

AC1022 5 to 1000 MHz
AC1063 TO-8 Cascadable Amplifiers

(Typical Values)

(Typical Values)	AC1022	AC1063
Low Noise Figure	2.3 dB	2.5 dB
High Single Stage Gain	+ 16.2 dB	+ 16.2 dB
Low SWR	< 1.4:1	< 1.4:1
High Performance Thin Film Standard Size TO-8		

Specifications

Parameter		Typical	Guaranteed*	
			0 to 50°C	-55 to 85°C
Frequency (Min.)		1-1100 MHz	5-1000 MHz	5-1000 MHz
Small Signal Gain (Min.)		16.2 dB	15.5 dB	15.0 dB
Gain Flatness (Max.)		± 0.25 dB	± 0.5 dB	± 0.7 dB
Noise Figure (Max.)	AC1022 AC1063	2.3 dB 2.5 dB	2.8 dB 3.0 dB	3.5 dB 4.0 dB
SWR (Max.) - Input/Output		< 1.4:1	1.5:1	1.8:1
Power Output @ 1dB comp. (Min.)	AC1022 AC1063	- 2.0 dBm + 5.5 dBm	- 2.5 dBm + 3.0 dBm	- 3.0 dBm + 2.5 dBm
DC Current (Max.)	AC1022 AC1063	9.0 mA 14.0 mA	11.0 mA 16.0 mA	12.0 mA 18.0 mA

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

Intermodulation Performance

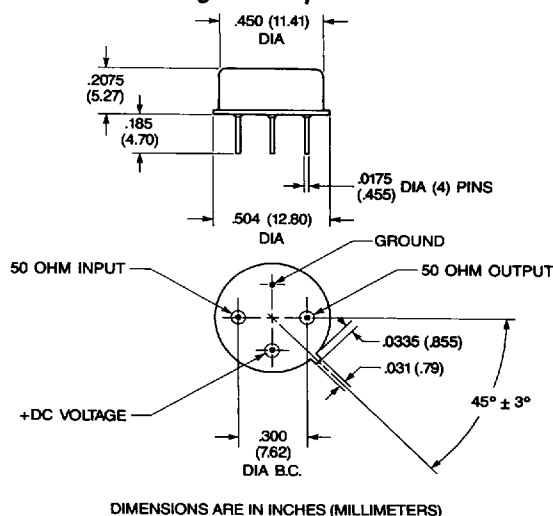
(Typical at 25 °C)	AC1022	AC1063
Second Order Harmonic Intercept Point	+ 17 dBm	+ 26 dBm
Second Order Two Tone Intercept Point	+ 11 dBm	+ 20 dBm
Third Order Two Tone Intercept Point	+ 11 dBm	+ 15 dBm

Absolute Maximum Ratings

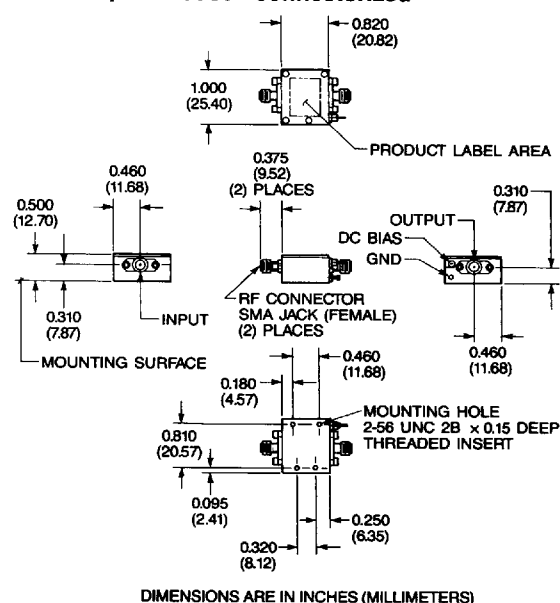
Ambient Operating Temperature	-55 to 125 °C
Storage Temperature	-62 to 125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+19 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Q Series Burn-in Temperature	+125 °C

