

AC3064

100 TO 3000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC3064
Ultra Broad Bandwidth	100-3000 MHz
High Gain	18.5 dB
Low Noise Figure	3.3 dB
Medium Output Level	+16.5 dBm
High Performance Thin Film Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	0.1-3.0 GHz	0.1-3.0 GHz	0.1-3.0 GHz
Small Signal Gain (Min.)	18.5 dB	17.5 dB	16.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.6 dB	±0.8 dB
Noise Figure (Max.)	3.3 dB	4.0 dB	4.5 dB
		4.5 dB	5.5 dB
SWR (Max.)	1.5:1	1.9:1	2.1:1
		Input/Output	
Power Output (Min.) @ 1dB comp.	+16.5 dBm	+15.5 dBm	+15.0 dBm
Reverse Isolation	36.0 dB	—	—
DC Current (Max.)	80.0 mA	84.0 mA	88.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC3064
Second Order Harmonic Intercept Point	+52 dBm
Second Order Two Tone Intercept Point	+46 dBm
Third Order Two Tone Intercept Point	+27 dBm

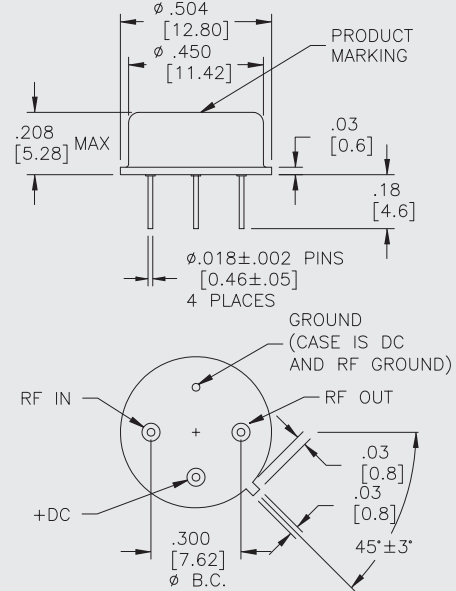
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+10 dBm
Maximum Short Term Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.25 Watt
Burn-in Temperature	+125 °C
Thermal Resistance ¹ (θjc)	+24 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+30.0 °C

¹Thermal resistance is based on total power dissipation.

