AC383 10 TO 250 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	*AC383*
High Gain	*+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	Guaranteed -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	*AC383*
Second Order Harmonic Intercept Point	+25 dBm
Second Order Two Tone Intercept Point	+19 dBm
Third Order Two Tone Intercept Point	+11 dBm

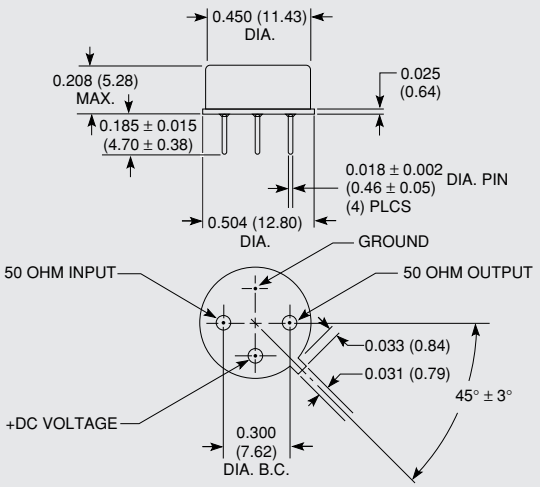
ABSOLUTE MAXIMUM RATINGS

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 Resistance[1] (θjc)	+74° C/Watt
Junction Temperature Rise Above Case (Tjc)	+5.9° C

[1]Thermal resistance is based on total power dissipation.

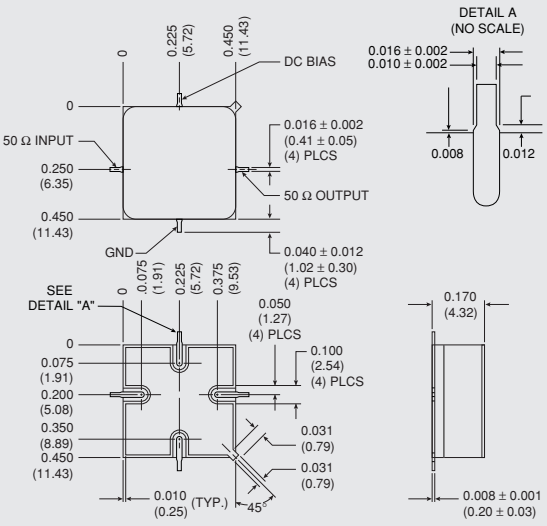
AC383

TO-8 Package for Amplifiers



AS383

SMTO-8 Package for Amplifiers

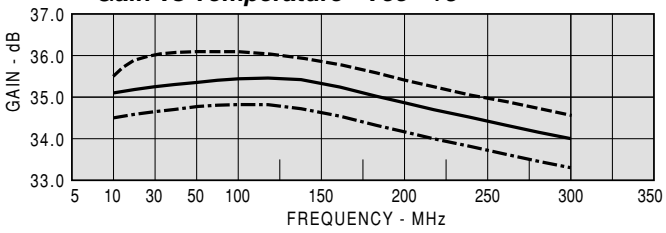


DIMENSIONS ARE IN INCHES (MILLIMETERS)

