

# AC3056

## 500 TO 3000 MHz TO-8 CASCADABLE AMPLIFIER

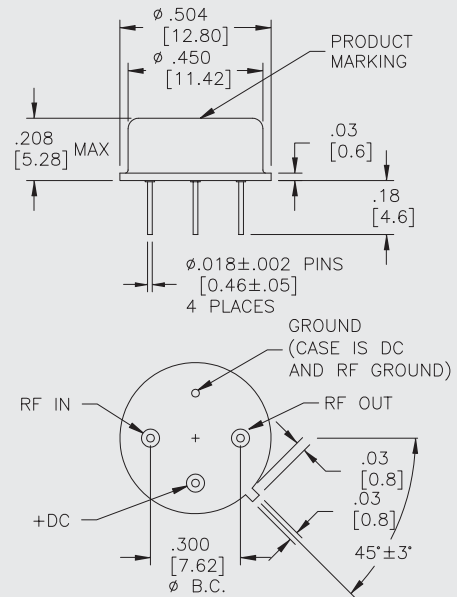
**Typical Values**

<b>High Gain</b> .....	<b>19.0 dB</b>
<b>Medium Output Power</b> .....	<b>+17.0 dBm</b>
<b>High Reverse Isolation</b> .....	<b>36.0 dB</b>
<b>Low Noise Figure</b> .....	<b>3.0 dB</b>
<b>High Performance Thin Film</b>	
<b>Standard Size TO-8 Package</b>	

**AC3056**

### AC3056

**TO-8 Package for Amplifiers**



## SPECIFICATIONS\*

Parameter	Typical	Guaranteed		
		0 to 50 °C	-55 to +85 °C	
Frequency (Min.)	400-3200 MHz	500-3000 MHz	500-3000 MHz	
Small Signal Gain (Min.)	19.0 dB	18.0 dB	17.5 dB	
Gain Flatness (Max.)	±0.5 dB	±0.7 dB	±0.9 dB	
Noise Figure (Max.)	3.2 dB	4.0 dB	4.5 dB	
SWR (Max.) Input/Output	1.4:1	1.7:1	2.0:1	
Power Output (Min.) @ 1dB comp.	+17.0 dBm	+15.0 dBm	+14.5 dBm	
Reverse Isolation	36.0 dB	—	—	
DC Current (Max.)	80 mA	85 mA	95 mA	

\* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.

## INTERMODULATION PERFORMANCE

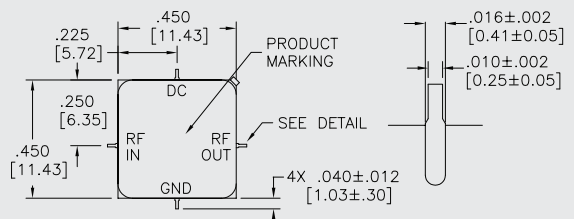
Typical @ 25 °C; 1500 MHz

<b>Second Order Harmonic Intercept Point</b> .....	<b>+51 dBm</b>
<b>Second Order Two Tone Intercept Point</b> .....	<b>+45 dBm</b>
<b>Third Order Two Tone Intercept Point</b> .....	<b>+29 dBm</b>

**AC3056**

### AS3056

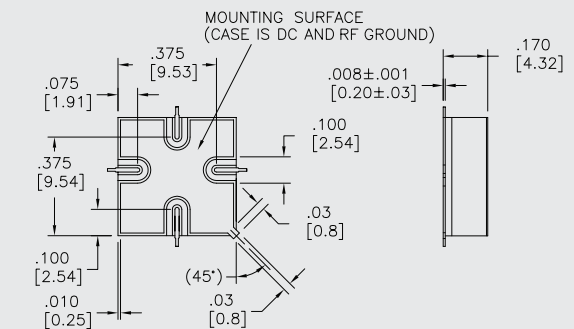
**SMT0-8 Package for Amplifiers**



## ABSOLUTE MAXIMUM RATINGS

<b>Storage Temperature</b> .....	<b>-65 to +125 °C</b>
<b>Maximum Case Temperature</b> .....	<b>+125 °C</b>
<b>Maximum DC Voltage</b> .....	<b>+8 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>+59.3 °C/Watt</b>
<b>Junction Temperature Rise Above Case (Tjc)</b> .....	<b>+25.2 °C</b>

