

AC2046

10 TO 2000 MHz TO-8 CASCADABLE AMPLIFIER

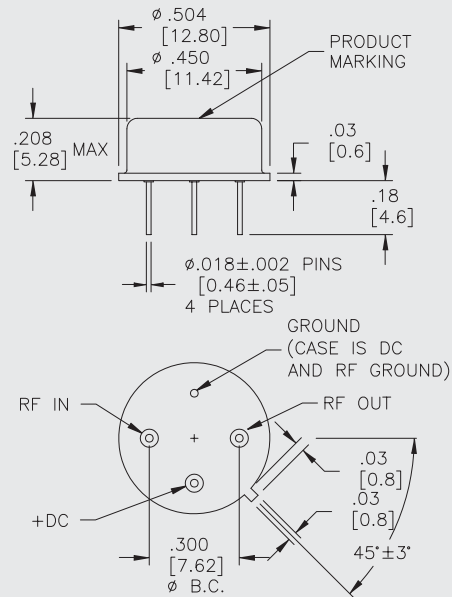
Typical Values

High Gain - Two Stages	20.5 dB
Low Noise Figure	4.5 dB
Medium Output Power	+15.0 dBm
High Third Order I.P.	+25 dBm
High Performance Thin Film	
Standard Size TO-8 Package	

AC2046

AC2046

TO-8 Package for Amplifiers



SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	8-2100 MHz	10-2000 MHz	10-2000 MHz
Small Signal Gain (Min.)	20.5 dB	19.5 dB	19.0 dB
Gain Flatness (Max.)	±0.25 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.) 100-2000 MHz	4.5 dB	5.5 dB	6.0 dB
SWR (Max.)	Input < 1.5:1 Output < 1.5:1	1.8:1 2.0:1	2.0:1 2.0:1
Power Output (Min.) @ 1dB comp.	+15.0 [^] dBm	+14.0 [^] dBm	+13.5 [^] dBm
Reverse Isolation	32.0 dB	—	—
DC Current (Max.)	58.0 mA	62.0 mA	65.0 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
^ 1.0 dB lower below 800 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C

Second Order Harmonic Intercept Point	+46 dBm
Second Order Two Tone Intercept Point	+41 dBm
Third Order Two Tone Intercept Point	+25 dBm

+15 volts

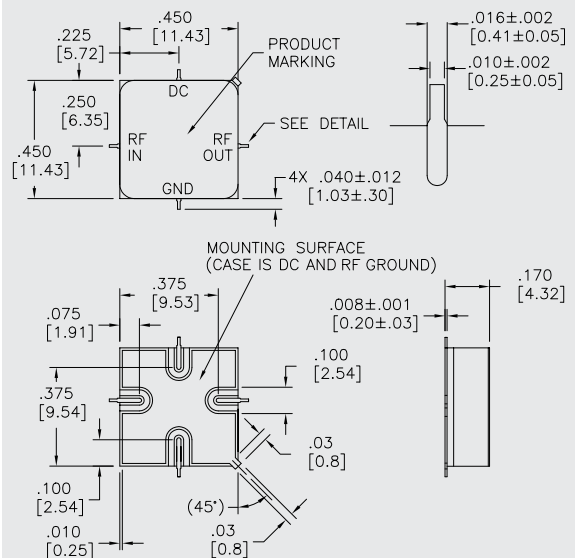
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+18 Volts
Maximum Continuous RF Input Power	+10 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance¹ (θjc)	+34 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+31.5 °C

¹ Thermal resistance is based on total power dissipation.

AS2046

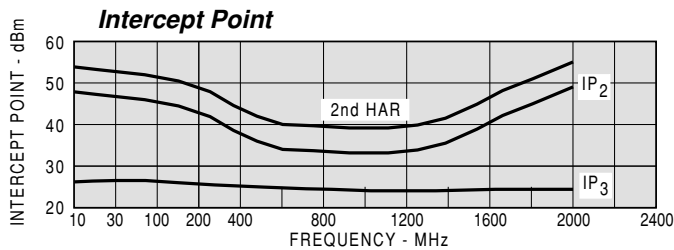
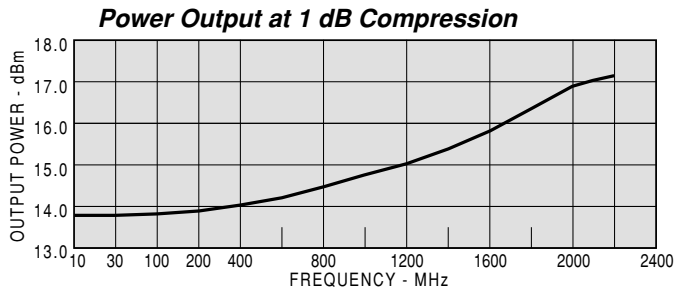
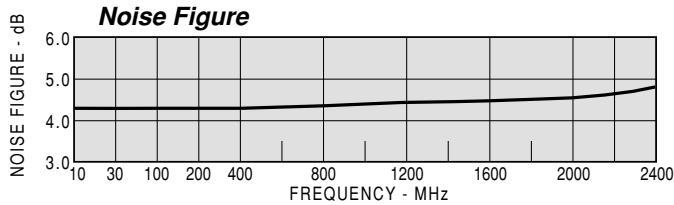
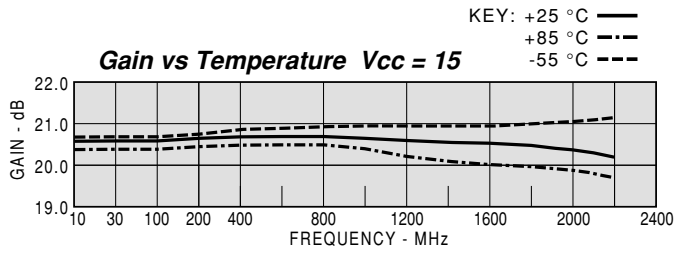
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



