

# AC838 10 TO 800 MHz TO-8 CASCADABLE AMPLIFIER

**Typical Values**

Low Noise Figure .....	<b>AC838</b>	<b>3.0 dB</b>
High Gain .....		<b>+30.0 dB</b>
Medium Power Level .....		<b>+16.0 dBm</b>

**High Performance Thin Film**  
Available in SMA Connectorized Package

## SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50° C	-55 to +85° C
Frequency (Min.)	10-900 MHz	10-800 MHz	10-800 MHz
Small Signal Gain (Min.)	30.0 <sup>^</sup> dB	29.0 <sup>^</sup> dB	28.0 <sup>^</sup> dB
Gain Flatness (Max.)	±0.5 dB	±0.7 dB	±0.9 dB
Noise Figure (Max.)	3.0 dB	3.5 dB	4.0 dB
SWR (Max.)	Input/Output <1.4:1	1.7:1	1.9:1
Power Output (Min.) @ 1 dB comp.	+16.0 dBm	+15.0 dBm	+14.5 dBm
DC Current (Max.)	73.0 mA	78.0 mA	83.0 mA

\* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.  
^ 0.5 dB lower above 600 MHz.

## INTERMODULATION PERFORMANCE

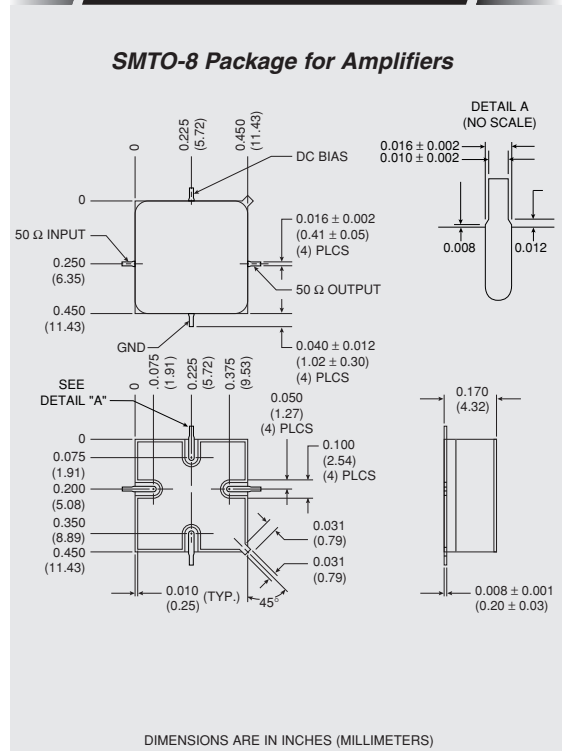
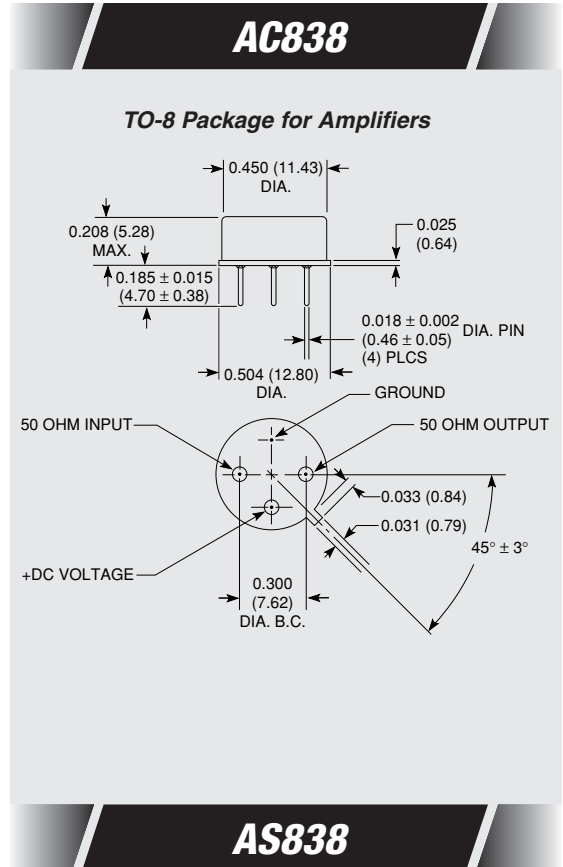
**Typical @ 25° C**

Second Order Harmonic Intercept Point .....	<b>+5 volts</b>	<b>+56 dBm</b>
Second Order Two Tone Intercept Point .....		<b>+50 dBm</b>
Third Order Two Tone Intercept Point .....		<b>+30 dBm</b>

## ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to 125° C
Maximum Case Temperature .....	+125° C
Maximum DC Voltage .....	+7 Volts
Maximum Continuous RF Input Power .....	+8 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 Resistance <sup>1</sup> (θjc) .....	+63° C/Watt
Junction Temperature Rise Above Case (Tjc) .....	+24.5° C