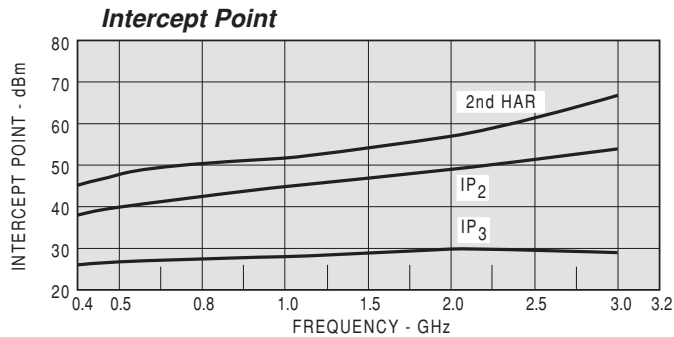
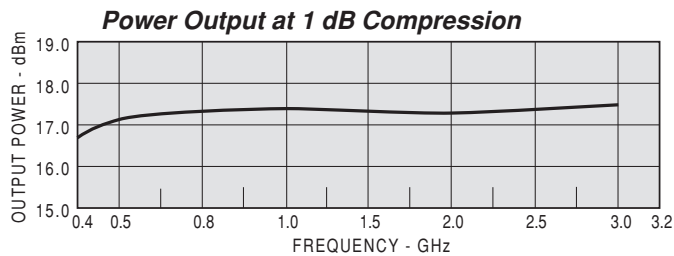
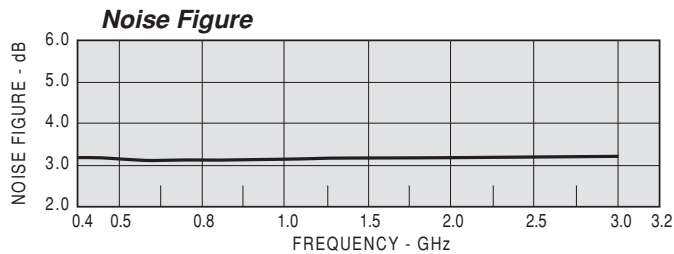
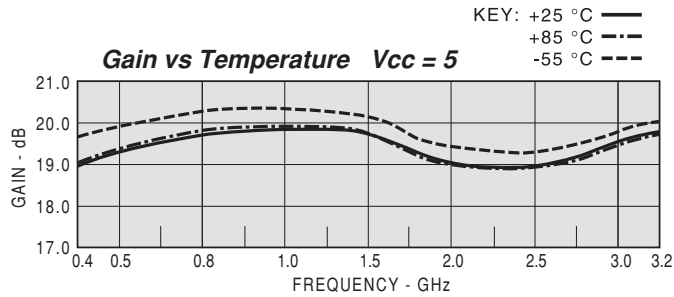
<sup>1</sup> Thermal resistance is based on total power dissipation.



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC3056			Vcc=+5V			Icc=79.21	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
400	1.35	1.17	19.11	-31	0.53	-36.7	
600	1.21	1.19	19.46	-61	0.42	-36.2	
800	1.12	1.21	19.79	-90	0.40	-36.1	
1000	1.08	1.25	19.89	-118	0.39	-36.4	
1200	1.09	1.27	19.90	-146	0.39	-35.8	
1400	1.11	1.27	19.82	-173	0.38	-36.6	
1600	1.08	1.30	19.50	159	0.38	-37.1	
1800	1.12	1.31	19.24	134	0.34	-36.9	
2000	1.13	1.33	19.10	110	0.35	-36.6	
2200	1.12	1.37	19.01	85	0.34	-36.2	
2400	1.11	1.37	19.01	59	0.35	-35.4	
2600	1.10	1.36	19.12	33	0.36	-34.8	
2800	1.06	1.35	19.34	7	0.37	-34.0	
3000	1.12	1.33	19.68	-23	0.41	-33.0	
3200	1.22	1.37	19.91	-55	0.45	-31.6	

Model: AC3056			LINEAR S-PARAMETERS				Icc=79.21	
FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
400	0.15	-84.5	9.02	-30.8	0.015	5.5	0.08	-134.5
600	0.09	-93.9	9.40	-60.9	0.015	-7.6	0.09	-173.7
800	0.06	-98.8	9.76	-89.8	0.016	-13.2	0.10	162.3
1000	0.04	-84.6	9.88	-117.8	0.015	-21.8	0.11	140.7
1200	0.04	-69.5	9.89	-145.7	0.016	-32.3	0.12	118.1
1400	0.05	-74.2	9.80	-173.2	0.015	-42.4	0.12	93.1
1600	0.04	-77.0	9.44	159.3	0.014	-57.1	0.13	68.4
1800	0.06	-74.5	9.16	134.5	0.014	-71.3	0.13	37.0
2000	0.06	-86.3	9.02	109.6	0.015	-78.8	0.14	11.5
2200	0.06	-90.8	8.93	84.8	0.015	-91.2	0.15	-11.7
2400	0.05	-86.2	8.93	59.4	0.017	-110.0	0.16	-35.3
2600	0.05	-85.2	9.03	33.4	0.018	-128.6	0.15	-60.1
2800	0.03	-54.6	9.26	6.60	0.020	-144.8	0.15	-90.9
3000	0.06	-12.8	9.64	-22.6	0.022	-159.9	0.14	-128.5
3200	0.10	-13.8	9.89	-54.8	0.026	-172.8	0.15	-175.3