MODEL: AC2046 Vcc = +15V Icc = 58.97 mA

FREQUENCY	VSWR	GAIN	GROUP DELAY	REV/ISO
MHZ	IN	OUT	NSEC	DB
10	1.27	2.03		-32.1
20	1.18	1.37		-31.2
50	1.17	1.16	1.362	-31.7
100	1.16	1.13	0.628	-31.7
200	1.16	1.12	0.508	-31.2
300	1.17	1.12	0.488	-31.5
400	1.17	1.11	0.480	-31.5
500	1.21	1.10	0.482	-31.4
600	1.25	1.10	0.490	-31.5
700	1.30	1.10	0.484	-31.5
800	1.35	1.12	0.492	-31.7
900	1.37	1.13	0.502	-32.1
1000	1.37	1.16	0.488	-32.2
1100	1.34	1.18	0.496	-32.1
1200	1.26	1.22	0.500	-33.2
1300	1.21	1.26	0.504	-33.6
1400	1.18	1.32	0.507	-33.0
1500	1.17	1.38	0.519	-34.1
1600	1.13	1.44	0.479	-33.4
1700	1.09	1.50	0.517	-34.1
1800	1.06	1.55	0.492	-34.8
1900	1.17	1.62	0.527	-34.7
2000	1.35	1.65	0.553	-34.7
2100	1.62	1.68	0.561	-34.9

MODEL: AC2046 Vcc = +15V Icc = 58.97 mA

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.12	170.7	9.95	32.4	0.025	38	0.34	115.3
20	0.08	171.4	10.36	12.0	0.027	16	0.16	80.9
50	0.08	172.4	10.27	-1.6	0.026	6	0.08	56.4
100	0.08	166.7	10.22	-12.2	0.026	0	0.06	35.1
200	0.08	160.9	10.34	-29.1	0.027	-5	0.06	12.2
300	0.08	150.2	10.38	-45.1	0.027	-8	0.06	1.5
400	0.08	142.3	10.52	-60.9	0.027	-10	0.05	-9.2
500	0.10	126.9	10.58	-76.9	0.027	-18	0.05	-10.5
600	0.11	116.4	10.62	-93.1	0.027	-22	0.05	-13.0
700	0.13	106.0	10.74	-109.0	0.027	-24	0.05	-12.8
800	0.15	98.3	10.75	-125.3	0.026	-27	0.06	-13.3
900	0.16	93.7	10.77	-142.0	0.025	-31	0.06	-18.4
1000	0.15	85.3	10.81	-158.2	0.025	-35	0.07	-24.8
1100	0.14	75.7	10.82	-174.6	0.025	-41	0.08	-34.5
1200	0.12	65.3	10.78	168.9	0.024	-44	0.10	-47.7
1300	0.10	45.1	10.66	152.2	0.023	-53	0.12	-63.4
1400	0.08	19.1	10.67	135.4	0.022	-55	0.14	-80.9
1500	0.08	-1.0	10.45	118.2	0.022	-60	0.16	-96.6
1600	0.06	-23.3	10.42	102.4	0.021	-65	0.18	-112.2
1700	0.04	-47.9	10.36	85.1	0.020	-69	0.20	-125.2
1800	0.02	-129.5	10.13	68.8	0.020	-75	0.21	-138.1
1900	0.08	174.8	10.28	51.2	0.018	-77	0.24	-150.9
2000	0.15	156.0	10.21	32.9	0.018	-87	0.25	-166.5
2100	0.24	142.7	10.18	14.0	0.018	-82	0.25	175.1
2200	0.32	127.6	9.94	-6.0	0.019	-80	0.26	155.5