

## TUNG-SOL

## TWIN TRIODE

MINIATURE TYPE

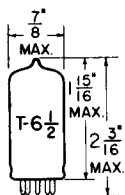
COATED UNIPOTENTIAL CATHODE

HEATER

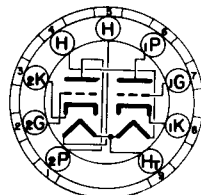
SERIES  
6.3 VOLTS  
0.3 AMP.

PARALLEL  
3.15 VOLTS  
0.6 AMP.

AC OR DC



GLASS BULB



BOTTOM VIEW  
MINIATURE BUTTON  
9 PIN BASE

9A

FOR 12.6 VOLT OPERATION APPLY HEATER VOLTAGE BETWEEN PINS #4 AND #5. FOR 6.3 VOLT OPERATION APPLY HEATER VOLTAGE BETWEEN PIN #9 AND PINS #4 AND #5 CONNECTED TOGETHER.

THE 6AU7 IS A MEDIUM-MU TWIN TRIODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS INTENDED FOR USE IN 600 MILLIAMPERE SERIES STRING TV APPLICATIONS. EXCEPT FOR HEATER RATINGS AND HEATER WARM-UP TIME, THE 6AU7 IS IDENTICAL TO THE 12AU7.

## DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD <sup>A</sup>	WITHOUT SHIELD	
<b>TRIODE UNIT 1</b>			
GRID TO PLATE: (G TO P)	1.5	1.5	$\mu\text{f}$
INPUT: G TO (H+K)	1.8	1.6	$\mu\text{f}$
OUTPUT: P TO (H+K)	2.0	0.40	$\mu\text{f}$
<b>TRIODE UNIT 2</b>			
GRID TO PLATE: (G TO P)	1.5	1.5	$\mu\text{f}$
INPUT: G TO (H+K)	1.8	1.6	$\mu\text{f}$
OUTPUT: P TO (H+K)	2.0	0.32	$\mu\text{f}$

<sup>A</sup> EXTERNAL SHIELD #315 CONNECTED TO CATHODE OF UNIT UNDER TEST.

## RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

EACH TRIODE UNIT

	CLASS A <sub>1</sub> <sup>B</sup> AMPLIFIER	VERTICAL DEFLECTION AMPLIFIER	
HEATER VOLTAGE	6.3	3.15	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE:			
TOTAL DC AND PEAK	200	200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE:			
DC	100	100	VOLTS
TOTAL DC AND PEAK	200	200	VOLTS
MAXIMUM PLATE VOLTAGE	300	300	VOLTS
MAXIMUM PEAK POSITIVE PLATE VOLTAGE (ABSOLUTE MAXIMUM)	---	1200	VOLTS
MAXIMUM PLATE DISSIPATION: <sup>C</sup>			
EACH PLATE	2.75	2.75	WATTS
BOTH PLATES	5.5	5.5	WATTS
MAXIMUM PEAK NEGATIVE GRID VOLTAGE	---	250	VOLTS
MAXIMUM CATHODE CURRENT	20	20	MA.
MAXIMUM PEAK CATHODE CURRENT	---	60	MA.
MAXIMUM GRID CIRCUIT RESISTANCE			
FIXED BIAS OPERATION	0.25	---	MEGOHM
CATHODE BIAS OPERATION	1.0	2.2	MEGOHMS
HEATER WARM-UP TIME (APPROX.)*		11.0	SECONDS

<sup>B</sup> FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS; FEDERAL COMMUNICATIONS COMMISSION". THE DUTY CYCLE OF THE VOLTAGE PULSE NOT TO EXCEED 15 PERCENT OF A SCANNING CYCLE.

<sup>C</sup> IN STAGES OPERATING WITH GRID-LEAK BIAS, AN ADEQUATE CATHODE BIAS RESISTOR OR OTHER SUITABLE MEANS IS REQUIRED TO PROTECT THE TUBE IN THE ABSENCE OF EXCITATION.

