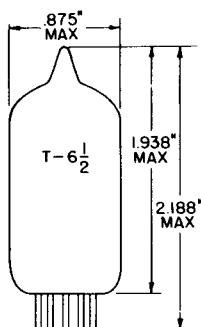


TUNG-SOL

TRIODE PENTODE
MINIATURE TYPE

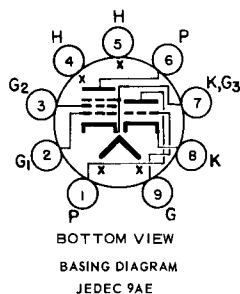
GLASS BULB
MINIATURE BUTTON
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-2

COATED UNIPOTENTIAL CATHODE

FOR
APPLICATION IN FM

OR TV RECEIVERS

ANY MOUNTING POSITION



THE 6U8A COMBINES TWO ELECTRICALLY INDEPENDENT SECTIONS-A TRIODE AND A PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. BOTH UNITS ARE CAPABLE OF GOOD PERFORMANCE AT THE HIGH FREQUENCIES. THE TUBE MAY BE USED AS A LOCAL OSCILLATOR-PENTODE MIXER IN FM OR TELEVISION RECEIVERS OR IN THE MANY COMBINED FUNCTIONS OF SUCH RECEIVERS. 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,

DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD A	WITHOUT SHIELD	
PENTODE GRID 1 TO PENTODE PLATE: (PG1 TO PP) MAX.	→ 0.007	→ 0.015	pf
PENTODE INPUT: PG1 TO (H + PK + PG2 + PG3 + I.S.)	5.0	5.0	pf
PENTODE OUTPUT: PP TO (H + PK + PG2 + PG3 + I.S.)	3.5	2.6	pf
PENTODE CATHODE TO HEATER: H TO (PK + PG3 + I.S.)	3.0 ^B	3.0	pf
TRIODE GRID TO TRIODE PLATE: (TG TO TP)	1.8	1.8	pf
TRIODE INPUT: TG TO (TK + H + PK + PG3 + I.S.)	2.8	2.8	pf
TRIODE OUTPUT: TP TO (TK + H + PK + PG3 + I.S.)	2.0	1.5	pf
TRIODE CATHODE TO HEATER (TK TO H)	3.0 ^B	3.0	pf
PENTODE GRID TO TRIODE PLATE (PG TO TP) (MAX.)	0.20	0.2	pf
PENTODE PLATE TO TRIODE PLATE (PP TO TP) (MAX.)	0.02	0.1	pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	6.3 VOLTS	450	MA.
HEATER WARM-UP TIME ^C		11	SECONDS
HEATER SUPPLY LIMITS:			
CURRENT OPERATION		450 ± 30	MA.
VOLTAGE OPERATION		6.3 ± 0.6	VOLTS
MAXIMUM HEATER CATHODE VOLTAGE: (EACH UNIT)			
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK		200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC		100	VOLTS
TOTAL DC AND PEAK		200	VOLTS

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

→ MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

PENTODE PLATE VOLTAGE	330	VOLTS
TRIODE PLATE VOLTAGE	330	VOLTS
GRID 2 SUPPLY VOLTAGE	330	VOLTS
GRID 2 VOLTAGE	SEE RATING CHART	
PENTODE PLATE DISSIPATION	3.0	WATTS
GRID 2 DISSIPATION: *		
FOR VOLTAGES UP TO 165 VOLTS	0.55	WATTS
FOR VOLTAGES BETWEEN 165 & 330 VOLTS	SEE RATING CHART	
POSITIVE DC GRID 1 VOLTAGE	0	VOLTS
POSITIVE DC TRIODE GRID VOLTAGE	0	VOLTS
TRIODE PLATE DISSIPATION	2.5	WATTS
PENTODE GRID 1 CIRCUIT RESISTANCE:*		
WITH CATHODE BIAS	1.0	MEGOHM
WITH FIXED BIAS	0.5	MEGOHM

TYPICAL OPERATING CHARACTERISTICS

CLASS A₁ AMPLIFIER

	TRIODE	PENTODE	
PLATE VOLTAGE	125	125	VOLTS
GRID 2 VOLTAGE	----	110	VOLTS
GRID 1 VOLTAGE	-1.0	-1.0	VOLTS
TRANSCONDUCTANCE	7500	5000	μMHOS
PLATE CURRENT	13.5	9.5	MA.
GRID 2 CURRENT	----	3.5	MA.
PLATE RESISTANCE (APPROX.)	----	0.2	MEGOHM
AMPLIFICATION FACTOR	40	----	
GRID 1 VOLTAGE (APPROX.) FOR I _b =20 μA	-9	-8	VOLTS
ZERO BIAS TRANSCONDUCTANCE (WITH E _b =100 V; E _{c2} =70 V)*	----	5500	μMHOS

A
EXTERNAL SHIELD 315 CONNECTED TO PIN 4.

