

ACH107

10 TO 200 MHz TO-8H CASCADABLE AMPLIFIER

Typical Values

Low Noise Figure	ACH107 <2.2 dB
High Output Level	+16.0 dBm
High Third Order I.P.	+31 dBm
High Reverse Isolation	36 dB
High Performance Thin Film Tall TO-8H Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-300 MHz	10-200 MHz	10-200 MHz
Small Signal Gain (Min.)	18.0 dB	17.0 dB	16.5 dB
Gain Flatness (Max.)	±0.2 dB	±0.4 dB	±0.7 dB
Noise Figure (Max.)	<2.2 dB	2.7 dB	3.2 dB
SWR (Max.)	Input <1.6:1 Output <1.4:1	1.8:1 1.5:1	2.0:1 1.7:1
Power Output (Min.) @ 1dB comp.	10-100 MHz +16.0 dBm 100-200 MHz +12.0 dBm	+15.5 dBm +11.5 dBm	+15.0 dBm +11.0 dBm
Reverse Isolation	36.0 dB	—	—
DC Current (Max.)	33.0 mA	37.0 mA	40.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 100 MHz

Second Order Harmonic Intercept Point	ACH107 +45 dBm
Second Order Two Tone Intercept Point	+38 dBm
Third Order Two Tone Intercept Point	+31 dBm

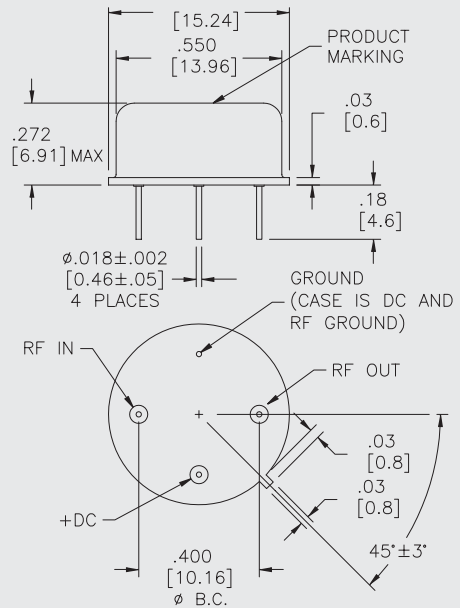
ABSOLUTE MAXIMUM RATINGS

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	+105 °C
Thermal Resistance¹ (θjc)	+51 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+28.2 °C

¹ Thermal resistance is based on total power dissipation.

ACH107

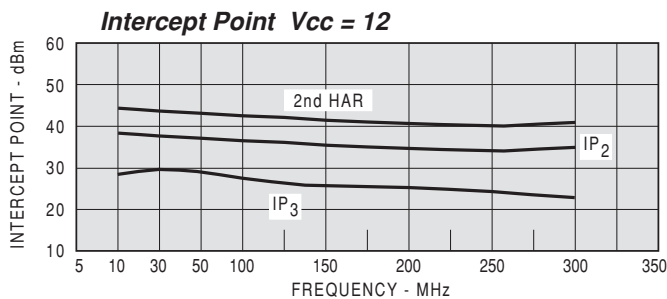
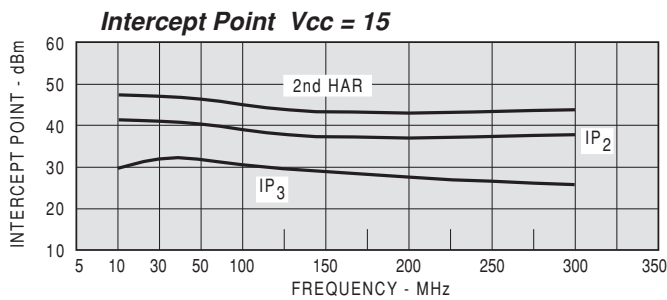
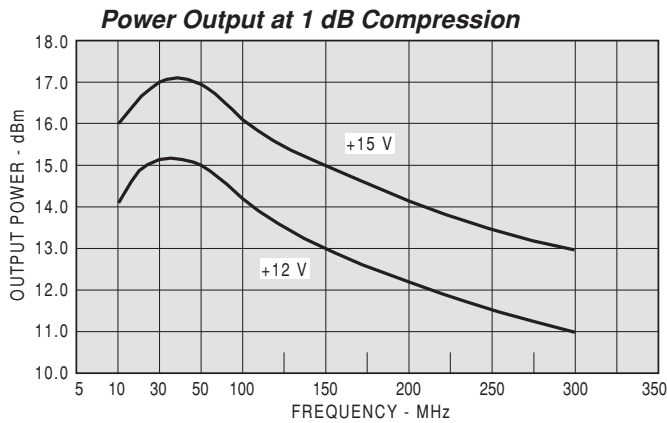
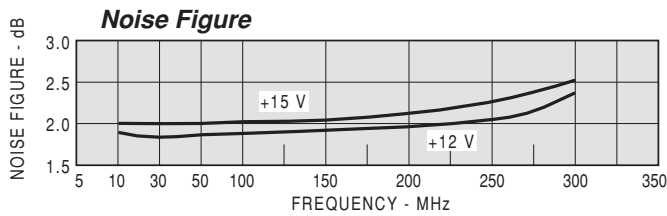
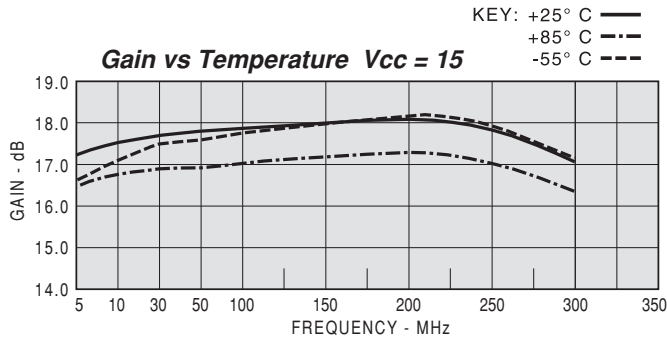
TO-8H Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: ACH107				Vcc=+15V		DELAY		Icc=33.33	
FREQ.	SWR	SWR	GAIN	DB	NSEC	DB	DB	REV/ISO	
MHZ	IN	OUT							
5	1.44	1.13	17.4					-36.9	
10	1.48	1.10	17.7					-37.1	
20	1.47	1.09	17.8		1.883			-37.0	
50	1.40	1.09	17.9		1.071			-36.7	
100	1.28	1.10	18.0		0.915			-36.2	
150	1.21	1.12	18.2		0.968			-35.0	
200	1.40	1.14	18.3		1.062			-33.1	
250	1.86	1.16	18.0		1.162			-31.1	
300	2.60	1.18	17.2		1.198			-29.4	

