

# AC4041

## 1000 TO 4000 MHz TO-8 CASCADABLE AMPLIFIER

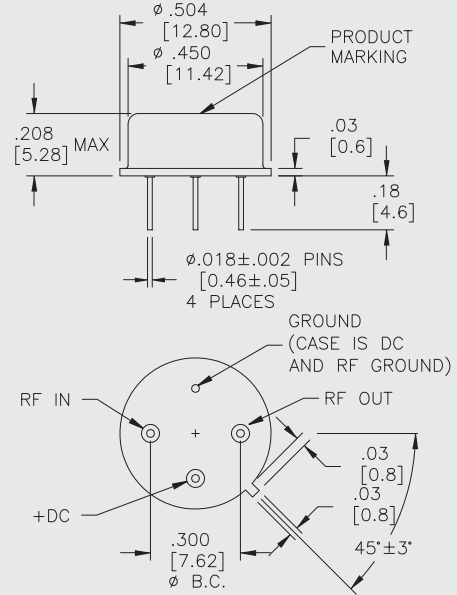
**Typical Values**

Low Noise Figure .....	<b>2.8 dB</b>
Medium Output Power .....	<b>+18.0 dBm</b>
High Performance Thin Film Standard Size TO-8 Package	

**AC4041**

### AC4041

**TO-8 Package for Amplifiers**



## SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	500-4200 MHz	1000-4000 MHz	1000-4000 MHz
Small Signal Gain (Min.)	10.3 dB	9.5 dB	9.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.5 dB	±0.6 dB
Noise Figure (Max.)	2.8 dB	3.5 dB	4.3 dB
SWR (Max.) Input/Output	<1.6:1	1.8:1	1.9:1
Power Output (Min.) @ 1dB comp.	+18.0 dBm	+17.0 dBm	+16.5 dBm
Reverse Isolation	18.0 dB	—	—
DC Current (Max.)	62.0 mA	67.0 mA	72.0 mA

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

## INTERMODULATION PERFORMANCE

Typical @ 25 °C; 2500 MHz	+12 Volts	+15 Volts
Second Order Harmonic Intercept Point .....	+52 dBm	+51 dBm
Second Order Two Tone Intercept Point .....	+46 dBm	+45 dBm
Third Order Two Tone Intercept Point .....	+27 dBm	+30 dBm

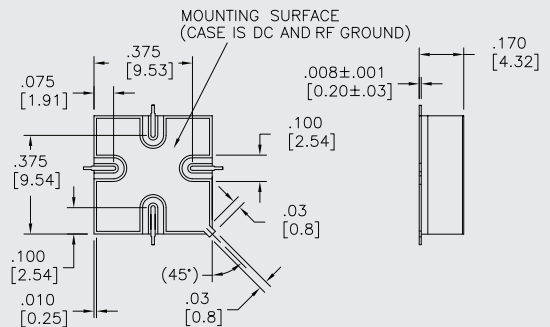
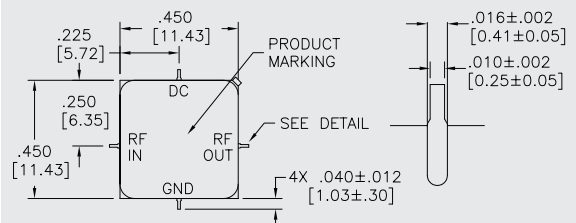
## ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to +125 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+17 Volts
Maximum Continuous RF Input Power .....	+20 dBm
Maximum Short Term Input Power (1 Minute Max.) .....	200 Milliwatts
Maximum Peak Power (3 μsec Max.) .....	0.5 Watt
Burn-in Temperature .....	+105 °C
Thermal Resistance <sup>1</sup> (θjc) .....	+36 °C/Watt
Junction Temperature Rise Above Case (Tjc) .....	+36.0 °C

