TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AC4064

800 TO 4000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC4064
Ultra Broad Bandwidth	*800 - 4000 MHz*
High Gain	*20.0 dB*
Medium Power	*+16.0 dBm*
Low Noise Figure	*3.0 dB*

High Performance Thin Film
Standard Size TO-8 Package

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50° C	Guaranteed -55 to +85° C
Frequency (Min.)	**0.75-4.2 GHz**	**0.8-4.0 GHz**	**0.8-4.0 GHz**
Small Signal Gain (Min.)	20.0 dB	19.0 dB	18.0 dB
Gain Flatness (Max.)	±0.6 dB	±0.7 dB	±0.9 dB
Noise Figure (Max.)	3.0 dB	3.5 dB	4.0 dB
SWR (Max.) Input/Output	1.5:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+16.0 dBm	+15.0 dBm	+14.5 dBm
DC Current (Max.)	85 mA	90 mA	95 mA

* Measured in a 50-ohm system at +15.0 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25° C; 2750 MHz	*AC4064*
Second Order Harmonic Intercept Point	+44 dBm
Second Order Two Tone Intercept Point	+37 dBm
Third Order Two Tone Intercept Point	+23 dBm

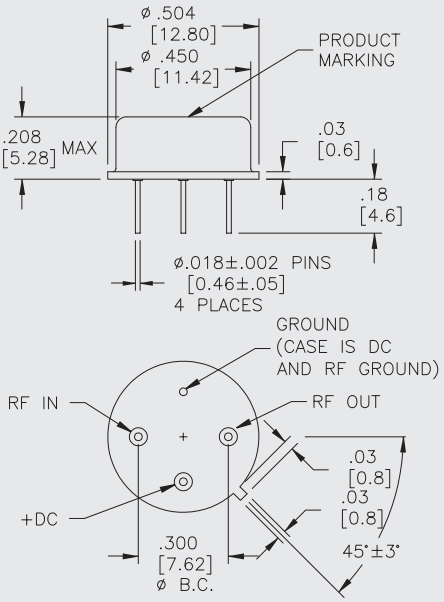
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125° C
Maximum Case Temperature	+100° C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+13 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[1] (θjc)	+15° C/Watt
Junction Temperature Rise Above Case (Tjc)	+16.4° C

[1] Thermal resistance is based on total power dissipation.

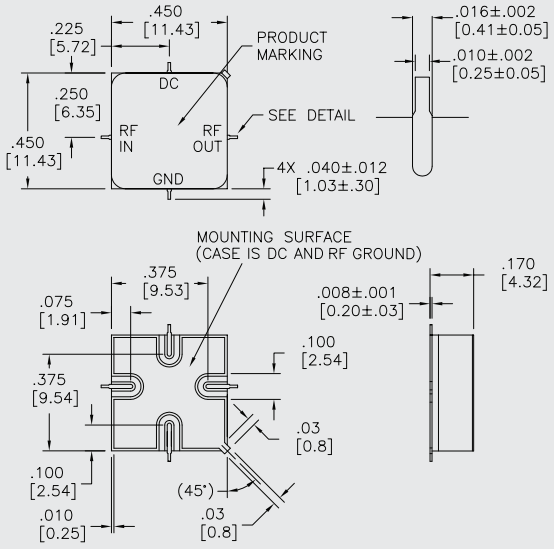
AC4064

TO-8 Package for Amplifiers



AS4064

SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

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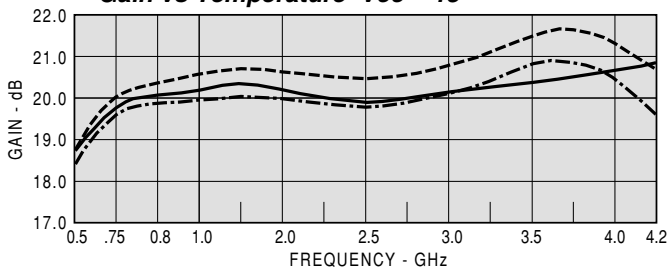
AC4064

