

TUNG-SOL

PENTODE

MINIATURE TYPE

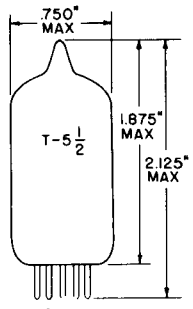
COATED UNIPOTENTIAL CATHODE

HEATER

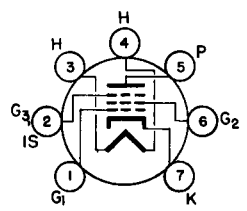
3.15 VOLTS 600±40 MA.

AC OR DC

ANY MOUNTING POSITION



GLASS BULB
MINIATURE BUTTON
7 PIN BASE E7-1
OUTLINE DRAWING
JEDEC 5-2



BOTTOM VIEW
BASING DIAGRAM
JEDEC 7BK

THE 3AU6 IS A PENTODE AMPLIFIER WITH SHARP CUT-OFF CONTROL CHARACTERISTICS. USING THE 7 PIN MINIATURE CONSTRUCTION, IT IS DESIGNED FOR USE IN 600 MA. SERIES HEATER OPERATED RECEIVERS. WITH HIGH TRANSCONDUCTANCE AND LOW GRID PLATE CAPACITANCE, IT IS INTENDED FOR SERVICE AS EITHER AN RF OR AF AMPLIFIER. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED. WITH THE EXCEPTION OF HEATER RATINGS, ITS CHARACTERISTICS ARE IDENTICAL TO TYPE 6AU6.

DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD ^A	WITHOUT SHIELD	
PENTODE CONNECTION:			
GRID TO PLATE: (G ₁ TO P) MAX.	0.003	0.003	pf
INPUT: G ₁ TO (H+K+G ₂ +G ₃ &IS)	5.5	5.5	pf
OUTPUT: P TO (H+K+G ₂ +G ₃ &IS)	5	5	pf
TRIODE CONNECTION:			
GRID TO PLATE: G ₁ TO (P+G ₂ +G ₃ &IS)	2.6	2.6	pf
INPUT: G ₁ TO (H+K)	3.2	3.2	pf
OUTPUT: (P+G ₂ +G ₃ &IS) TO (H+K)	8.5	1.2	pf

^A SHIELD #316 CONNECTED TO PIN #7.

→ **MAXIMUM RATINGS**

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

	TRIODE CONNECTION ^C	PENTODE CONNECTION	
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE	200	200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE	200 [*]	200 [*]	VOLTS
MAXIMUM PLATE VOLTAGE	275	330	VOLTS
MAXIMUM GRID #2 SUPPLY VOLTAGE	---	330	VOLTS
MAXIMUM GRID #2 VOLTAGE	---	SEE J5-C4-2	
MAXIMUM GRID #3 VOLTAGE PIN #2 CONNECTED TO:	PLATE	CATHODE	
MAXIMUM PLATE DISSIPATION	3.5	3.5	WATTS
MAXIMUM GRID #2 DISSIPATION	---	---	WATTS
MAXIMUM GRID #2 INPUT: [*]			
FOR GRID #2 VOLTAGES UP TO 165 VOLTS	---	0.75	VOLTS
FOR GRID #2 VOLTAGES BETWEEN 165 VOLTS AND 330 VOLTS [*]	---	SEE J5-C4-2	
MAXIMUM POSITIVE DC GRID #1 VOLTAGE	0	0	VOLTS
HEATER WARM-UP TIME (APPROX.) [*]		11.0	SECONDS

→ INDICATES A CHANGE.

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CONTINUED FROM PRECEDING PAGE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ AMPLIFIER - PENTODE CONNECTION

PLATE VOLTAGE	100	250	250	VOLTS
GRID #2 VOLTAGE	100	125	150	VOLTS
CATHODE BIAS RESISTOR	150	100	68	OHMS
GRID #3 VOLTAGE	PIN #2 CONNECTED TO PIN #7 AT SOCKET			
TRANSCONDUCTANCE	3 900	4 500	5 200	μMHOS
PLATE CURRENT	5	7.6	10.6	MA.
GRID #2 CURRENT	2.1	3	4.3	MA.
PLATE RESISTANCE (APPROX.)	0.5	1.5	1	MEGOHMS
GRID #1 VOLTAGE (APPROX.) FOR I _b = 10 μA.	-4.2	-5.5	-6.5	VOLTS