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

### AS4041

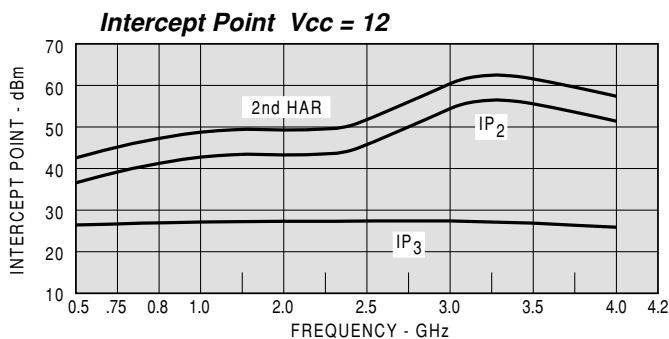
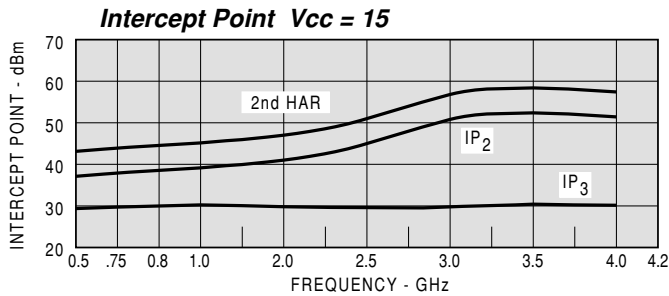
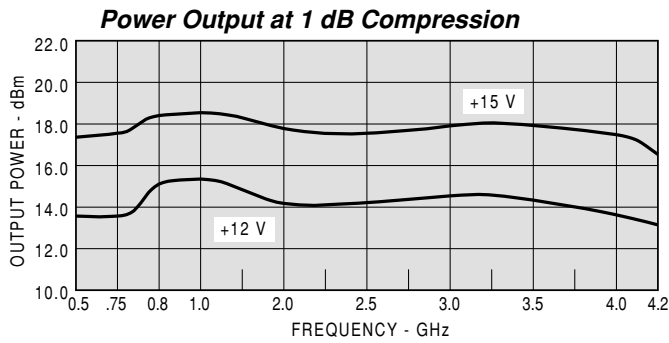
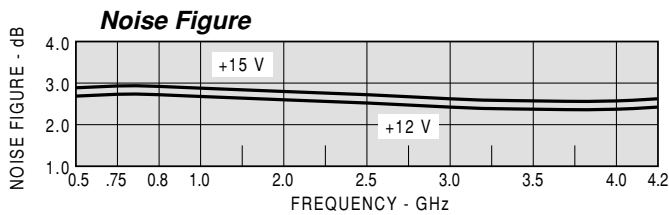
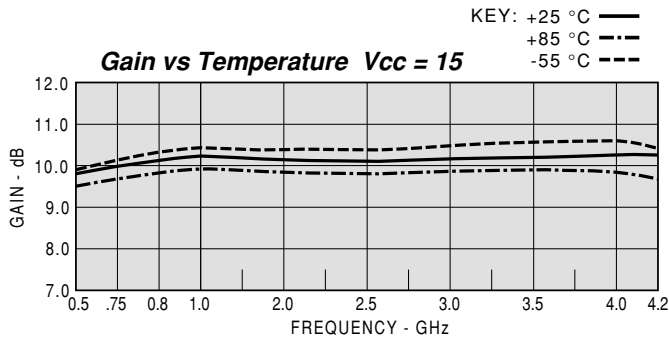
**SMTO-8 Package for Amplifiers**



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC4041				Vcc= +15V			Icc= 61.56
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
500	1.88	1.73	9.96	-180	0.38	-19.3	
600	1.73	1.62	10.18	169	0.31	-19.1	
700	1.64	1.53	10.29	159	0.27	-19.0	
800	1.53	1.47	10.38	151	0.25	-19.0	
900	1.47	1.43	10.43	142	0.24	-19.0	
1000	1.47	1.38	10.44	134	0.22	-18.9	
1200	1.45	1.31	10.42	119	0.21	-18.9	
1400	1.46	1.25	10.42	105	0.19	-18.8	
1600	1.41	1.21	10.39	92	0.19	-18.7	
1800	1.41	1.19	10.35	78	0.19	-18.7	
2000	1.48	1.19	10.32	65	0.18	-18.8	
2200	1.49	1.26	10.31	53	0.17	-18.8	
2400	1.49	1.32	10.18	41	0.17	-18.9	
2600	1.47	1.38	10.22	27	0.19	-18.7	
2800	1.45	1.44	10.42	14	0.18	-18.5	
3000	1.59	1.48	10.34	1	0.18	-18.4	
3200	1.62	1.49	10.12	-13	0.19	-18.4	
3400	1.44	1.49	10.14	-26	0.18	-18.1	
3600	1.50	1.48	10.30	-39	0.18	-17.9	
3800	1.42	1.45	10.38	-53	0.20	-17.8	
4000	1.41	1.45	10.25	-69	0.23	-17.4	
4200	1.45	1.53	10.26	-86	0.23	-17.3	

