

AC751

200 TO 700 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

High Efficiency	AC751 +5 V, 11 mA
Low Noise Figure	1.9 dB
Medium Gain	13.0 dB
High Performance Thin Film Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	100-800 MHz	200-700 MHz	200-700 MHz
Small Signal Gain (Min.)	13.0 dB	12.5 dB	12.0 dB
Gain Flatness (Max.)	< ±0.2 dB	±0.4 dB	±0.6 dB
Noise Figure (Max.)	1.9 dB	2.4 dB	2.9 dB
SWR (Max.)	Input < 1.3:1 Output < 1.7:1	1.7:1	1.9:1
Power Output (Min.) @ 1dB comp.	200-500 MHz > +4.8 dBm 500-700 MHz > +6.5 dBm	+4.0 dBm +6.0 dBm	+3.5 dBm +5.5 dBm
Reverse Isolation	20.0 dB	—	—
DC Current (Max.)	11 mA	13 mA	16 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 500 MHz

Second Order Harmonic Intercept Point	AC751 +40 dBm
Second Order Two Tone Intercept Point	+27 dBm
Third Order Two Tone Intercept Point	+20 dBm

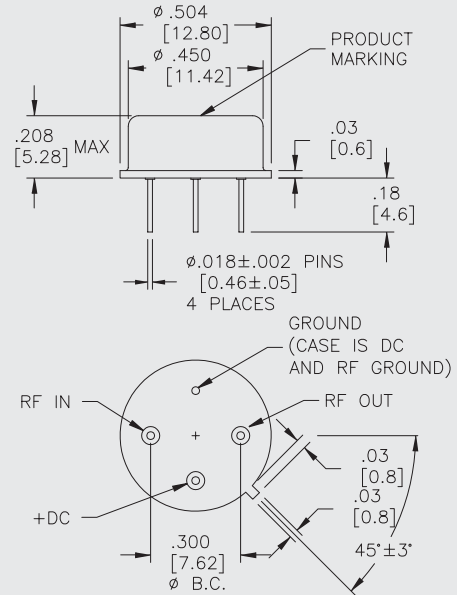
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+9 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	+125 °C
Thermal Resistance ¹ (θjc)	+91 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+5.9 °C

¹Thermal resistance is based on total power dissipation.

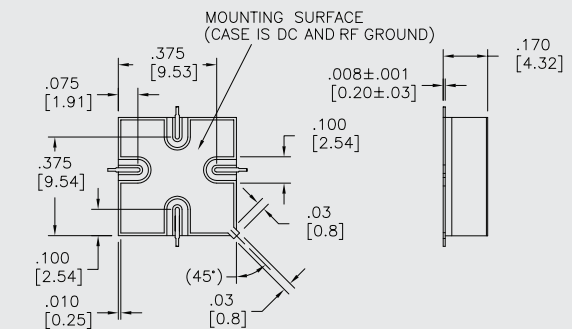
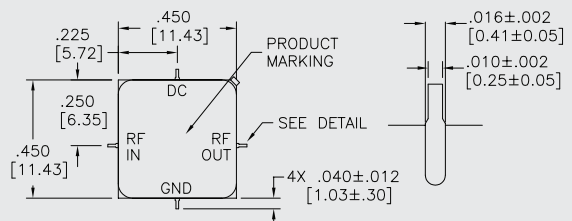
AC751

