

# AR2067

## 100 TO 2000 MHz TO-8B CASCADABLE AMPLIFIER

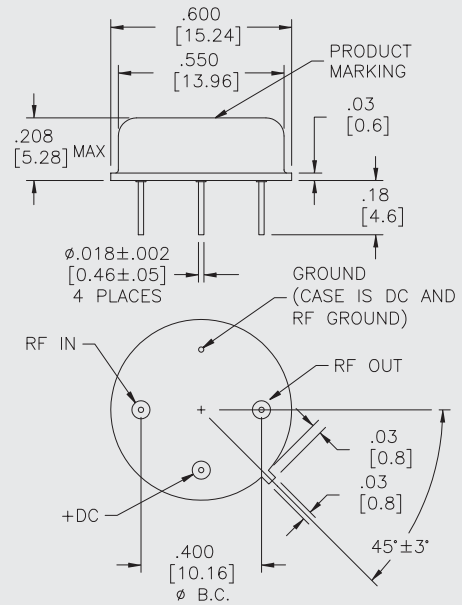
**Typical Values**

<b>High Gain</b> .....	<b>21.5 dB</b>
<b>High Power Output</b> .....	<b>+22.0 dBm</b>
<b>Low Noise Figure</b> .....	<b>2.5 dB</b>
<b>High Reverse Isolation</b> .....	<b>36 dB</b>
<b>High Second Order I.P.</b> .....	<b>+62 dBm</b>
<b>High Performance Thin Film</b>	
<b>Standard Size TO-8B Package</b>	

**AR2067**

### AR2067

**TO-8B Package for Amplifiers**



## SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	50-2000 MHz	100-2000 MHz	100-2000 MHz
Small Signal Gain (Min.)	21.5 dB	20.0 dB	19.5 dB
Gain Flatness (Max.)	±0.5 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)	2.5 dB	3.8 dB	4.2 dB
SWR (Max.) Input/Output	1.7:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	+22.0 dBm	+21.5 dBm	+21.0 dBm
Reverse Isolation	36.0 dB	—	—
DC Current (Max.)	160 mA	165 mA	175 mA

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

## INTERMODULATION PERFORMANCE

Typical @ 25 °C; 1000 MHz

<b>Second Order Harmonic Intercept Point</b> .....	<b>+66 dBm</b>
<b>Second Order Two Tone Intercept Point</b> .....	<b>+62 dBm</b>
<b>Third Order Two Tone Intercept Point</b> .....	<b>+33 dBm</b>

**AR2067**

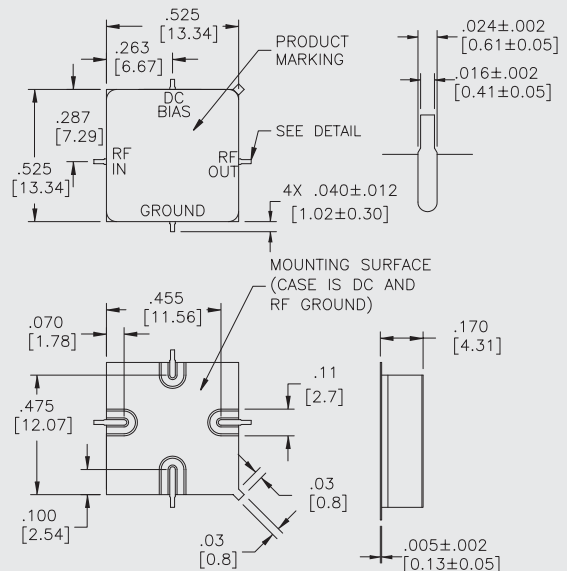
## ABSOLUTE MAXIMUM RATINGS

<b>Storage Temperature</b> .....	<b>-65 to +150 °C</b>
<b>Maximum Case Temperature</b> .....	<b>+125 °C</b>
<b>Maximum DC Voltage</b> .....	<b>+17 Volts</b>
<b>Maximum Continuous RF Input Power</b> .....	<b>+20 dBm</b>
<b>Maximum Short Term Input Power (1 Minute Max.)</b> .....	<b>125 Milliwatts</b>
<b>Maximum Peak Power (3 μsec Max.)</b> .....	<b>0.5 Watt</b>
<b>Burn-in Temperature</b> .....	<b>+125°C</b>
<b>Thermal Resistance<sup>1</sup> (θjc)</b> .....	<b>+8.5 °C/Watt</b>
<b>Junction Temperature Rise Above Case (Tjc)</b> .....	<b>+22.0 °C</b>

<sup>1</sup> Thermal resistance is based on total power dissipation.

