

AC552

30 TO 500 MHz TO-8 CASCADABLE AMPLIFIER

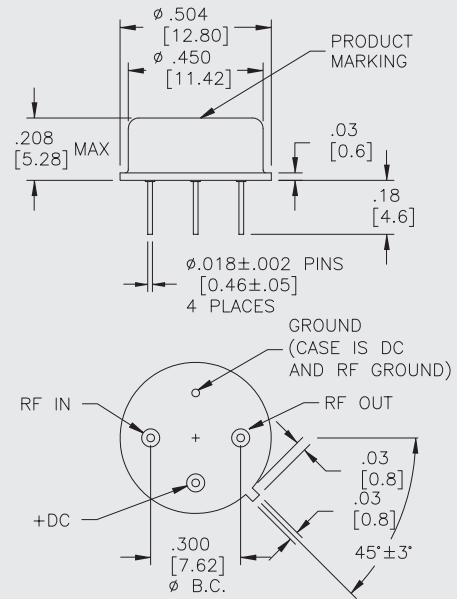
Typical Values

High Gain	+22.0 dB
Low Noise Figure	2.4 dB
Low Current Drain	16 mA Current Drain
High Performance Thin Film	
Standard Size TO-8 Package	
Available in Surface Mount	

AC552

AC552

TO-8 Package for Amplifiers



SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	30-600 MHz	30-500 MHz	30-500 MHz
Small Signal Gain (Min.)	22.0 dB	21.0 dB	20.5 dB
Gain Flatness (Max.)	< ±0.3 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)	2.4 dB	3.0 dB	3.5 dB
SWR (Max.) Input/Output	< 1.7:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	+10.0 dBm	+9.0 dBm	+8.0 dBm
Reverse Isolation	29.0 dB	—	—
DC Current (Max.)	16.0 mA	19.0 mA	22.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	+5 volts	+8 volts
Second Order Harmonic Intercept Point	+34 dBm	+39 dBm
Second Order Two Tone Intercept Point	+28 dBm	+33 dBm
Third Order Two Tone Intercept Point	+22 dBm	+28 dBm

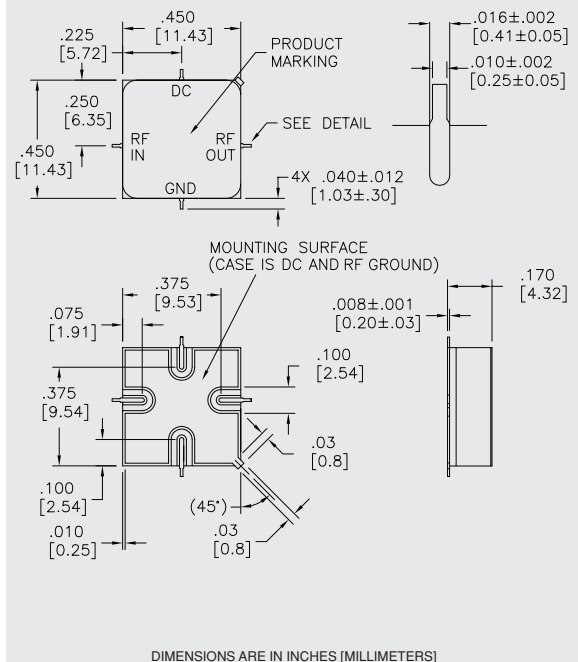
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+6 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 Resistance¹ (θjc)	+47 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+4.5 °C

1. Thermal resistance is based on total power dissipation.

AS552

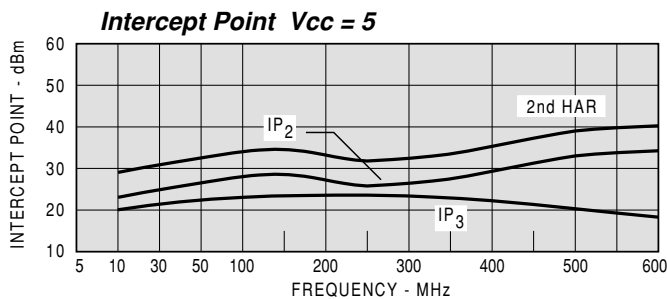
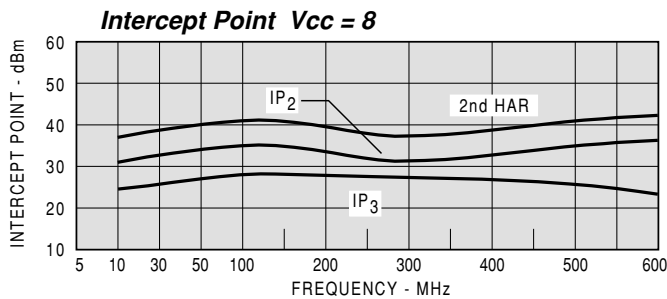
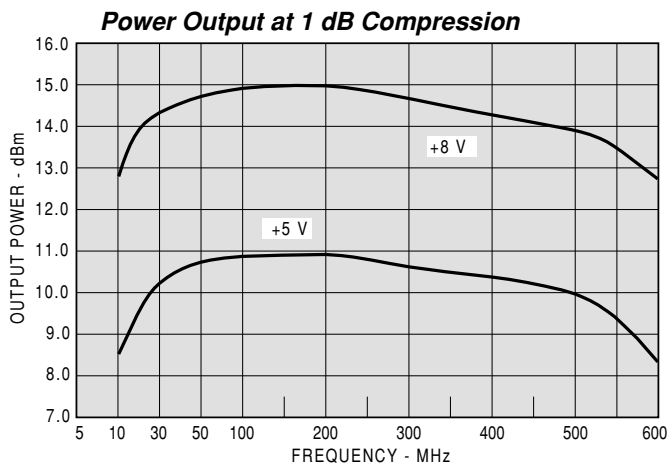
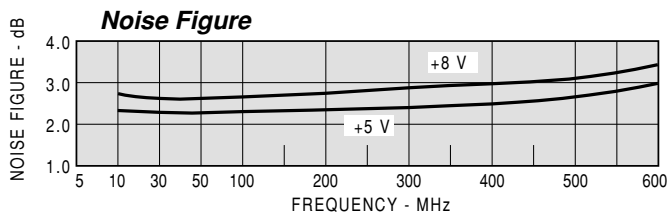
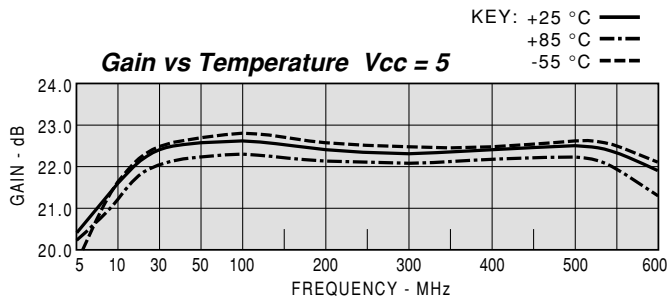
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC552		Vcc=+5V					Icc=16.18	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO		
MHZ	IN	OUT	DB	DEG	NSEC	DB		
5	2.87	4.14	20.43	-137				-33.7
10	1.93	2.13	21.59	-159				-31.1
20	1.61	1.61	22.13	-172	3.6			-30.2
30	1.50	1.44	22.37	-179	1.9			-29.8
40	1.44	1.36	22.49	176	1.4			-29.7
50	1.42	1.31	22.55	172	1.2			-29.5
100	1.39	1.23	22.60	154	0.97			-29.4
200	1.48	1.23	22.44	124	0.84			-29.7
300	1.55	1.24	22.32	95	0.79			-29.7
400	1.60	1.30	22.39	65	0.83			-30.0
500	1.63	1.72	22.48	31	0.95			-30.8
600	1.66	3.14	21.90	-9	1.1			-31.9
700	1.98	6.69	19.57	-50	1.1			-35.1

