

# AC501

## 5 TO 500 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC501
Low Noise Figure.....	2.1 dB
Medium Gain .....	16.2 dB
Low Power Consumption .....	10 mA at +15 V
High Performance Thin Film Standard Size TO-8 Package	

### SPECIFICATIONS\*

Parameter	Typical	Guaranteed		
		0 to 50 °C	-55 to +85 °C	
Frequency (Min.)	5-600 MHz	5-500 MHz	5-500 MHz	
Small Signal Gain (Min.)	16.2 dB	15.0 dB	14.3 dB	
Gain Flatness (Max.)	±0.2 dB	±0.5 dB	±0.7 dB	
Noise Figure (Max.)	2.1 dB	3.0 dB	3.5 dB	
SWR (Max.) Input/Output	1.3:1	1.8:1	2.0:1	
Power Output (Min.) @ 1dB comp.	-1.5 dBm	-2.0 dBm	-3.0 dBm	
Reverse Isolation	20.0 dB	—	—	
DC Current (Max.)	10 mA	11 mA	12 mA	

\* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.

### INTERMODULATION PERFORMANCE

Typical @ 25 °C; 50 MHz	AC501
Second Order Harmonic Intercept Point .....	+16 dBm
Second Order Two Tone Intercept Point .....	+10 dBm
Third Order Two Tone Intercept Point .....	+11 dBm

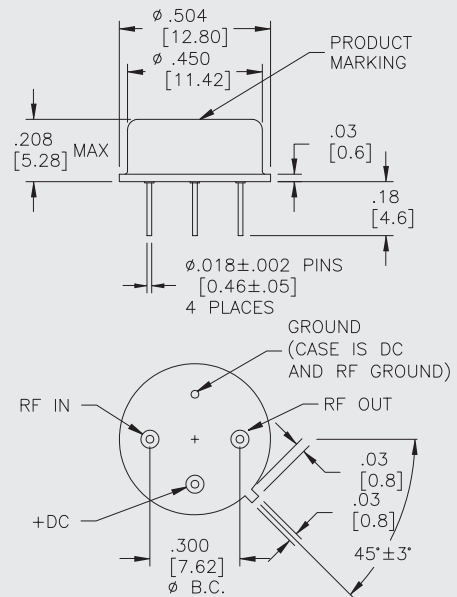
### ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to 125 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+17 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 <sup>1</sup> (θjc) .....	60 °C/Watt
Junction Temperature Rise Above Case (Tjc) .....	10 °C

<sup>1</sup> Thermal resistance is based on total power dissipation.

