

AC2037

10 TO 2000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC2037
Extended Bandwidth	5-2100 MHz
High Output Level	+15.0 dBm
High Third Order I.P.	+30.0 dBm
High Performance Thin Film	
Standard Size TO-8	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5-2100 MHz	10-2000 MHz	10-2000 MHz
Small Signal Gain (Min.)	9.0 dB	8.5 dB	7.5 dB
Gain Flatness (Max.)	±0.25 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.)	5.5 dB	6.0 [^] dB	6.5 [^] dB
SWR (Max.)	Input/Output	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+15.0 dBm	+14.0 dBm	+13.5 dBm
DC Current (Max.)	46.0 mA	50.0 mA	53.0 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
[^] 0.5 dB higher above 1600 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC2037
Second Order Harmonic Intercept Point	+49 dBm
Second Order Two Tone Intercept Point	+43 dBm
Third Order Two Tone Intercept Point	+30 dBm

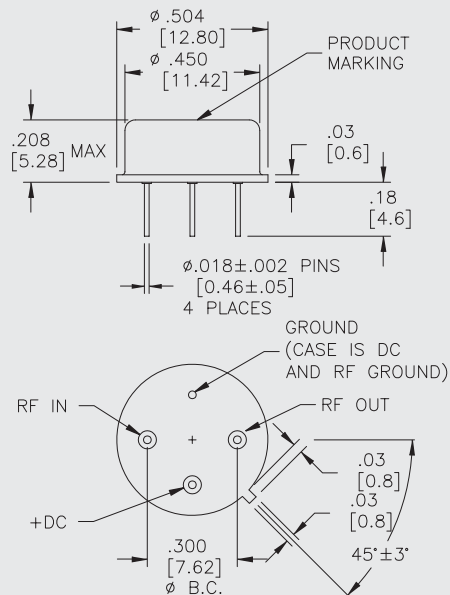
ABSOLUTE MAXIMUM RATINGS

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	+100 °C
Thermal Resistance ¹ (θjc)	+38 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+28.7 °C

¹ Thermal resistance is based on total power dissipation.

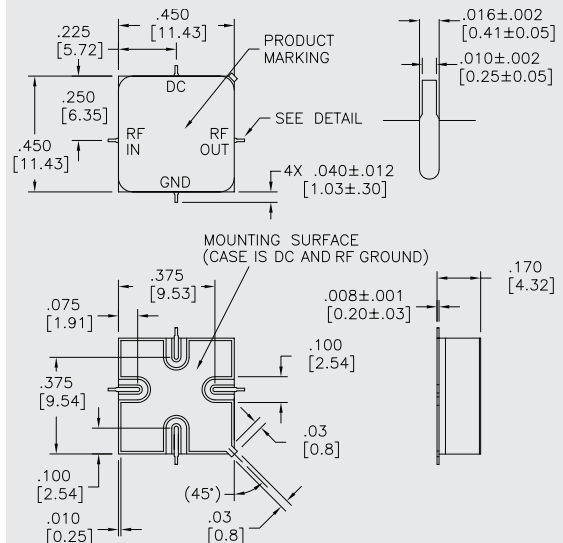
AC2037

TO-8 Package for Amplifiers



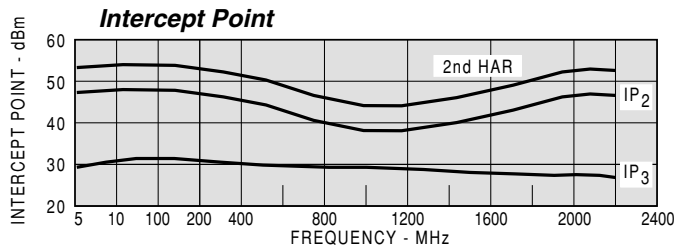
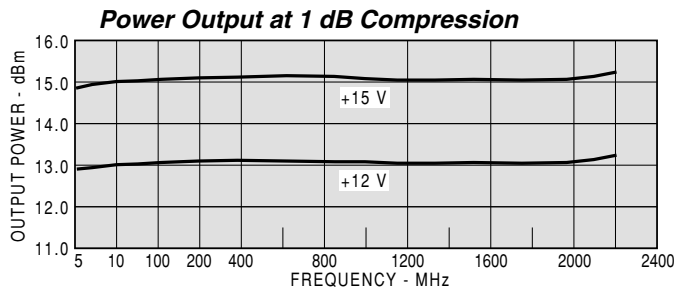
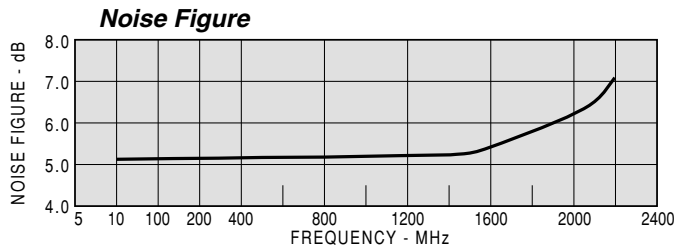
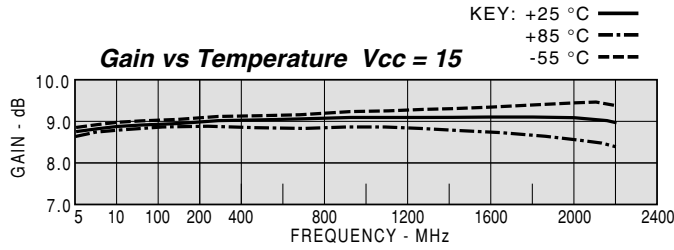
AS2037

SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AC2037			Vcc=+15V			Icc=46.20	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.41	1.50	9.12	-170		-15.1	
10	1.35	1.43	9.15	-176		-15.0	
50	1.33	1.38	9.20	175	0.52	-15.0	
100	1.32	1.38	9.16	168	0.36	-15.0	
200	1.30	1.37	9.12	156	0.33	-15.1	
400	1.25	1.32	9.18	133	0.33	-15.0	
600	1.17	1.24	9.34	109	0.34	-14.9	
800	1.09	1.13	9.50	84	0.35	-14.9	
1000	1.20	1.10	9.59	58	0.37	-14.9	
1200	1.38	1.24	9.56	31	0.37	-15.1	
1400	1.51	1.40	9.37	4	0.38	-15.4	
1600	1.48	1.53	9.38	-23	0.40	-15.4	
1800	1.23	1.57	9.49	-53	0.45	-15.2	
2000	1.34	1.45	9.30	-87	0.50	-15.1	
2200	2.45	1.12	8.14	-127	0.56	-15.5	

Model: AC2037			LINEAR S-PARAMETERS						Icc=46.20	
			Vcc=+15V							
FREQ.	S11		S21		S12		S22			
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
5	0.17	-140.3	2.86	-170.1	0.176	11.5	0.20	161.2		
10	0.15	-158.4	2.87	-175.8	0.177	5.4	0.18	167.2		
50	0.14	-179.0	2.88	174.8	0.179	-2.3	0.16	169.9		
100	0.14	175.8	2.87	168.3	0.177	-6.5	0.16	163.7		
200	0.13	169.0	2.86	156.4	0.176	-13.3	0.16	148.6		
400	0.11	159.4	2.88	132.8	0.177	-26.0	0.14	118.3		
600	0.08	154.5	2.93	108.8	0.179	-40.3	0.11	85.8		
800	0.04	-166.0	2.99	83.7	0.181	-54.5	0.06	37.6		
1000	0.09	-123.4	3.02	57.6	0.180	-70.2	0.05	-75.1		
1200	0.16	-134.5	3.01	30.9	0.175	-85.5	0.11	-138.9		
1400	0.20	-154.6	2.94	4.2	0.170	-101.6	0.17	-177.3		
1600	0.19	-172.8	2.95	-23.0	0.169	-115.4	0.21	150.3		
1800	0.10	-171.8	2.98	-52.8	0.173	-131.4	0.22	118.1		
2000	0.15	-92.2	2.92	-86.8	0.176	-152.2	0.18	82.1		
2200	0.42	-107.0	2.55	-126.9	0.167	-176.9	0.06	36.8		

Model: AC2037			Vcc=+12V			Icc=36.67	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.39	1.48	9.06	-170		-15.1	
10	1.34	1.42	9.09	-176		-15.0	
50	1.32	1.37	9.14	175	0.52	-14.9	
100	1.31	1.36	9.09	168	0.37	-15.0	
200	1.29	1.35	9.04	156	0.33	-15.0	
400	1.25	1.30	9.11	133	0.33	-15.0	
600	1.17	1.22	9.25	109	0.34	-14.9	
800	1.10	1.09	9.43	84	0.35	-14.8	
1000	1.21	1.08	9.51	57	0.37	-14.8	
1200	1.39	1.24	9.50	31	0.37	-14.9	
1400	1.52	1.42	9.37	4	0.38	-15.1	
1600	1.47	1.57	9.38	-24	0.40	-15.1	
1800	1.19	1.63	9.51	-54	0.46	-14.7	
2000	1.38	1.51	9.28	-89	0.51	-14.5	
2200	2.59	1.19	7.97	-129	0.56	-15.1	

Model: AC2037			LINEAR S-PARAMETERS						Icc=36.67	
			Vcc=+12V							
FREQ.	S11		S21		S12		S22			
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
5	0.16	-139.8	2.84	-170.2	0.177	11.4	0.19	160.7		
10	0.14	-158.0	2.85	-175.9	0.178	5.4	0.17	166.8		
50	0.14	-178.7	2.86	174.8	0.179	-2.4	0.16	170.3		
100	0.13	176.2	2.85	168.2	0.178	-6.4	0.15	164.3		
200	0.13	170.4	2.83	156.2	0.177	-13.0	0.15	150.3		
400	0.11	161.7	2.85	132.7	0.178	-25.7	0.13	121.8		
600	0.08	158.3	2.90	108.5	0.180	-39.4	0.10	92.5		
800	0.05	-163.6	2.96	83.6	0.183	-53.8	0.04	53.9		
1000	0.10	-127.0	2.99	57.3	0.183	-69.0	0.04	-106.1		
1200	0.16	-137.4	2.98	30.7	0.179	-84.2	0.11	-154.1		
1400	0.21	-157.6	2.94	3.9	0.175	-99.9	0.17	172.3		
1600	0.19	-176.9	2.94	-23.7	0.177	-114.0	0.22	141.1		
1800	0.09	-176.7	2.99	-54.1	0.183	-130.3	0.24	107.6		
2000	0.16	-84.5	2.91	-88.7	0.187	-152.2	0.20	67.0		
2200	0.44	-106.4	2.50	-129.1	0.176	-177.6	0.09	2.4		