TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AR2066

100 TO 2000 MHz TO-8B CASCADABLE AMPLIFIER

Typical Values	AR2066
High Output Power	**+20.5 dBm**
High Gain	**+19.0 dB**
Low Noise Figure	**3.0 dB**
Low DC Current Drain	**125 mA**

High Performance Thin Film
Standard Size TO-8B Package
Available in Surface Mount

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)	**30-2100 MHz**	**100-2000 MHz**	**100-2000 MHz**
Small Signal Gain (Min.)	19.0 dB	18.5 dB	18.0 dB
Gain Flatness (Max.)	< ±0.4 dB	±0.5 dB	±0.6 dB
Noise Figure (Max.)	3.0 dB	3.8 dB	4.3 dB
SWR (Max.) Input/Output	< 1.5:1	1.7:1	1.9:1
Power Output (Min.) @ 1dB comp.	+20.5 dBm	+19.5 dBm	+19.0 dBm
DC Current (Max.)	125 mA	130 mA	140 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	+12 volts	+15 volts
Second Order Harmonic Intercept Point	+53 dBm	+61 dBm
Second Order Two Tone Intercept Point	+47 dBm	+55 dBm
Third Order Two Tone Intercept Point	+31 dBm	+32 dBm

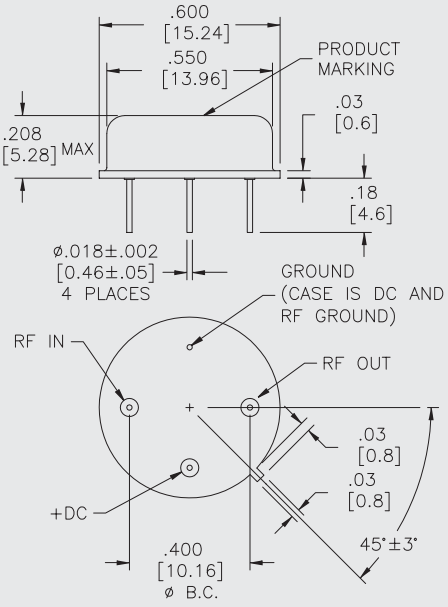
ABSOLUTE MAXIMUM RATINGS

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.)	125 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance[1] (θjc Vcc = 15)	+7 °C/Watt
Junction Temperature Rise Above Case (Tjc; Vcc = 15)	+15 °C

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

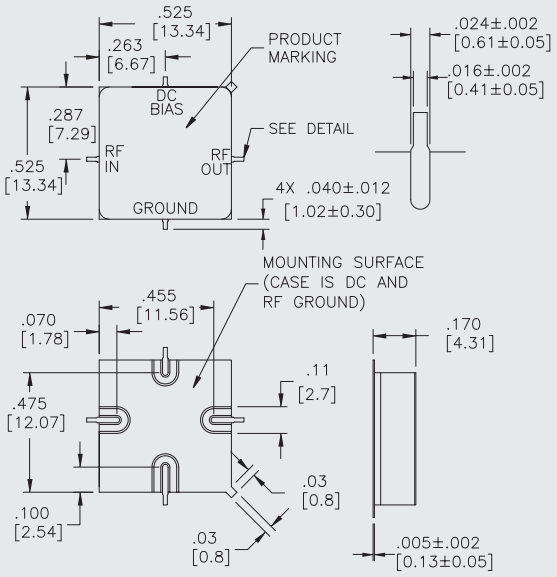
AR2066

TO-8B Package for Amplifiers



ARS2066

SMTO-8B Package for Amplifiers

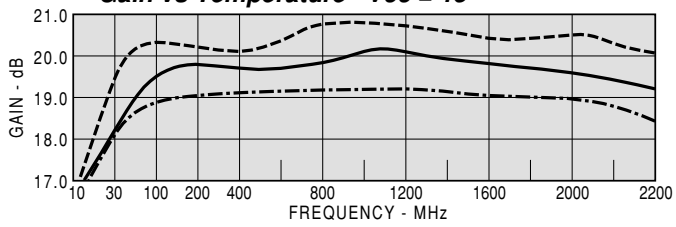


DIMENSIONS ARE IN INCHES [MILLIMETERS]