B
EXTERNAL SHIELD 315 CONNECTED TO PIN 6.

C
HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 90% 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 THREE TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

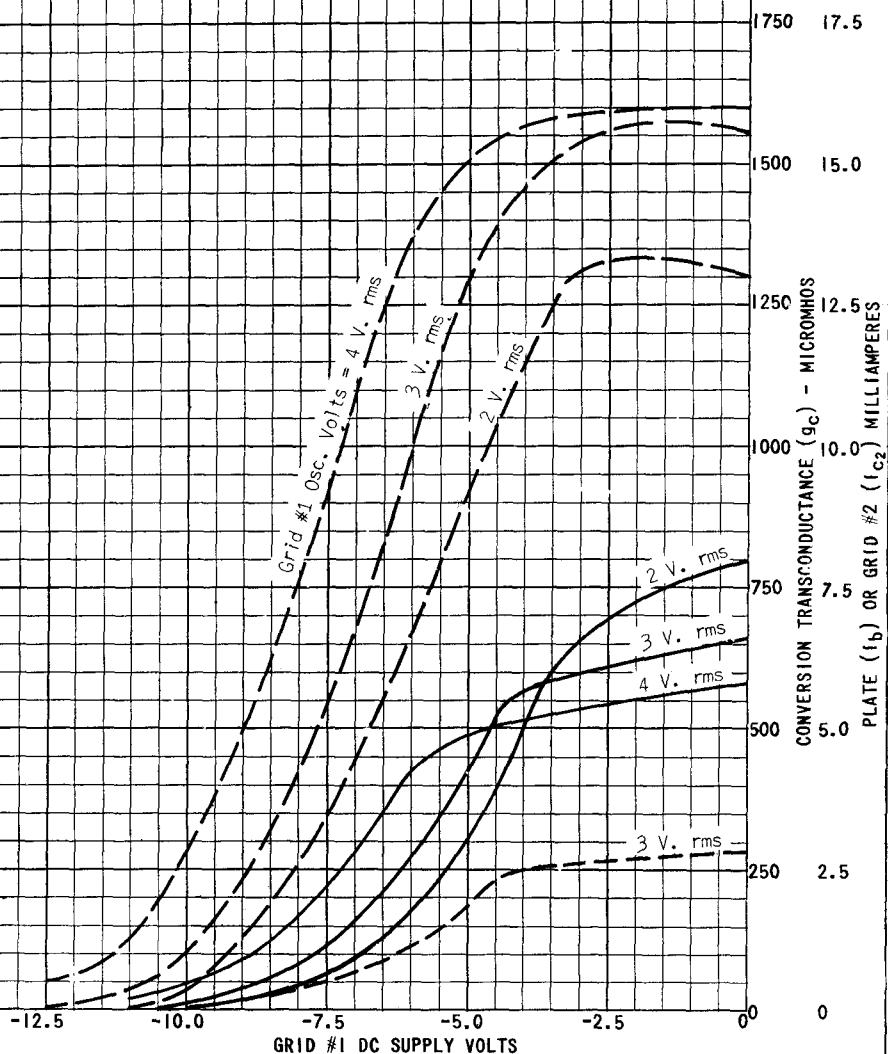
→ INDICATES A CHANGE.

* INDICATES AN ADDITION.

6U8A
 PENTODE UNIT
 MIXER CHARACTERISTICS
 WITH
 SEPARATE OSCILLATOR EXCITATION

$E_f = 6.3$ Volts
 $E_b = E_{c2} = 150$ Volts DC
 $E_{c3} = 0$ Volts
 $R_{c1} = 270\ 000$ Ohms

_____ I_b
 - - - - - I_{c2}
 - - - - - I_c



6U8A
 PENTODE UNIT
 MIXER CHARACTERISTICS
 WITH
 SEPARATE OSCILLATOR EXCITATION

$E_f = 6.3$ Volts
 $E_b = 150$ Volts
 $E_{c1} = 0$ DC Supply Volts
 $E_{c3} = 0$ Volts
 $R_{c1} = 270\ 000$ Ohms

