TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AC293

10 TO 200 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC293
Low Noise Figure	2.0 dB
High Gain	28.8 dB
High Output Level	+17.5 dBm
High Reverse Isolation	34 dB
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)	10-300 MHz	10-200 MHz	10-200 MHz
Small Signal Gain (Min.)	28.8 dB	28.3 dB	27.8 dB
Gain Flatness (Max.)	±0.2 dB	±0.4 dB	±0.5 dB
Noise Figure (Max.)	2.0 dB	2.5 dB	3.0 dB
SWR (Max.) Input/Output	<1.5:1	1.8:1	1.9:1
Power Output (Min.) @ 1dB comp.	+17.5^ dBm	+17.0^ dBm	+16.5^ dBm
Reverse Isolation	34.0 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.
^ 0.5 dBm lower below 30 MHz and above 150 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC293
Second Order Harmonic Intercept Point	+41 dBm
Second Order Two Tone Intercept Point	+35 dBm
Third Order Two Tone Intercept Point	+28 dBm

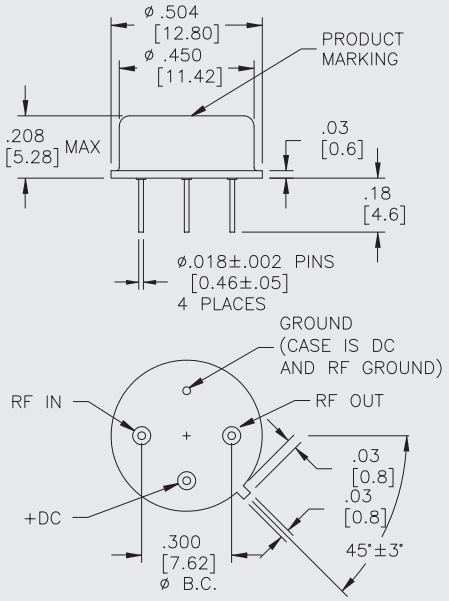
ABSOLUTE MAXIMUM RATINGS

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 Resistance[1] (θjc)	+40 °C/Watt
Junction Temperature Rise above Case (Tjc)	+30.3 °C

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

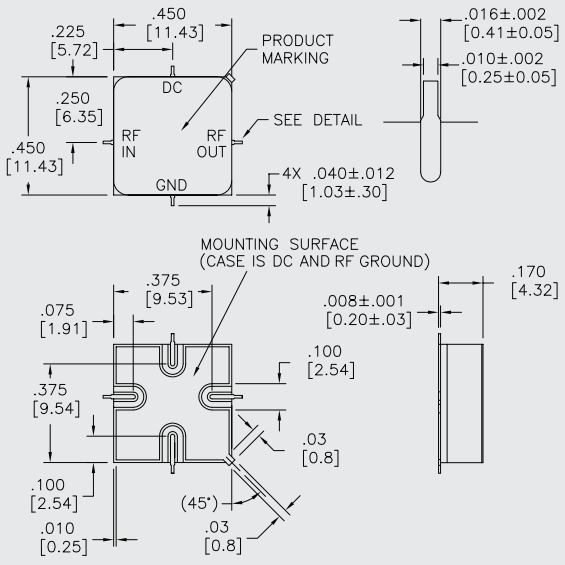
AC293

TO-8 Package for Amplifiers



AS293

SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

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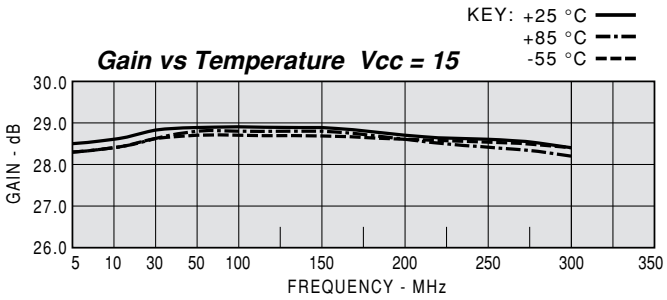
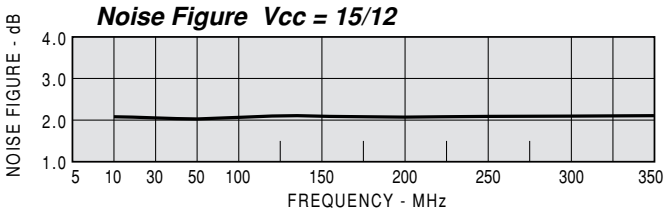
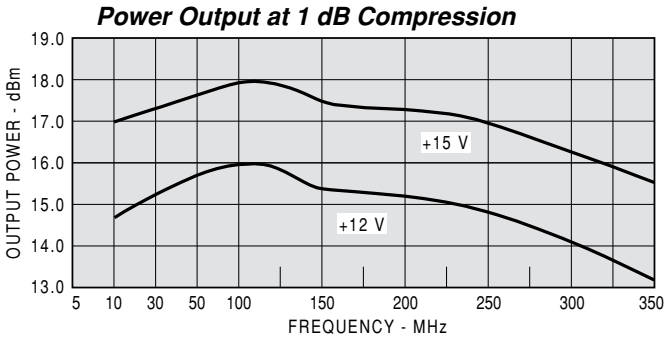
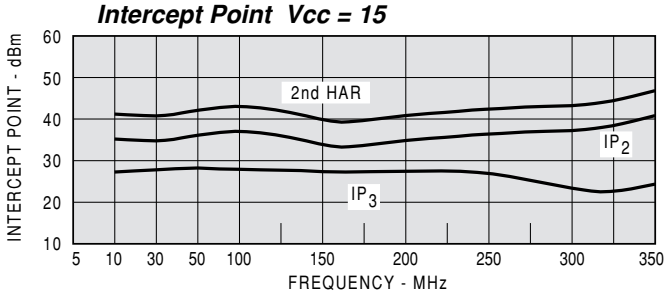
AC293