Outline Drawings

TO-8 Package for Amplifiers



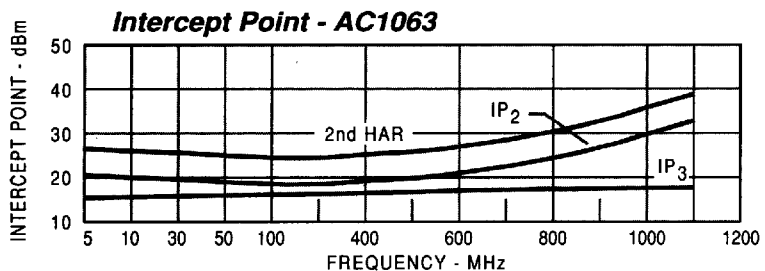
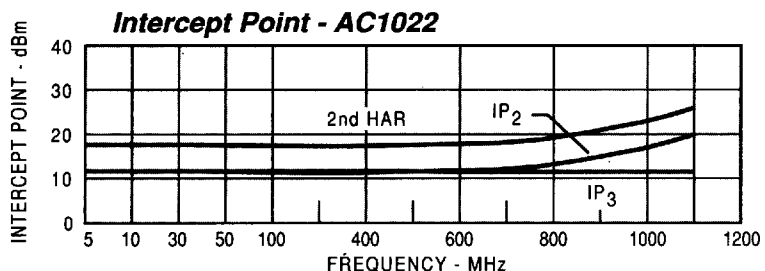
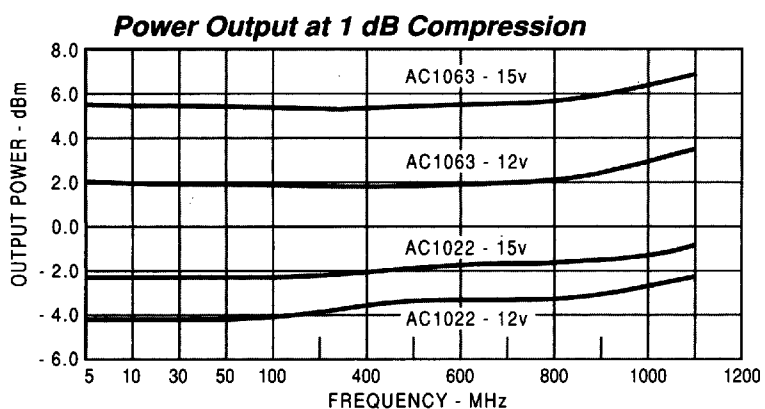
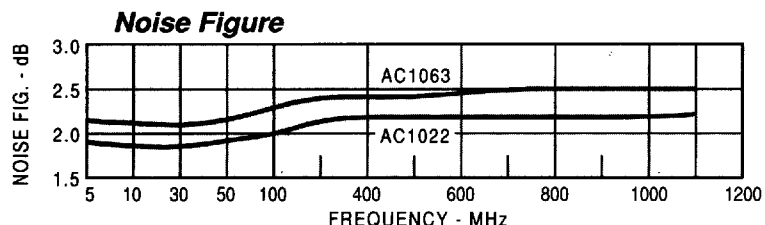
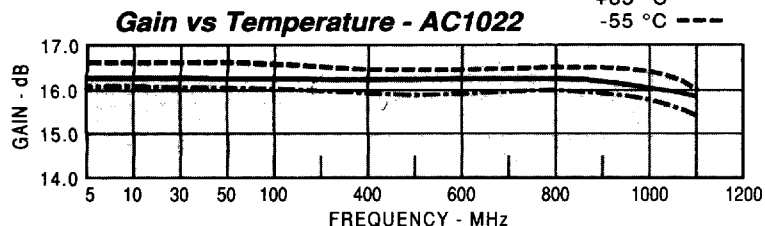
Amplifier Case - connectorized



AC1022/AC1063

Typical Performance

KEY: +25 °C —
+85 °C - - -
-55 °C ---



Typical Automatic Test Data

MODEL:AC1022		Vcc=15V		Icc= 8.86 mA	
FREQUENCY	USWR	USWR	GAIN	GROUP DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
5.0	1.25	1.23	16.1		-19.8
10.0	1.24	1.23	16.1		-19.8
20.0	1.27	1.23	16.1	.792	-19.8
50.0	1.25	1.22	16.1	.558	-19.8
100.0	1.26	1.22	16.0	.452	-19.9
200.0	1.26	1.23	15.9	.477	-20.0
300.0	1.25	1.23	15.9	.475	-20.1
400.0	1.24	1.24	15.8	.465	-20.2
500.0	1.24	1.24	15.9	.473	-20.3
600.0	1.25	1.23	15.9	.489	-20.4
700.0	1.20	1.19	16.0	.484	-20.5
800.0	1.16	1.13	16.0	.530	-20.8
900.0	1.12	1.07	16.1	.550	-20.9
1000.0	1.13	1.02	16.0	.605	-21.1
1100.0	1.27	1.10	15.7	.620	-21.1

