

AC2056

10 TO 2000 MHz TO-8 CASCADABLE AMPLIFIER

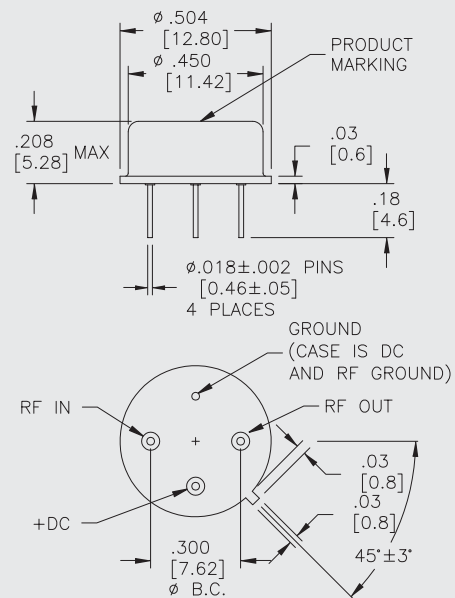
Typical Values

High Gain - Two Stages	19.0 dB
Low Noise Figure	4.0 dB
High Efficiency	+5.0 Volts
Medium Output Level	+9.5 dBm
High Performance Thin Film	
Standard Size TO-8 Package	

AC2056

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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
Small Signal Gain (Min.)	19.0 dB	18.0 dB	17.5 dB
Gain Flatness (Max.)	±0.35 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	4.0 dB	5.0 dB	5.5 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. 10-1500 MHz 1500-2000 MHz	+9.5 dBm > +12.0 dBm	+7.5 dBm +10.0 dBm	+7.0 dBm +9.0 dBm
Reverse Isolation	31.0 dB	—	—
DC Current (Max.)	34.0 mA	37.0 mA	39.0 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.
^ 2.2:1 below 20 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C

Second Order Harmonic Intercept Point	+44 dBm
Second Order Two Tone Intercept Point	+38 dBm
Third Order Two Tone Intercept Point	+21 dBm

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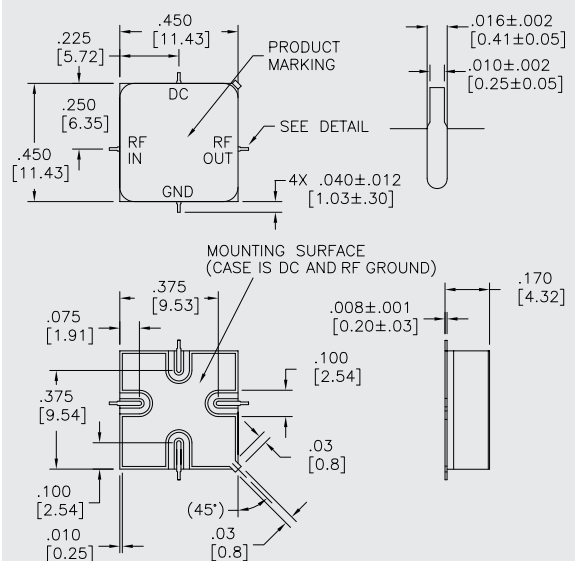
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+10 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)	+58 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+10.7 °C

¹ Thermal resistance is based on total power dissipation.

