TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AC263

30 TO 200 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC263
Ultra Low Noise Figure	1.5 dB
High Output Level	< +22.5 dBm
High Third Order I.P.	+37 dBm
High Efficiency	37 mA Current Drain
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter		Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to 85 °C
Frequency (Min.)		10-250 MHz	30-200 MHz	30-200 MHz
Small Signal Gain (Min.)		8.3 dB	7.5 dB	6.8 dB
Gain Flatness (Max.)		< ±0.2 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)		1.5 dB	2.0 dB	2.5 dB
SWR (Max.)	Input/Output	<1.5:1	2.0:1	2.0:1
Power Output (Min.) @ 1dB comp.	30-100 MHz	< +22.5 dBm	+21.5 dBm	+20.5 dBm
	100-250 MHz	> +19.5 dBm	+18.5 dBm	+18.0 dBm
Reverse Isolation		11.0 dB	—	—
DC Current (Max.)		37 mA	40 mA	43 mA

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

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INTERMODULATION PERFORMANCE

Typical @ 25 °C; 100 MHz	AC263
Second Order Harmonic Intercept Point	+59 dBm
Second Order Two Tone Intercept Point	+53 dBm
Third Order Two Tone Intercept Point	+37 dBm

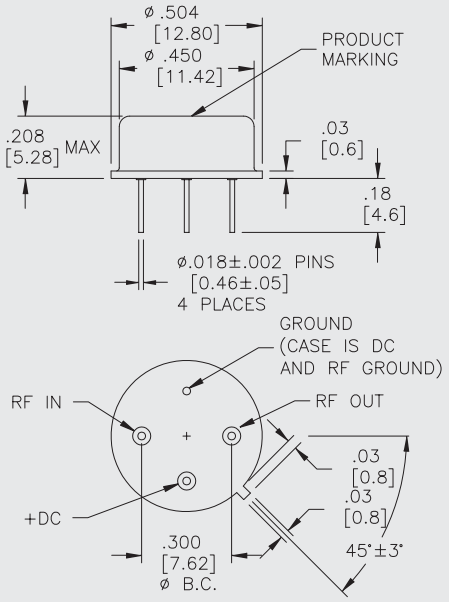
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+17 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)	+33 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+19.5 °C

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

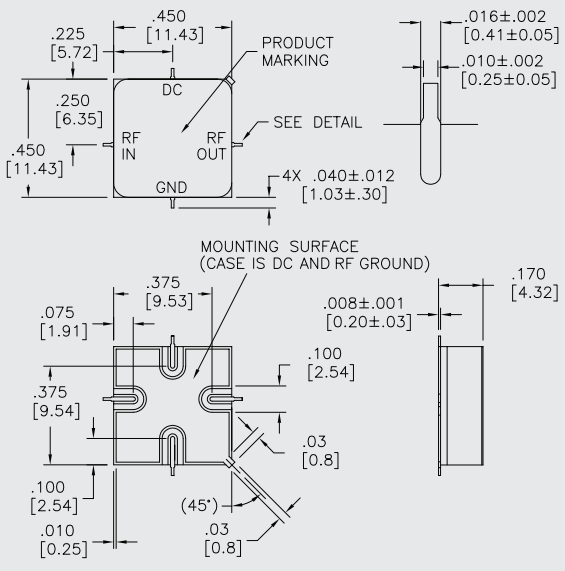
AC263

TO-8 Package for Amplifiers



AS263

SMTO-8 Package for Amplifiers

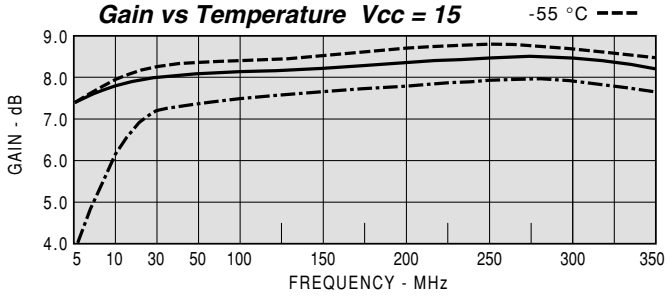


DIMENSIONS ARE IN INCHES [MILLIMETERS]