LINEAR S-PARAMETERS **B-74-13-51**

MODEL:AC1022		Vcc=15V		Icc= 8.86 mA	
FREQ.	S11	S21	S12	S22	
MHZ	MAG ANG	MAG ANG	MAG ANG	MAG ANG	
5	.11 -171.4	6.41 -177.5	.102 4	.10 -172.2	
10	.11 -177.6	6.40 179.8	.102 1	.10 -179.1	
20	.12 176.2	6.36 176.9	.102 -1	.10 174.8	
50	.11 169.8	6.37 170.8	.102 -4	.10 164.8	
100	.11 160.0	6.31 162.8	.102 -8	.10 150.9	
200	.11 137.2	6.25 145.6	.100 -17	.10 124.7	
300	.11 118.3	6.22 128.4	.099 -25	.10 97.6	
400	.11 93.4	6.20 111.5	.098 -33	.11 72.8	
500	.11 72.5	6.23 94.9	.096 -41	.11 50.4	
600	.11 50.1	6.20 77.2	.096 -49	.10 31.0	
700	.09 44.2	6.29 59.4	.094 -57	.09 10.2	
800	.07 33.3	6.32 40.5	.091 -65	.06 -13.2	
900	.06 43.7	6.36 20.7	.090 -73	.05 -46.1	
1000	.06 72.6	6.32 -1.0	.088 -80	.01 -160.4	
1100	.12 72.8	6.12 -23.3	.088 -88	.05 117.9	
1200	.20 64.3	5.70 -47.4	.089 -95	.08 85.9	

MODEL:AC1063		Vcc=15V		Icc= 14.46 mA	
FREQUENCY	USWR	USWR	GAIN	GROUP DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
5.0	1.17	1.12	16.1		-20.3
10.0	1.18	1.12	16.1		-20.3
20.0	1.18	1.12	16.1	.787	-20.2
50.0	1.18	1.12	16.1	.540	-20.2
100.0	1.17	1.12	16.0	.434	-20.3
200.0	1.17	1.13	16.0	.466	-20.3
300.0	1.19	1.14	15.9	.460	-20.4
400.0	1.23	1.15	15.9	.457	-20.5
500.0	1.23	1.14	16.0	.465	-20.5
600.0	1.22	1.12	16.0	.474	-20.6
700.0	1.25	1.11	16.1	.487	-20.5
800.0	1.28	1.15	16.2	.514	-20.5
900.0	1.30	1.22	16.3	.545	-20.4
1000.0	1.31	1.34	16.2	.593	-20.2
1100.0	1.36	1.49	15.9	.613	-19.8

LINEAR S-PARAMETERS

MODEL:AC1063		Vcc=15V		Icc= 14.46 mA	
FREQ.	S11	S21	S12	S22	
MHZ	MAG ANG	MAG ANG	MAG ANG	MAG ANG	
5	.08 -5.2	6.41 -177.9	.097 4	.05 -10.1	
10	.08 -3.4	6.40 179.9	.097 1	.06 -4.4	
20	.08 -4	6.37 177.1	.097 -0	.06 -1.4	
50	.08 -3	6.39 171.2	.097 -4	.06 -1.2	
100	.08 -5.9	6.33 163.5	.097 -8	.06 -3.5	
200	.08 -13.2	6.31 146.5	.096 -15	.06 -8.7	
300	.09 -25.7	6.24 129.9	.095 -22	.07 -18.2	
400	.10 -36.9	6.24 113.5	.095 -29	.07 -32.1	
500	.10 -46.6	6.28 97.0	.094 -35	.06 -48.6	
600	.10 -61.6	6.31 79.7	.094 -43	.05 -76.1	
700	.11 -83.9	6.38 62.3	.094 -50	.05 -119.8	
800	.12 -106.6	6.43 43.9	.094 -57	.07 -166.6	
900	.13 -135.7	6.51 24.2	.095 -63	.10 155.2	
1000	.13 -167.7	6.45 2.7	.098 -70	.14 121.5	
1100	.15 153.3	6.25 -19.4	.102 -78	.20 92.5	
1200	.20 116.1	5.79 -42.6	.107 -87	.24 64.8	



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