

AC1037 10 to 1000 MHz TO-8 Cascadable Amplifier

(Typical Values)

AC1037

High Reverse Isolation	48.0 dB
High Output Level	+ 18.5 dBm
High Third Order I.P.	+ 30 dBm
High Performance Thin Film Standard Size TO-8	

Specifications

Parameter	Typical	Guaranteed*	
		0 to 50°C	-55 to 85°C
Frequency (Min.)		10-1100 MHz	10-1000 MHz
Small Signal Gain (Min.)	10.8 dB	10.0 dB	9.5 dB
Gain Flatness (Max.)	± 0.4 dB	± 0.6 dB	± 0.8 dB
Noise Figure (Max.)			
100-250 MHz	6.0 [^] dB	7.5 dB	8.0 dB
250-1000 MHz	5.4 [^] dB	6.0 dB	6.5 dB
SWR (Max.) - Input/Output	< 1.6:1	1.8:1	2.0:1
Power Output @ 1dB comp. (Min.)	+ 18.5 dBm	+ 17.0 dBm	+ 16.5 dBm
Reverse Isolation			
10-500 MHz	48.0 [†] dB	30.0 dB	28.0 dB
DC Current (Max.)	50.0 mA	56.0 mA	60.0 mA

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

[^]< 13.5 dB below 100 MHz; NOT guaranteed below 100 MHz. [†]Typical at 100 MHz.

Intermodulation Performance

(Typical at 25° C, at 600 MHz)

V_{CC} = 12.0 V_{CC} = 15.0

Second Order Harmonic Intercept Point	+ 49 dBm	+ 42 dBm
Second Order Two Tone Intercept Point	+ 43 dBm	+ 36 dBm
Third Order Two Tone Intercept Point	+ 28 dBm	+ 30 dBm

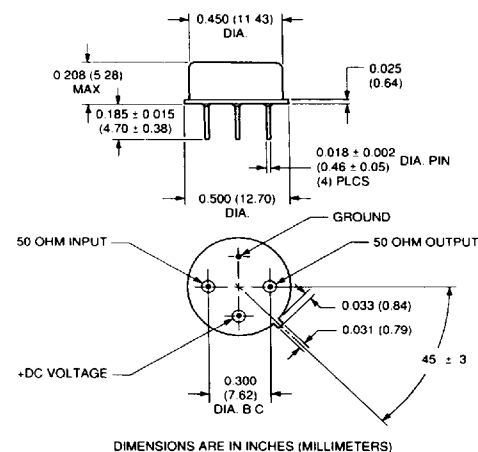
**Typical at 600 MHz.

Absolute Maximum Ratings

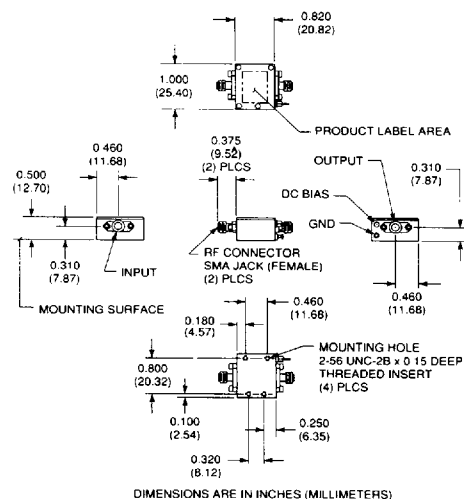
Ambient Operating Temperature	-55 to 110° C
Storage Temperature	-62 to 125° C
Maximum Case Temperature	+125° C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+17 dBm
Maximum Short Term Input Power (1 Minute Max.)	200 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Q Series Burn-in Temperature	+125° C