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## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## RATINGS (CONT'D)

EACH TRIODE UNIT

	VERTICAL <sup>D</sup> DEFLECTION OSCILLATOR	HORIZONTAL <sup>D</sup> DEFLECTION OSCILLATOR	
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE:			
TOTAL DC AND PEAK	200	200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE:			
DC	100	100	VOLTS
TOTAL DC AND PEAK	200	200	VOLTS
MAXIMUM DC PLATE VOLTAGE	300	300	VOLTS
MAXIMUM PLATE DISSIPATION:			
EACH PLATE	2.75	2.75	WATTS
BOTH PLATES	5.5	5.5	WATTS
MAXIMUM PEAK NEGATIVE GRID VOLTAGE	400	600	VOLTS
MAXIMUM AVERAGE CATHODE CURRENT	20	20	MA.
MAXIMUM PEAK CATHODE CURRENT	60	300	MA.
MAXIMUM GRID CIRCUIT RESISTANCE	2.2	2.2	MEG OHMS

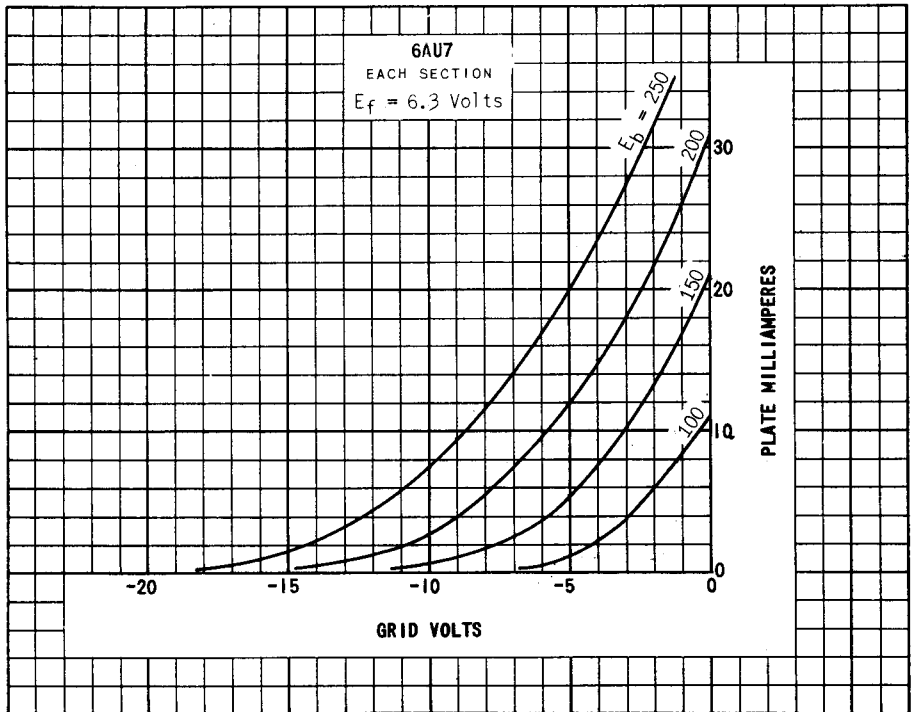
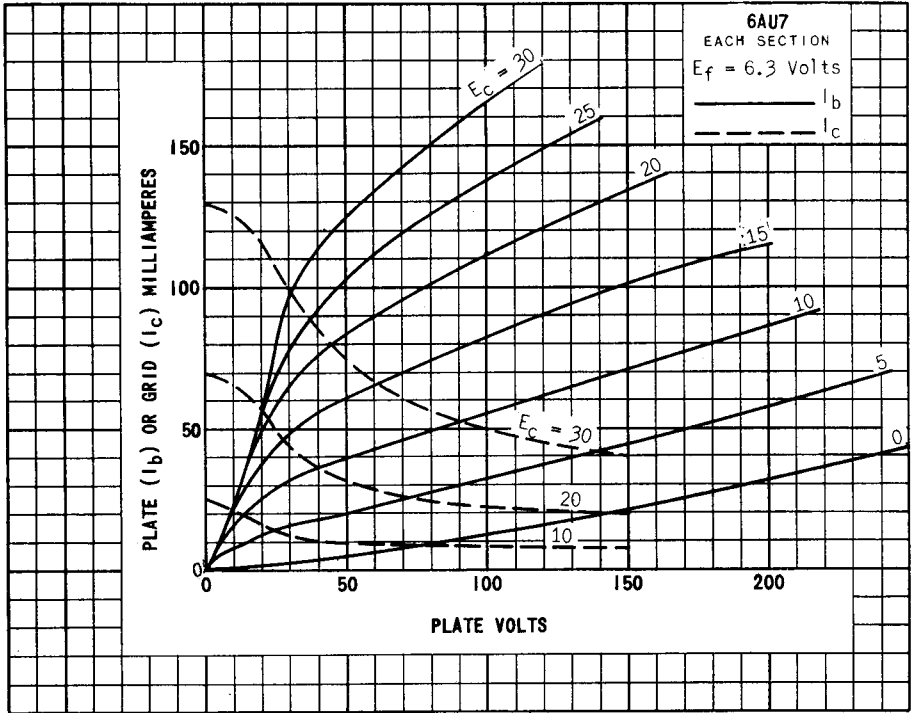
<sup>D</sup> FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS; FEDERAL COMMUNICATIONS COMMISSION". THE DUTY CYCLE OF THE VOLTAGE PULSE NOT TO EXCEED 15 PERCENT OF A SCANNING CYCLE.

