

AR3056

100 TO 3000 MHz TO-8B CASCADABLE AMPLIFIER

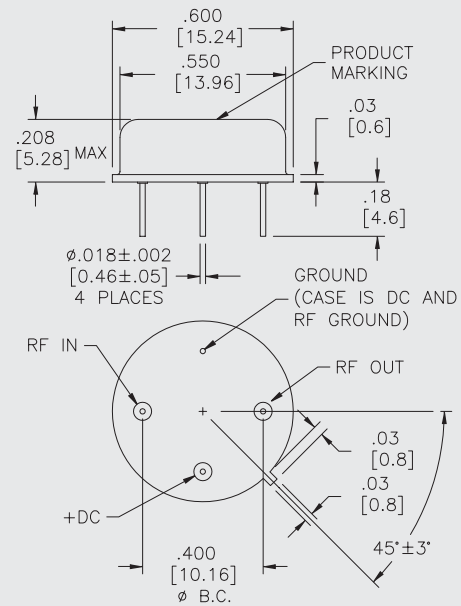
Typical Values

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	

AR3056

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TO-8B Package for Amplifiers



SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-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.)	±0.5 dB	±0.7 dB	±0.9 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 (Min.) @ 1dB comp.	+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 @ 25 °C

Second Order Harmonic Intercept Point	+52 dBm
Second Order Two Tone Intercept Point	+46 dBm
Third Order Two Tone Intercept Point	+26 dBm

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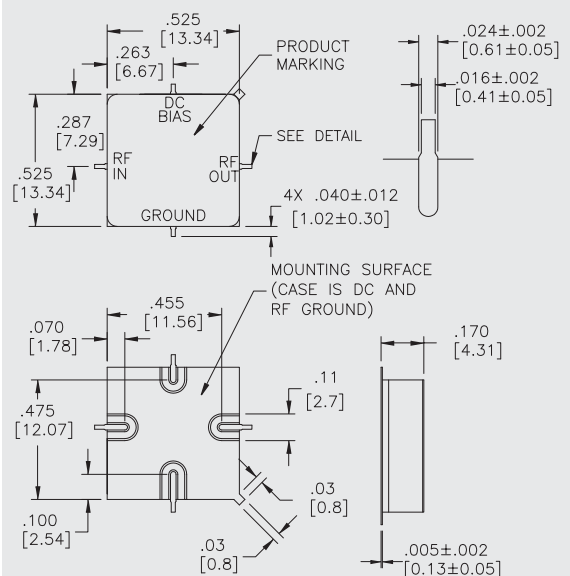
ABSOLUTE MAXIMUM RATINGS

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
Burn-in Temperature	+125 °C
Thermal Resistance ¹ (θjc)	+64 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+28.2 °C

¹Thermal resistance is based on total power dissipation.

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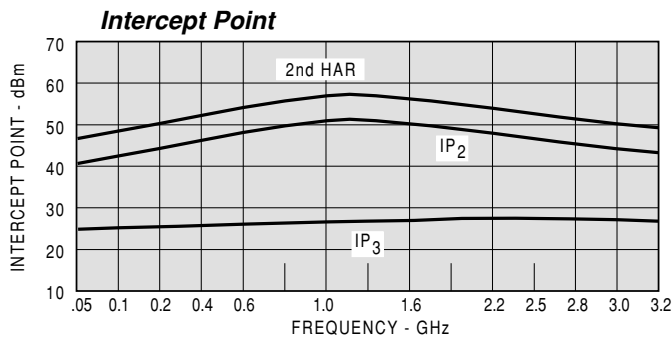
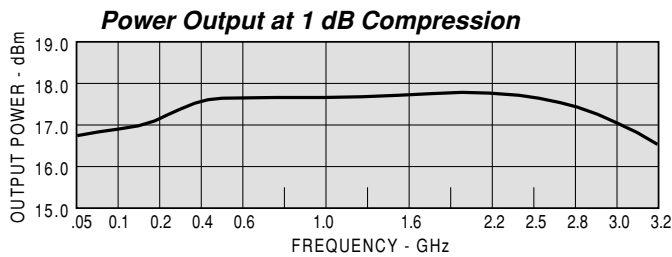
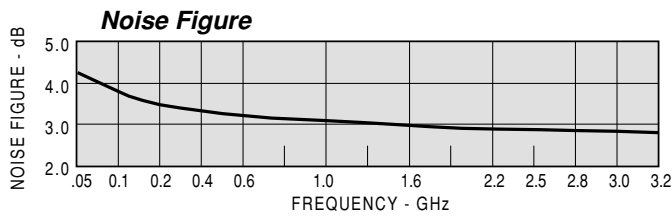
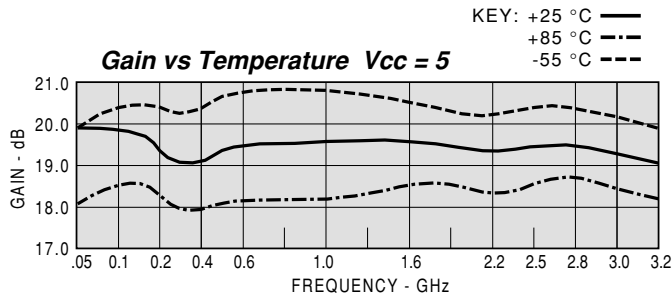
SMT0-8B Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