Model: AC552		Vcc=+5V						Icc=16.18	
FREQ.	S11	S21		S12		S22			
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
5	0.48	-35.3	10.51	-137.1	0.021	36.1	0.61	144.5	
10	0.32	-35.5	12.01	-159.4	0.028	18.2	0.36	129.3	
20	0.23	-29.4	12.78	-172.3	0.031	9.9	0.23	121.5	
30	0.20	-25.0	13.14	-179.0	0.032	4.0	0.18	115.6	
40	0.18	-20.8	13.32	176.0	0.033	0.7	0.15	111.4	
50	0.17	-17.4	13.41	171.7	0.033	-1.7	0.14	108.1	
100	0.16	-5.6	13.49	154.2	0.034	-14.0	0.11	91.0	
200	0.19	-1.9	13.25	123.8	0.033	-30.3	0.10	55.1	
300	0.22	-11.1	13.06	95.2	0.033	-47.1	0.11	9.6	
400	0.23	-28.4	13.17	65.3	0.032	-70.2	0.13	-59.1	
500	0.24	-62.7	13.31	31.0	0.029	-100.4	0.27	-129.2	
600	0.25	-124.2	12.45	-8.7	0.026	-136.6	0.52	177.3	
700	0.33	167.4	9.52	-49.6	0.017	176.2	0.74	133.8	

Model: AC552		Vcc=+8V					Icc=25.48	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO		
MHZ	IN	OUT	DB	DEG	NSEC	DB		
5	2.66	4.06	21.24	-138				-34.0
10	1.77	2.15	22.32	-160				-31.4
20	1.46	1.64	22.82	-173	3.5			-30.6
30	1.35	1.48	23.04	-179	1.8			-30.2
40	1.30	1.40	23.15	176	1.4			-30.1
50	1.27	1.36	23.21	172	1.2			-29.8
100	1.28	1.29	23.24	155	0.94			-30.0
200	1.45	1.30	23.02	126	0.81			-30.0
300	1.62	1.30	22.82	99	0.75			-29.9
400	1.76	1.29	22.84	71	0.77			-29.9
500	1.86	1.48	23.01	40	0.87			-30.2
600	1.76	2.41	22.79	3	1.0			-31.0
700	1.63	4.92	21.09	-37	1.1			-33.6

Model: AC552		Vcc=+8V						Icc=25.48	
FREQ.	S11	S21		S12		S22			
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
5	0.45	-40.4	11.53	-138.2	0.020	33.8	0.60	146.0	
10	0.28	-42.3	13.06	-160.0	0.027	17.8	0.36	133.3	
20	0.19	-36.2	13.83	-172.6	0.029	11.1	0.24	128.1	
30	0.15	-30.4	14.19	-179.1	0.031	5.5	0.19	124.4	
40	0.13	-23.0	14.38	176.1	0.031	0.0	0.17	121.8	
50	0.12	-15.9	14.47	171.9	0.032	-1.0	0.15	119.2	
100	0.12	9.8	14.52	155.0	0.032	-11.9	0.13	104.3	
200	0.18	18.5	14.16	125.8	0.032	-26.6	0.13	69.0	
300	0.24	9.9	13.84	98.8	0.032	-41.1	0.13	30.1	
400	0.28	-4.6	13.87	71.0	0.032	-62.0	0.12	-28.1	
500	0.30	-30.0	14.15	39.8	0.031	-86.7	0.19	-109.8	
600	0.28	-74.3	13.78	3.3	0.028	-121.0	0.41	-170.9	
700	0.24	-146.2	11.33	-37.0	0.021	-162.3	0.66	142.6	