

AC2028

10 TO 2000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

Low Voltage	AC2028 +5 Volts
Medium Output Level	+15.0 dBm
High Gain	+19.8 dB
High Performance Thin Film Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-2200 MHz	10-2000 MHz	10-2000 MHz
Small Signal Gain (Min.)	19.8 dB	19.0 [^] dB	18.5 [^] dB
Gain Flatness (Max.)	±0.4 dB	±0.6 dB	±0.8 dB
Noise Figure (Max.)	<5.0 dB	5.5 dB	6.0 dB
SWR (Max.)	Input <1.4:1 Output <1.5:1†	1.7:1 1.7:1†	1.8:1 1.8:1†
Power Output (Min.) @ 1dB comp. 10-800 MHz 800-2000 MHz	+13.0 dBm +15.0 dBm	+12.0 dBm +13.5 dBm	+11.5 dBm +13.0 dBm
Reverse Isolation	29.0 dB	—	—
DC Current (Max.)	60.0 mA	65.0 mA	70.0 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.
[^] 0.5 dB lower below 50 MHz. † 0.2 higher below 20 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 1000 MHz; +5 Volts

Second Order Harmonic Intercept Point	AC2028 +56 dBm
Second Order Two Tone Intercept Point	+50 dBm
Third Order Two Tone Intercept Point	+28 dBm

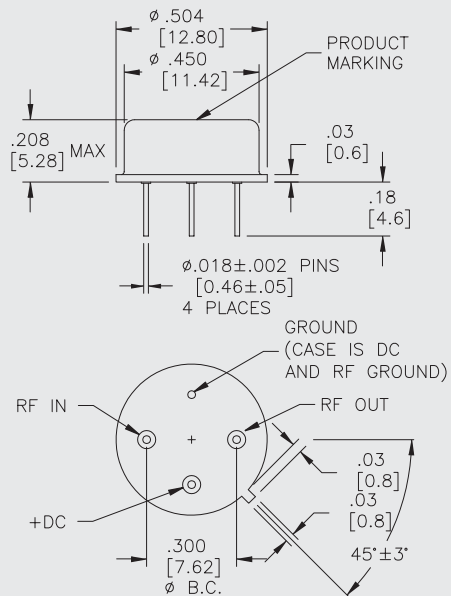
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+8 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)	+66 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+24.5 °C

¹ Thermal resistance is based on total power dissipation.

