COUGAR COMPONENTS
2225-K Martin Avenue, Santa Clara, CA 95050 (408) 492-1400
FAX (408) 492-1500

AR3056 100 to 3000 MHz TO-8 Cascadable Amplifier

(Typical Values)	AR3056
Ultra Broad Bandwidth	100-3000 MHz
Low Noise Figure above 1.0 GHz	3.0 dB
High Output Level at + 5.0 volts	+ 17.5 dBm

High Performance Thin Film
TO-8B Package

Specifications

Parameter	Typical	Guaranteed* 0 to 50 °C	Guaranteed* - 55 to 85 °C
Frequency (Min.)	**50-3200 MHz**	**100-3000 MHz**	**100-3000 MHz**
Small Signal Gain (Min.)	19.5 dB	18.0 dB	17.5 dB
Gain Flatness (Max.)	± 0.4 dB	± 0.5 dB	± 0.7 dB
Noise Figure (Max.)	3.0^ dB	4.0^ dB	4.5^ dB
SWR (Max.) Input/Output	1.6:1	1.8:1	2.0:1
Power Output @ 1dB comp. (Min.)	+ 17.5 dBm	+ 16.5 dBm	+ 16.0 dBm
DC Current (Max.)	80.0 mA	85.0 mA	90.0 mA

*Measured in a 50-ohm system at +5.0 Vdc unless otherwise specified.
^0.5 dB higher below 500 MHz.

Intermodulation Performance

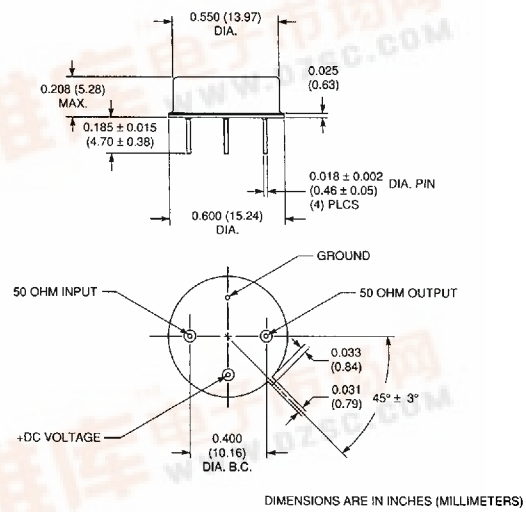
(Typical at 25° C)	AR3056
Second Order Harmonic Intercept Point	+ 52 dBm
Second Order Two Tone Intercept Point	+ 46 dBm
Third Order Two Tone Intercept Point	+ 26 dBm

Absolute Maximum Ratings

Storage Temperature	-62 to 125° C
Maximum Case Temperature	+125° C
Maximum DC Voltage	+ 8 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	125 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Q Series Burn-in Temperature	+125° C

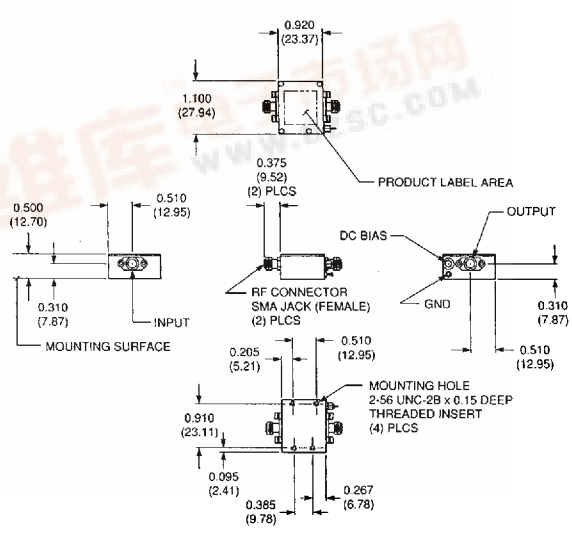
Outline Drawings

TO-8B Package for Amplifiers



DIMENSIONS ARE IN INCHES (MILLIMETERS)

Amplifier Case - connectorized



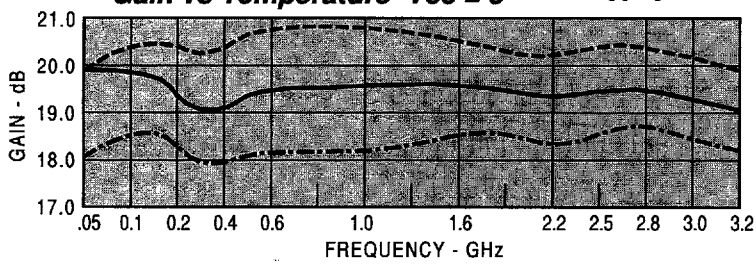
DIMENSIONS ARE IN INCHES (MILLIMETERS)