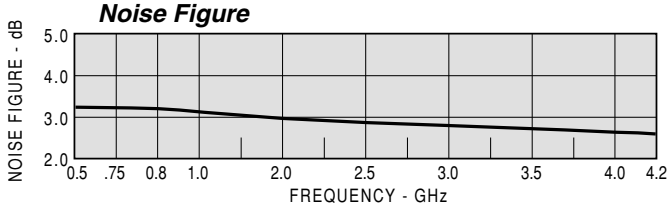
TYPICAL PERFORMANCE

KEY: +25 °C —— +85 °C -·-·- -55 °C - - -

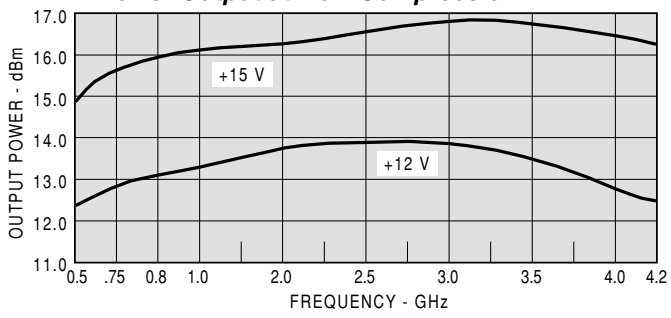
Gain vs Temperature Vcc = 15



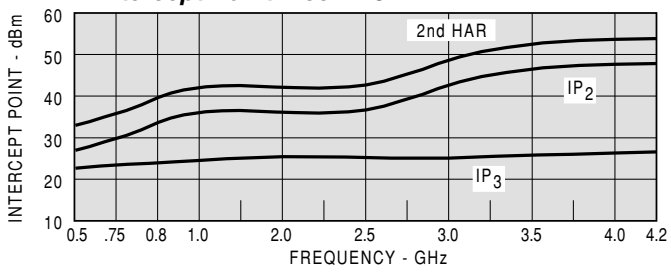
Noise Figure



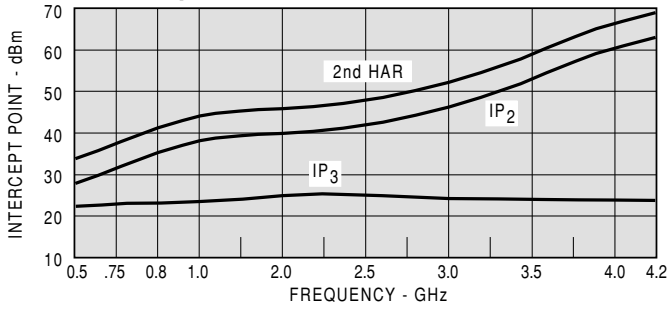
Power Output at 1 dB Compression



Intercept Point Vcc = 15



Intercept Point Vcc = 12



TYPICAL AUTOMATIC TEST DATA

MODEL: AC4064 Vcc = +15V Icc = 71.29 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
750	1.59	1.30	19.7	0.503	-39.2
800	1.56	1.28	19.8	0.503	-39.1
1000	1.50	1.29	20.1	0.455	39.2
1250	1.51	1.38	20.3	0.403	-39.9
1500	1.53	1.46	20.4	0.377	-40.9
1750	1.56	1.53	20.4	0.364	-42.0
2000	1.54	1.54	20.1	0.343	-44.3
2250	1.55	1.48	20.0	0.325	-44.8
2500	1.55	1.38	20.0	0.323	-44.4
2750	1.56	1.30	20.1	0.323	-42.8
3000	1.55	1.26	20.2	0.322	-40.7
3250	1.55	1.24	20.2	0.333	-38.4
3500	1.53	1.31	20.3	0.339	-36.3
3750	1.47	1.51	20.6	0.349	-35.5
4000	1.41	1.67	20.4	0.402	-35.1
4250	1.48	1.72	19.8	0.410	-34.6