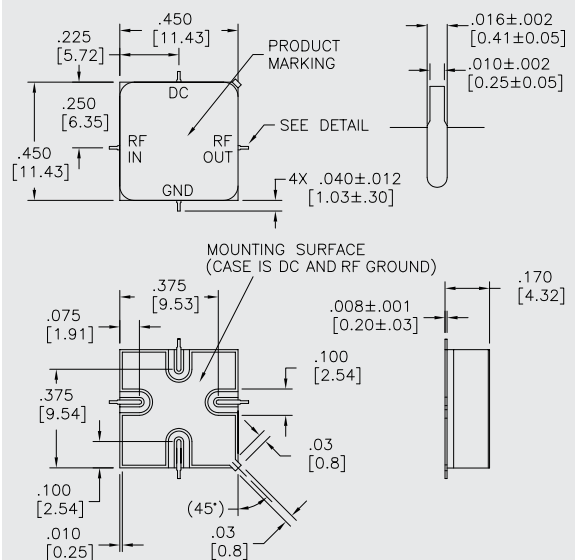
AC2028

TO-8 Package for Amplifiers



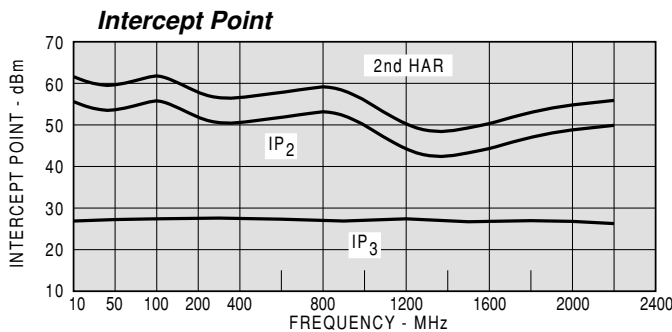
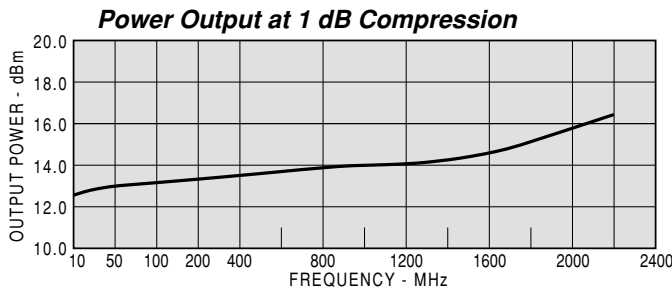
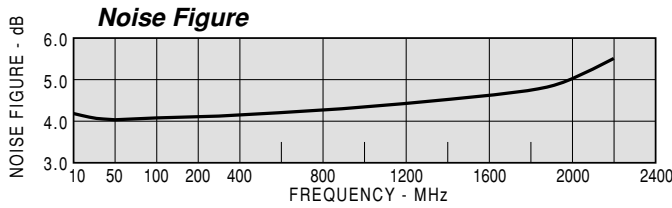
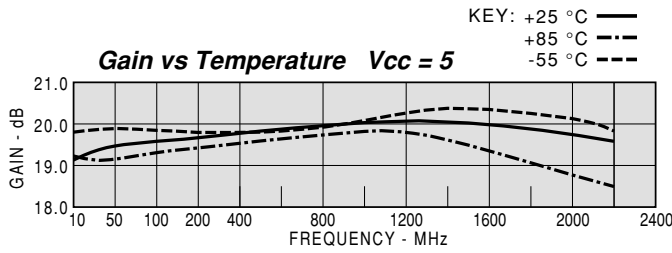
AS2028

SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AC2028			Vcc=+5V			Icc = 59.69	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
10	1.33	1.66	19.61	48		-31.2	
50	1.08	1.32	19.85	-1		-30.9	
100	1.07	1.32	19.96	-15	0.78	-30.7	
200	1.07	1.33	20.08	-38	0.62	-30.5	
400	1.10	1.40	20.19	-81	0.58	-30.3	
600	1.10	1.50	20.34	-122	0.59	-29.9	
800	1.11	1.59	20.44	-164	0.58	-30.0	
1000	1.06	1.48	20.54	153	0.60	-29.7	
1200	1.04	1.39	20.55	108	0.62	-29.4	
1400	1.04	1.30	20.39	65	0.61	-29.2	
1600	1.11	1.18	20.22	20	0.64	-29.2	
1800	1.23	1.22	19.95	-24	0.62	-29.2	
2000	1.47	1.25	19.85	-71	0.66	-28.4	
2200	1.95	1.48	19.66	-123	0.75	-27.3	

Model: AC2028

LINEAR S-PARAMETERS

Vcc=+5V

Icc = 59.69

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.14	-132.3	9.56	47.6	0.027	57.1	0.25	126
50	0.04	-164	9.83	-1.3	0.029	5.4	0.14	171.9
100	0.03	-168.5	9.96	-15.2	0.029	-1.1	0.14	174
200	0.03	-175.2	10.10	-38	0.030	-12	0.14	176.4
400	0.05	168.9	10.23	-80.6	0.030	-28	0.17	167.1
600	0.05	146.4	10.40	-122.4	0.032	-43	0.20	150.8
800	0.05	124.5	10.52	-164.3	0.032	-59.6	0.23	122.8
1000	0.03	87.1	10.64	152.5	0.033	-77.1	0.19	94.6
1200	0.02	117.8	10.65	108.5	0.034	-94.3	0.16	53.4
1400	0.02	164.4	10.46	64.6	0.035	-110.6	0.13	2.3
1600	0.05	115.8	10.26	20.4	0.035	-127.4	0.08	-77.8
1800	0.10	54.2	9.95	-24.2	0.035	-144.2	0.10	-160.9
2000	0.19	10.4	9.83	-70.8	0.038	-162	0.11	130.6
2200	0.32	-36.9	9.61	-123.1	0.043	174.7	0.19	28.1