	0.11	-153.7	4.13	7.2	0.146	-96.0	0.12	-166.8		
1300	0.11	130.4	4.13	-9.5	0.148	-106.0	0.11	179.9		

Model: AC1017			Vcc=+12V		Icc=34.50	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO	
MHZ	IN	OUT	DB	NSEC	DB	
5	1.20	1.19	12.3		-17.2	
10	1.14	1.10	12.3		-17.2	
20	1.09	1.06	12.3	1.089	-17.2	
50	1.10	1.03	12.4	0.541	-17.1	
100	1.10	1.03	12.4	0.443	-17.1	
200	1.12	1.03	12.2	0.389	-17.2	
300	1.15	1.05	12.2	0.362	-17.2	
400	1.17	1.07	12.2	0.397	-17.1	
500	1.18	1.09	12.2	0.394	-17.1	
600	1.18	1.11	12.2	0.389	-17.0	
700	1.21	1.15	12.2	0.423	-16.9	
800	1.21	1.18	12.2	0.396	-16.9	
900	1.23	1.22	12.2	0.404	-16.7	
1000	1.25	1.25	12.2	0.419	-16.7	
1100	1.26	1.28	12.1	0.424	-16.5	

Model: AC1017			LINEAR S-PARAMETERS						Icc=34.50	
			Vcc=+12V							
FREQ.	S11		S21		S12		S22		MAG	ANG
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
5	0.09	-55.4	4.11	-171.5	0.137	10.0	0.09	104.4		
10	0.07	-40.8	4.13	-176.5	0.137	5.0	0.05	95.5		
20	0.05	-23.0	4.14	179.5	0.139	2.0	0.03	77.3		
50	0.05	-30.4	4.16	173.6	0.139	-3.0	0.02	39.3		
100	0.05	-29.2	4.16	165.7	0.139	-7.0	0.01	2.0		
200	0.06	-53.0	4.07	151.6	0.138	-14.0	0.02	-28.5		
300	0.07	-71.0	4.09	138.6	0.139	-21.0	0.02	-48.7		
400	0.08	-83.1	4.08	124.3	0.139	-29.0	0.03	-66.5		
500	0.08	-97.4	4.07	110.1	0.140	-36.0	0.04	-79.0		
600	0.08	-110.6	4.08	96.0	0.142	-44.0	0.05	-94.7		
700	0.09	-122.5	4.08	81.0	0.143	-52.0	0.07	-111.5		
800	0.09	-138.8	4.07	66.6	0.144	-60.0	0.08	-126.5		
900	0.10	-152.8	4.07	52.1	0.146	-68.0	0.10	-141.3		
1000	0.11	-171.8	4.06	37.0	0.147	-76.0	0.11	-155.4		
1100	0.11	166.9	4.05	21.7	0.149	-85.0	0.12	-168.6		
1200	0.12	143.4	4.06	5.8	0.152	-95.0	0.13	177.5		
1300	0.11	115.9	4.06	-11.1	0.155	-105.0	0.12	162.1		