



AC652

10 TO 600 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

Low Noise	1.3 dB
Medium Gain	+10.8 dB
Medium Output Level	+18.8 dBm
High Dynamic Range	+93 dB
High Performance Thin Film	
Standard Size TO-8 Package	

AC652

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-600 MHz	10-600 MHz	10-600 MHz
Small Signal Gain (Min.)	10.8 dB	10.0 dB	9.5 dB
Gain Flatness (Max.)	±0.6 dB	±0.9 dB	±1.0 dB
Noise Figure (Max.) 100-600 MHz	1.3 dB	1.7 dB	2.0 dB
SWR (Max.) Input/Output	1.7:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+18.8 [^] dBm	+18.0 [^] dBm	+17.5 [^] dBm
Reverse Isolation	17.5 dB	—	—
DC Current (Max.)	50 mA	55 mA	58 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.

[^] 1.0 dBm lower below 50 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C

Second Order Harmonic Intercept Point	+51 dBm
Second Order Two Tone Intercept Point	+45 dBm
Third Order Two Tone Intercept Point	+32 dBm

AC652

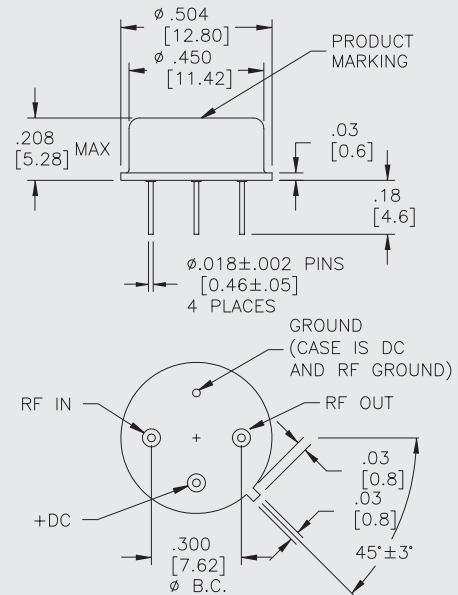
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+7 Volts
Maximum Continuous RF Input Power	+15 dBm
Maximum Short Term Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance ¹ (θjc)	+30.3 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+8.0 °C

¹ Thermal resistance is based on total power dissipation.

