

# AC4056

## 800 TO 4000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC4056
Ultra Broad Bandwidth .....	800 - 4000 MHz
High Gain .....	+17.5 dB
Low Noise Figure .....	<3.5 dB
High Performance Thin Film Standard Size TO-8 Package	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	0.8-4.2 GHz	0.8-4.0 GHz	0.8-4.0 GHz
Small Signal Gain (Min.)	17.5 dB	16.5 dB	15.5 dB
Gain Flatness (Max.)	±0.6 dB	±0.8 dB	±0.9 dB
Noise Figure (Max.)	<3.5 dB	4.0 dB	4.5 dB
SWR (Max.) Input/Output	1.5:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+14.5 dBm	+13.0 dBm	+12.5 dBm
Reverse Isolation	41.0 dB	—	—
DC Current (Max.)	65.0 mA	70 mA	75 mA

\* Measured in a 50-ohm system at +5.0 Vdc unless otherwise specified.

### INTERMODULATION PERFORMANCE

Typical @ 25 °C; 2000 MHz	AC4056
Second Order Harmonic Intercept Point .....	+48 dBm
Second Order Two Tone Intercept Point .....	+42 dBm
Third Order Two Tone Intercept Point .....	+24 dBm

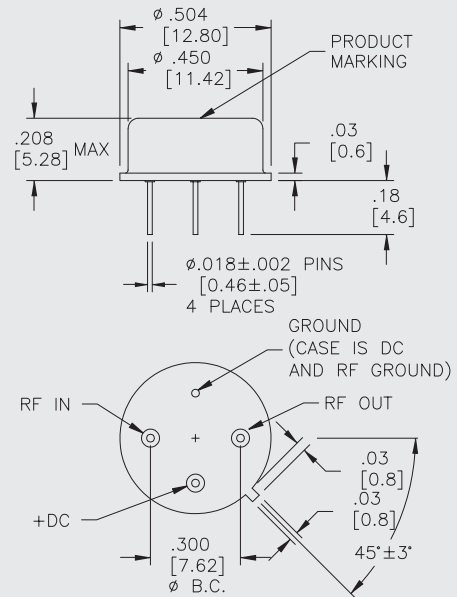
### ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to +125 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+7 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 <sup>1</sup> (θjc) .....	+35 °C/Watt
Junction Temperature Rise Above Case (Tjc) .....	+12.2 °C

