

March 16, 1955

Twin Triode Type 7AU7

The 7AU7 is a medium-mu twin triode of the 9-pin miniature type with characteristics like those of the 6SN7-GT. Its applications include multivibrators, synchronizing amplifiers, oscillators, mixers, and industrial controls. Except for heater ratings, the 7AU7 is identical with the 12AU7.

The 7AU7 has been designed for use in receivers which employ series-connected heaters, especially in television receivers where the picture-tube heater is in series with other heaters. When it is employed in this type of circuit with other tubes having a heater current rating of 600 ma., heater voltage surges across individual tubes are minimized inasmuch as the heater warm-up characteristic is controlled.

GENERAL DATA

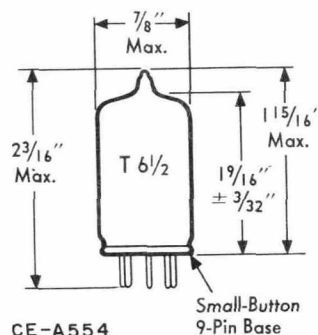
Electrical:

Cathodes	Two, Coated Unipotential		
Heater	Series	Parallel	
Voltage	7.0	3.5 ac or dc	Volts
Current	0.3	0.6	Ampere
Warm-Up Time*		11	Seconds
Direct Interelectrode Capacitances (Unshielded):			
	Unit No. 1	Unit No. 2	
Grid to Plate	1.5	1.5	$\mu\mu\text{f}$
Grid to Cathode	1.6	1.6	$\mu\mu\text{f}$
Plate to Cathode	0.50	0.35	$\mu\mu\text{f}$

Mechanical:

Bulb	T-6 1/2
Base	JETEC E9-1, Small Button 9-pin
Basing	9A
Mounting Position	Any

*See page 3.



CLASS A₁ AMPLIFIER

Each Unit

Maximum Ratings

Design Center Values

Plate Voltage	300 max.	Volts
Plate Dissipation	2.75 max.	Watts
Cathode Current	20 max.	Ma.
Heater-Cathode Voltage:		
Heater Negative with Respect to Cathode		
Total DC + Peak	200 max.	Volts
Heater Positive with Respect to Cathode		
DC Component	100 max.	Volts
Total DC + Peak	200 max.	Volts

Characteristics

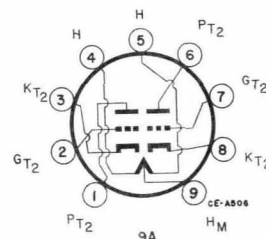
Plate Voltage	100	250	Volts
Grid Voltage	0	-8.5	Volts
Amplification Factor	19.5	17	
Plate Resistance (Approx.)	6250	7700	Ohms
Transconductance	3100	2200	μmhos
Plate Current	11.8	10.5	Ma.

Maximum Circuit Values

For Maximum Rated Conditions

Grid-Circuit Resistance

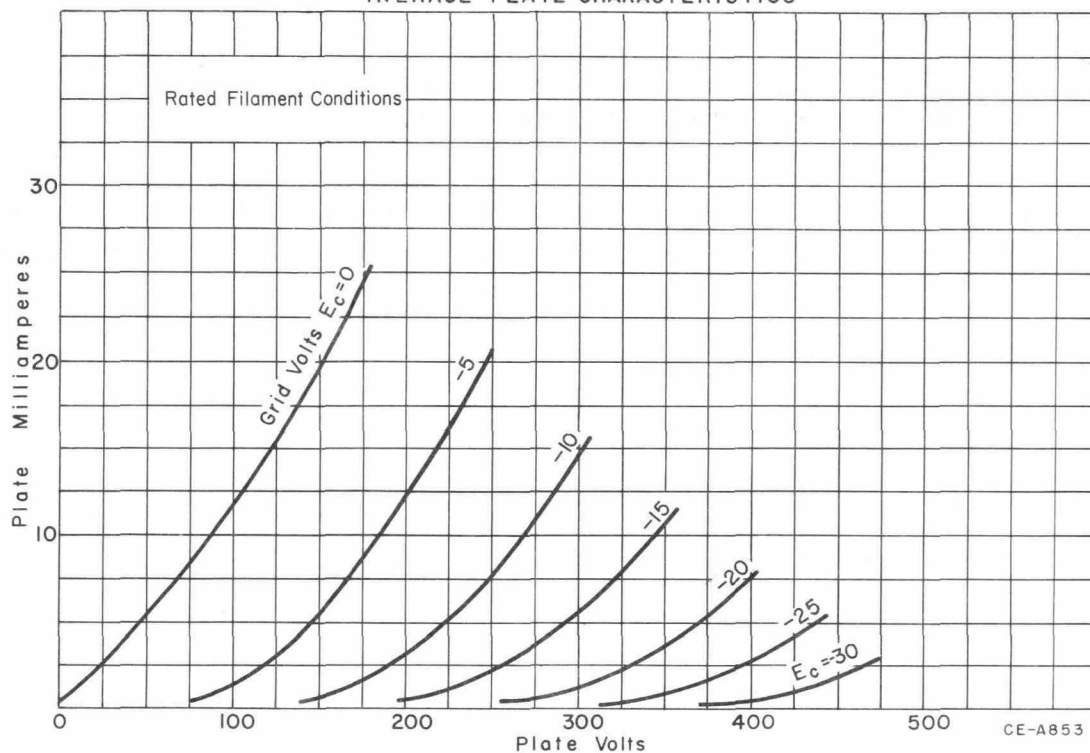
Cathode-Bias Operation	1.0 max.	Megohm
Fixed-Bias Operation	0.25 max.	Megohm



