

# 12AV7

## TWIN TRIODE

### DESCRIPTION AND RATING

The 12AV7 is a miniature, medium-mu twin triode for use as a radio-frequency amplifier or as a combined oscillator and mixer in VHF television receivers. It may also be used as an audio-frequency amplifier.

#### GENERAL

##### ELECTRICAL

Cathode—Coated Unipotential

	Series	Parallel	
Heater Voltage, AC or DC.....	12.6	6.3	Volts
Heater Current.....	0.225	0.45	Ampere
Direct Interelectrode Capacitances			

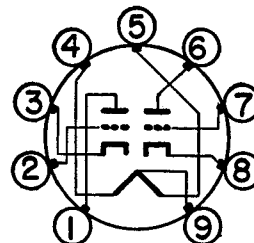
	With Shield*	Without Shield	
Grid to Plate: (g to p), Each Section.....	1.9	1.9	$\mu\mu\text{f}$
Input: g to (h+k), Each Section.....	3.2	3.1	$\mu\mu\text{f}$
Output: p to (h+k), Section 1.....	1.3	0.5	$\mu\mu\text{f}$
Output: p to (h+k), Section 2.....	1.6	0.4	$\mu\mu\text{f}$
Heater to Cathode: (h to k), Each Section.....	4.0	3.8	$\mu\mu\text{f}$
Plate to Cathode: (p to k), Each Section.....	0.23	0.24	$\mu\mu\text{f}$
Grounded-Grid Input: k to (h+g), Each Section...	7.0	6.9	$\mu\mu\text{f}$
Grounded-Grid Output: p to (h+g), Section 1....	2.8	2.0	$\mu\mu\text{f}$
Grounded-Grid Output: p to (h+g), Section 2....	3.2	2.0	$\mu\mu\text{f}$

##### MECHANICAL

Mounting Position—Any  
Envelope—T-6½, Glass  
Base—E9-1, Small Button 9-Pin

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

#### BASING DIAGRAM

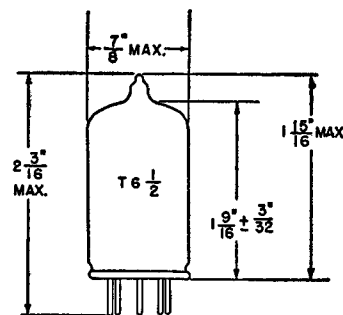


EIA 9A

#### TERMINAL CONNECTIONS

- Pin 1—Plate (Section 2)
- Pin 2—Grid (Section 2)
- Pin 3—Cathode (Section 2)
- Pin 4—Heater
- Pin 5—Heater
- Pin 6—Plate (Section 1)
- Pin 7—Grid (Section 1)
- Pin 8—Cathode (Section 1)
- Pin 9—Heater Center-Tap

#### PHYSICAL DIMENSIONS



EIA 6-2

## MAXIMUM RATINGS

### DESIGN-CENTER VALUES, EACH SECTION

Plate Voltage . . . . .	300	Volts
Negative DC Grid Voltage . . . . .	50	Volts
Plate Dissipation . . . . .	2.7	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode . . . . .	90	Volts
Heater Negative with Respect to Cathode . . . . .	90	Volts

Design-Center ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under normal conditions.

These values are chosen by the tube manufacturer to provide acceptable serviceability of the tube in average applications, taking responsibility for normal changes in operating conditions due to rated supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all tubes.

The equipment manufacturer should design so that initially no design-center value for the intended service is exceeded with a bogey tube in equipment operating at the stated normal supply-voltage.

