

AC1035 AC1036

10 TO 1000 MHz TO-8 CASCADABLE AMPLIFIERS

Typical Values	AC1035	AC1036
Low Noise Figure	2.5 dB	2.7 dB
High Gain - Two Stages	25.0 dB	26.0 dB
High Efficiency; +5.0 Volts	18.0 mA	34.0 mA
Output Power; +5 Volts	+5.0 dBm	+11.0 dBm
Output Power; +8 Volts	+8.0 dBm	+14.5 dBm
High Performance Thin Film Standard Size TO-8 Package		

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5-1100 MHz	10-1000 MHz	10-1000 MHz
Small Signal Gain (Min.)			
AC1035	25.0 dB	24.5 dB	24.0 dB
AC1036	26.0 dB	24.5 dB	24.0 dB
Gain Flatness (Max.)	±0.25 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)			
AC1035	2.5 dB	3.0 dB	3.5 dB
AC1036	2.7 dB	3.5 dB	4.0 dB
SWR (Max.)			
Input/Output			
AC1035	< 1.5:1	2.0:1	2.1:1
AC1036	< 1.5:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.			
AC1035	+5.0 dBm	+3.0 dBm	+2.5 dBm
AC1036	+10.0 dBm	+8.5 dBm	+8.0 dBm
Reverse Isolation	AC1035 37.0 dB	—	—
Reverse Isolation	AC1036 36.0 dB	—	—
DC Current (Max.)			
AC1035	18.0 mA	21.0 mA	22.5 mA
AC1036	34.0 mA	37.0 mA	40.0 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC1035	AC1036
Second Order Harmonic Intercept Point	+42 dBm	+46 dBm
Second Order Two Tone Intercept Point	+38 dBm	+40 dBm
Third Order Two Tone Intercept Point	+15 dBm	+22 dBm

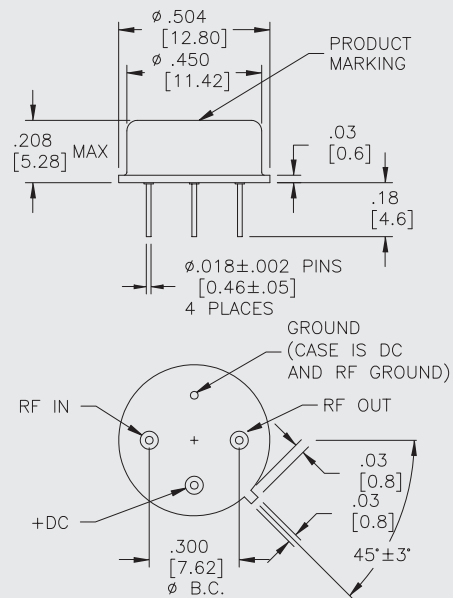
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+10 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature (AC1035/AC1036)	+125 °C
Thermal Resistance ¹ (θ _{jc} ; AC1035)	+38 °C/Watt
Thermal Resistance ¹ (θ _{jc} ; AC1036)	+54 °C/Watt
Junction Temperature Rise Above Case (T _{jc} ; AC1035)	+4.0 °C
Junction Temperature Rise Above Case (T _{jc} ; AC1036)	+9.9 °C

¹Thermal resistance is based on total power dissipation.