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

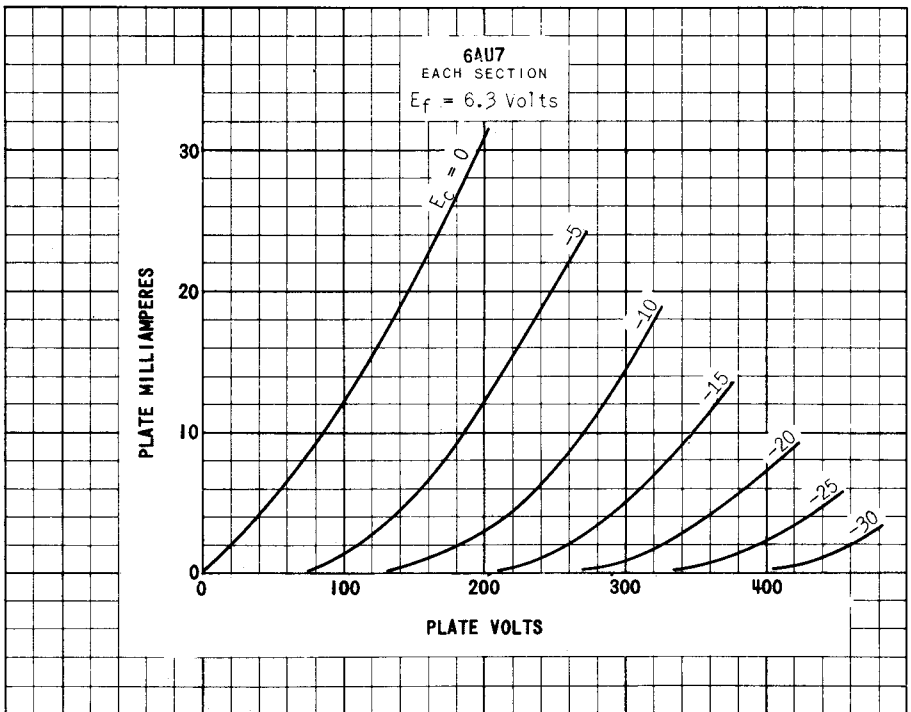
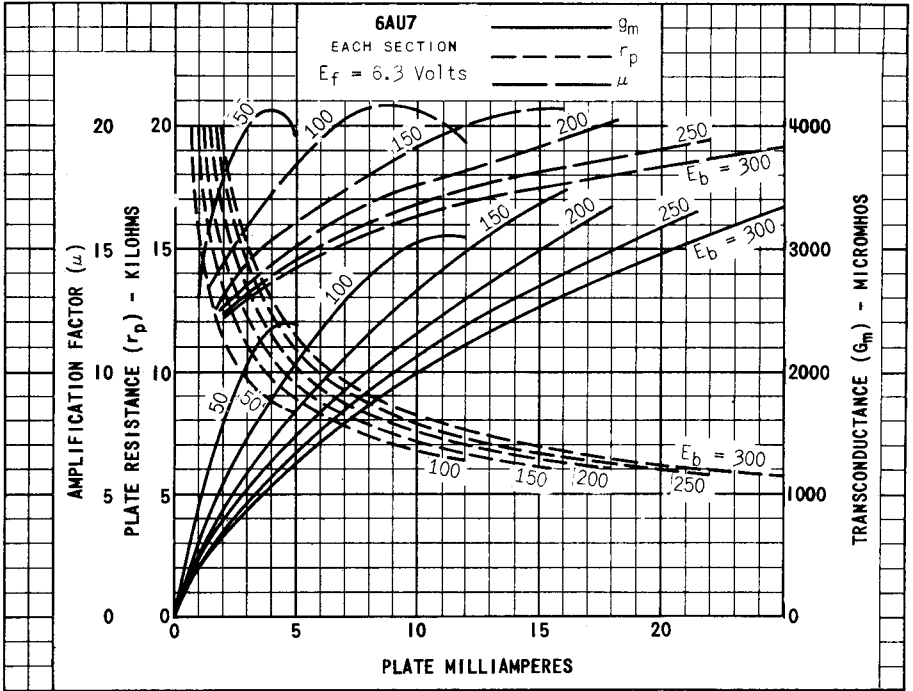
CLASS A<sub>1</sub> AMPLIFIER - EACH TRIODE UNIT

