Rev. 5/10

TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

AC155

5 TO 150 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC155
Low Noise Figure	**2.2 dB**
High Efficiency	**Low Current Drain 33 mA**
Medium Output Level	**+15.5 dBm**
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter		Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)		5-200 MHz	5-150 MHz	5-150 MHz
Small Signal Gain (Min.)		14.8 dB	14.0 dB	13.5 dB
Gain Flatness (Max.)		±0.4 dB	±0.6 dB	±0.8 dB
Noise Figure (Max.)		<2.2 dB	2.6 dB	3.0 dB
SWR (Max.)	Input	<1.7:1	1.8:1	2.0:1
	Output	<1.5:1^	1.7:1^	1.9:1^
Power Output (Min.) @ 1dB comp.		+15.5 dBm	+14.5 dBm	+14.0 dBm
Reverse Isolation		27.0 dB	—	—
DC Current (Max.)		34.0 mA	37.0 mA	40.0 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.
^ 0.2 higher below 10 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 100 MHz	AC155
Second Order Harmonic Intercept Point	+47 dBm
Second Order Two Tone Intercept Point	+41 dBm
Third Order Two Tone Intercept Point	+30 dBm

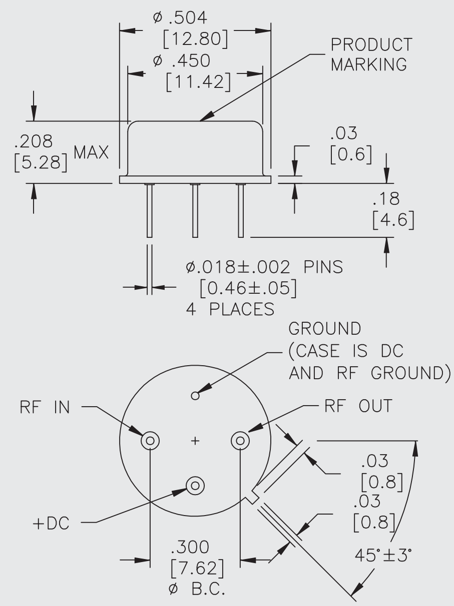
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+12 Volts
Maximum Continuous RF Input Power	+15 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)	+26.6 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+5 °C

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

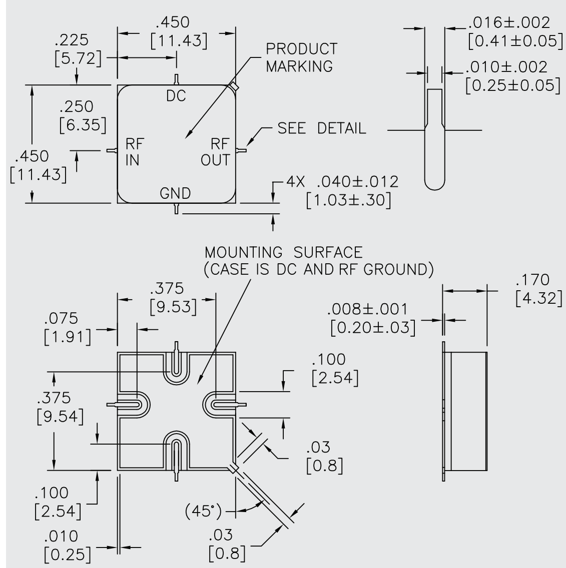
AC155

TO-8 Package for Amplifiers



AS155

SMTO-8 Package for Amplifiers



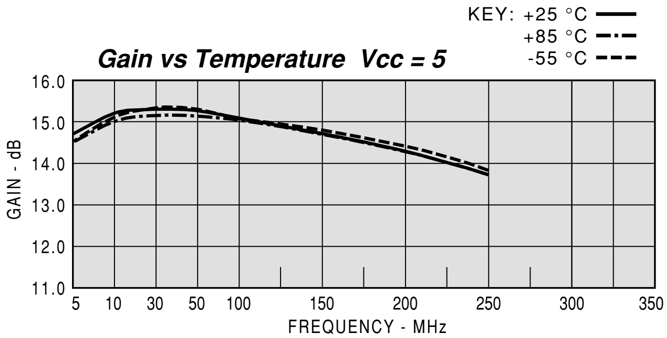
If DC is present on RF input/output, this model requires additional external blocking capacitors.

DIMENSIONS ARE IN INCHES [MILLIMETERS]

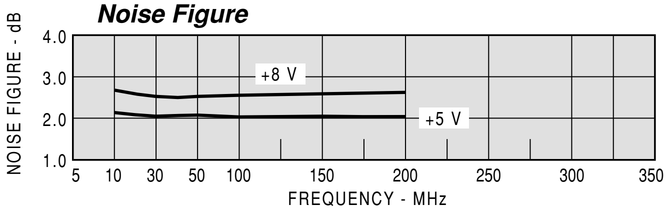
408-522-3838 • Fax 408-522-3839 • Check for updates: www.teledyne-cougar.com • cougar@teledyne.com