LINEAR S-PARAMETERS

MODEL: AC4064 Vcc = +15V Icc = 71.29 mA

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
750	0.23	-78.7	9.67	-11.7	0.011	21	0.13	120.8
800	0.22	-78.8	9.79	-20.0	0.011	18	0.12	126.8
1000	0.20	-80.9	10.13	-49.9	0.011	6	0.13	145.9
1250	0.20	-87.8	10.38	-82.5	0.010	-7	0.16	150.9
1500	0.21	-98.5	10.53	-112.8	0.009	-20	0.19	144.7
1750	0.22	-113.3	10.50	-141.9	0.008	-38	0.21	134.2
2000	0.21	-125.8	10.14	-169.1	0.006	-57	0.21	119.2
2250	0.22	-137.7	9.94	165.3	0.006	-78	0.19	107.0
2500	0.22	-149.5	10.02	139.8	0.006	-102	0.16	91.0
2750	0.22	-161.8	10.14	114.4	0.007	-121	0.13	67.4
3000	0.22	-174.6	10.20	88.9	0.009	-136	0.11	39.9
3250	0.21	170.1	10.25	62.3	0.012	-148	0.11	13.4
3500	0.21	153.5	10.33	35.5	0.015	-160	0.13	-1.9
3750	0.19	131.1	10.66	7.7	0.017	-173	0.20	-24.2
4000	0.17	109.0	10.46	-24.9	0.018	-178	0.25	-49.0
4250	0.19	87.5	9.78	-58.2	0.019	178	0.26	-64.4

MODEL: AC4064 Vcc = +12V Icc = 63.34 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
750	1.58	1.36	-40.2	0.491	-40.2
800	1.55	1.35	-40.1	0.491	-40.1
1000	1.49	1.39	-40.0	0.450	-40.0
1250	1.49	1.51	-40.4	0.401	-40.4
1500	1.50	1.63	-41.1	0.376	-41.1
1750	1.53	1.74	-42.0	0.366	-42.0
2000	1.52	1.78	-43.6	0.344	-43.6
2250	1.53	1.74	-44.2	0.326	-44.2
2500	1.54	1.65	-44.0	0.327	-44.0
2750	1.56	1.57	-42.5	0.330	-42.5
3000	1.57	1.54	-40.4	0.325	-40.4
3250	1.57	1.54	-37.7	0.335	-37.7
3500	1.54	1.66	-35.6	0.335	-35.6
3750	1.45	1.93	-34.9	0.351	-34.9
4000	1.37	2.12	-34.4	0.395	-34.4
4250	1.37	2.17	-33.7	0.388	-33.7

LINEAR S-PARAMETERS

MODEL: AC4064 Vcc = +12V Icc = 63.34 mA

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
750	0.23	-81.5	10.04	-13.6	0.010	24	0.15	134.8
800	0.22	-82.0	10.17	-21.7	0.010	22	0.15	139.5
1000	0.20	-85.1	10.53	-51.2	0.010	12	0.16	152.4
1250	0.20	-92.0	10.82	-83.7	0.010	2	0.20	153.9
1500	0.20	-102.7	11.00	-114.0	0.009	-8	0.24	146.4
1750	0.21	-117.6	10.97	-143.4	0.009	-23	0.27	135.0
2000	0.21	-130.3	10.54	-170.8	0.007	-35	0.28	119.8
2250	0.21	-142.3	10.29	163.5	0.006	-52	0.27	106.4
2500	0.21	-154.9	10.41	137.6	0.006	-74	0.25	90.0
2750	0.22	-168.0	10.57	111.5	0.007	-95	0.22	68.7
3000	0.22	177.7	10.51	85.8	0.010	-114	0.21	45.9
3250	0.22	161.0	10.32	59.3	0.013	-130	0.21	23.5
3500	0.21	139.6	10.33	32.7	0.017	-147	0.25	3.8
3750	0.18	112.0	10.43	4.7	0.018	-161	0.32	-20.7
4000	0.15	84.3	9.87	-27.3	0.019	-168	0.36	-45.1
4250	0.15	65.0	9.08	-58.6	0.021	-171	0.37	-62.9