

AC3055

10 TO 3000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC3055
Ultra Broad Bandwidth	10-3000 MHz
Low Noise Figure above 1.0 GHz	< 3.0 dB
Medium Output Power	+17.5 dBm
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed		
		0 to 50 °C	-55 to +85 °C	
Frequency (Min.)	10-3000 MHz	10-3000 MHz	10-3000 MHz	
Small Signal Gain (Min.)	10.5 dB	10.0 dB	9.5 dB	
Gain Flatness (Max.)	±0.25 dB	±0.5 dB	±0.8 dB	
Noise Figure (Max.)				
	1.5-3.0 GHz	2.6 dB	3.0 dB	3.5 dB
	0.75-1.5 GHz	3.0 dB	3.5 dB	4.0 dB
	0.2-0.75 GHz	3.5 dB	4.5 [^] dB	5.0 [^] dB
SWR (Max.)	Input/Output	< 1.5:1	1.9:1 [†]	2.0:1 [†]
Power Output (Min.) @ 1dB comp.	+17.5 dBm	+17.0 dBm	+16.5 dBm	
Reverse Isolation	18.0 dB	—	—	
DC Current (Max.)	66.0 mA	70.0 mA	75.0 mA	

* Measured in a 50-ohm system at +5.0 Vdc unless otherwise specified.
[^] 6.0 dB from 0.1-0.2 GHz. [†] 0/50 °C ≤2.0:1, +85 °C ≤2.1:1 below 50 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC3055
Second Order Harmonic Intercept Point	+41 dBm
Second Order Two Tone Intercept Point	+35 dBm
Third Order Two Tone Intercept Point	+27 dBm

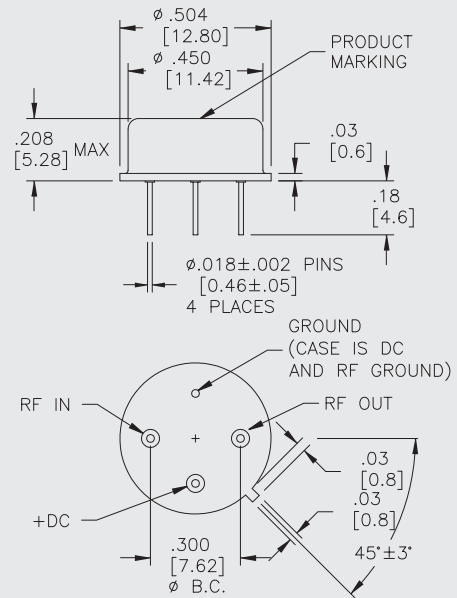
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+8 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	500 Milliwatts
Maximum Peak Power (3 μsec Max.)	1.0 Watt
Burn-in Temperature	+105 °C
Thermal Resistance ¹ (θjc)	+66 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+19.8 °C

¹Thermal resistance is based on total power dissipation.