AR3056

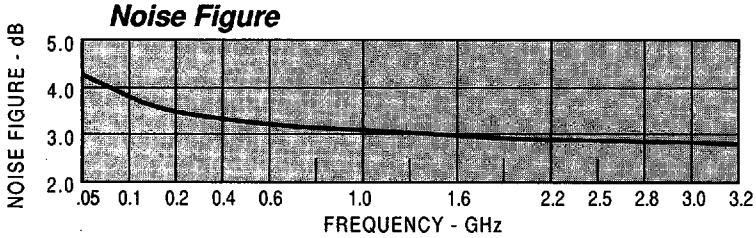
Typical Performance

KEY: +25 °C ——
+85 °C –·–
-55 °C – – –

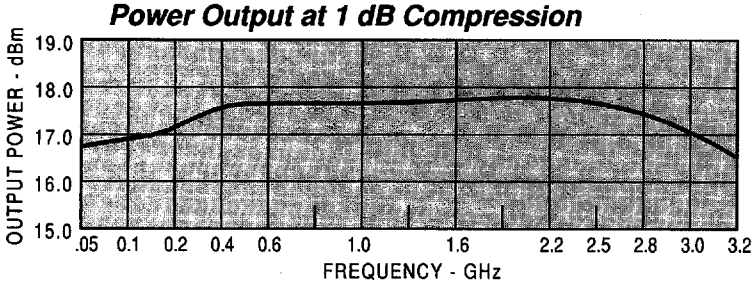
Gain vs Temperature Vcc = 5



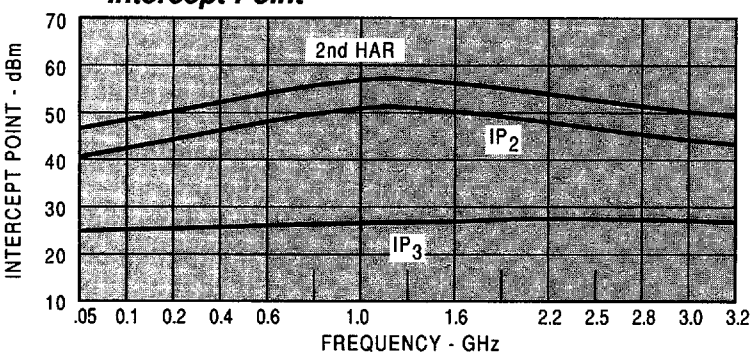
Noise Figure



Power Output at 1 dB Compression



Intercept Point



Typical Automatic Test Data

MODEL:AR3056 Vcc=+5V Icc= 80.18 mA

FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
50.0	1.19	1.26	20.1	.881	-35.0
100.0	1.14	1.24	20.0	.881	-34.9
200.0	1.15	1.19	19.5	.484	-34.4
400.0	1.20	1.20	19.5	.333	-34.2
600.0	1.23	1.24	19.6	.361	-34.4
800.0	1.25	1.28	19.7	.360	-34.2
1000.0	1.27	1.32	19.8	.364	-34.4
1200.0	1.28	1.36	19.7	.364	-34.2
1400.0	1.29	1.40	19.7	.371	-33.9
1600.0	1.29	1.43	19.6	.362	-33.7
1800.0	1.30	1.44	19.6	.362	-33.5
2000.0	1.30	1.44	19.6	.357	-33.0
2200.0	1.30	1.41	19.6	.367	-32.3
2400.0	1.29	1.39	19.6	.384	-31.5
2600.0	1.27	1.39	19.6	.380	-30.9
2800.0	1.23	1.37	19.6	.389	-30.3
3000.0	1.12	1.35	19.4	.418	-30.1
3200.0	1.18	1.39	19.3	.417	-29.7

LINEAR S-PARAMETERS

MODEL:AR3056 Vcc=+5V Icc= 80.18 mA

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
50	.09	-53.9	10.08	8.8	.018	15	.11	156.0
100	.06	-25.3	10.05	-7.1	.018	7	.11	150.2
200	.07	4.5	9.42	-24.5	.019	-0	.09	136.2
400	.09	8.7	9.43	-48.5	.020	-15	.09	126.4
600	.10	5.1	9.60	-74.4	.019	-25	.11	109.1
800	.11	-2.5	9.68	-100.3	.019	-34	.12	91.9
1000	.12	-11.2	9.74	-126.5	.019	-44	.14	74.6
1200	.12	-21.6	9.72	-152.7	.019	-54	.15	56.9
1400	.13	-30.4	9.70	-179.4	.020	-65	.17	39.7
1600	.13	-37.5	9.53	154.6	.021	-77	.18	19.8
1800	.13	-50.1	9.50	128.5	.021	-89	.18	-1.5
2000	.13	-61.3	9.53	102.8	.022	-104	.18	-25.7
2200	.13	-75.3	9.50	76.3	.024	-118	.17	-50.6
2400	.13	-91.1	9.57	48.7	.027	-134	.16	-80.6
2600	.12	-112.7	9.59	21.4	.029	-151	.16	-115.1
2800	.10	-147.3	9.57	-6.7	.031	-169	.16	-154.3
3000	.06	148.5	9.34	-36.8	.031	174	.15	163.8
3200	.08	61.5	9.25	-66.8	.033	160	.16	124.2
3400	.17	25.7	9.27	-100.7	.035	142	.24	86.8

COUGAR