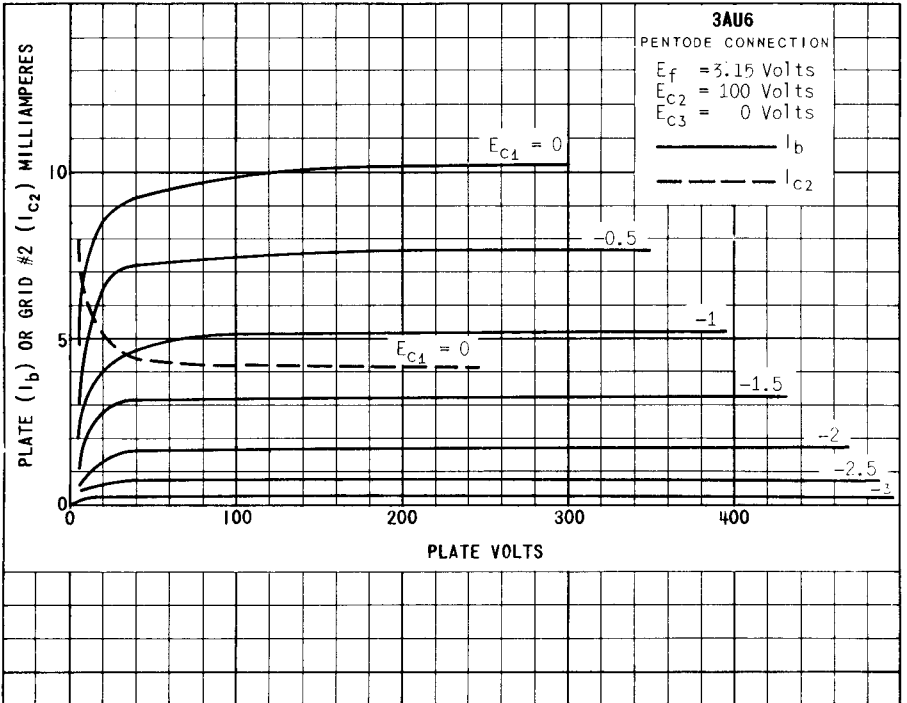
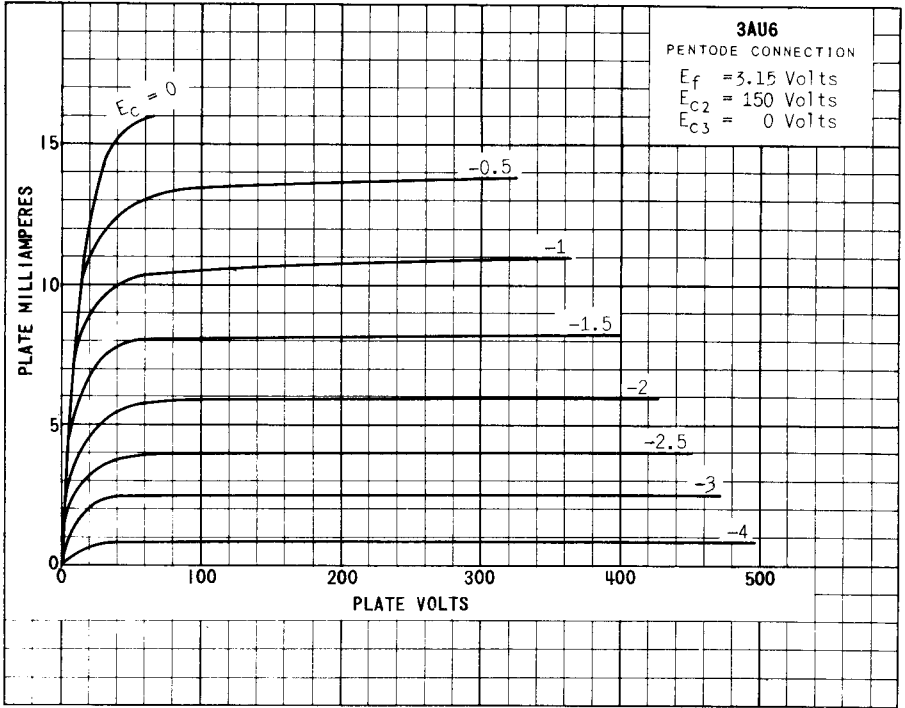
CLASS A₁ AMPLIFIER - TRIODE CONNECTION^c

PLATE VOLTAGE	250	VOLTS
GRID #2 VOLTAGE	PLATE	
CATHODE RESISTOR	330	OHMS
GRID #3 VOLTAGE	PLATE	
TRANSCONDUCTANCE	4 800	μMHOS
PLATE CURRENT	12.2	MA.
AMPLIFICATION FACTOR	.36	

^c TRIODE CONNECTION: GRID #2 AND GRID #3 CONNECTED TO PLATE.

* 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.

• THE DC COMPONENT MUST NOT EXCEED 100 VOLTS.



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3AU6

