TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AC2066 10 TO 2000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC2066
High Gain - Two Stages	17.0 dB
High Output Level	+15.0 dBm
High Third Order I.P.	+27.5 dBm
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter		Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)		8-2100 MHz	10-2000 MHz	10-2000 MHz
Small Signal Gain (Min.)		17.0 dB	16.0 dB	15.0 dB
Gain Flatness (Max.)		±0.25 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)		5.3 dB	6.2 dB	6.7 dB
SWR (Max.)	Input	< 1.5:1	1.8:1	2.0:1
	Output	< 1.5:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.		+15.0 dBm	+14.0^ dBm	+14.0^ dBm
Reverse Isolation		29.0 dB	—	—
DC Current (Max.)		65.0 mA	69.0 mA	71.0 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
^ 1.0 dB less below 500 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC2066
Second Order Harmonic Intercept Point	+48 dBm
Second Order Two Tone Intercept Point	+43 dBm
Third Order Two Tone Intercept Point	+27.5 dBm

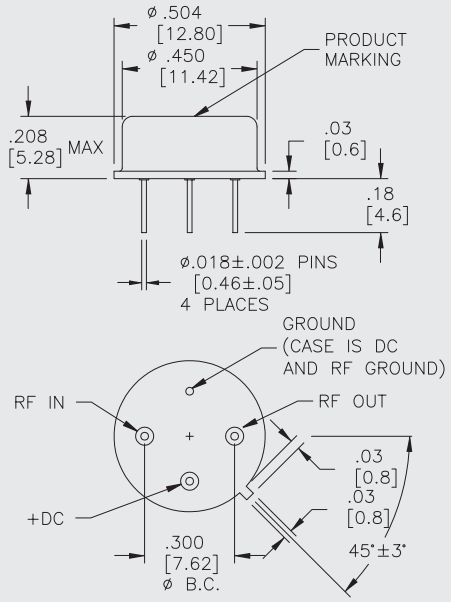
ABSOLUTE MAXIMUM RATINGS

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 Resistance[1] (θjc)	+26 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+26.8 °C

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

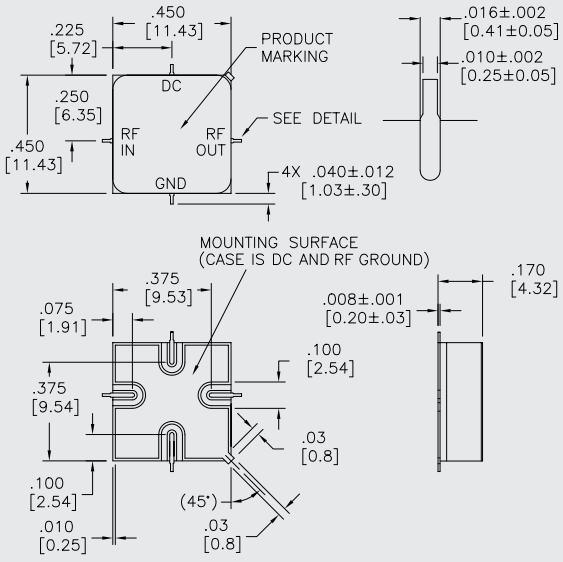
AC2066

TO-8 Package for Amplifiers



AS2066

SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

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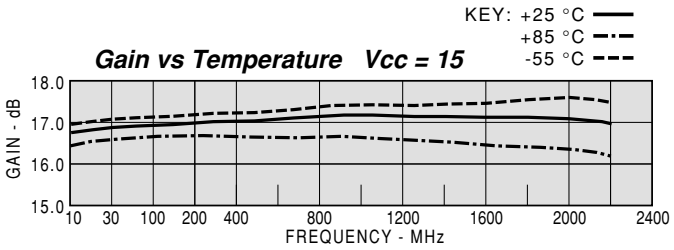
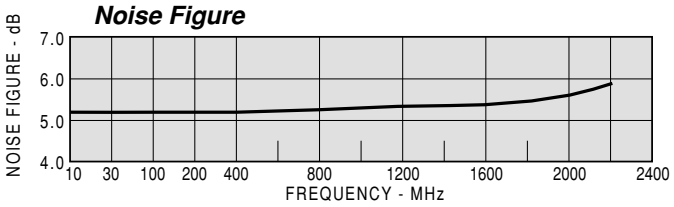
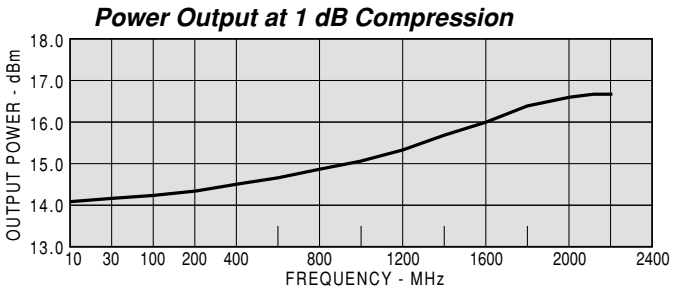
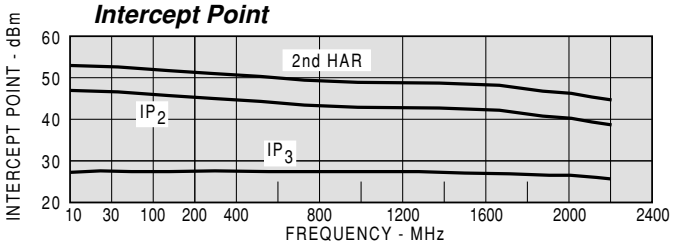
AC2066

