



COUGAR COMPONENTS

2/99

AC383

10 TO 250 MHz
TO-8 CASCADABLE AMPLIFIER

Typical Values

High Gain	AC383 +35.0 dB
High Reverse Isolation	47 dB
High Efficiency	14 mA Current Drain
Low Noise Figure	1.7 dB
Power Supply Range	5 to +8 Volts
High Performance Thin Film	
Standard Size TO-8	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50° C	-55 to +85° C
Frequency (Min.)	5-350 MHz	10-250 MHz	10-250 MHz
Small Signal Gain (Min.)	35.0 dB	34.0 dB	33.0 dB
Gain Flatness (Max.)	< ±0.5 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	1.7 dB	2.5 dB	3.0 dB
SWR (Max.) Input/Output	<1.4:1	1.7:1	1.9:1
Power Output (Min.) @ 1dB comp.	+0.5 dBm	-1.0 dBm	-2.0 dBm
DC Current (Max.)	14 mA	16 mA	17 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25° C

Second Order Harmonic Intercept Point	AC383 +25 dBm
Second Order Two Tone Intercept Point	+19 dBm
Third Order Two Tone Intercept Point	+11 dBm

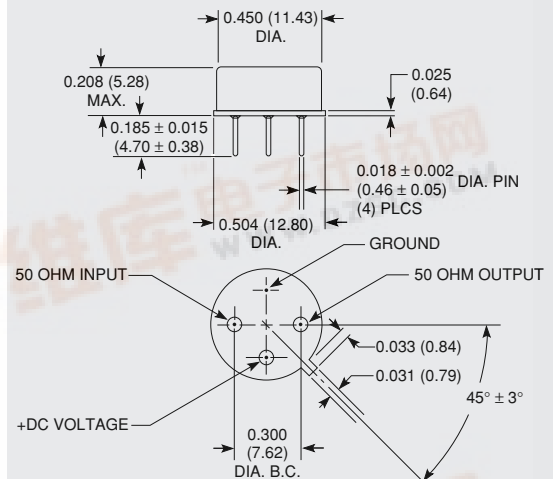
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to 125° C
Maximum Case Temperature	+125° C
Maximum DC Voltage	+13 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 (θ_{jc})	+74° C/Watt
Junction Temperature Rise Above Case (T_{jc})	+5.9° C

¹ Thermal resistance is based on total power dissipation.