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

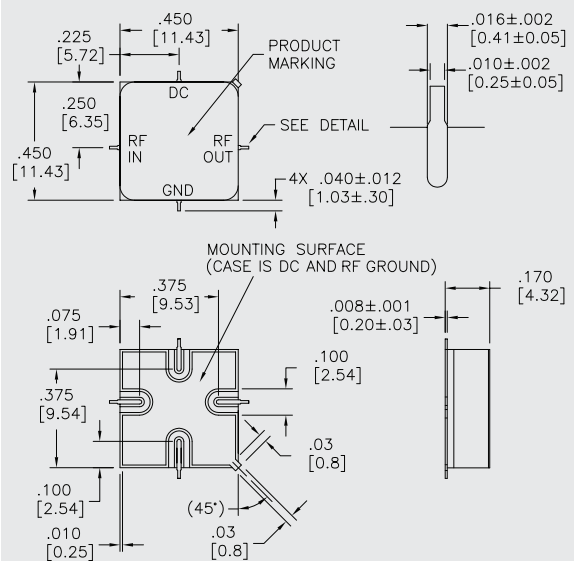
### AC4056

#### TO-8 Package for Amplifiers



### AS4056

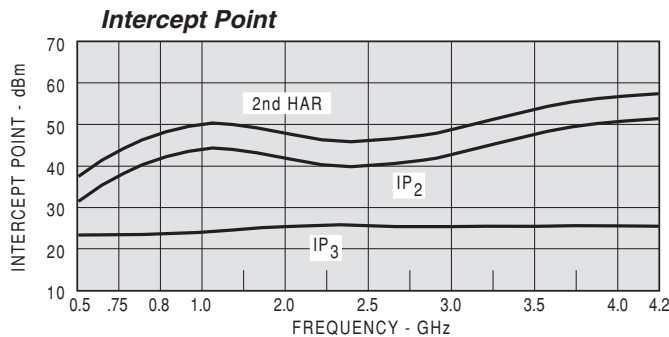
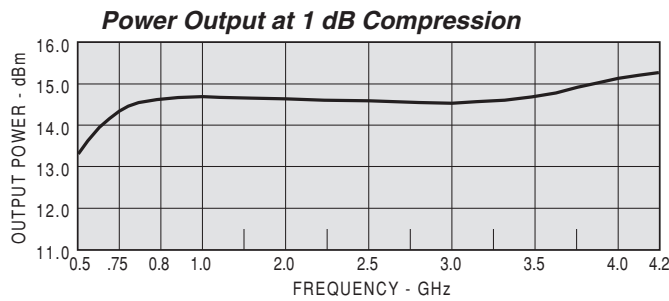
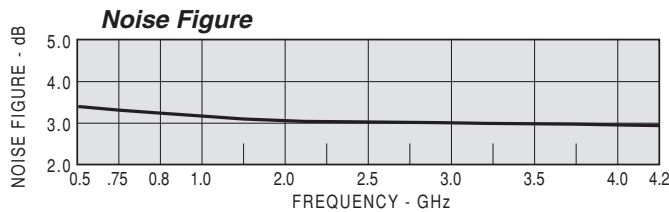
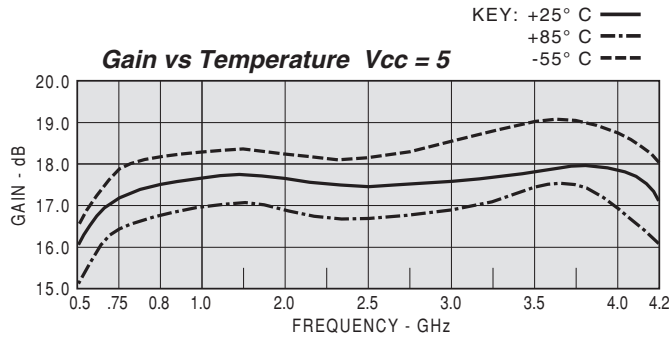
#### SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



MODEL: AC4056  $V_{cc} = +5V$   $I_{cc} = 65.36$  mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
750	1.66	1.45	17.2	0.484	-39.8
800	1.61	1.42	17.3	0.484	-39.7
1000	1.46	1.38	17.6	0.442	-39.8
1250	1.38	1.42	17.7	0.396	-40.7
1500	1.35	1.46	17.8	0.370	-41.8
1750	1.36	1.49	17.8	0.357	-43.2
2000	1.36	1.47	17.5	0.339	-45.7
2250	1.38	1.41	17.4	0.325	-46.2
2500	1.40	1.32	17.5	0.322	-45.3
2750	1.42	1.22	17.5	0.320	-43.4
3000	1.42	1.15	17.6	0.326	-41.3
3250	1.42	1.09	17.6	0.338	-39.2
3500	1.41	1.06	17.6	0.340	-37.7
3750	1.35	1.07	17.8	0.350	-36.9
4000	1.26	1.14	17.7	0.389	-36.3
4250	1.26	1.21	17.2	0.404	-35.6

MODEL: AC4056  $V_{cc} = +5V$   $I_{cc} = 65.36$  mA

LINEAR S-PARAMETERS

FREQ. MHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
750	0.25	-109.6	7.25	-17.9	0.010	21	0.18	123.5
800	0.23	-112.5	7.33	-25.9	0.010	18	0.17	125.8
1000	0.19	-121.6	7.56	-54.9	0.010	5	0.16	136.5
1250	0.16	-128.6	7.71	-86.9	0.009	-9	0.17	141.9
1500	0.15	-133.4	7.78	-116.6	0.008	-23	0.19	138.9
1750	0.15	-140.2	7.74	-145.1	0.007	-44	0.20	132.4
2000	0.15	-145.9	7.53	-171.9	0.005	-67	0.19	122.8
2250	0.16	-151.0	7.41	-162.4	0.005	-94	0.17	117.3
2500	0.17	-158.2	7.46	-137.0	0.005	-120	0.14	112.1
2750	0.17	-166.9	7.54	-111.8	0.007	-138	0.10	104.5
3000	0.17	-175.6	7.57	-86.0	0.009	-151	0.07	98.6
3250	0.17	-174.8	7.62	-59.2	0.011	-161	0.04	96.5
3500	0.17	-160.7	7.61	-32.1	0.013	-170	0.03	76.0
3750	0.15	-136.8	7.75	-4.2	0.014	-177	0.03	-3.1
4000	0.11	-105.0	7.71	-27.2	0.015	180	0.07	-49.3
4250	0.11	-67.6	7.28	-59.9	0.017	179	0.10	-66.2