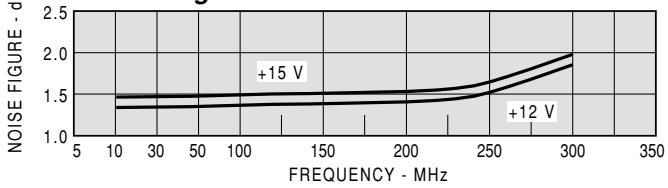
TYPICAL PERFORMANCE

KEY: +25 °C ——
+85 °C -·-·-
-55 °C - - -

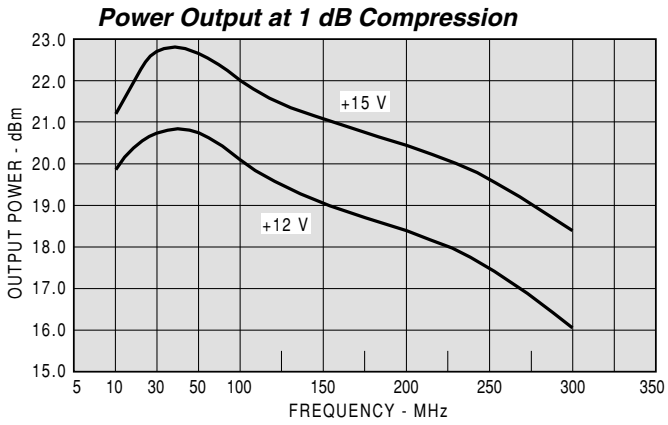
Gain vs Temperature Vcc = 15



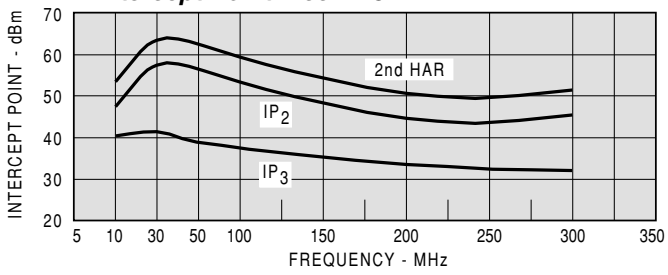
Noise Figure



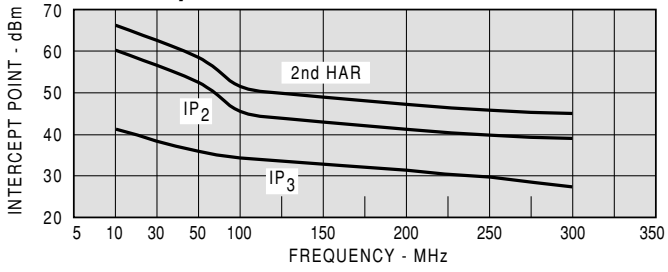
Power Output at 1 dB Compression



Intercept Point Vcc = 15



Intercept Point Vcc = 12



TYPICAL AUTOMATIC TEST DATA

Model: AC263 Vcc=+15V Icc=36.84

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
5	1.60	1.59	7.4		-11.5
10	1.31	1.31	7.9		-11.1
20	1.17	1.17	8.1		-10.9
50	1.09	1.09	8.2	1.414	-10.9
100	1.18	1.14	8.2	1.118	-11.0
150	1.30	1.23	8.2	1.084	-11.3
200	1.46	1.36	8.3	1.098	-11.7
250	1.66	1.53	8.3	1.159	-12.3
300	1.93	1.78	8.2	1.232	-13.0
350	2.29	2.17	8.0	1.316	-14.0

LINEAR S-PARAMETERS

Model: AC263 Vcc=+15V Icc=36.84

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.23	130.0	2.35	23.2	0.267	24.0	0.23	138.4
10	0.13	128.7	2.48	9.8	0.279	10.0	0.13	130.6
20	0.08	135.6	2.54	0.0	0.284	0.0	0.08	131.7
50	0.04	-179.9	2.57	-14.8	0.286	-14.0	0.04	160.4
100	0.08	-144.3	2.57	-34.2	0.280	-33.0	0.07	-171.0
150	0.13	-148.7	2.58	-53.0	0.271	-51.0	0.10	-178.3
200	0.19	-161.9	2.59	-72.1	0.259	-69.0	0.15	167.0
250	0.25	179.5	2.60	-92.2	0.244	-89.0	0.21	150.4
300	0.32	156.0	2.58	-113.7	0.224	-110.0	0.28	133.3
350	0.39	129.1	2.52	-136.6	0.201	-132.0	0.37	115.5
400	0.48	98.6	2.39	-161.7	0.173	-156.0	0.48	96.4
450	0.58	66.8	2.14	172.2	0.140	178.0	0.60	75.8

Model: AC263 Vcc=+12V Icc=28.46

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
5	1.17	1.17	8.0		-11.0
10	1.11	1.10	8.2		-10.8
20	1.07	1.07	8.3		-10.7
50	1.10	1.08	8.3	1.289	-10.8
100	1.22	1.17	8.3	1.093	-11.0
150	1.35	1.27	8.3	1.082	-11.3
200	1.51	1.40	8.3	1.102	-11.7
250	1.72	1.59	8.3	1.169	-12.3
300	2.00	1.86	8.2	1.243	-13.0
350	2.38	2.29	8.0	1.327	-14.0

LINEAR S-PARAMETERS

Model: AC263 Vcc=+12V Icc=28.46

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.08	140.5	2.51	13.2	0.282	14.0	0.08	152.2
10	0.05	147.1	2.57	4.3	0.288	5.0	0.05	149.5
20	0.04	168.4	2.60	-3.2	0.291	-3.0	0.03	162.3
50	0.05	-140.0	2.61	-16.7	0.290	-16.0	0.04	-153.4
100	0.10	-134.9	2.59	-35.7	0.282	-34.0	0.08	-155.4
150	0.15	-144.9	2.60	-54.4	0.272	-52.0	0.12	-170.9
200	0.20	-160.0	2.60	-73.6	0.260	-70.0	0.17	171.3
250	0.26	-179.6	2.61	-93.9	0.244	-90.0	0.23	153.0
300	0.33	156.2	2.58	-115.5	0.223	-111.0	0.30	134.6
350	0.41	129.0	2.51	-138.7	0.199	-133.0	0.39	115.9
400	0.50	98.2	2.37	-163.9	0.171	-158.0	0.50	96.1
450	0.59	66.1	2.10	170.0	0.138	176.0	0.62	75.1