

AP1051

10 TO 1000 MHz TO-8 CASCADABLE AMPLIFIER

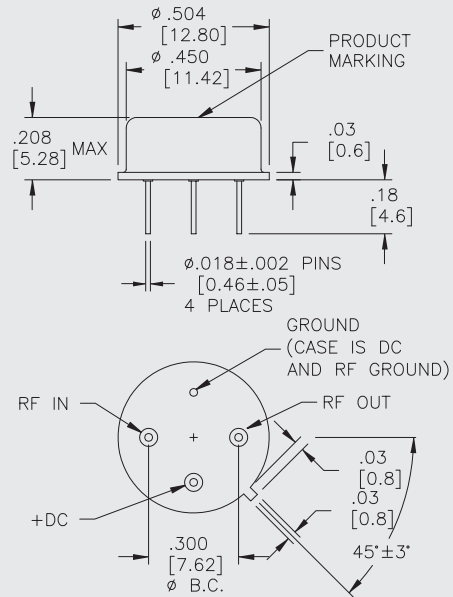
Typical Values

Low Noise	1.5 dB
High Output Level	+23.0 dBm
High Second Order I.P.	+52.0 dBm
High Dynamic Range	94 dB
High Efficiency	
High Performance Thin Film	
Standard Size TO-8 Package	

AP1051

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TO-8 Package for Amplifiers



SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-1100 MHz	10-1000 MHz	10-1000 MHz
Small Signal Gain (Min.)			
10-500 MHz	10.0 dB	9.8 dB	9.5 dB
500-1000 MHz	11.5 dB	10.3 dB	10.0 dB
Gain Flatness (Max.)			
10-500 MHz	±0.2 dB	±0.4 dB	±0.5 dB
500-1000 MHz	±0.5 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)			
100-1000 MHz	1.5 [^] dB	2.5 [^] dB	3.0 [^] dB
SWR (Max.)	Input/Output	2.0:1	2.1:1
Power Output (Min.)			
@ 1dB comp.	+23.0 dBm	+20.0 dBm	+19.0 dBm
Reverse Isolation	17.0 dB	—	—
DC Current (Max.)	89 mA	94 mA	99 mA

* Measured in a 50-ohm system at +8 Vdc unless otherwise specified.
[^] 0.5 dB higher above 600 MHz.

APS1051

INTERMODULATION PERFORMANCE

Typical @ 25 °C

Second Order Harmonic Intercept Point	+58 dBm
Second Order Two Tone Intercept Point	+52 dBm
Third Order Two Tone Intercept Point	+35 dBm

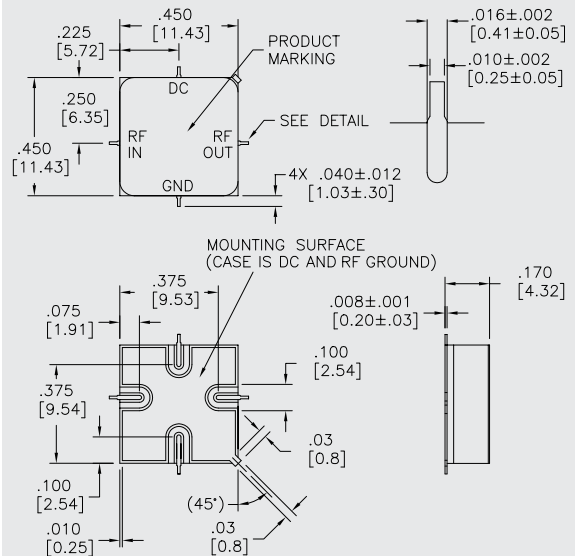
AP1051

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+10 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	+23 dBm
Maximum Peak Power (3 μsec Max.)	+27 dBm
Burn-in Temperature	+125 °C
Thermal Resistance¹ (θjc)	+21 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+15.4 °C

¹ Thermal resistance is based on total power dissipation.