### ARS2067

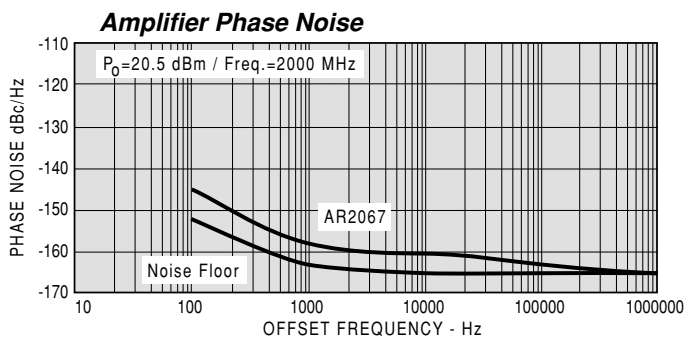
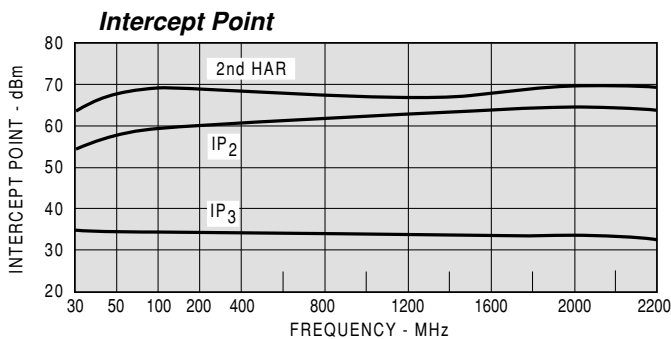
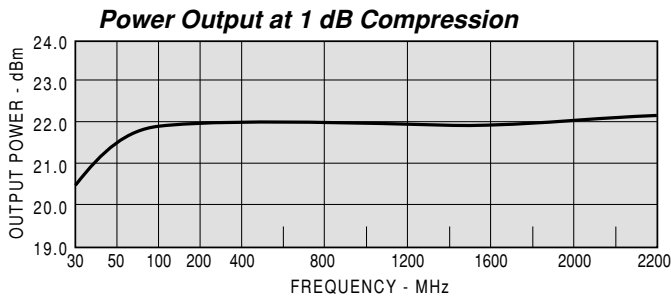
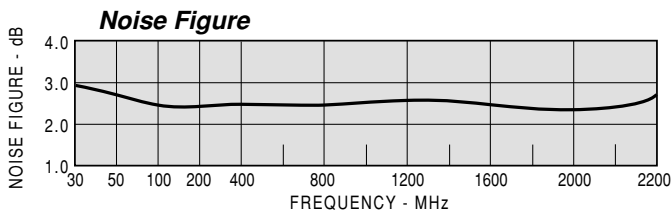
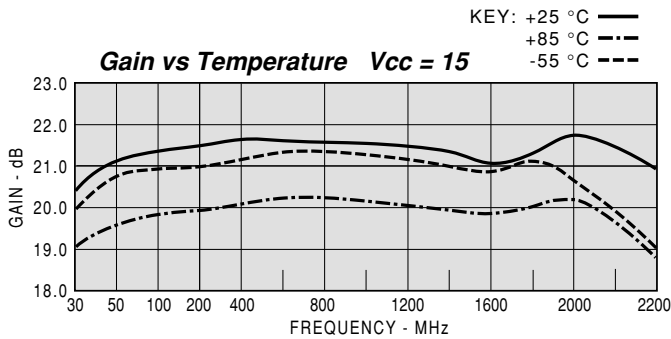
**SMT0-8B Package for Amplifiers**



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AR2067 Vcc=+15V Icc=160.96

FREQ. MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	GROUP DELAY NSEC	REV/ISO DB
20	1.12	1.01	20.41	34		-37.1
50	1.08	1.23	21.21	7		-37.5
100	1.08	1.28	21.41	-11	0.98	-37.5
200	1.10	1.31	21.53	-32	0.58	-37.4
400	1.13	1.39	21.55	-73	0.57	-37.0
600	1.19	1.46	21.41	-111	0.53	-36.6
800	1.29	1.47	21.31	-149	0.53	-36.4
1000	1.41	1.41	21.22	173	0.52	-37.1
1200	1.53	1.34	21.16	134	0.54	-36.2
1400	1.64	1.26	20.99	95	0.55	-36.5
1600	1.67	1.22	20.67	55	0.55	-35.7
1800	1.53	1.23	20.98	15	0.55	-35.1
2000	1.41	1.28	21.56	-32	0.65	-33.9
2200	1.92	1.45	21.13	-89	0.80	-33.0