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

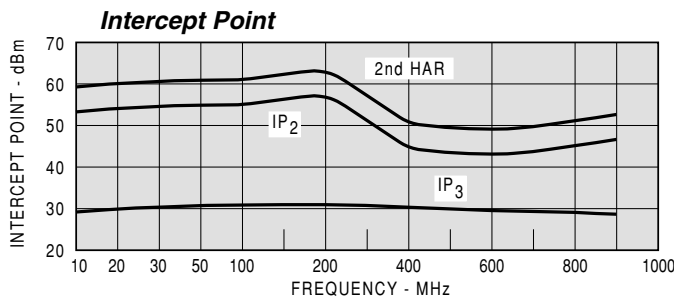
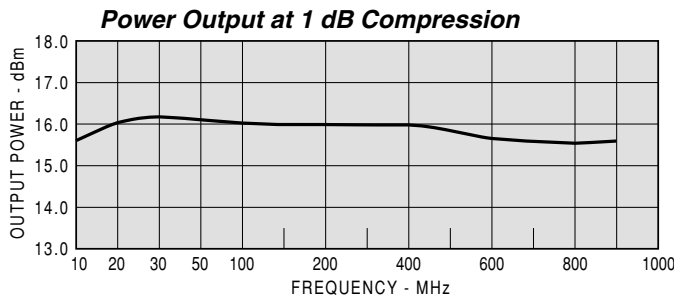
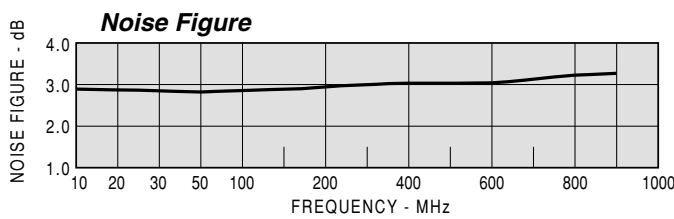
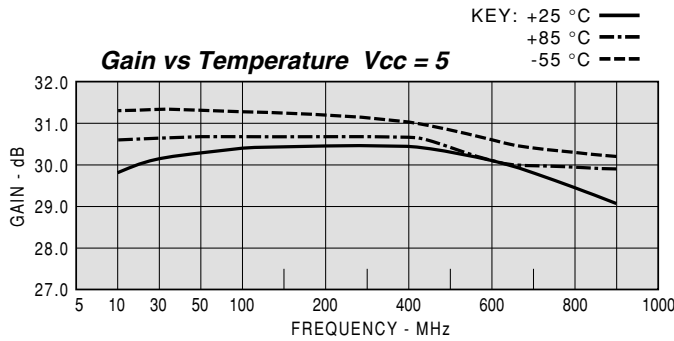


DIMENSIONS ARE IN INCHES (MILLIMETERS)



## TYPICAL PERFORMANCE

## TYPICAL AUTOMATIC TEST DATA



Model: AC838 Vcc=+5V Icc=71.13

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
5	2.43	7.18	25.65	106		-49.2
10	1.27	1.70	30.02	51		-39.9
50	1.08	1.16	30.23	-7	1.5	-39.0
100	1.08	1.15	30.17	-27	1.1	-38.8
200	1.08	1.22	30.06	-59	0.89	-38.9
300	1.12	1.33	29.99	-91	0.86	-37.9
400	1.17	1.39	29.93	-122	0.88	-37.9
500	1.23	1.41	29.77	-154	0.88	-37.2
600	1.30	1.37	29.58	174	0.9	-36.0
700	1.36	1.30	29.25	142	0.9	-35.5
800	1.33	1.26	29.01	109	0.91	-35.1
900	1.29	1.26	28.8	75	0.96	-34.2

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LINEAR S-PARAMETERS

FREQ	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.42	-82.8	19.17	106.1	0.003	167.3	0.76	161.5
10	0.12	-120.8	31.69	50.7	0.010	59.8	0.26	107.1
50	0.04	-55.0	32.46	-6.9	0.011	8.0	0.07	168.0
100	0.04	-86.8	32.23	-26.7	0.011	1.2	0.07	-177.0
200	0.04	-151.4	31.84	-59.2	0.011	-5.3	0.10	-154.7
300	0.06	158.2	31.57	-90.6	0.013	-5.1	0.14	-158.7
400	0.08	118.6	31.36	-122.1	0.013	-10.2	0.16	-174.5
500	0.10	83.8	30.8	-154.1	0.014	-15.8	0.17	164.5
600	0.13	49.0	30.12	174.0	0.016	-25.2	0.16	144.5
700	0.15	20.3	29.0	141.6	0.017	-33.9	0.13	120.3
800	0.14	-12.7	28.22	109.0	0.018	-43.8	0.12	93.8
900	0.13	-56.7	27.54	74.8	0.019	-57.5	0.12	75.2
1000	0.09	-122	27.04	37.5	0.022	-75.3	0.17	46.9