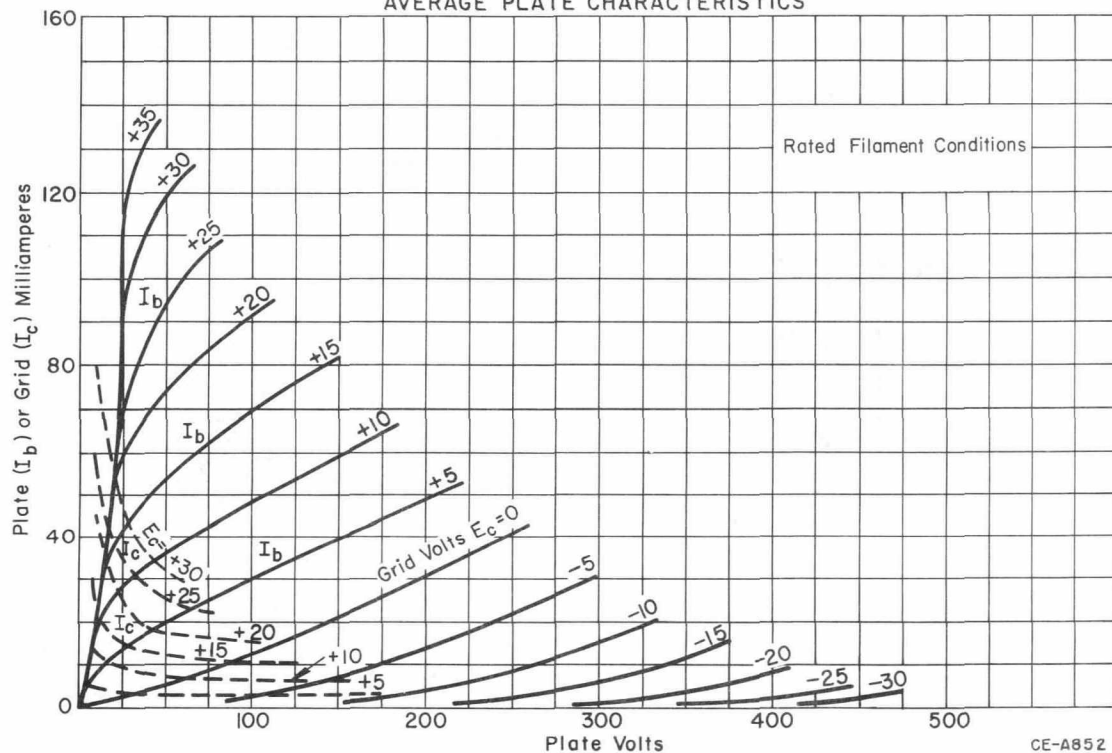
Bottom View

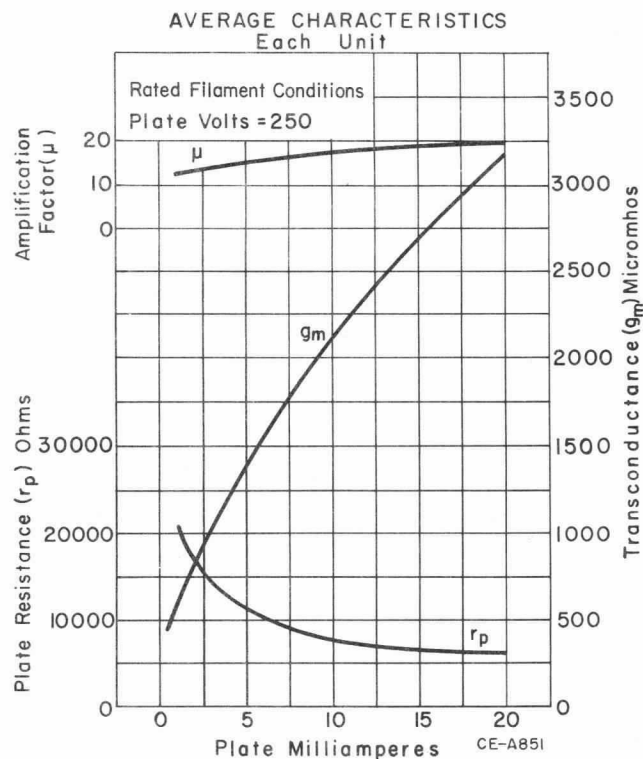
Receiving Tube Section

AVERAGE PLATE CHARACTERISTICS



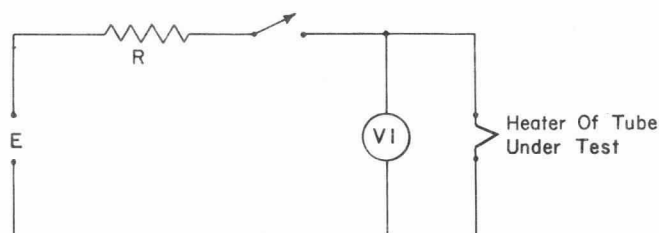
AVERAGE PLATE CHARACTERISTICS





HEATER WARM-UP TIME MEASUREMENTS

Heater warm-up time is defined as the time required for the voltage across the heater terminals to increase from zero to the heater test voltage (V_1) in the circuit shown below. The conditions used in conjunction with the test circuit depend upon the rated heater voltage and current of the tube under test as indicated.



E —Applied Voltage, RMS or DC	13.9	Volts
R —Total Series Resistance	17.5	Ohms
V_1 —Heater Test Voltage, RMS or DC	2.78	Volts
E_r —Rated Heater Voltage of Tube Under Test	3.5	Volts
I_r —Rated Heater Current of Tube Under Test	0.6	Ampere