TYPICAL PERFORMANCE









TYPICAL AUTOMATIC TEST DATA

MODEL: AC2066 Vcc = +15V Icc = 66.86 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10	1.08	1.69	16.4		-29.5
20	1.12	1.24	16.5		-29.5
50	1.13	1.11	16.5	1.210	-29.5
100	1.13	1.09	16.5	0.623	-29.4
200	1.15	1.09	16.6	0.515	-29.3
400	1.20	1.12	16.7	0.496	-29.4
600	1.26	1.18	16.9	0.496	-29.5
800	1.33	1.25	17.0	0.501	-29.9
1000	1.40	1.33	17.0	0.504	-30.2
1200	1.48	1.42	17.1	0.510	-30.3
1400	1.54	1.48	17.0	0.509	-30.4
1600	1.53	1.52	16.9	0.521	-30.4
1800	1.40	1.57	16.9	0.522	-29.9
2000	1.15	1.61	17.1	0.578	-29.4
2200	1.66	1.57	16.7	0.664	-28.5

LINEAR S-PARAMETERS

MODEL: AC2066 Vcc = +15V Icc = 66.86 mA

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.04	17.4	6.63	28.5	0.033	35	0.26	118.7
20	0.06	0.4	6.72	10.3	0.034	14	0.11	98.1
50	0.06	-5.1	6.68	-2.9	0.034	3	0.05	94.7
100	0.06	-13.4	6.72	14.0	0.034	-2	0.04	80.0
200	0.07	-31.4	6.78	32.5	0.034	-11	0.04	64.4
400	0.09	-60.9	6.86	-68.3	0.034	-25	0.06	48.8
600	0.12	-83.9	6.96	-104.0	0.033	-39	0.08	37.7
800	0.14	-104.0	7.07	-139.9	0.032	-52	0.11	22.5
1000	0.17	-120.5	7.12	-176.3	0.031	-65	0.14	-4.0
1200	0.19	-135.7	7.17	147.1	0.031	-81	0.17	-34.6
1400	0.21	-162.7	7.11	110.5	0.030	-87	0.19	69.7
1600	0.21	-174.0	6.98	72.9	0.030	-111	0.21	-107.3
1800	0.17	160.5	6.98	35.3	0.032	-127	0.22	-143.1
2000	0.07	83.1	7.12	-6.3	0.034	-143	0.23	177.9
2200	0.25	-42.6	6.84	-54.6	0.037	-162	0.22	139.3
2400	0.56	-90.1	5.71	-105.5	0.037	170	0.17	110.4

MODEL: AC2066 Vcc = +12V Icc = 53.12 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10	1.09	1.69	16.2		-29.5
20	1.14	1.24	16.4		-29.4
50	1.14	1.11	16.3	1.218	-29.4
100	1.15	1.09	16.3	0.621	-29.2
200	1.16	1.09	16.4	0.518	-29.3
400	1.22	1.11	16.5	0.500	-29.2
600	1.28	1.16	16.7	0.499	-29.4
800	1.35	1.22	16.8	0.501	-29.6
1000	1.44	1.29	16.8	0.509	-29.9
1200	1.52	1.36	16.9	0.515	-30.0
1400	1.58	1.41	16.9	0.509	-29.8
1600	1.57	1.46	16.7	0.526	-29.8
1800	1.43	1.50	16.8	0.528	-29.5
2000	1.23	1.53	17.0	0.592	-28.5
2200	1.89	1.46	16.5	0.686	-27.6

LINEAR S-PARAMETERS

MODEL: AC2066 Vcc = +12V Icc = 53.12 mA

FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.04	13.8	6.49	28.5	0.033	35	0.26	118.4
20	0.06	-0.3	6.58	10.3	0.034	16	0.11	97.1
50	0.06	-5.3	6.52	-2.9	0.034	4	0.05	92.2
100	0.07	-13.3	6.57	-14.2	0.035	-2	0.04	78.3
200	0.08	-30.4	6.63	-32.9	0.034	-11	0.04	60.9
400	0.10	-60.2	6.70	-68.6	0.034	-25	0.05	44.3
600	0.12	-84.3	6.82	-104.6	0.034	-37	0.08	33.1
800	0.15	-104.2	6.92	-140.7	0.033	-52	0.10	18.3
1000	0.18	-122.0	6.95	-177.3	0.032	-65	0.13	-8.0
1200	0.21	-138.8	7.01	145.7	0.032	-79	0.15	-39.1
1400	0.23	-157.5	6.96	108.9	0.032	-95	0.17	-75.5
1600	0.22	-178.7	6.87	71.1	0.032	-108	0.19	-113.7
1800	0.18	149.0	6.90	33.2	0.033	-125	0.20	-151.2
2000	0.10	60.3	7.06	-9.2	0.038	-141	0.21	168.1
2200	0.31	-41.5	6.71	-59.1	0.042	-165	0.19	1226.3
2400	0.61	-92.3	5.35	-110.9	0.040	168	0.12	98.6