Model: AR2067 Vcc=+15V Icc=160.96

LINEAR S-PARAMETERS

FREQ. MHZ	MAG S11	ANG S11	MAG S21	ANG S21	MAG S12	ANG S12	MAG S22	ANG S22
20	0.06	-62.4	10.48	33.6	0.014	7.3	0.01	-131.0
50	0.04	-29.6	11.50	6.6	0.013	3.0	0.10	-158.7
100	0.04	-8.0	11.76	-11.1	0.013	-2.4	0.12	-165.3
200	0.05	-37.8	11.92	-31.9	0.013	-4.9	0.13	-175.0
400	0.06	-45.0	11.96	-72.6	0.014	-11.6	0.16	176.5
600	0.09	-60.9	11.76	-111.0	0.015	-23.5	0.19	158.5
800	0.13	-75.8	11.62	-148.8	0.015	-36.8	0.19	138.0
1000	0.17	-91.0	11.51	173.4	0.014	-51.1	0.17	115.0
1200	0.21	-106.6	11.43	134.4	0.016	-63.3	0.15	85.7
1400	0.24	-123.2	11.21	94.7	0.015	-80.6	0.11	49.4
1600	0.25	-150.4	10.80	55.0	0.016	-93.0	0.10	21.8
1800	0.21	-177.0	11.19	15.3	0.017	-114.9	0.10	-19.8
2000	0.17	125.1	11.97	-31.7	0.020	-137.4	0.12	-32.6
2200	0.32	25.5	11.39	-89.0	0.022	-160.0	0.18	-36.0

Model: AR2067 Vcc=+12V Icc=156.68

FREQ. MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	GROUP DELAY NSEC	REV/ISO DB
20	1.17	1.06	19.65	33		-37.3
50	1.14	1.28	20.43	6		-38.4
100	1.14	1.33	20.62	-11	0.97	-37.8
200	1.16	1.36	20.73	-32	0.58	-37.3
400	1.19	1.43	20.76	-73	0.56	-37.1
600	1.25	1.51	20.63	-111	0.53	-36.6
800	1.34	1.53	20.53	-149	0.53	-36.2
1000	1.46	1.50	20.47	173	0.53	-36.4
1200	1.57	1.46	20.42	133	0.55	-34.9
1400	1.69	1.38	20.31	93	0.56	-34.9
1600	1.73	1.36	20.07	53	0.56	-33.9
1800	1.63	1.38	20.37	12	0.58	-32.5
2000	1.60	1.56	20.73	-38	0.69	-31.5
2200	2.42	1.90	19.57	-96	0.81	-31.0

Model: AR2067 Vcc=+12V Icc=156.68

LINEAR S-PARAMETERS

FREQ. MHZ	MAG S11	ANG S11	MAG S21	ANG S21	MAG S12	ANG S12	MAG S22	ANG S22
20	0.08	-43.5	9.60	33.1	0.014	6.6	0.03	-151.9
50	0.06	-22.7	10.51	6.2	0.012	3.3	0.12	-161.2
100	0.07	-14.3	10.74	-11.2	0.013	-1.3	0.14	-168.3
200	0.08	-36.7	10.87	-32.2	0.014	-0.9	0.15	-177.3
400	0.09	-53.0	10.91	-72.9	0.014	-10.6	0.18	175.0
600	0.11	-70.1	10.76	-111.4	0.015	-19.7	0.20	159.6
800	0.14	-84.5	10.63	-149.3	0.016	-28.9	0.21	141.5
1000	0.19	-98.4	10.55	172.7	0.015	-43.0	0.20	121.6
1200	0.22	-113.5	10.50	133.5	0.018	-55.4	0.19	96.3
1400	0.26	-130.4	10.36	93.5	0.018	-71.5	0.16	67.0
1600	0.27	-158.7	10.08	53.0	0.020	-88.0	0.15	43.2
1800	0.24	167.7	10.44	11.5	0.024	-112.9	0.16	11.5
2000	0.23	100.3	10.87	-38.0	0.027	-137.8	0.22	-11.0
2200	0.42	14.5	9.51	-96.3	0.028	-165.9	0.31	-36.5