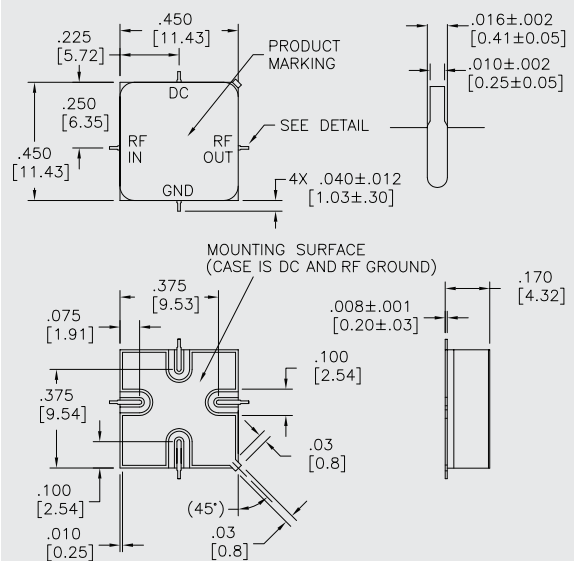
AC3055

TO-8 Package for Amplifiers



AS3055

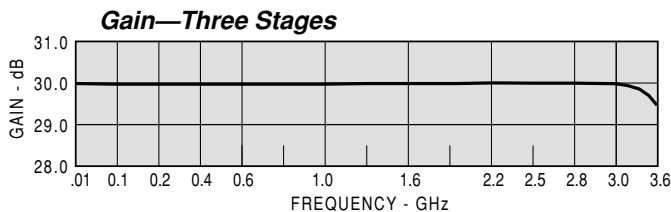
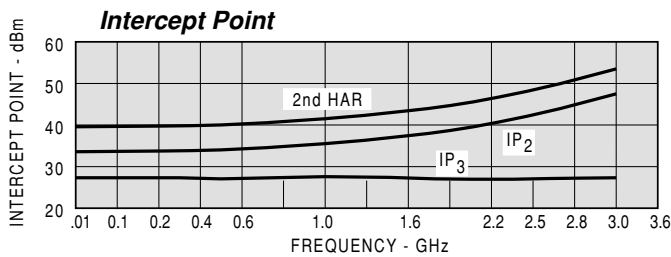
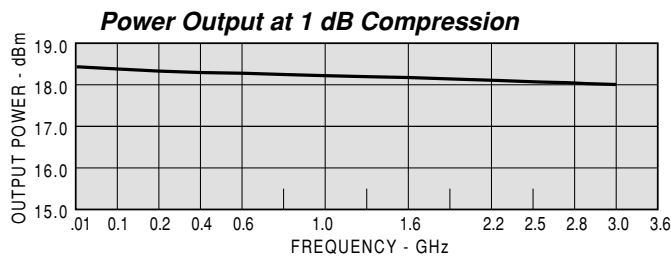
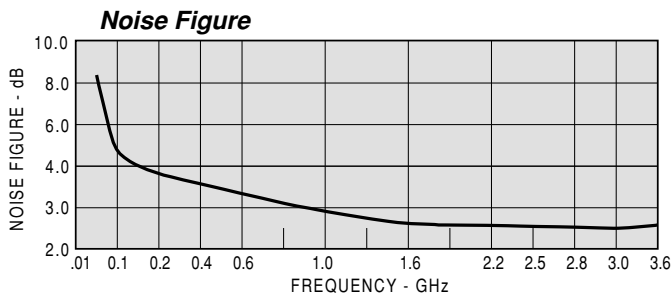
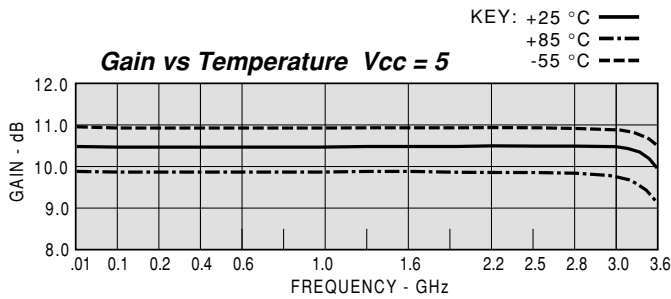
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC3055			Vcc= +5V			Icc= 58.84	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
10	1.83	1.26	10.64	-155		-17.8	
50	1.51	1.14	10.81	-178	0.86	-18.0	
100	1.50	1.14	10.82	176	0.30	-18.0	
200	1.48	1.14	10.87	169	0.21	-18.0	
400	1.45	1.14	10.95	155	0.20	-18.1	
600	1.42	1.13	10.94	141	0.19	-18.2	
800	1.43	1.10	10.95	128	0.18	-18.2	
1000	1.45	1.07	10.93	114	0.18	-18.3	
1200	1.44	1.06	10.96	101	0.19	-18.3	
1400	1.45	1.10	10.95	87	0.19	-18.4	
1600	1.49	1.17	10.89	73	0.19	-18.3	
1800	1.54	1.26	10.78	60	0.18	-18.3	
2000	1.53	1.34	10.64	46	0.19	-18.5	
2200	1.51	1.44	10.50	32	0.20	-18.5	
2400	1.47	1.53	10.43	19	0.17	-18.5	
2600	1.36	1.59	10.36	4	0.22	-18.3	
2800	1.27	1.62	10.41	-10	0.26	-18.1	
3000	1.15	1.64	10.50	-24	0.19	-17.8	
3200	1.60	1.65	10.23	-40	0.21	-17.8	
3300	1.14	1.64	10.21	-48	0.23	-17.7	

LINEAR S-PARAMETERS

Model: AC3055			Vcc= +5V			Icc= 58.84		
FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.29	-38.0	3.40	-154.8	0.129	18.6	0.12	138.4
50	0.20	-13.3	3.47	-178.3	0.126	1.5	0.07	170.5
100	0.20	-12.3	3.48	176.3	0.126	-1.9	0.07	167.3
200	0.19	-15.9	3.50	168.7	0.126	-5.7	0.06	161.6
400	0.18	-24.5	3.53	154.6	0.124	-12.9	0.07	144.0
600	0.18	-33.8	3.52	141.1	0.122	-19.1	0.06	125.5
800	0.18	-44.2	3.53	127.7	0.123	-25.5	0.05	104.9
1000	0.18	-53.5	3.52	114.4	0.121	-31.8	0.03	70.1
1200	0.18	-62.8	3.53	100.9	0.121	-37.9	0.03	13.2
1400	0.18	-73.2	3.53	87.2	0.121	-45.3	0.05	-37.8
1600	0.20	-85.4	3.50	73.4	0.121	-51.4	0.08	-69.5
1800	0.21	-95.0	3.46	59.8	0.121	-58.2	0.11	-92.5
2000	0.21	-108.5	3.41	45.8	0.119	-66.2	0.14	-110.9
2200	0.20	-122.5	3.35	32.2	0.118	-72.7	0.18	-123.9
2400	0.19	-133.5	3.32	19.3	0.120	-79.0	0.21	-133.3
2600	0.15	-146.4	3.29	4.4	0.121	-86.3	0.23	-145.5
2800	0.12	-163.7	3.31	-10.1	0.124	-93.8	0.24	-158.3
3000	0.07	-177.7	3.35	-23.6	0.129	-102.3	0.24	-165.8
3200	0.03	72.3	3.25	-40.0	0.129	-110.6	0.25	-171.7
3300	0.06	34.5	3.24	-48.1	0.131	-114.8	0.24	-176.1