PLATE VOLTAGE	100	250	VOLTS
GRID VOLTAGE	0	-8.5	VOLTS
PLATE CURRENT	11.8	10.5	MA.
PLATE RESISTANCE (APPROX.)	6 500	7 700	OHMS
TRANSCONDUCTANCE	3 100	2 200	μMHOS
AMPLIFICATION FACTOR	20	17	
GRID VOLTAGE FOR I <sub>b</sub> = 10 μA. (APPROX.)	---	- 24	VOLTS

\*HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.



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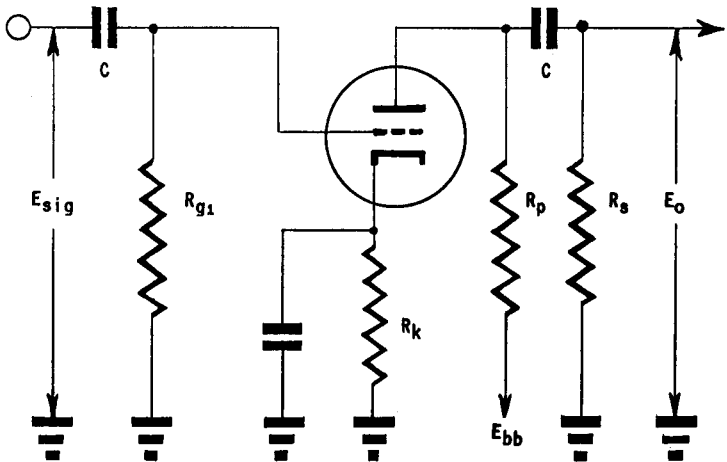


**TUNG-SOL**

**RESISTANCE COUPLED AMPLIFIER**  
EACH SECTION

R <sub>p</sub> MEG.	R <sub>s</sub> MEG.	R <sub>g1</sub> MEG.	E <sub>bb</sub> = 90 VOLTS			E <sub>bb</sub> = 180 VOLTS			E <sub>bb</sub> = 300 VOLTS		
			R <sub>k</sub>	GAIN	E <sub>o</sub>	R <sub>k</sub>	GAIN	E <sub>o</sub>	R <sub>k</sub>	GAIN	E <sub>o</sub>
0.10	0.10	0.10	3300	14	13	2200	14	26	1800	14	40
0.10	0.24	0.10	3600	14	16	2700	15	33	2200	15	51
0.24	0.24	0.10	7500	14	16	5100	15	30	4300	15	44
0.24	0.51	0.10	9100	14	19	6800	15	39	5100	15	54
0.51	0.51	0.10	13000	14	16	9100	15	30	6800	16	40
0.51	1.0	0.10	15000	14	19	10000	16	32	7500	16	45
0.24	0.24	10	0	15	13	0	16	33	0	17	46
0.24	0.51	10	0	16	17	0	17	38	0	18	62
0.51	0.51	10	0	16	14	0	18	32	0	18	53
0.51	1.0	10	0	17	18	0	18	41	0	19	68

- NOTES:**
1. E<sub>o</sub> IS MAXIMUM RMS VOLTAGE OUTPUT FOR FIVE PERCENT (5%) TOTAL HARMONIC DISTORTION.
  2. GAIN MEASURED AT 2.0 VOLTS RMS OUTPUT.
  3. FOR ZERO-BIAS DATA, GENERATOR IMPEDANCE IS NEGLIGIBLE.



**NOTES:** COUPLING CAPACITORS (C) SHOULD BE SELECTED TO GIVE DESIRED FREQUENCY RESPONSE.  
R<sub>k</sub> SHOULD BE ADEQUATELY BY-PASSED

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