TYPICAL PERFORMANCE

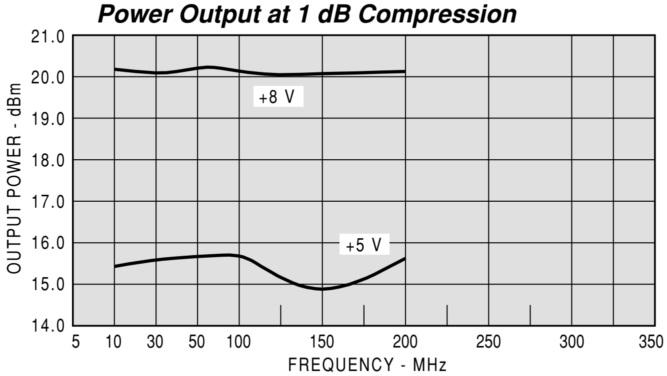
Gain vs Temperature Vcc = 5



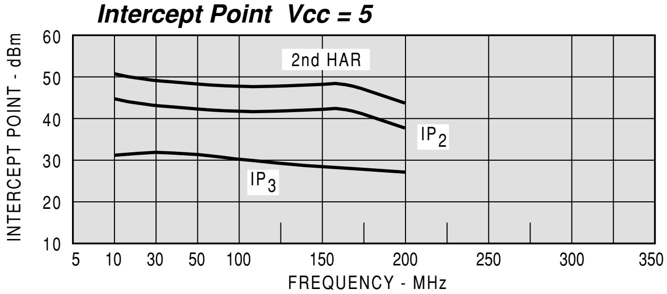
Noise Figure



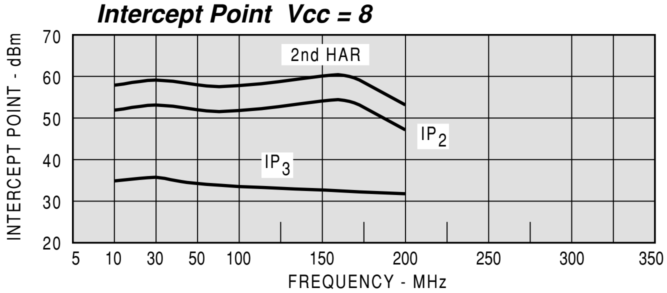
Power Output at 1 dB Compression



Intercept Point Vcc = 5



Intercept Point Vcc = 8



TYPICAL AUTOMATIC TEST DATA

Model: AC155 Vcc=+5V Icc=34.64

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
5	1.65	1.75	14.54	-168		-31.1
10	1.45	1.56	15.08	-175		-29.4
30	1.38	1.48	15.20	173	1.1	-28.8
50	1.40	1.48	15.19	166	0.99	-28.6
100	1.53	1.49	15.03	150	0.90	-27.3
150	1.71	1.52	14.73	134	0.85	-25.9
200	1.95	1.58	14.33	119	0.86	-24.6
250	2.25	1.66	13.80	104	0.83	-23.4
300	2.58	1.78	13.13	89	0.81	-22.7

LINEAR S-PARAMETERS

Model: AC155 Vcc=+5V Icc=34.64

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.24	-32.7	5.33	-167.8	0.028	-163.3	0.27	-18.9
10	0.19	-32.1	5.67	-175.4	0.034	-175.0	0.22	-18.5
30	0.16	-37.3	5.75	173.2	0.036	164.7	0.19	-19.0
50	0.17	-50.3	5.74	165.9	0.037	150.3	0.19	-25.9
100	0.21	-83.9	5.64	149.7	0.043	121.9	0.20	-46.3
150	0.26	-111.7	5.45	134.4	0.051	99.5	0.21	-69.2
200	0.32	-136.2	5.20	119.0	0.059	79.7	0.23	-92.2
250	0.38	-157.7	4.90	104.0	0.068	62.6	0.25	-114.8
300	0.44	-177.5	4.54	89.3	0.073	46.5	0.28	-136.1
350	0.49	165.3	4.14	75.1	0.078	32.9	0.31	-155.4

Model: AC155 Vcc=+8V Icc=57.48

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
5	1.62	1.72	14.73	-167		-30.9
10	1.42	1.52	15.25	-175		-29.0
30	1.33	1.43	15.44	174	1.10	-28.3
50	1.34	1.43	15.39	167	0.93	-28.1
100	1.43	1.44	15.29	153	0.82	-27.1
150	1.57	1.47	15.10	138	0.80	-26.0
200	1.75	1.51	14.82	124	0.80	-24.9
250	1.99	1.58	14.44	110	0.79	-23.9
300	2.27	1.69	13.91	96	0.78	-23.1

LINEAR S-PARAMETERS

Model: AC155 Vcc=+8V Icc=57.48

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.24	-35.8	5.45	-167.1	0.029	-163.9	0.26	-18.9
10	0.17	-34.9	5.78	-174.9	0.035	-174.4	0.21	-19.1
30	0.14	-36.4	5.91	174.2	0.038	167.4	0.18	-17.5
50	0.15	-47.7	5.88	167.4	0.039	154.1	0.18	-22.7
100	0.18	-79.1	5.81	152.6	0.044	128.9	0.18	-40.2
150	0.22	-106.4	5.69	138.3	0.050	107.7	0.19	-60.5
200	0.27	-130.7	5.51	123.9	0.057	88.3	0.20	-81.7
250	0.33	-152.2	5.27	109.6	0.064	71.8	0.23	-103.9
300	0.39	-171.8	4.96	95.6	0.070	55.8	0.26	-125.3
350	0.44	170.6	4.59	81.6	0.075	41.8	0.29	-145.2