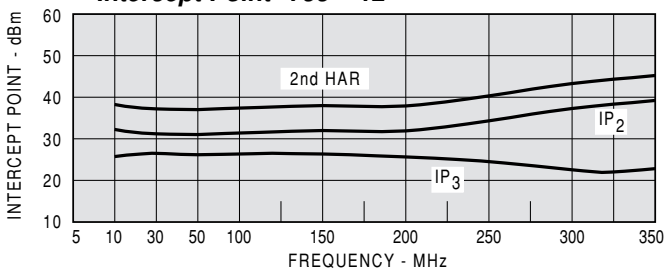
TYPICAL PERFORMANCE











TYPICAL AUTOMATIC TEST DATA

Model: AC293 Vcc=+15V Icc=32.03

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
5	1.53	1.71	28.39	-163		-35.1
10	1.29	1.39	28.47	-173		-34.4
30	1.14	1.31	28.71	173	1.4	-34.5
50	1.11	1.35	28.81	164	1.3	-34.0
100	1.09	1.48	28.80	143	1.1	-34.2
150	1.15	1.59	28.69	123	1.1	-34.2
200	1.24	1.66	28.57	104	1.1	-34.4
250	1.39	1.68	28.41	84	1.1	-35.3
300	1.59	1.71	28.20	63	1.2	-35.5
350	1.87	1.83	27.84	41	1.2	-37.1

LINEAR S-PARAMETERS

Model: AC293 Vcc=+15V Icc=32.03

FREQ	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.21	-62.4	26.26	-162.5	0.018	14.1	0.26	104.9
10	0.13	-58.0	26.53	-173.4	0.019	6.6	0.16	85.9
30	0.07	-57.3	27.26	172.9	0.019	-3.9	0.14	53.6
50	0.05	-56.1	27.58	163.6	0.02	-12.1	0.15	41.4
100	0.04	-42.1	27.55	143.0	0.019	-23.6	0.19	24.1
150	0.07	-34.7	27.19	123.4	0.019	-39	0.23	6.7
200	0.11	-37.9	26.84	103.7	0.019	-50.8	0.25	-15.2
250	0.16	-46.3	26.34	83.6	0.017	-63.7	0.25	-42.4
300	0.23	-58.4	25.72	62.8	0.017	-83.4	0.26	-77.3
350	0.3	-71.7	24.67	40.7	0.014	-99.0	0.29	-118.1
400	0.37	-86.6	22.99	17.8	0.013	-125.4	0.37	-159.3
450	0.43	-102.6	20.48	-5.3	0.010	-141.6	0.48	165.9

Model: AC293 Vcc=+12V Icc=25.8

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
5	1.56	1.71	27.95	-162		-34.8
10	1.33	1.40	28.05	-173		-34.4
30	1.2	1.35	28.31	173	1.4	-34.2
50	1.16	1.39	28.41	163	1.3	-33.7
100	1.16	1.51	28.39	143	1.2	-33.9
150	1.22	1.61	28.26	123	1.1	-34.4
200	1.31	1.66	28.13	103	1.1	-34.3
250	1.46	1.68	27.98	83	1.1	-35.0
300	1.67	1.72	27.75	62	1.2	-35.5
350	1.95	1.88	27.36	40	1.2	-37.2

LINEAR S-PARAMETERS

Model: AC293 Vcc=+12 Vlcc= 25.8

FREQ	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.22	-55	24.97	-162.4	0.018		0.26	99.5
10	0.14	-47.6	25.28	-173.3	0.019		0.17	77.7
30	0.09	-43.1	26.03	172.9	0.020	-3.8	0.15	44.9
50	0.08	-42.9	26.32	163.5	0.021	-11.4	0.16	32.8
100	0.07	-40.4	26.26	142.7	0.020	-25.4	0.20	15.7
150	0.1	-40.5	25.89	122.9	0.019	-39.0	0.23	-1.2
200	0.13	-45.3	25.51	103.1	0.019	-54.3	0.25	-23.2
250	0.19	-53.4	25.05	82.8	0.018	-68.1	0.25	-50.6
300	0.25	-64.5	24.41	61.9	0.017	-87.0	0.27	-86.0
350	0.32	-77.4	23.33	39.7	0.014	-102.7	0.31	-125.9
400	0.39	-91.8	21.65	16.9	0.013	-127.1	0.39	-164.8
450	0.44	-107.2	19.22	-6.1	0.009	-143.2	0.50	162.2