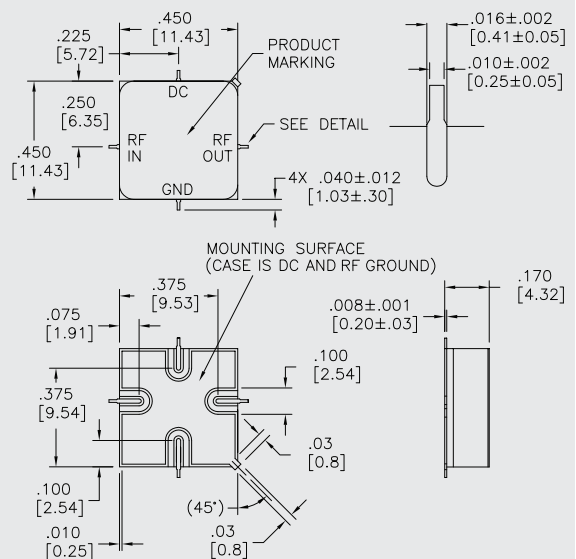
AC3064

TO-8 Package for Amplifiers



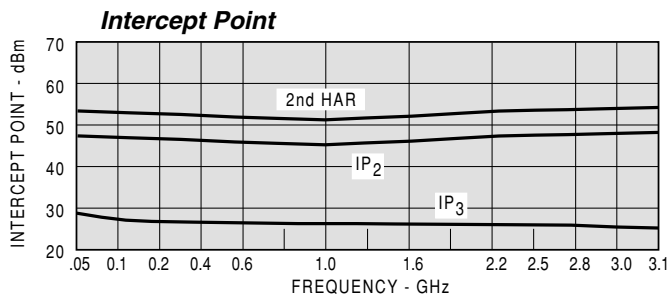
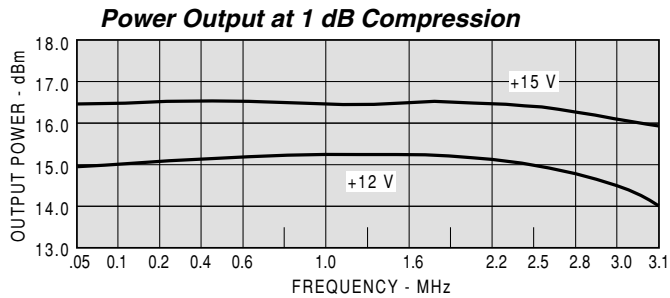
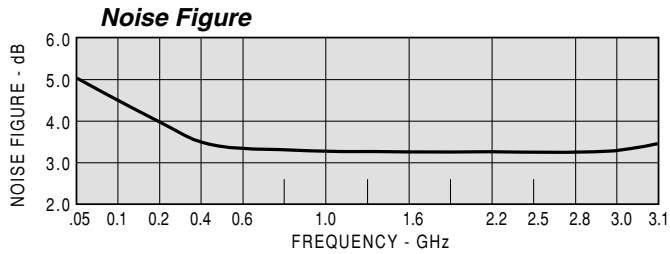
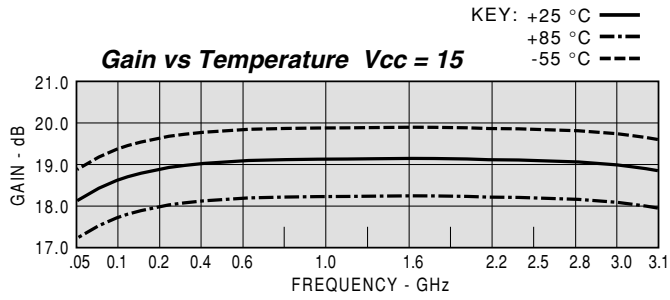
AS3064

SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

MODEL: AC3064 Vcc = +15V Icc = 78.32 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
50	1.56	1.14	18.2		-36.4
100	1.52	1.11	18.6		-36.5
200	1.52	1.11	18.9	0.483	-36.7
400	1.54	1.10	19.1	0.390	-36.7
600	1.55	1.09	19.2	0.364	-36.7
800	1.55	1.08	19.3	0.366	-36.8
1000	1.60	1.07	19.3	0.363	-36.7
1200	1.59	1.05	19.3	0.367	-37.0
1400	1.59	1.05	19.2	0.365	-36.9
1600	1.60	1.04	19.0	0.360	-36.8
1800	1.57	1.04	18.8	0.356	-36.4
2000	1.57	1.04	18.7	0.339	-36.3
2200	1.60	1.03	18.7	0.352	-35.9
2400	1.59	1.05	18.8	0.356	-35.1
2600	1.54	1.07	19.0	0.382	-34.0
2800	1.49	1.08	19.2	0.407	-33.3
3000	1.45	1.09	19.2	0.439	-32.4
3200	1.43	1.11	18.7	0.456	-31.4