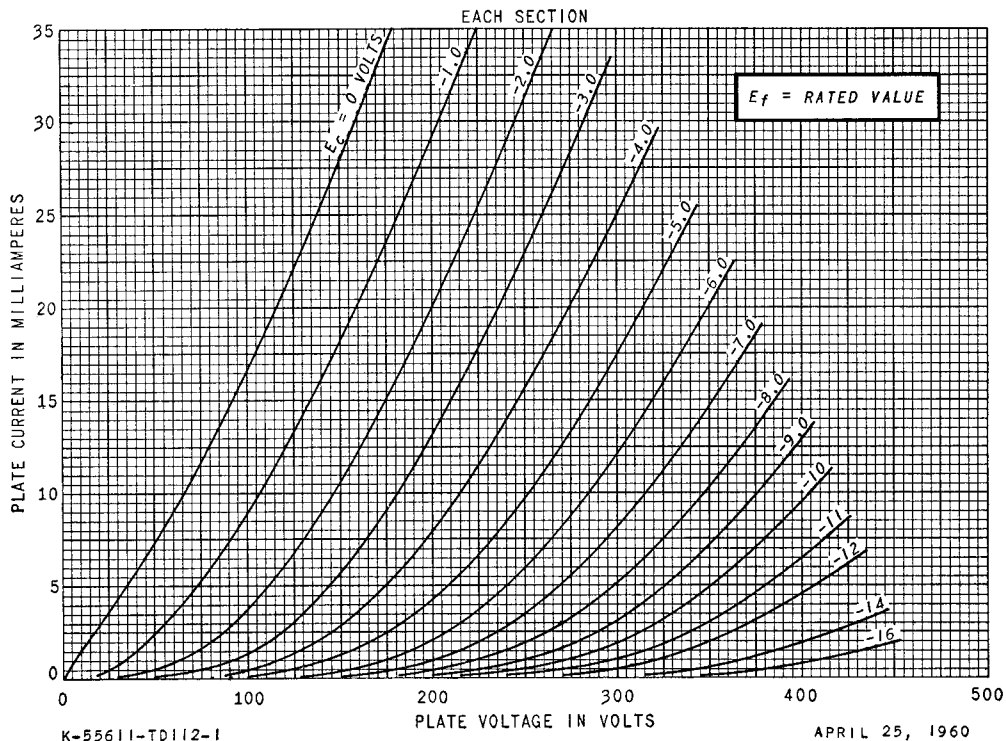
## CHARACTERISTICS AND TYPICAL OPERATION

### AVERAGE CHARACTERISTICS, EACH SECTION

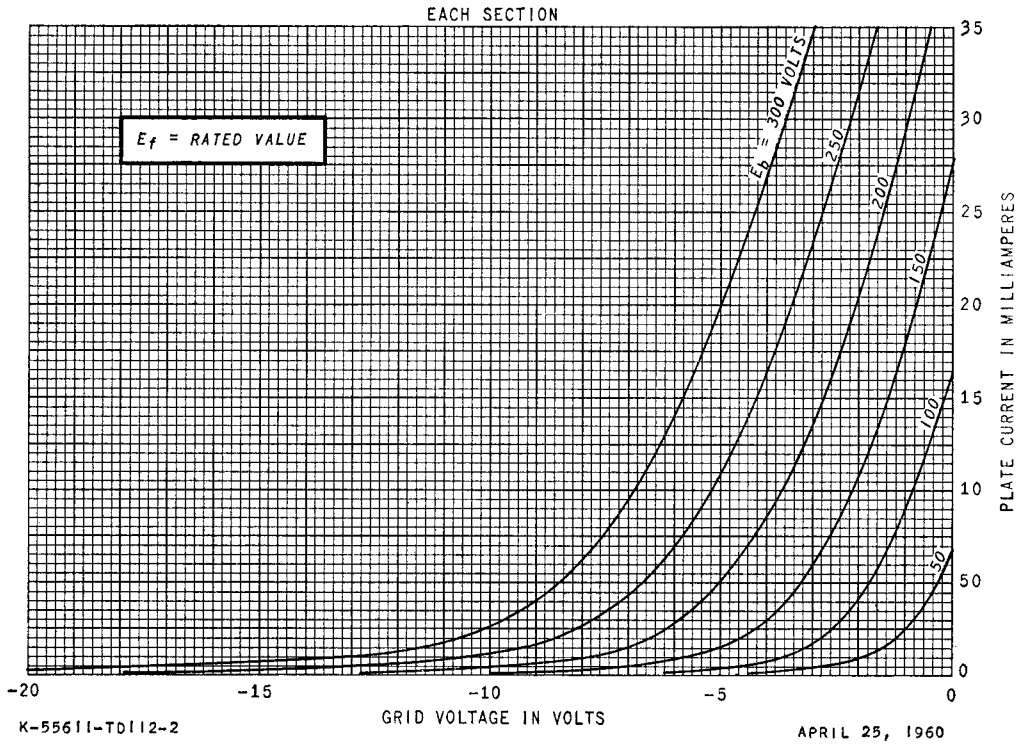
Plate Voltage . . . . .	100	150	Volts
Cathode-Bias Resistor . . . . .	120	56	Ohms
Amplification Factor . . . . .	37	41	
Plate Resistance, approximate . . . . .	.6100	4800	Ohms
Transconductance . . . . .	.6100	8500	Micromhos
Plate Current . . . . .	9.0	18	Milliamperes
Grid Voltage, approximate			
$I_b = 10$ Microamperes . . . . .	-9	-12	Volts

\* With external shield (EIA 315) connected to cathode of section under test.

### AVERAGE PLATE CHARACTERISTICS



**AVERAGE TRANSFER CHARACTERISTICS**



**AVERAGE CHARACTERISTICS**

