



# RCA-6AS7-G LOW MU TWIN POWER TRIODE

Amateur Net

~~\$5.45~~  
Reduced To  
**\$4.25**

## Features

- High Efficiency. Usable plate swing is almost equal to plate voltage.
- Good Stability. Low amplification factor insures freedom from regeneration.
- Two Cathodes. Allows use of self-bias balancing of the two triode units.
- Low Distortion. Even harmonics almost cancel in class A push-pull circuits.
- Excellent Voltage Regulation. Output signal varies but slightly with change in load.
- Twin-Unit Construction. Provides circuit layout convenience.
- In voltage regulator service, a load current of 250 ma can be controlled with one 6AS7-G. Because of the 300-volt heater-to-cathode rating, no separate filament winding is needed.
- In bias regulator service, the tube's low internal resistance allows regulation as low as 20 volts.

## Application Considerations

The following recommended practices should be observed when the 6AS7-G is used in audio-frequency amplifier applications.

1. The two units should always be used in push-pull, never parallel.
2. Always use self bias; fixed bias must not be used.
3. Separate cathode bias resistors, and by-pass capacitors, should be used for each unit.
4. The total series grid resistance, per unit, should be limited to one megohm.
5. Transformer, or impedance-coupling devices should be used in order to get sufficient voltage to fully swing the grids.
6. The transformer-coupled driver tube should be a medium-mu triode such as the 6J5, 6SR7, 6C4, 6SN7, 12AU7, etc. For self-biased operation of the driver tube, by-pass its cathode resistor with a capacitance of 8 uf or more.
7. The plate supply voltage for the driver tube should be at least 250 volts in order to obtain sufficient grid swing for the 6AS7-G.
8. In a voice-frequency speech amplifier using a single driver tube, the plate of the driver tube can be series-fed through the primary winding of the interstage push-pull transformer.
9. In wide-band, flat-response, audio amplifier service, the grids can be excited by:
  - (a) a push-pull stage through a high-fidelity push-pull interstage transformer.
  - (b) a push-pull stage through a center-tapped plate choke, capacitance-coupled to resistor-fed grids.
  - (c) a single tube with choke-fed plate, through a capacitance-coupled single-plate-to-push-pull-grids high-fidelity transformer.

### 6AS7-G LOW-MU TWIN POWER TRIODE

#### GENERAL DATA

<b>Electrical:</b>	
Heater, for Unipotential Cathode:*	
Voltage .....	6.3 ac or dc volts
Current .....	2.5 amp.
<b>Mechanical:</b>	
Mounting Position .....	any
Maximum Overall Length .....	5-5/16"
Maximum Seated Length .....	4-3/4"
Maximum Diameter .....	2-1/16"
Bulb .....	ST-16
Base .....	Medium Shell Octal 8-Pin

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J. H. OWENS, W2FTW ..... Editor  
H. S. STAMM, W2WCT ..... Associate Editor

#### AUDIO AMPLIFIER SERVICE

Values are for each unit

<b>Maximum Ratings, Design Center Values:</b>			
PLATE VOLTAGE .....	250 max.	volts	
PLATE CURRENT .....	125 max.	ma	
PLATE DISSIPATION .....	13 max.	wa.tts	
<b>PEAK HEATER-CATHODE VOLTAGE</b>			
Heater negative with respect to cathode .....	300 max.	volts	
Heater positive with respect to cathode .....	300 max.	volts	
Typical operation, Class A <sub>1</sub> push-pull amplifier. Unless otherwise specified, values are for both units.			
Plate .....	200	250	volts
Grid .....	-90	-125	volts
Cathode Resistor (per unit) .....	1500	2500	ohms
Peak AF grid to grid voltage .....	190	255	volts
Zero signal plate current .....	120	100	ma
Max. signal plate current .....	128	106	ma
Effective load resistance (plate to plate) .....	4000	6000	ohms
Total harmonic distortion (less than) .....	4	4	per cent
Max. signal power output .....	11	13	watts
Amplification Factor (per unit) .....	2.0	2.0	
Plate Resistance (per unit) .....	280	280	ohms

\* It is essential that precaution be taken in equipment design to prevent subjecting the tube to full load current of 250 ma before its cathodes have reached normal operating temperature. The cathodes require approximately 15 seconds to attain normal operating temperature. Unless this precaution is observed, the cathodes will be seriously damaged, if not completely ruined. In speech amplifier service, as indicated under typical operating conditions, the plate voltage may be applied simultaneously with the filament voltage.