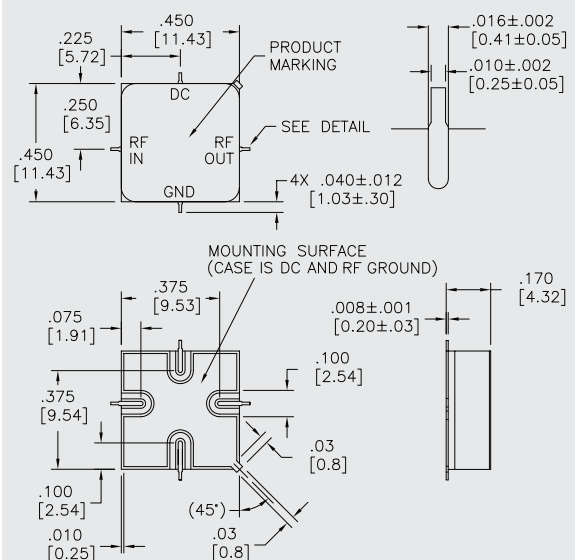
AC652

TO-8 Package for Amplifiers



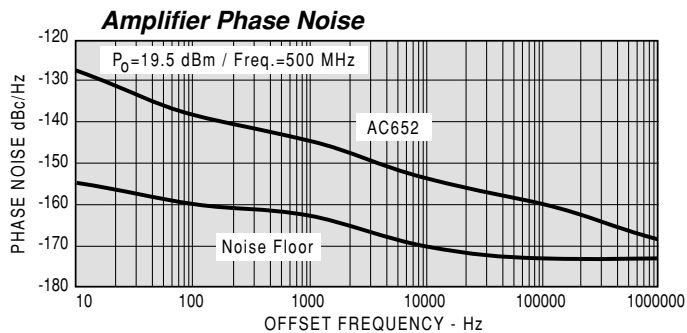
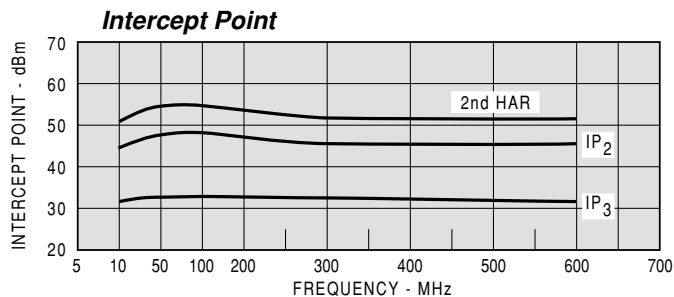
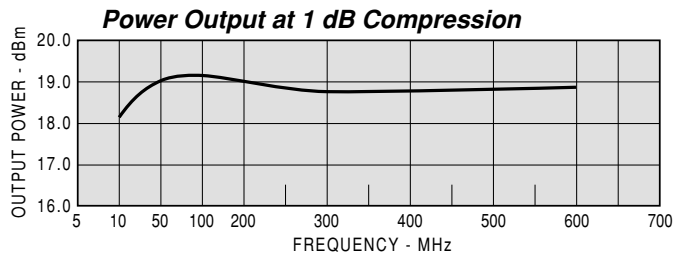
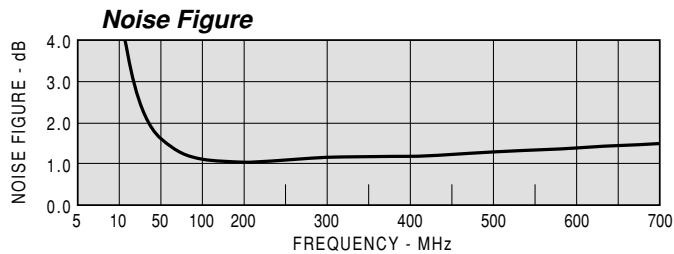
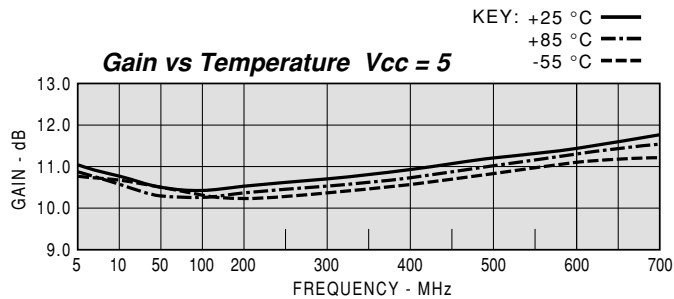
AS652

SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AC652			Vcc=+5V			Icc=49.21	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	2.07	1.62	10.9	-150.7		-17.8	
10	1.67	1.16	10.7	-167.8		-17.7	
30	1.59	1.08	10.6	179.9	1.71	-17.5	
50	1.59	1.09	10.4	175.9	0.55	-17.4	
100	1.58	1.13	10.4	168.6	0.41	-17.5	
150	1.58	1.17	10.4	162.1	0.36	-17.5	
200	1.59	1.22	10.5	155.6	0.36	-17.5	
250	1.58	1.27	10.6	149.2	0.36	-17.5	
300	1.59	1.31	10.6	142.8	0.35	-17.5	
350	1.59	1.34	10.7	136.4	0.36	-17.5	
400	1.59	1.37	10.9	129.6	0.38	-17.5	
450	1.58	1.39	11.0	122.8	0.38	-17.4	
500	1.58	1.40	11.2	115.9	0.39	-17.4	
550	1.57	1.40	11.3	108.5	0.41	-17.4	
600	1.57	1.37	11.4	100.9	0.43	-17.3	
650	1.58	1.34	11.6	92.8	0.45	-17.3	

Model: AC652		Vcc=+5V		Icc=49.21	
FREQ.	S11	S21	S12	S22	
MHz	MAG	ANG	MAG	ANG	MAG
5	0.35	-39.2	3.51	-150.7	0.13
10	0.25	-23.5	3.41	-167.8	0.13
30	0.23	-10.4	3.34	179.9	0.13
50	0.23	-9.4	3.31	175.9	0.13
100	0.23	-11.9	3.30	168.6	0.13
150	0.23	-15.8	3.31	162.1	0.13
200	0.23	-20.3	3.34	155.6	0.13
250	0.23	-25.6	3.37	149.2	0.13
300	0.23	-31.2	3.40	142.8	0.13
350	0.23	-37.9	3.44	136.4	0.13
400	0.23	-45.9	3.51	129.6	0.13
450	0.22	-54.0	3.56	122.8	0.13
500	0.22	-63.9	3.64	115.9	0.13
550	0.22	-74.6	3.73	108.5	0.13
600	0.22	-87.2	3.79	100.9	0.14
650	0.22	-101.4	3.87	92.8	0.14
700	0.23	-116.9	3.95	84.6	0.14