TO-8 Package for Amplifiers



AS751

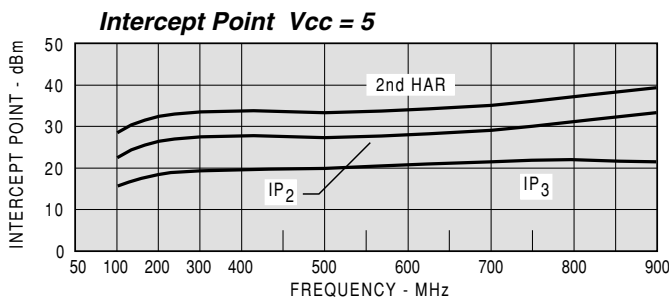
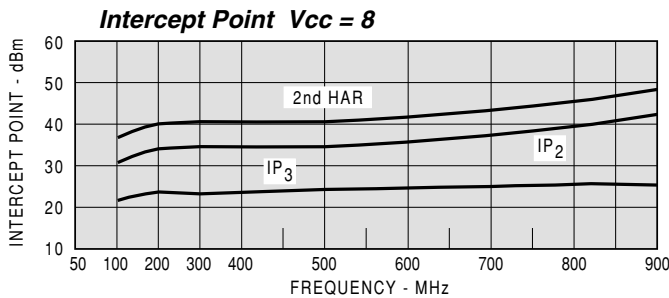
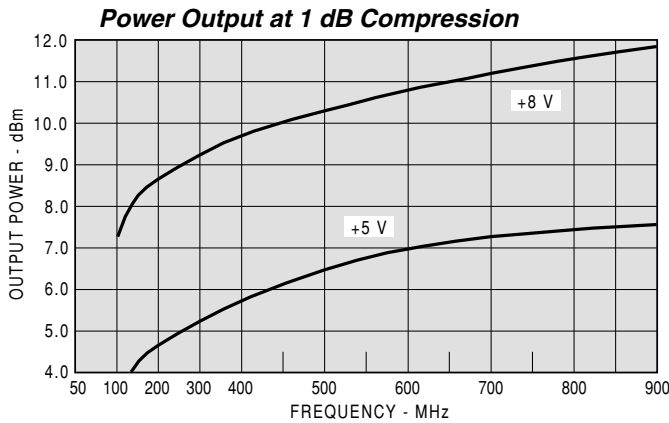
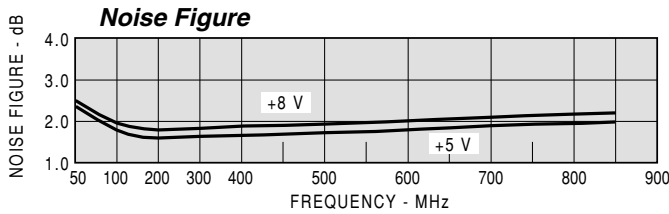
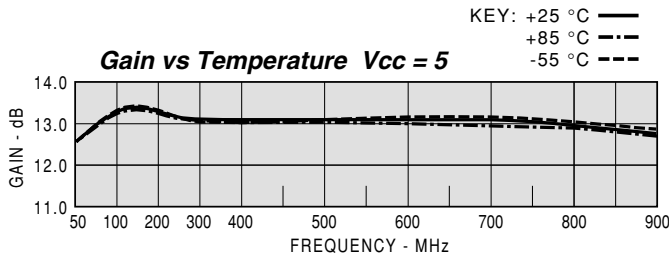
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC751 Vcc=+5V Icc=11.95

FREQ	SWR IN	SWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
150	1.39	1.72	13.4	0.716	-20.7
200	1.28	1.65	13.4	0.716	-20.7
300	1.15	1.64	13.2	0.575	-20.7
400	1.06	1.65	13.1	0.506	-20.6
500	1.08	1.63	13.1	0.480	-20.5
600	1.21	1.57	13.0	0.480	-20.4
700	1.40	1.46	13.0	0.481	-20.4
800	1.66	1.30	12.9	0.500	-20.4

Model: AC751 Vcc=+5V Icc=11.95

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
150	0.16	75.0	4.69	174.5	0.092	168.0	0.27	73.9
200	0.12	66.8	4.67	162.4	0.092	160.0	0.25	65.5
300	0.07	55.0	4.60	143.1	0.092	147.0	0.24	51.6
400	0.03	68.9	4.54	126.3	0.093	135.0	0.25	39.6
500	0.04	145.0	4.51	110.5	0.094	124.0	0.24	28.8
600	0.10	155.6	4.48	94.6	0.095	112.0	0.22	18.7
700	0.17	148.0	4.46	78.7	0.095	100.0	0.19	10.0
800	0.25	136.8	4.43	62.2	0.095	88.0	0.13	5.8
900	0.34	123.8	4.36	45.4	0.094	74.0	0.07	23.5

Model: AC751 Vcc=+8V Icc=18.64

FREQ	SWR IN	SWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
150	1.43	1.74	13.8	0.685	-20.2
200	1.33	1.69	13.7	0.685	-20.2
300	1.22	1.70	13.6	0.556	-20.2
400	1.15	1.73	13.5	0.490	-20.2
500	1.13	1.74	13.4	0.465	-20.1
600	1.19	1.69	13.3	0.464	-20.0
700	1.33	1.59	13.3	0.464	-20.0
800	1.55	1.43	13.3	0.485	-20.0

Model: AC751 Vcc=+8V Icc=18.64

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
150	0.18	88.5	4.89	173.1	0.098	170.0	0.27	82.5
200	0.14	82.6	4.86	161.5	0.098	162.0	0.26	74.1
300	0.10	74.8	4.77	142.9	0.098	149.0	0.26	59.2
400	0.07	79.1	4.71	126.7	0.098	137.0	0.27	46.4
500	0.06	104.2	4.67	111.4	0.099	125.0	0.27	34.7
600	0.08	131.0	4.64	96.1	0.100	114.0	0.26	23.6
700	0.14	136.3	4.63	80.8	0.100	102.0	0.23	13.4
800	0.22	131.4	4.64	64.8	0.101	91.0	0.18	5.4
900	0.30	121.7	4.60	48.6	0.099	78.0	0.11	5.4