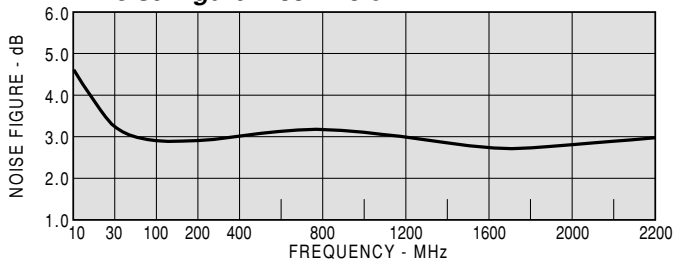
TYPICAL PERFORMANCE

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

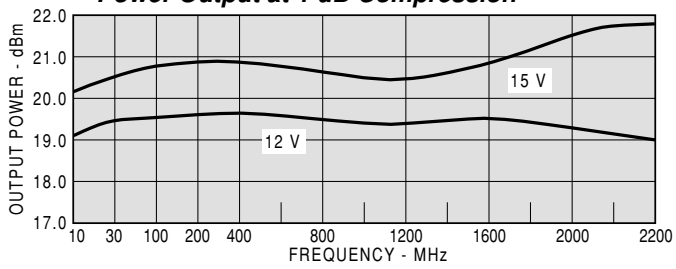
Gain vs Temperature Vcc = 15



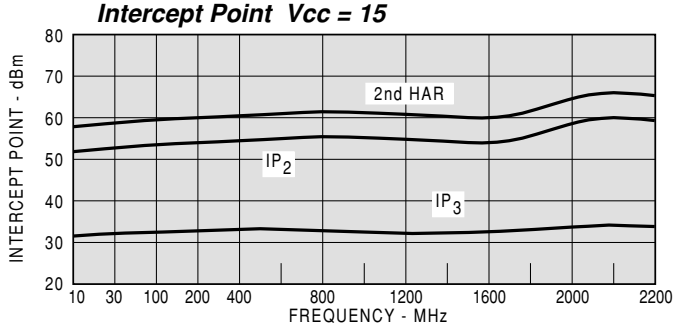
Noise Figure Vcc = 15 & 12



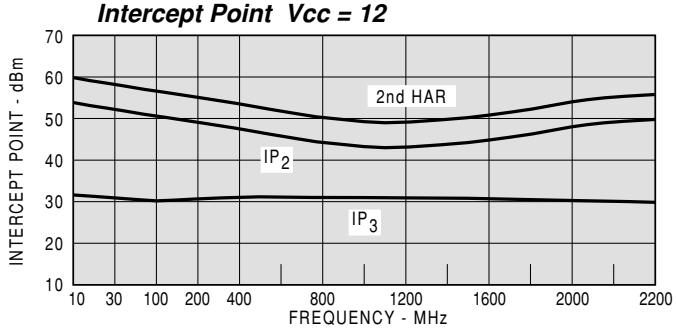
Power Output at 1 dB Compression



Intercept Point Vcc = 15



Intercept Point Vcc = 12



TYPICAL AUTOMATIC TEST DATA

Model: AR2066 Vcc=+15V Icc=121.96

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	GROUP DELAY NSEC	REV/ISO DB
10	1.36	2.33	16.44	67		-38.4
20	1.25	1.35	18.41	31		-37.6
50	1.19	1.14	19.00	7	2.2	-37.7
100	1.18	1.14	19.39	-8	0.83	-38.1
200	1.18	1.20	19.69	-30	0.61	-37.9
400	1.16	1.30	19.67	-68	0.53	-36.9
600	1.17	1.37	19.61	-103	0.49	-36.4
800	1.22	1.44	19.78	-137	0.48	-36.8
1000	1.31	1.48	19.95	-174	0.50	-37.2
1200	1.40	1.47	20.02	149	0.52	-37.6
1400	1.43	1.42	19.93	112	0.52	-37.6
1600	1.45	1.37	19.77	74	0.53	-37.5
1800	1.43	1.35	19.63	35	0.54	-37.9
2000	1.46	1.44	19.56	-7	0.58	-36.6
2200	1.72	1.74	19.07	-53	0.63	-35.9