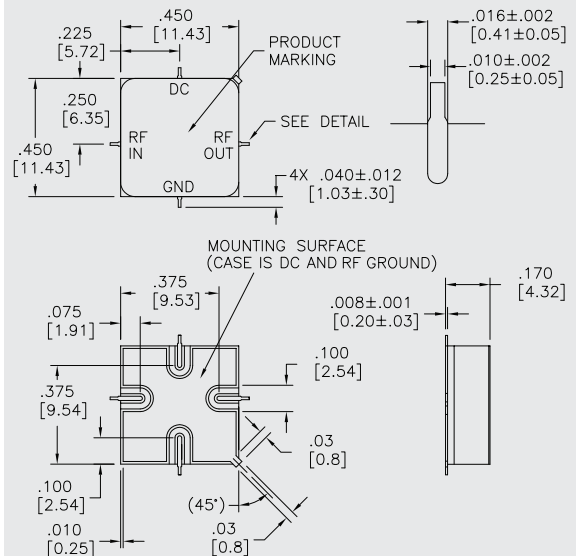
### AC501

#### TO-8 Package for Amplifiers



### AS501

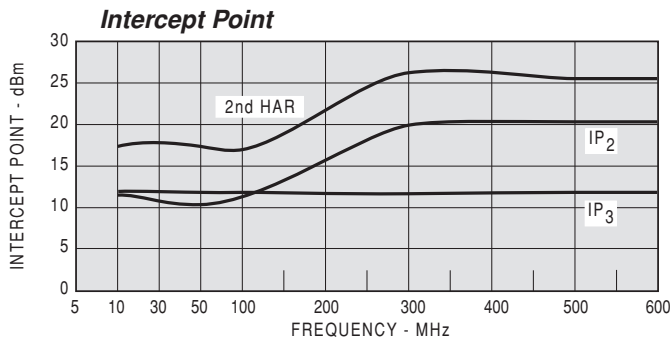
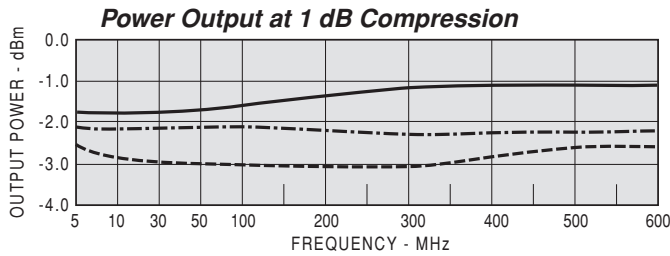
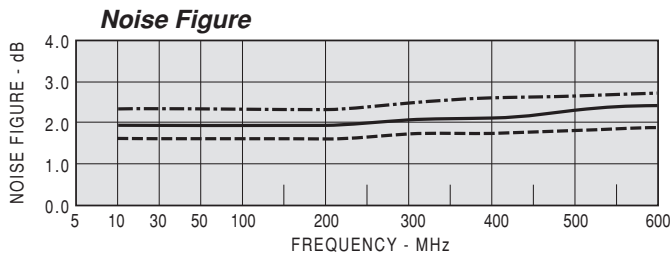
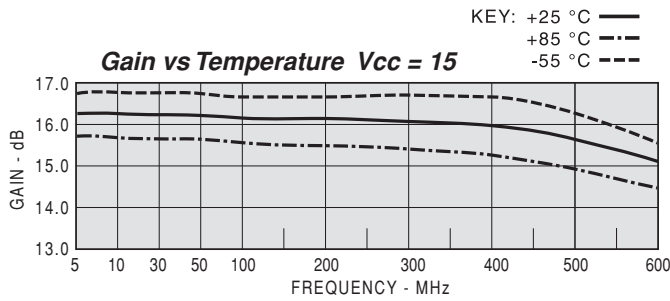
#### SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: AC501		Vcc=+15V				Icc=10.01	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.38	1.29	16.21	-177		-20.40	
10	1.38	1.28	16.21	179	1.90	-20.30	
30	1.37	1.27	16.17	172	1.00	-20.40	
50	1.35	1.28	16.16	166	0.80	-20.40	
100	1.31	1.27	16.10	152	0.80	-20.40	
200	1.20	1.22	16.05	123	0.80	-20.30	
300	1.05	1.15	15.95	93	0.82	-19.90	
400	1.13	1.01	15.80	62	0.86	-20.00	
500	1.30	1.18	15.38	30	0.89	-19.80	
600	1.42	1.58	14.83	-3	0.94	-19.20	

Model: AC501

Vcc=+15V

Icc=10.01

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.16	-171.70	6.46	-177.40	0.10	5.10	0.13	-172.50
10	0.16	-177.40	6.46	179.20	0.10	1.40	0.12	-179.90
30	0.15	174.70	6.44	171.80	0.10	-2.00	0.12	170.90
50	0.15	169.90	6.43	166.00	0.10	-4.40	0.12	162.10
100	0.13	158.20	6.38	151.60	0.10	-9.80	0.12	145.10
200	0.09	136.40	6.35	122.80	0.10	-21.10	0.10	108.80
300	0.02	80.50	6.28	93.30	0.10	-31.80	0.07	74.60
400	0.06	-49.00	6.17	62.40	0.10	-42.70	0.01	34.10
500	0.13	-74.20	5.88	30.40	0.10	-55.90	0.08	-163.80
600	0.17	-85.30	5.51	-3.30	0.11	-67.50	0.22	162.90