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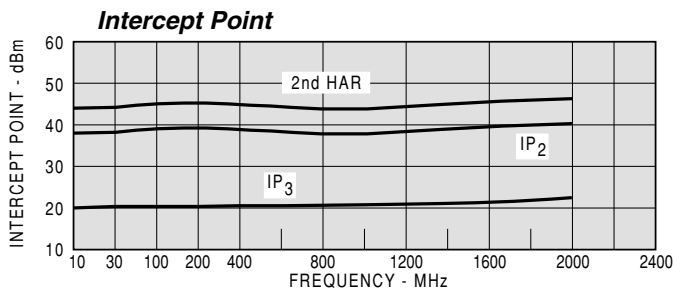
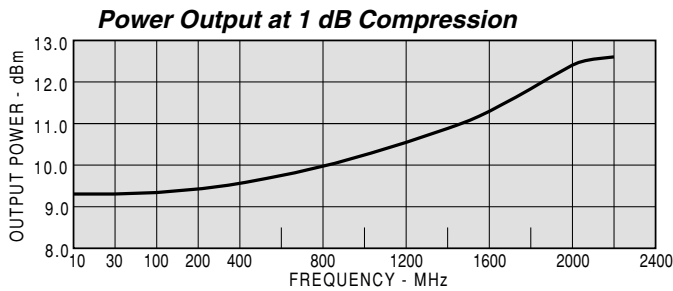
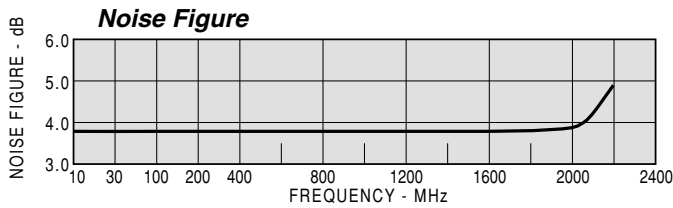
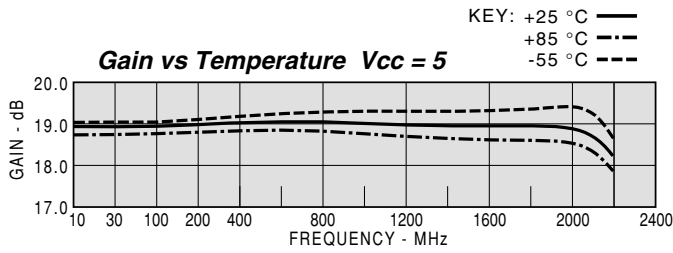
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC2056			Vcc=+5V			Icc=33.96	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.11	2.40	17.85	55		-33.3	
8	1.12	1.68	18.59	33		-31.7	
10	1.15	1.52	18.74	25		-31.6	
20	1.19	1.26	18.81	9		-31.2	
50	1.19	1.18	18.70	-5	1.20	-31.1	
100	1.19	1.18	18.70	-17	0.66	-31.3	
200	1.21	1.18	18.75	-37	0.57	-31.1	
400	1.25	1.17	18.88	-77	0.55	-31.4	
600	1.30	1.15	19.01	-116	0.56	-31.8	
800	1.37	1.16	19.12	-157	0.56	-31.8	
1000	1.43	1.19	19.11	163	0.57	-32.2	
1200	1.46	1.18	19.05	122	0.56	-32.6	
1400	1.51	1.15	18.99	82	0.57	-32.8	
1600	1.56	1.18	18.99	40	0.58	-32.2	
1800	1.54	1.36	19.16	-3	0.63	-30.7	
2000	1.57	1.68	19.31	-51	0.70	-29.4	
2200	1.82	2.03	18.39	-107	0.79	-28.0	

Model: AC2056			LINEAR S-PARAMETERS						Vcc=+5V		Icc=33.96	
FREQ.	S11		S21		S12		S22		MAG	ANG	MAG	ANG
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG				
5	0.05	-87.3	7.81	55.4	0.022	64.7	0.41	147.6				
8	0.06	-14.4	8.50	32.7	0.026	38.9	0.25	109.9				
10	0.07	-8.0	8.65	25.1	0.026	31.3	0.21	94.2				
20	0.09	-7.8	8.72	8.6	0.027	14.7	0.12	52.6				
50	0.09	-11.0	8.61	-4.8	0.028	4.7	0.08	24.1				
100	0.09	-18.0	8.61	-16.6	0.027	-3.0	0.08	11.9				
200	0.09	-34.5	8.66	-37.1	0.028	-10.4	0.08	1.0				
400	0.11	-63.9	8.79	-76.6	0.027	-23.9	0.08	-9.7				
600	0.13	-92.5	8.93	-116.4	0.026	-37.8	0.07	-13.2				
800	0.16	-114.2	9.03	-156.7	0.026	-50.3	0.07	-20.7				
1000	0.18	-132.1	9.03	162.7	0.024	-60.8	0.08	-41.5				
1200	0.19	-150.9	8.96	122.2	0.024	-71.3	0.08	-74.5				
1400	0.20	-171.0	8.90	81.6	0.023	-88.8	0.07	-130.4				
1600	0.22	166.3	8.90	40.4	0.024	-95.4	0.08	151.1				
1800	0.21	133.6	9.07	-2.9	0.029	-109.0	0.15	87.1				
2000	0.22	75.5	9.23	-51.1	0.034	-126.2	0.25	31.9				
2200	0.29	4.7	8.31	-107.1	0.040	-155.2	0.34	-24.7				

Model: AC2056			Vcc=+8V			Icc=55.72	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.13	2.44	18.47	56		-33.7	
8	1.07	1.70	19.24	33		-32.1	
10	1.09	1.53	19.39	26		-31.9	
20	1.13	1.27	19.47	9		-31.2	
50	1.13	1.18	19.37	-4	1.20	-31.4	
100	1.14	1.18	19.38	-16	0.65	-31.5	
200	1.15	1.18	19.44	-36	0.56	-31.5	
400	1.19	1.17	19.56	-75	0.54	-32.1	
600	1.23	1.16	19.69	-114	0.55	-32.2	
800	1.29	1.21	19.81	-154	0.55	-32.3	
1000	1.35	1.27	19.80	166	0.56	-32.7	
1200	1.39	1.29	19.76	126	0.55	-33.4	
1400	1.44	1.28	19.74	86	0.56	-33.7	
1600	1.50	1.26	19.77	46	0.57	-33.5	
1800	1.48	1.32	20.03	4	0.60	-32.9	
2000	1.43	1.52	20.37	-42	0.67	-31.8	
2200	1.53	1.82	20.07	-97	0.78	-29.6	