LINEAR S-PARAMETERS

Model: AR2066 Vcc=+15V Icc=121.96

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.15	-110.3	6.63	66.7	0.012	34.0	0.40	103.8
20	0.11	-132.7	8.32	31.1	0.013	13.4	0.15	45.4
50	0.09	-167.6	8.91	7.2	0.013	1.0	0.07	0.9
100	0.08	170.7	9.32	-7.7	0.012	1.5	0.06	-32.0
200	0.08	140.4	9.64	-29.5	0.013	-1.6	0.09	-69.5
400	0.07	82.3	9.62	-67.6	0.014	-14.0	0.13	-108.7
600	0.08	27.5	9.56	-102.6	0.015	-26.2	0.16	-129.8
800	0.10	-16.8	9.75	-137.4	0.014	-40.6	0.18	-143.5
1000	0.13	-49.3	9.94	-173.7	0.014	-54.2	0.19	-157.2
1200	0.17	-74.6	10.03	148.9	0.013	-68.8	0.19	-174.1
1400	0.18	-97.5	9.92	111.6	0.013	-80.6	0.17	164.6
1600	0.18	-122.2	9.74	73.5	0.013	-95.8	0.16	142.3
1800	0.18	-156.5	9.58	34.6	0.013	-107.3	0.15	112.8
2000	0.19	158.4	9.51	-7.4	0.015	-118.5	0.18	79.4
2200	0.26	108.1	8.99	-52.7	0.016	-145.3	0.27	51.8

Model: AR2066 Vcc=+12V Icc=120.83

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	GROUP DELAY NSEC	REV/ISO DB
10	1.34	2.20	15.93	66		-39.0
20	1.22	1.27	17.83	30		-37.9
50	1.16	1.07	18.40	7	2.2	-38.8
100	1.14	1.09	18.78	-8	0.82	-39.1
200	1.14	1.17	19.06	-30	0.60	-38.3
400	1.13	1.30	19.05	-68	0.53	-37.3
600	1.15	1.40	18.99	-103	0.49	-36.8
800	1.21	1.49	19.17	-137	0.48	-36.3
1000	1.31	1.55	19.37	-174	0.50	-36.4
1200	1.41	1.56	19.49	149	0.52	-36.6
1400	1.46	1.54	19.47	112	0.52	-36.8
1600	1.50	1.52	19.35	73	0.54	-35.6
1800	1.53	1.55	19.19	33	0.55	-35.2
2000	1.59	1.71	19.01	-10	0.60	-34.3
2200	1.91	2.13	18.21	-57	0.64	-33.9

LINEAR S-PARAMETERS

Model: AR2066 Vcc=+12V Icc=120.83

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.15	-103.1	6.26	65.7	0.011	31.6	0.37	105.7
20	0.10	-124.5	7.79	30.5	0.013	11.5	0.12	49.3
50	0.07	-162.2	8.32	7.0	0.011	6.5	0.03	-9.2
100	0.07	173.3	8.69	-7.9	0.011	3.7	0.04	-59.9
200	0.06	140.0	8.98	-29.6	0.012	0.9	0.08	-92.8
400	0.06	75.7	8.96	-67.6	0.014	-10.7	0.13	-122.9
600	0.07	20.6	8.90	-102.6	0.014	-19.1	0.17	-141.0
800	0.10	-22.0	9.09	-137.4	0.015	-34.9	0.20	-153.3
1000	0.13	-51.2	9.30	-173.6	0.015	-45.8	0.21	-166.8
1200	0.17	-74.9	9.43	149.0	0.015	-57.3	0.22	175.1
1400	0.19	-96.8	9.41	111.5	0.015	-72.8	0.21	152.3
1600	0.20	-121.4	9.27	72.9	0.017	-89.5	0.21	128.3
1800	0.21	-155.6	9.11	33.1	0.017	-103.8	0.22	98.9
2000	0.23	159.4	8.92	-10.5	0.019	-122.2	0.26	68.7
2200	0.31	109.1	8.14	-56.5	0.020	-147.7	0.36	42.4