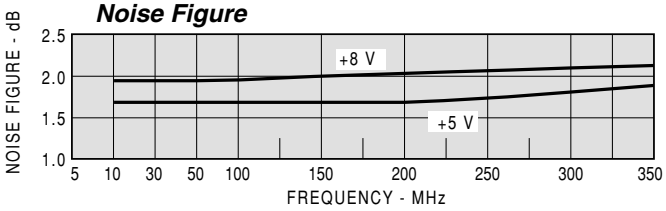
TYPICAL PERFORMANCE

KEY: +25 °C —— +85 °C -·-·- -55 °C - - -

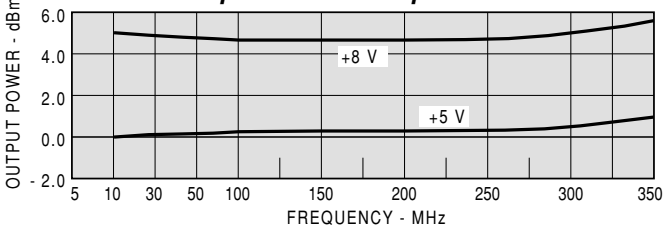
Gain vs Temperature Vcc= +5



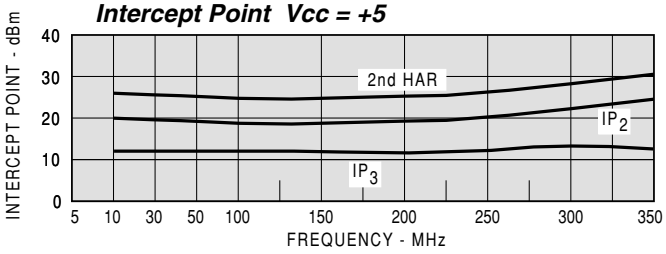
Noise Figure



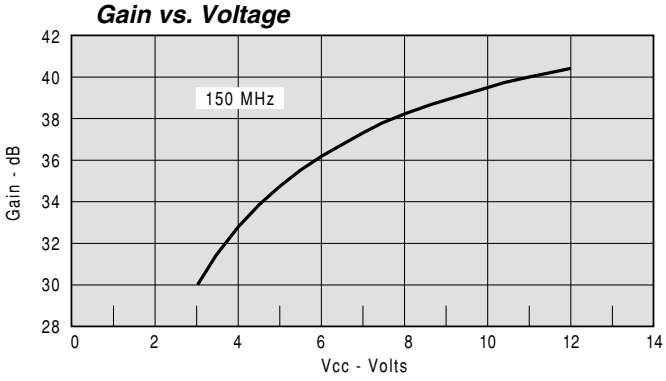
Power Output at 1 dB Compression



Intercept Point Vcc = +5



Gain vs. Voltage



TYPICAL AUTOMATIC TEST DATA

Model: AC383 Vcc=+5V Icc=14.92

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO 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

LINEAR S-PARAMETERS

Model: AC383 Vcc=+5V Icc=14.92

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.19	-61.9	59.55	20.1	0.004	24.0	0.17	-44.2
10	0.10	-50.4	58.24	7.2	0.004	11.0	0.12	-33.7
20	0.05	-29.9	58.40	-0.4	0.005	3.0	0.10	-25.1
50	0.12	5.3	58.38	-16.8	0.004	4.0	0.10	-26.3
100	0.04	15.1	57.75	-43.3	0.004	-3.0	0.10	-40.2
150	0.06	17.1	60.14	-66.8	0.005	-4.0	0.11	-56.2
200	0.11	19.0	59.77	-90.1	0.005	-1.0	0.12	-73.4
250	0.08	15.2	51.57	-112.9	0.005	-5.0	0.13	-90.1
300	0.08	-25.6	54.03	-133.2	0.004	0.0	0.15	-107.3
350	0.09	-62.1	50.73	-152.6	0.005	-9.0	0.17	-123.7
400	0.06	-11.4	47.94	-177.1	0.004	-5.0	0.20	-139.5

Model: AC383 Vcc=+8V Icc=24.42

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO 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

LINEAR S-PARAMETERS

Model: AC383 Vcc=+8V Icc=24.42

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.20	-103.5	83.95	22.6	0.003	29.0	0.16	-38.2
10	0.12	-122.0	82.67	8.5	0.003	14.0	0.13	-28.5
20	0.08	-160.4	82.59	0.6	0.004	3.0	0.12	-23.5
50	0.06	174.4	83.56	-15.5	0.003	4.0	0.11	-30.2
100	0.11	144.3	82.79	-42.0	0.004	4.0	0.11	-50.0
150	0.13	124.8	87.08	-66.0	0.004	2.0	0.12	-70.1
200	0.18	88.1	89.11	-89.8	0.004	3.0	0.13	-90.5
250	0.14	82.7	76.55	-113.6	0.004	2.0	0.14	-109.1
300	0.16	58.6	79.18	-135.2	0.004	6.0	0.16	-127.2
350	0.14	61.5	74.36	-155.6	0.004	-7.0	0.18	-142.5
400	0.14	59.3	68.51	179.0	0.004	9.0	0.19	-157.4