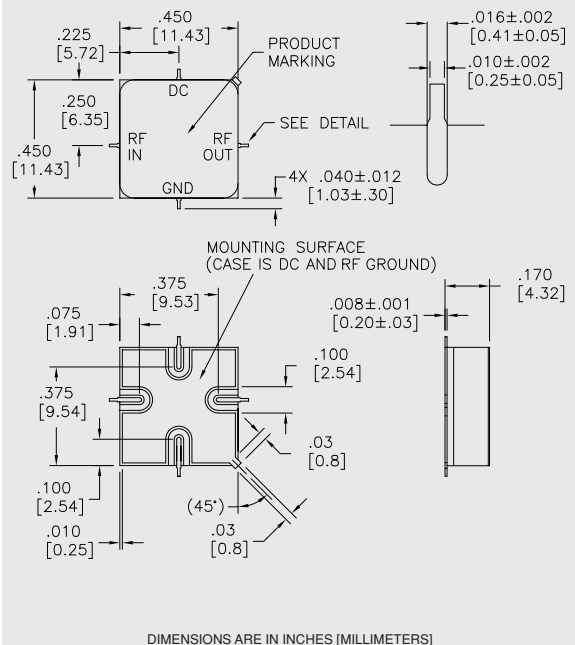
AC1035/AC1036

TO-8 Package for Amplifiers



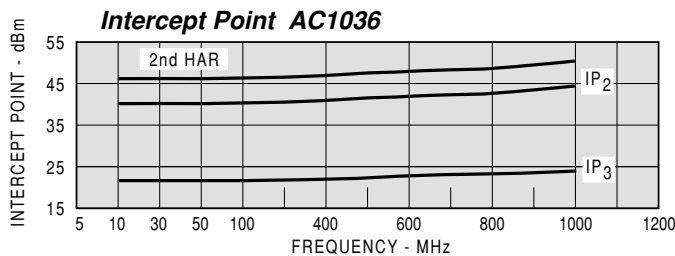
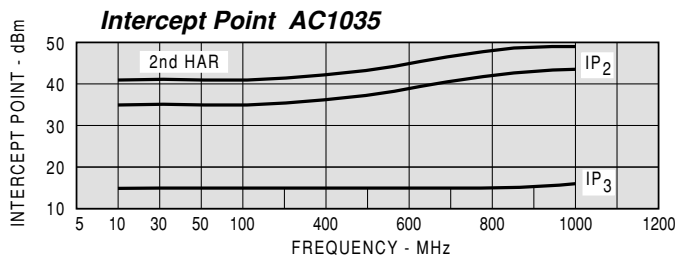
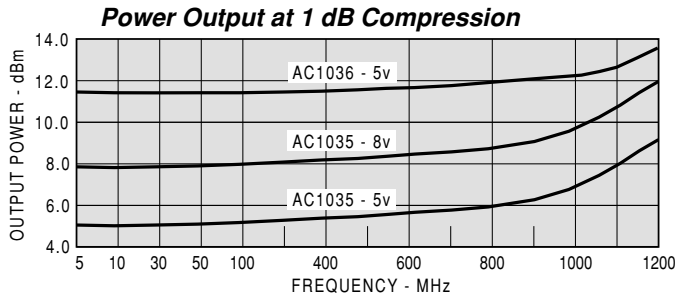
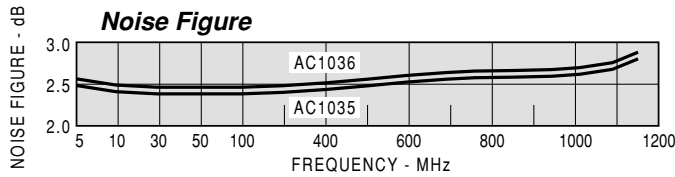
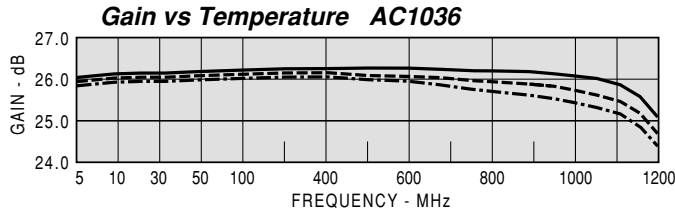
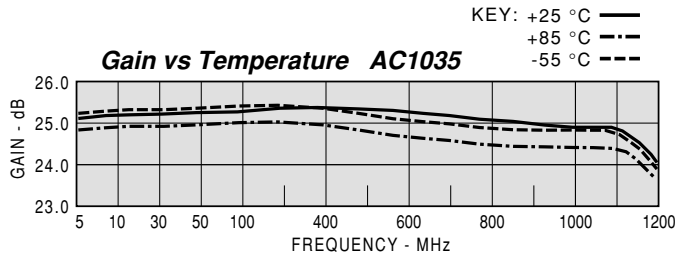
AS1035/AS1036

SMT0-8 Package for Amplifiers



TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC1035				Vcc=+5V			Icc=17.92	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO			
MHZ	IN	OUT	DB	NSEC	DB			
10	1.67	1.04	25.4		-38.8			
20	1.65	1.07	25.4		-38.2			
50	1.66	1.08	25.5	1.310	-37.9			
100	1.65	1.07	25.4	0.898	-38.1			
200	1.69	1.08	25.4	0.822	-37.8			
300	1.74	1.12	25.4	0.828	-37.6			
400	1.77	1.18	25.5	0.837	-38.0			
500	1.73	1.25	25.5	0.854	-37.5			
600	1.67	1.28	25.4	0.876	-37.0			
700	1.59	1.30	25.3	0.861	-35.9			
800	1.50	1.24	25.3	0.897	-35.6			
900	1.46	1.12	25.4	0.954	-35.1			
1000	1.65	1.09	25.4	1.060	-34.2			
1100	2.65	1.50	25.0	1.251	-33.0			