Outline Drawings

TO-8 Package for Amplifiers



Amplifier Case - connectorized

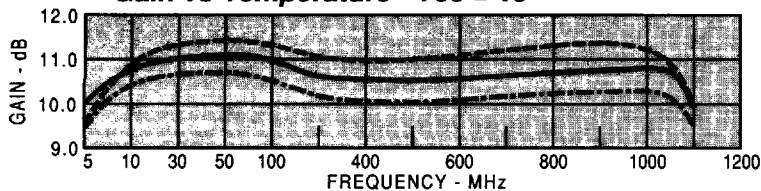


AC1037

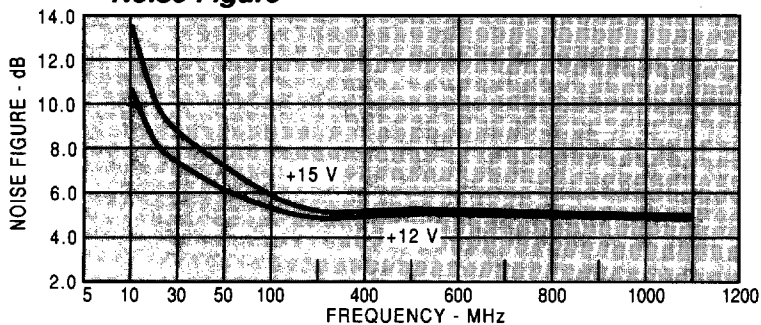
Typical Performance

KEY: +25 °C —
+85 °C - - -
-55 °C ---

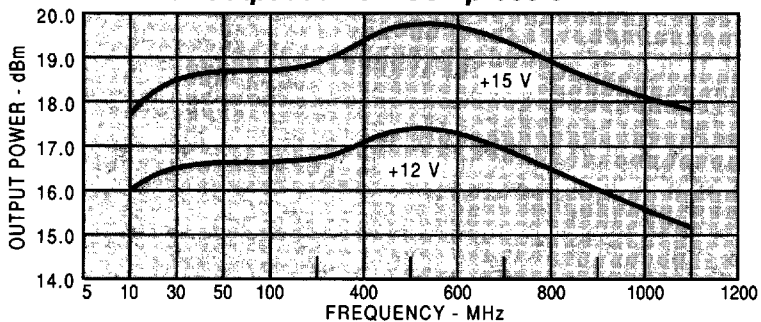
Gain vs Temperature Vcc = 15



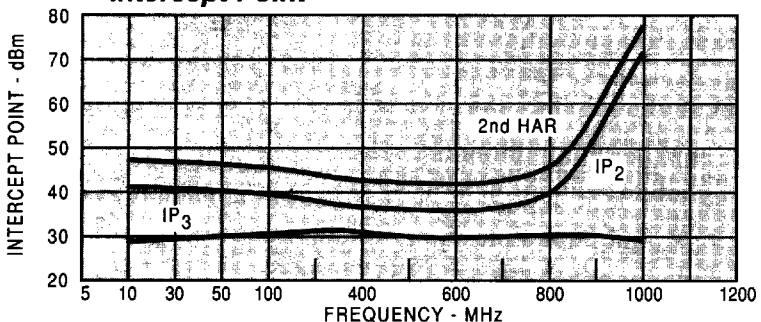
Noise Figure



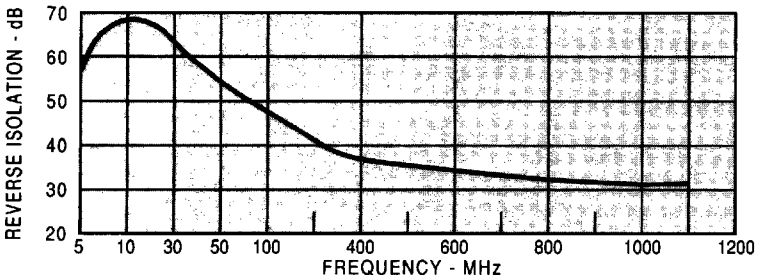
Power Output at 1 dB Compression



Intercept Point



Reverse Isolation



Typical Automatic Test Data

MODEL: AC1037

Vcc=+15V Icc= 50.87 mA

FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10.0	1.66	1.56	11.0		-71.9
20.0	1.65	1.43	11.2		-64.4
50.0	1.65	1.43	11.1	1.248	-52.3
100.0	1.64	1.44	11.0	.627	-46.4
200.0	1.58	1.41	10.8	.513	-40.6
300.0	1.52	1.48	10.8	.484	-37.6
400.0	1.46	1.60	10.8	.497	-35.6
500.0	1.41	1.72	10.8	.513	-34.1
600.0	1.35	1.77	10.8	.517	-33.0
700.0	1.32	1.73	10.8	.532	-31.9
800.0	1.30	1.60	10.9	.567	-31.0
900.0	1.32	1.44	10.9	.630	-30.1
1000.0	1.37	1.53	10.7	.700	-29.6
1100.0	1.46	2.17	10.1	.780	-29.4

LINEAR S-PARAMETERS

MODEL: AC1037

Vcc=+15V Icc= 50.87 mA

FREQ.	S11	S21	S12	S22
MHZ	MAG	ANG	MAG	ANG
10	.25	-1.7	3.53	-157.0
20	.24	-3.4	3.63	-172.0
50	.24	-8.6	3.60	174.5
100	.24	-17.0	3.54	163.2
200	.22	-32.2	3.47	144.9
300	.21	-47.2	3.46	127.3
400	.19	-62.5	3.46	109.3
500	.17	-77.0	3.45	91.1
600	.15	-94.1	3.45	72.5
700	.14	-113.9	3.46	53.3
800	.13	-136.8	3.49	32.9
900	.14	-164.9	3.51	10.3
1000	.15	164.1	3.44	-14.9
1100	.19	132.9	3.20	-43.0
1200	.22	103.4	2.72	-71.8

MODEL: AC1037

Vcc=+12V Icc= 44.51 mA

FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10.0	1.66	1.83	10.2		-72.1
20.0	1.65	1.69	10.4		-63.7
50.0	1.65	1.66	10.4	1.206	-52.8
100.0	1.63	1.65	10.3	.620	-46.4
200.0	1.58	1.57	10.2	.503	-40.6
300.0	1.52	1.56	10.2	.479	-37.4
400.0	1.46	1.60	10.2	.491	-35.3
500.0	1.41	1.64	10.2	.509	-33.8
600.0	1.36	1.65	10.3	.514	-32.5
700.0	1.32	1.59	10.4	.539	-31.4
800.0	1.30	1.46	10.4	.566	-30.5
900.0	1.32	1.37	10.4	.626	-29.6
1000.0	1.37	1.56	10.2	.693	-29.1
1100.0	1.46	2.26	9.6	.765	-29.0

LINEAR S-PARAMETERS

MODEL: AC1037

Vcc=+12V Icc= 44.51 mA

FREQ.	S11	S21	S12	S22
MHZ	MAG	ANG	MAG	ANG
10	.25	-1.7	3.22	-157.9
20	.25	-3.4	3.32	-171.9
50	.25	-8.3	3.33	175.1
100	.24	-16.6	3.29	163.9
200	.23	-31.9	3.23	145.8
300	.21	-46.8	3.24	128.5
400	.19	-61.9	3.25	110.9
500	.17	-76.6	3.25	92.7
600	.15	-93.2	3.27	74.1
700	.14	-112.6	3.29	54.9
800	.13	-135.5	3.32	34.3
900	.14	-163.7	3.33	11.7
1000	.16	165.9	3.25	-13.1
1100	.19	134.4	3.02	-40.7
1200	.22	104.2	2.58	-68.7



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