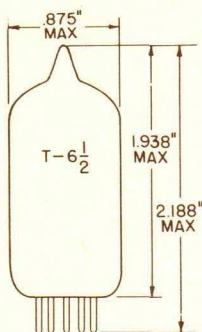


## TUNG-SOL

TRIODE PENTODE  
MINIATURE TYPE

GLASS BULB

MINIATURE BUTTON

9 PIN BASE E9-1

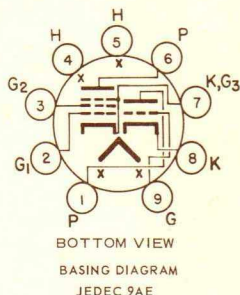
OUTLINE DRAWING

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<br>SHIELD A | WITHOUT<br>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 <sup>B</sup> | 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 <sup>B</sup> | 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 <sup>C</sup>            |           | 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 A<sub>1</sub> 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 $I_b = 20 \mu A$                       | -9     | -8      | VOLTS  |
| ZERO BIAS TRANSCONDUCTANCE<br>(WITH $E_b = 100 V$ ; $E_c = 70 V$ )* | ----   | 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 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 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

—————  $I_b$   
 - - - - -  $I_{c2}$   
 - - - - -  $g_c$