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

FREQ.Y	VSWR	VSWR	GAIN	GROUP DELAY	REV/ISO
MHZ	IN	OUT	DB	NSEC	DB
50	1.19	1.26	20.1	0.881	-35.0
100	1.14	1.24	20.0	0.881	-34.9
200	1.15	1.19	19.5	0.484	-34.4
400	1.20	1.20	19.5	0.333	-34.2
600	1.23	1.24	19.6	0.361	-34.4
800	1.25	1.28	19.7	0.360	-34.2
1000	1.27	1.32	19.8	0.364	-34.4
1200	1.28	1.36	19.7	0.364	-34.2
1400	1.29	1.40	19.7	0.371	-33.9
1600	1.29	1.43	19.6	0.362	-33.7
1800	1.30	1.44	19.6	0.362	-33.5
2000	1.30	1.44	19.6	0.357	-33.0
2200	1.30	1.41	19.6	0.367	-32.3
2400	1.29	1.39	19.6	0.384	-31.5
2600	1.27	1.39	19.6	0.380	-30.9
2800	1.23	1.37	19.6	0.389	-30.3
3000	1.12	1.35	19.4	0.418	-30.1
3200	1.18	1.39	19.3	0.417	-29.7

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

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
50	0.09	-53.9	10.08	8.8	0.018	15	0.11	156.0
100	0.06	-25.3	10.05	-7.1	0.018	7	0.11	150.2
200	0.07	4.5	9.42	-24.5	0.019	-0	0.09	136.2
400	0.09	8.7	9.43	-48.5	0.020	-15	0.09	126.4
600	0.10	5.1	9.60	-74.4	0.019	-25	0.11	109.1
800	0.11	-2.5	9.68	-100.3	0.019	-34	0.12	91.9
1000	0.12	-11.2	9.74	-126.5	0.019	-44	0.14	74.6
1200	0.12	-21.6	9.72	-152.7	0.019	-54	0.15	56.9
1400	0.13	-30.4	9.70	-179.4	0.020	-65	0.17	39.7
1600	0.13	-37.5	9.53	154.6	0.021	-77	0.18	19.8
1800	0.13	-50.1	9.50	128.5	0.021	-89	0.18	-1.5
2000	0.13	-61.3	9.53	102.8	0.022	-104	0.18	-25.7
2200	0.13	-75.3	9.50	76.3	0.024	-118	0.17	-50.6
2400	0.13	-91.1	9.57	48.7	0.027	-134	0.16	-80.6
2600	0.12	-112.7	9.59	21.4	0.029	-151	0.16	-115.1
2800	0.10	-147.3	9.57	-6.7	0.031	-169	0.16	-154.3
3000	0.06	148.5	9.34	-36.8	0.031	174	0.15	163.8
3200	0.08	61.5	9.25	-66.8	0.033	160	0.16	124.2
3400	0.17	25.7	9.27	-100.7	0.035	142	0.24	86.8