Model: ACH107

Vcc=+15V

Icc=26.88

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.18	-16.2	7.45	-166.6	0.014	8.0	0.06	-166.1
10	0.19	-10.7	7.64	-175.0	0.014	6.0	0.05	179.1
20	0.19	-14.3	7.76	178.4	0.014	6.0	0.04	165.0
50	0.17	-28.3	7.84	167.3	0.015	10.0	0.04	138.9
100	0.12	-57.9	7.96	151.5	0.016	18.0	0.05	100.6
150	0.10	-119.2	8.15	134.8	0.018	26.0	0.05	64.3
200	0.17	174.0	8.20	116.4	0.022	31.0	0.06	27.6
250	0.30	138.7	7.95	96.2	0.028	30.0	0.07	-10.8
300	0.44	113.1	7.28	75.4	0.034	24.0	0.08	-50.7
350	0.56	92.4	6.24	55.4	0.039	16.0	0.09	-89.7
350	0.64	75.7	5.02	38.0	0.042	8.0	0.11	-125.5

Model: ACH107				Vcc=+12V		DELAY		Icc=26.88	
FREQ.	SWR	SWR	GAIN	DB	NSEC	DB	DB	REV/ISO	
MHZ	IN	OUT							
5	1.46	1.11	17.3					-36.5	
10	1.50	1.08	17.5					-36.7	
20	1.50	1.07	17.7		1.902			-36.6	
50	1.43	1.07	17.8		1.109			-36.4	
100	1.31	1.08	17.9		0.950			-35.7	
150	1.25	1.09	18.0		0.997			-34.5	
200	1.45	1.11	18.0		1.085			-32.6	
250	1.93	1.14	17.6		1.164			-30.7	
300	2.67	1.16	16.7		1.176			-29.1	

Model: ACH107

Vcc=+12V

Icc=26.88

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.19	-16.0	7.35	-166.4	0.015	8.0	0.05	-166.9
10	0.20	-10.8	7.53	-175.0	0.015	5.0	0.04	177.9
20	0.20	-15.0	7.66	178.3	0.015	6.0	0.04	162.3
50	0.18	-29.9	7.73	166.7	0.015	10.0	0.03	134.1
100	0.13	-62.9	7.83	150.4	0.016	19.0	0.04	92.8
150	0.11	-123.3	7.95	133.1	0.019	26.0	0.05	53.8
200	0.18	174.6	7.91	114.3	0.023	30.0	0.05	14.7
250	0.32	138.6	7.56	94.1	0.029	28.0	0.06	-25.1
300	0.46	112.9	6.83	73.7	0.035	22.0	0.08	-64.5
350	0.56	92.4	5.82	54.4	0.040	15.0	0.09	-101.0
400	0.64	75.9	4.69	37.6	0.043	7.0	0.11	-133.4

