TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AC829

10 TO 800 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC829
Low Noise Figure	3.0 dB
Medium Power Output	+18.5 dBm
Low Voltage	+5 Vdc
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)	10-900 MHz	10-800 MHz	10-800 MHz
Small Signal Gain (Min.)	12.0 dB	11.5 dB	11.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.3 dB	±0.4 dB
Noise Figure (Max.)	3.0^ dB	4.0^ dB	4.7^ dB
SWR (Max.) Input/Output	<1.5:1	1.8:1	1.9:1
Power Output (Min.) @ 1dB comp.	+18.5 dBm	+17.0 dBm	+16.5 dBm
Reverse Isolation	18.5 dB	—	—
DC Current (Max.)	50.0 mA	55.0 mA	60.0 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.
^ 0.6 dB higher above 400 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 500 MHz	+5 Volts
Second Order Harmonic Intercept Point	+47 dBm
Second Order Two Tone Intercept Point	+41 dBm
Third Order Two Tone Intercept Point	+33 dBm

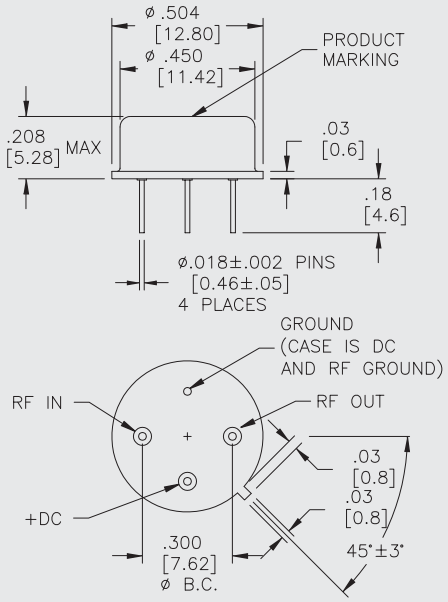
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+7 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 Resistance[1] (θjc)	+70 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+16.3 °C