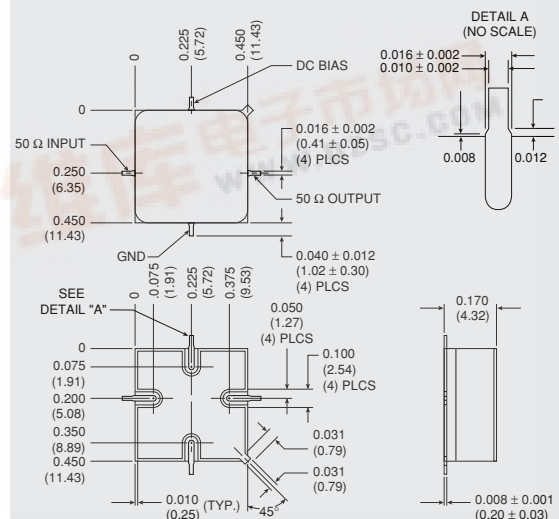
AC383

TO-8 Package for Amplifiers



AS383

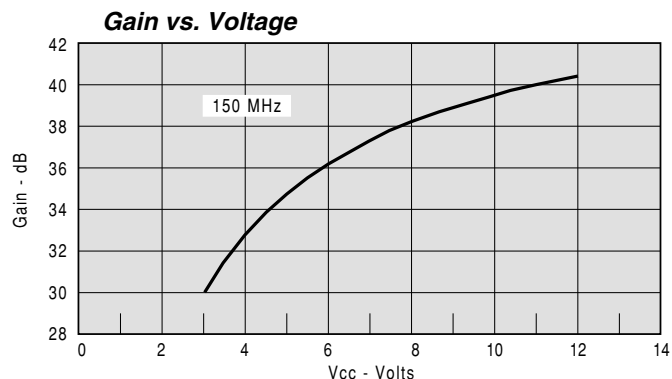
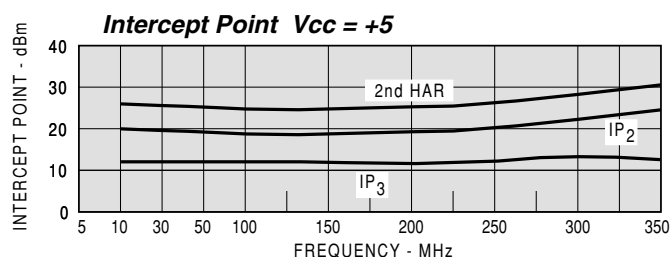
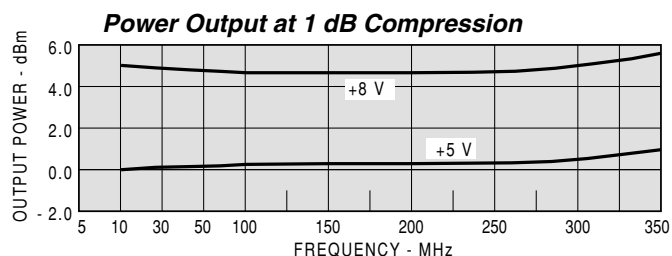
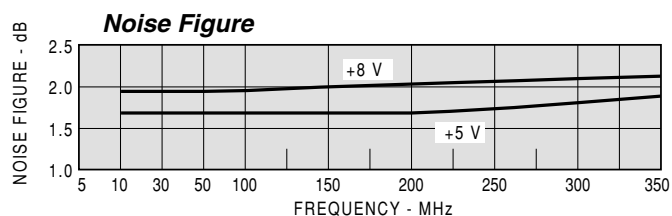
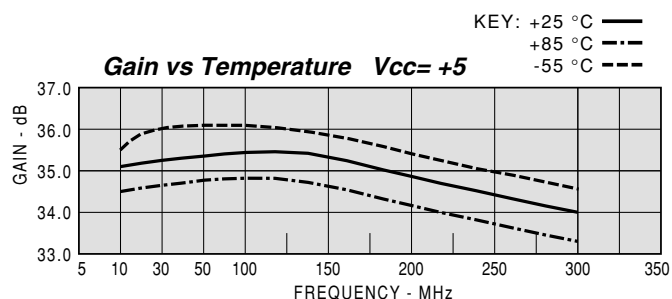
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES (MILLIMETERS)



TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AC383		$V_{cc} = +5V$		GROUP DELAY		$I_{cc} = 14.92$
FREQ	SWR	SWR	GAIN	NSEC	DB	REV/ISO
MHZ	IN	OUT	DB			
5	1.47	1.40	35.5		-47.2	
10	1.22	1.28	35.3		-47.1	
20	1.11	1.23	35.3	2.091	-46.5	
50	1.27	1.22	35.3	1.509	-47.1	
100	1.09	1.22	35.2	1.472	-47.0	
150	1.13	1.24	35.6	1.320	-46.7	
200	1.24	1.27	35.5	1.286	-46.7	
250	1.18	1.31	34.2	1.266	-46.2	
300	1.18	1.35	34.7	1.127	-47.1	

Model: AC383		$V_{cc} = +5V$		GROUP DELAY		$I_{cc} = 14.92$
FREQ.	S11	S21	S12	S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG
5	0.19	-61.9	59.55	20.1	0.004	24.0
10	0.10	-50.4	58.24	7.2	0.004	11.0
20	0.05	-29.9	58.40	-0.4	0.005	3.0
50	0.12	5.3	58.38	-16.8	0.004	4.0
100	0.04	15.1	57.75	-43.3	0.004	-3.0
150	0.06	17.1	60.14	-66.8	0.005	-4.0
200	0.11	19.0	59.77	-90.1	0.005	-1.0
250	0.08	15.2	51.57	-112.9	0.005	-5.0
300	0.08	-25.6	54.03	-133.2	0.004	0.0
350	0.09	-62.1	50.73	-152.6	0.005	-9.0
400	0.06	-11.4	47.94	-177.1	0.004	-5.0

Model: AC383		$V_{cc} = +8V$		GROUP DELAY		$I_{cc} = 24.42$
FREQ	SWR	SWR	GAIN	NSEC	DB	REV/ISO
MHZ	IN	OUT	DB			
5	1.50	1.38	38.5		-50.0	
10	1.26	1.29	38.3		-50.0	
20	1.17	1.26	38.3	2.211	-48.8	
50	1.13	1.25	38.4	1.494	-49.5	
100	1.25	1.26	38.4	1.466	-48.8	
150	1.31	1.27	38.8	1.335	-48.5	
200	1.44	1.30	39.0	1.314	-48.3	
250	1.31	1.34	37.7	1.324	-48.3	
300	1.38	1.38	38.0	1.196	-48.3	

Model: AC383		$V_{cc} = +8V$		GROUP DELAY		$I_{cc} = 24.42$
FREQ.	S11	S21	S12	S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG
5	0.20	-103.5	83.95	22.6	0.003	29.0
10	0.12	-122.0	82.67	8.5	0.003	14.0
20	0.08	-160.4	82.59	0.6	0.004	3.0
50	0.06	174.4	83.56	-15.5	0.003	4.0
100	0.11	144.3	82.79	-42.0	0.004	4.0
150	0.13	124.8	87.08	-66.0	0.004	2.0
200	0.18	88.1	89.11	-89.8	0.004	3.0
250	0.14	82.7	76.55	-113.6	0.004	2.0
300	0.16	58.6	79.18	-135.2	0.004	6.0
350	0.14	61.5	74.36	-155.6	0.004	-7.0
400	0.14	59.3	68.51	-179.0	0.004	9.0