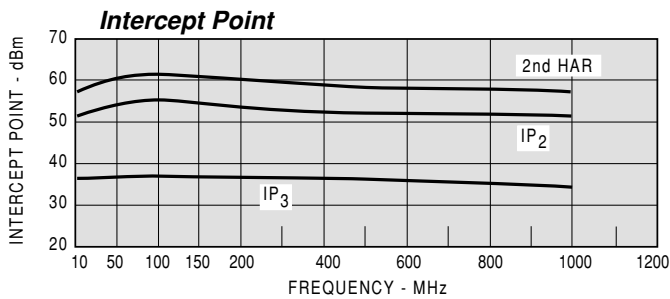
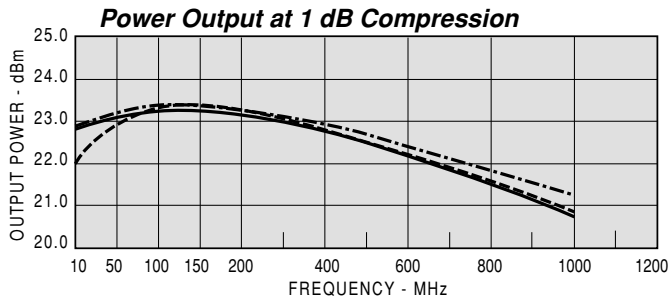
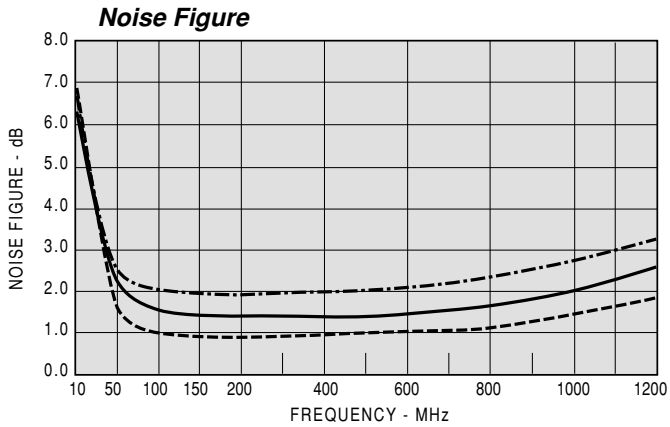
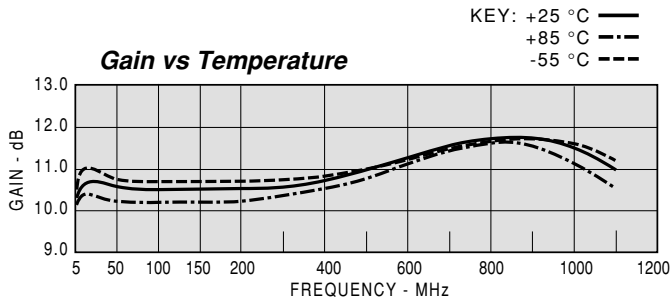
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AP1051				Vcc= +8V			Icc= 90.12	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO		
MHZ	IN	OUT	DB	DEG	NSEC	DB		
5	2.19	1.42	10.3	-153.0	8.589	-16.7		
10	1.73	1.15	10.6	-168.5	8.589	-17.0		
30	1.62	1.12	10.6	179.7	1.645	-17.0		
50	1.61	1.14	10.6	175.6	0.574	-16.9		
100	1.60	1.16	10.5	168.3	0.404	-16.9		
200	1.60	1.21	10.5	155.4	0.358	-17.0		
300	1.60	1.27	10.6	142.8	0.350	-17.1		
400	1.58	1.32	10.7	130.1	0.354	-17.1		
500	1.56	1.34	10.9	117.0	0.364	-17.0		
600	1.52	1.32	11.1	103.2	0.383	-16.9		
700	1.49	1.25	11.3	88.6	0.404	-16.9		
800	1.49	1.16	11.5	73.1	0.431	-16.9		
900	1.56	1.12	11.5	56.5	0.461	-16.9		
1000	1.75	1.30	11.3	39.4	0.474	-17.3		
1100	2.04	1.60	10.9	22.2	0.479	-17.9		

Model: AP1051				Vcc= +8V				Icc= 90.12	
FREQ	S11		S21		S12		S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
5	0.37	-32	3.26	-153.0	0.146	170.4	0.17	108.9	
10	0.27	-22.9	3.40	-168.5	0.142	176.0	0.07	122.1	
30	0.24	-10.4	3.39	179.7	0.142	176.0	0.06	156.6	
50	0.23	-9.2	3.37	175.6	0.142	173.4	0.06	150.8	
100	0.23	-10.5	3.36	168.3	0.144	167.1	0.07	131.8	
200	0.23	-17.1	3.37	155.4	0.142	154.5	0.10	99.6	
300	0.23	-26.4	3.39	142.8	0.140	142.7	0.12	79.3	
400	0.23	-38.1	3.43	130.1	0.140	130.6	0.14	61.8	
500	0.22	-53.0	3.51	117.0	0.142	117.4	0.14	48.4	
600	0.21	-72.6	3.59	103.2	0.143	104.8	0.14	36.6	
700	0.20	-97.8	3.69	88.6	0.144	91.2	0.11	27.1	
800	0.20	-130.3	3.75	73.1	0.143	76.6	0.07	30.1	
900	0.22	-166.3	3.77	56.5	0.143	60.9	0.06	79.8	
1000	0.27	160.1	3.69	39.4	0.136	45.2	0.13	105.9	
1100	0.34	131.4	3.51	22.2	0.128	28.6	0.23	100.3	