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

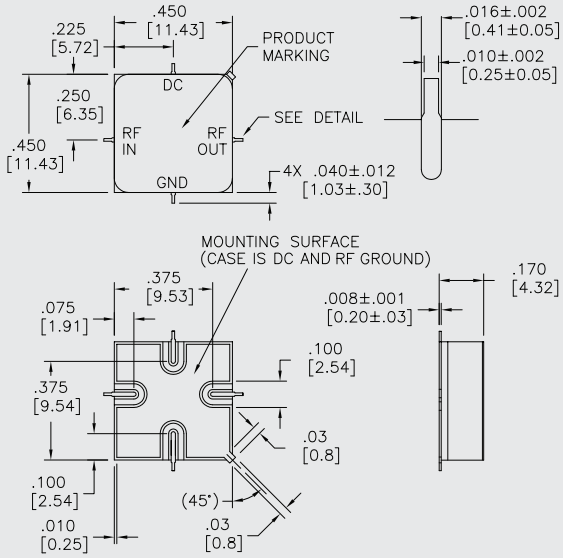
AC829

TO-8 Package for Amplifiers



AS829

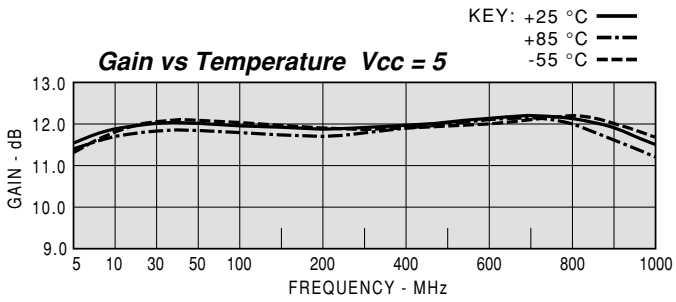
SMTO-8 Package for Amplifiers

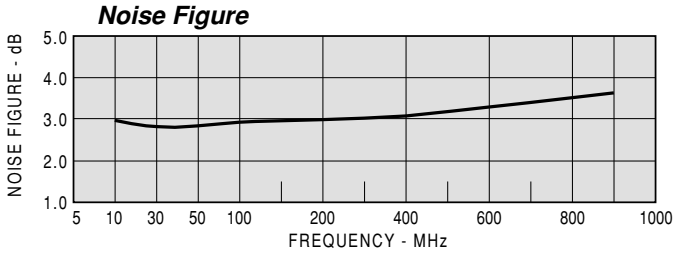


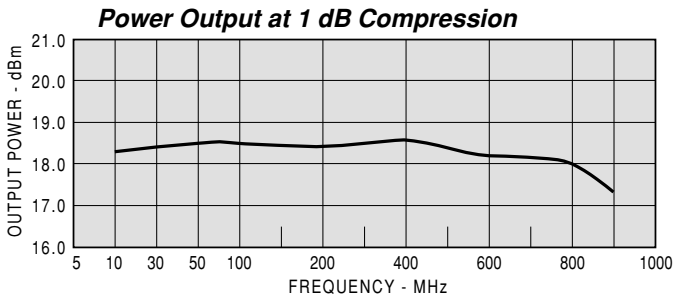
If DC is present on RF input/output, this model requires additional external blocking capacitors.

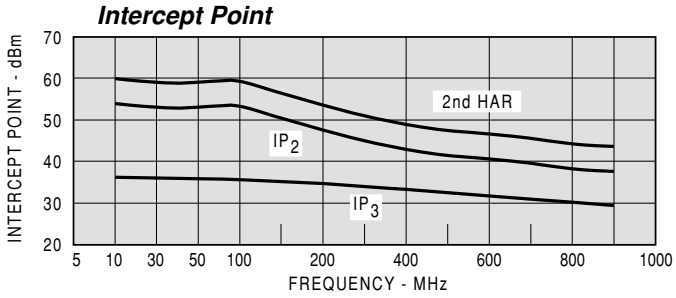
DIMENSIONS ARE IN INCHES [MILLIMETERS]

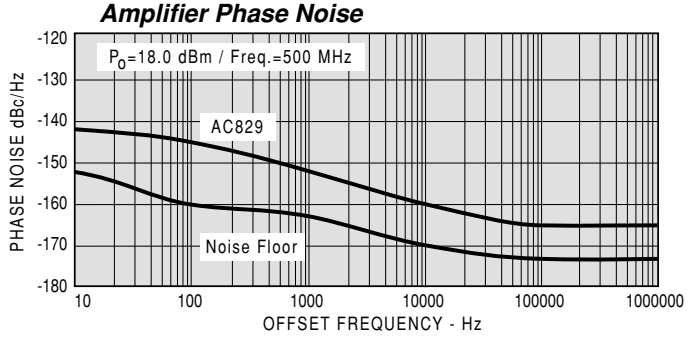
TYPICAL PERFORMANCE











TYPICAL AUTOMATIC TEST DATA

Model: AC829 Vcc=+5V Icc=50.33

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
5	1.24	1.26	11.53	-166		-19.5
10	1.15	1.18	11.91	-174		-18.9
50	1.10	1.16	12.02	173	0.63	-18.7
100	1.13	1.16	1200	163	0.52	-18.8
200	1.20	1.16	11.91	146	0.47	-18.9
300	1.29	1.17	11.90	129	0.46	-18.9
400	1.38	1.16	11.95	112	0.48	-18.9
500	1.48	1.14	12.03	95	0.49	-19.0
600	1.53	1.17	12.09	77	0.51	-19.0
700	1.56	1.22	12.10	58	0.54	-19.3
800	1.61	1.34	12.02	38	0.55	-19.6

LINEAR S-PARAMETERS

Model: AC829 Vcc=+5V Icc=50.33

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.11	-40.8	3.77	-165.7	0.105	-175.5	0.11	-4.8
10	0.07	-41.8	3.94	-173.5	0.113	-178.0	0.08	-8.1
50	0.05	-39.6	3.99	172.7	0.116	171.8	0.07	-9.1
100	0.06	-56.3	3.98	163.4	0.114	162.5	0.07	-16.2
200	0.09	-82.3	3.94	146.2	0.114	145.5	0.08	-36.5
300	0.13	-103.8	3.94	129.3	0.114	128.1	0.08	-60.0
400	0.16	-121.6	3.96	112.3	0.114	110.7	0.07	-80.7
500	0.19	-139.8	3.99	94.8	0.113	93.0	0.07	-111.6
600	0.21	-158.2	4.02	76.7	0.112	75.1	0.08	-144.4
700	0.22	178.5	4.03	57.7	0.109	57.6	0.10	-175.4
800	0.23	154.5	3.99	38.1	0.105	39.4	0.15	150.6
900	0.23	126.8	3.90	17.8	0.100	20.3	0.21	127.6