MODEL: AC3064 Vcc = +15V Icc = 78.32 mA

LINEAR S-PARAMETER

FREQ. MHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
50	0.22	-19.1	8.14	15.9	0.015	7	0.07	48.5
100	0.21	-12.7	8.46	0.4	0.015	1	0.05	32.8
200	0.21	-9.2	8.78	-17.1	0.015	-5	0.05	16.5
400	0.21	-11.9	9.04	-45.3	0.015	-13	0.05	0.9
600	0.22	-18.8	9.15	-71.4	0.015	-21	0.04	-6.5
800	0.22	-24.9	9.22	-97.7	0.014	-28	0.04	-10.8
1000	0.23	-35.5	9.25	-123.7	0.015	-36	0.03	-17.5
1200	0.23	-45.8	9.20	-150.3	0.014	-47	0.03	-25.2
1400	0.23	-59.8	9.12	-176.4	0.014	-56	0.02	-32.6
1600	0.23	-73.6	8.95	-157.6	0.014	-70	0.02	-47.9
1800	0.22	-87.4	8.72	132.0	0.015	-86	0.02	-44.8
2000	0.22	-104.6	8.58	107.7	0.015	-101	0.02	-61.2
2200	0.23	-121.1	8.62	82.1	0.016	-116	0.02	-67.5
2400	0.23	-139.1	8.71	56.7	0.017	-135	0.02	-67.0
2600	0.21	-160.2	8.93	29.3	0.020	-150	0.03	-77.5
2800	0.20	174.9	9.10	-0.3	0.022	-166	0.04	-84.1
3000	0.18	147.4	9.07	-32.1	0.024	176	0.04	-82.9
3200	0.18	110.6	8.58	-65.0	0.027	158	0.05	-76.4
3400	0.19	72.9	7.82	-97.7	0.028	145	0.05	-73.3

MODEL: AC3064 Vcc = +12V Icc = 68.88 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
50	1.51	1.08	18.7		-37.2
100	1.48	1.05	19.0		-37.5
200	1.48	1.05	19.3	0.479	-37.5
400	1.49	1.04	19.5	0.389	-37.5
600	1.51	1.04	19.6	0.366	-37.6
800	1.51	1.05	19.7	0.368	-37.3
1000	1.54	1.05	19.7	0.364	-37.1
1200	1.55	1.06	19.7	0.371	-36.9
1400	1.56	1.07	19.6	0.368	-36.7
1600	1.59	1.07	19.5	0.366	-36.1
1800	1.57	1.09	19.3	0.361	-36.0
2000	1.58	1.10	19.1	0.344	-35.5
2200	1.62	1.11	19.2	0.359	-34.8
2400	1.61	1.15	19.3	0.360	-34.1
2600	1.58	1.18	19.5	0.390	-32.8
2800	1.56	1.24	19.7	0.424	-32.1
3000	1.54	1.30	19.6	0.452	-31.2
3200	1.57	1.32	19.1	0.469	-30.5

MODEL: AC3064 Vcc = +12V Icc = 68.88 mA

LINEAR S-PARAMETERS

FREQ. MHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
50	0.20	-18.3	8.58	14.9	0.014	5	0.04	78.7
100	0.19	-11.1	8.91	-0.3	0.013	0	0.03	76.5
200	0.19	-8.4	9.21	-17.7	0.013	-5	0.02	57.7
400	0.20	-10.7	9.45	-45.8	0.013	-11	0.02	43.3
600	0.20	-18.0	9.57	-72.0	0.013	-18	0.02	49.4
800	0.20	-24.4	9.67	-98.5	0.014	-22	0.02	60.2
1000	0.21	-33.9	9.70	-124.5	0.014	-29	0.03	66.9
1200	0.22	-44.5	9.66	-151.4	0.014	-41	0.03	67.6
1400	0.22	-58.2	9.59	-178.0	0.015	-48	0.03	61.8
1600	0.23	-72.5	9.43	155.7	0.016	-60	0.04	55.1
1800	0.22	-86.2	9.19	129.7	0.016	-78	0.04	46.8
2000	0.23	-105.2	9.03	105.0	0.017	-92	0.05	35.2
2200	0.24	-122.4	9.09	79.2	0.018	-108	0.05	22.3
2400	0.23	-143.3	9.22	53.2	0.020	-126	0.07	3.1
2600	0.23	-166.7	9.45	25.1	0.023	-142	0.08	-17.3
2800	0.22	165.8	9.65	-5.4	0.025	-161	0.11	-37.0
3000	0.21	133.6	9.54	-37.9	0.027	179	0.13	56.4
3200	0.22	94.8	8.97	-71.5	0.030	163	0.14	-74.0
3400	0.24	58.8	8.10	-106.2	0.032	147	0.13	-85.5