Model: AC1035				Vcc=+5V				Icc=17.82	
FREQ.	S11		S21		S12		S22		
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
10	0.25	-8.9	18.52	12.6	0.011	13.0	0.02	-10.3	
20	0.25	-7.2	18.63	2.3	0.012	11.0	0.03	6.2	
50	0.25	-11.9	18.73	-11.4	0.013	2.0	0.04	4.6	
100	0.25	-20.4	18.57	-26.9	0.012	-1.0	0.04	6.8	
200	0.26	-39.7	18.57	-55.1	0.013	-10.0	0.04	31.9	
300	0.27	-57.1	18.71	-83.2	0.013	-13.0	0.06	42.3	
400	0.28	-74.5	18.91	-112.1	0.013	-16.0	0.08	34.1	
500	0.27	-91.5	18.77	-141.4	0.013	-29.0	0.11	21.4	
600	0.25	-110.3	18.63	-170.9	0.014	-34.0	0.12	5.4	
700	0.23	-132.4	18.49	-158.9	0.016	-45.0	0.13	-15.4	
800	0.20	-162.6	18.44	128.1	0.017	-52.0	0.11	-36.9	
900	0.19	151.4	18.55	95.1	0.018	-71.0	0.06	-64.1	
1000	0.25	84.9	18.70	58.4	0.019	-87.0	0.04	119.2	
1100	0.45	26.8	17.77	15.0	0.022	-114.0	0.20	71.4	
1200	0.70	-20.7	13.91	-32.2	0.019	-143.0	0.35	30.0	
1300	0.85	-54.9	8.98	-73.1	0.018	-168.0	0.43	-4.6	

Model: AC1036				Vcc=+5V			Icc=34.08	
FREQ	SWR	SWR	GAIN	DELAY	REV/ISO			
MHZ	IN	OUT	DB	NSEC	DB			
10	1.34	1.06	25.8		-37.4			
20	1.34	1.04	25.9		-37.8			
50	1.36	1.04	26.0	1.240	-36.8			
100	1.36	1.03	25.9	0.834	-37.0			
200	1.38	1.05	26.0	0.743	-36.8			
300	1.40	1.08	26.0	0.742	-36.7			
400	1.41	1.12	26.2	0.755	-36.8			
500	1.39	1.16	26.2	0.784	-36.2			
600	1.36	1.19	26.2	0.793	-36.2			
700	1.30	1.23	26.2	0.794	-35.3			
800	1.22	1.23	26.2	0.826	-35.3			
900	1.16	1.23	26.2	0.852	-35.4			
1000	1.25	1.30	26.2	0.904	-34.0			
1100	1.70	1.47	26.2	1.008	-33.0			

Model: AC1036				Vcc=+5V				Icc=34.08	
FREQ.	S11		S21		S12		S22		
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
10	0.14	-8.4	19.43	13.6	0.013	19.0	0.03	139.4	
20	0.15	-5.6	19.68	3.5	0.013	8.0	0.02	94.1	
50	0.15	-9.6	19.88	-9.9	0.014	3.0	0.02	51.9	
100	0.15	-19.5	19.77	-24.8	0.014	-3.0	0.02	43.1	
200	0.16	-38.4	19.87	-51.6	0.014	-12.0	0.03	52.3	
300	0.17	-54.0	20.02	-78.4	0.015	-16.0	0.04	49.6	
400	0.17	-68.8	20.41	-105.5	0.014	-18.0	0.06	31.2	
500	0.16	-83.4	20.52	-133.1	0.015	-34.0	0.07	11.2	
600	0.15	-97.3	20.50	-162.3	0.015	-42.0	0.09	-13.8	
700	0.13	-116.5	20.52	169.0	0.017	-54.0	0.10	-43.4	
800	0.10	-144.6	20.38	139.3	0.017	-60.0	0.10	-77.6	
900	0.07	161.0	20.43	108.8	0.017	-72.0	0.10	-120.7	
1000	0.11	81.6	20.51	76.2	0.020	-89.0	0.13	-169.9	
1100	0.26	31.4	20.41	39.8	0.022	-111.0	0.19	135.0	
1200	0.49	-8.3	18.74	-1.5	0.022	-134.0	0.28	84.3	
1300	0.73	-43.4	14.72	-44.6	0.021	-159.0	0.34	35.3	