PLATE (I_b) OR GRID #2 (I_{c2}) MILLIAMPERES

CONVERSION TRANSCONDUCTANCE (g_c) - MICROMHMS

17.5 1750

15.0 1500

12.5 1250

10.0 1000

7.5 750

5.0 500

2.5 250

0

GRID #1 OSCILLATOR RMS VOLTS

I_b
 I_{c2}
 g_c

$E_{c2} = 150$

100

50

$E_{c2} = 150$

100

$E_{c2} = 150$

50

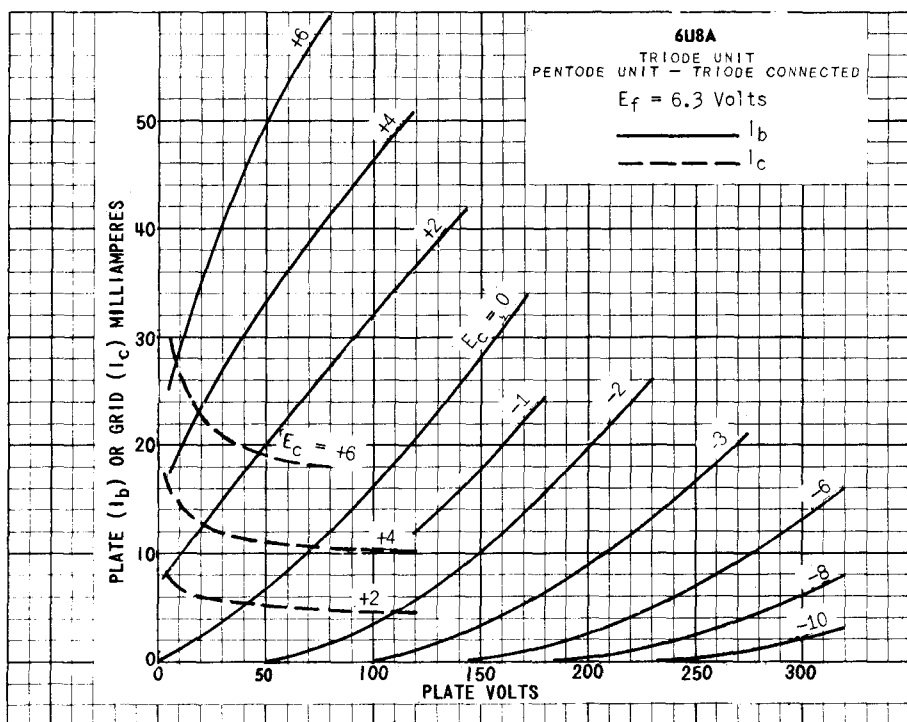
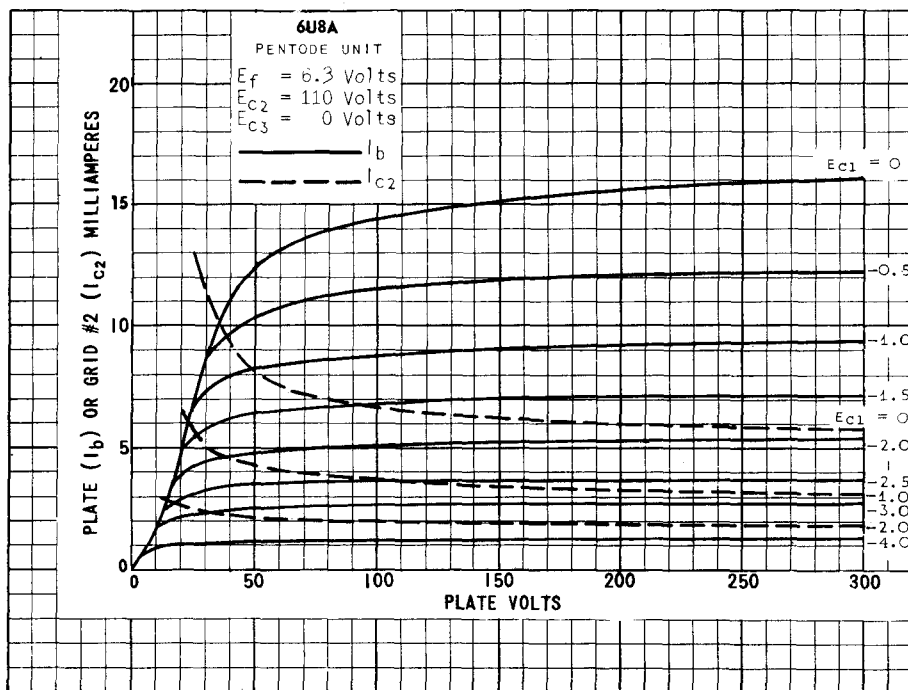
50

0

2.5

5.0

7.5



6U8A