LINEAR S-PARAMETERS

Model: AC4041				Vcc= +15V				Icc= 61.56
FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
500	0.30	-81.9	3.15	-179.5	0.109	13.0	0.27	122.1
600	0.27	-88.4	3.23	169.2	0.110	6.4	0.24	111.1
700	0.24	-91.9	3.27	159.4	0.112	-0.1	0.21	101.2
800	0.21	-95.6	3.30	150.5	0.112	-4.9	0.19	92.0
900	0.19	-103.7	3.32	142.0	0.112	-9.3	0.18	82.7
1000	0.19	-110.8	3.33	134.3	0.113	-14.0	0.16	72.8
1200	0.18	-117.6	3.32	119.2	0.113	-21.6	0.13	50.5
1400	0.19	-122.1	3.32	105.4	0.114	-29.5	0.11	24.3
1600	0.17	-130.2	3.31	92.0	0.116	-36.8	0.10	-4.0
1800	0.17	-141.8	3.29	78.5	0.116	-43.9	0.09	-36.8
2000	0.19	-147.3	3.28	65.3	0.115	-51.9	0.09	-77.8
2200	0.20	-157.0	3.28	52.9	0.115	-59.0	0.12	-109.8
2400	0.20	-152.3	3.23	40.6	0.114	-64.7	0.14	-135.9
2600	0.19	-175.1	3.25	27.1	0.116	-72.4	0.16	-156.7
2800	0.18	172.0	3.32	14.1	0.119	-80.3	0.18	-175.3
3000	0.23	168.2	3.29	1.0	0.120	-87.8	0.19	163.4
3200	0.24	161.5	3.21	-12.5	0.120	-96.0	0.20	142.5
3400	0.18	158.7	3.22	-25.5	0.124	-103.8	0.20	123.0
3600	0.20	148.1	3.27	-38.7	0.127	-111.1	0.19	98.9
3800	0.17	127.7	3.30	-52.9	0.129	-120.6	0.18	75.2
4000	0.17	120.3	3.26	-69.4	0.135	-131.8	0.18	44.0
4200	0.18	93.4	3.26	-85.7	0.137	-142.1	0.21	12.4
4400	0.21	61.9	3.18	-101.0	0.131	-153.2	0.26	-16.5

Model: AC4041				Vcc= +12V			Icc= 54.64
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
500	1.89	1.78	9.70	179	0.37	-19.9	
600	1.75	1.68	9.91	168	0.31	-19.6	
700	1.67	1.61	10.0	159	0.27	-19.5	
800	1.57	1.56	10.10	150	0.24	-19.5	
900	1.51	1.51	10.15	141	0.23	-19.4	
1000	1.51	1.47	10.15	134	0.21	-19.3	
1200	1.50	1.39	10.15	119	0.21	-19.3	
1400	1.50	1.32	10.13	105	0.19	-19.0	
1600	1.44	1.26	10.09	91	0.19	-18.8	
1800	1.44	1.21	10.08	78	0.19	-18.7	
2000	1.51	1.15	10.07	65	0.18	-18.6	
2200	1.51	1.16	10.04	52	0.17	-18.5	
2400	1.49	1.18	9.97	40	0.18	-18.4	
2600	1.47	1.22	10.02	26	0.18	-18.1	
2800	1.46	1.26	10.15	13	0.18	-17.8	
3000	1.58	1.28	10.10	0	0.18	-17.5	
3200	1.61	1.28	9.97	-13	0.19	-17.5	
3400	1.41	1.27	10.00	-27	0.19	-17.1	
3600	1.45	1.25	10.09	-41	0.19	-16.7	
3800	1.37	1.21	10.13	-55	0.20	-16.5	
4000	1.33	1.22	10.00	-71	0.22	-16.1	
4200	1.36	1.29	9.92	-88	0.23	-15.8	