

# Radiotron Type 12AU7 Twin-Triode Amplifier

(Reprinted by courtesy of Radio Corporation of America)

Radiotron type 12AU7 is a heater-cathode type of medium-mu, twin-triode amplifier featuring a small glass envelope with integral button 9-pin base, separate terminals for each cathode, and a mid-tapped heater to permit operation from either a 6.3- or 12.6-volt supply.

Having characteristics which are very similar to those of the larger types 6SN7-GT and 12SN7-GT, the 12AU7 like these types is useful in many diversified applications including multivibrators, synchronising amplifiers, oscillators, mixers, and numerous industrial control devices. In such equipment, the 12AU7 can be used to advantage because of its compact size, its separate cathode terminals, and its economical consumption of heater power at either of the two voltages.

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathodes:

Heater Arrangement	Series	Parallel	
Voltage (a.c. or d.c.)	12.6	6.3	volts
Current	0.15	0.3	ampere

Direct Interelectrode Capacitances:<sup>o</sup>

	Triode Unit T <sub>1</sub>	Triode Unit T <sub>2</sub>	
Grid to Plate	1.5	1.5	μμF
Grid to Cathode	1.6	1.6	μμF
Plate to Cathode	0.50	0.35	μμF

### Mechanical:

Mounting Position	Any
Maximum Overall Length	2- $\frac{3}{16}$ "
Maximum Seated Length	1- $\frac{5}{16}$ "
Length from Base Seat to Bulb Top (excluding tip)	1- $\frac{9}{16}$ " ± $\frac{3}{32}$ "
Maximum Diameter	$\frac{7}{8}$ "
Bulb	T-6- $\frac{1}{2}$
Base	Small Button Noval 9-Pin

<sup>o</sup>With no external shield.

### Socket Connections:

- Pin 1 — Plate (Triode No. 2).
- Pin 2 — Grid (Triode No. 2).
- Pin 3 — Cathode (Triode No. 2).
- Pin 4 — Heater.
- Pin 5 — Heater.
- Pin 6 — Plate (Triode No. 1).
- Pin 7 — Grid (Triode No. 1).
- Pin 8 — Cathode (Triode No. 1).
- Pin 9 — Heater Mid-tap.

## CLASS A<sub>1</sub> AMPLIFIER

*Values are for each unit*

### Maximum ratings, Design-Centre Values:

PLATE VOLTAGE	300 max.	volts
PLATE DISSIPATION	2.75 max.	watts
CATHODE CURRENT	20 max.	mA

### Peak Heater-Cathode Voltage:

Heater negative with respect to cathode	180 max.	volts
Heater positive with respect to cathode	180 max.	volts

### Characteristics:

Plate Voltage	100	250	volts
Grid Voltage	0	-8.5	volts
Amplification Factor	19.5	17	
Plate Resistance	6250	7700	ohms
Transconductance	3100	2200	micromhos
Plate Current	11.8	10.5	mA

### Maximum Circuit Values

*(for maximum rated conditions):*

#### Grid-Circuit Resistance:

For cathode-bias operation	1.0 max.	megohm
For fixed-bias operation	0.25 max.	megohm