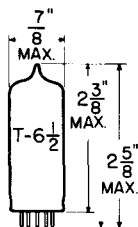


## TUNG-SOL

TRIODE PENTODE  
MINIATURE TYPE

GLASS BULB

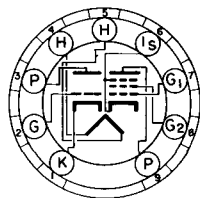
COATED UNIPOTENTIAL CATHODE

HEATER

10.5 VOLTS 0.45 AMP.

AC OR DC

ANY MOUNTING POSITION

BOTTOM VIEW  
MINIATURE BUTTON  
9 PIN BASE  
9DX

THE 10EB8 IS A HIGH-MU TRIODE AND SHARP CUTOFF PENTODE IN THE 9-PIN MINIATURE CONSTRUCTION. THE TRIODE SECTION IS DESIGNED FOR USE AS A VOLTAGE AMPLIFIER WHILE THE PENTODE SECTION HAS A CONTROLLED PLATE KNEE CHARACTERISTIC AND IS DESIGNED FOR USE AS A VIDEO AMPLIFIER. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SO THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED. EXCEPT FOR HEATER RATINGS AND HEATER WARM-UP TIME THE 10EB8 IS IDENTICAL TO THE 6EB8.

DIRECT INTERELECTRODE CAPACITANCES  
WITHOUT EXTERNAL SHIELD

## TRIODE SECTION:

|                      |      |                  |
|----------------------|------|------------------|
| GRID TO PLATE        | 4.4  | $\mu\mu\text{f}$ |
| INPUT: G TO (H + K)  | 2.4  | $\mu\mu\text{f}$ |
| OUTPUT: P TO (H + K) | 0.36 | $\mu\mu\text{f}$ |

## PENTODE SECTION:

|                                                                     |     |                  |
|---------------------------------------------------------------------|-----|------------------|
| GRID #1 TO PLATE (MAX.)                                             | 0.1 | $\mu\mu\text{f}$ |
| INPUT: G <sub>1</sub> TO (H+K+G <sub>2</sub> +G <sub>3</sub> +I.S.) | 11  | $\mu\mu\text{f}$ |
| OUTPUT: P TO (H+K+G <sub>2</sub> +G <sub>3</sub> +I.S.)             | 4.2 | $\mu\mu\text{f}$ |

## COUPLING:

|                                        |      |                  |
|----------------------------------------|------|------------------|
| TRIODE GRID TO PENTODE PLATE (MAX.)    | .018 | $\mu\mu\text{f}$ |
| PENTODE GRID #1 TO TRIODE PLATE (MAX.) | .005 | $\mu\mu\text{f}$ |
| PENTODE PLATE TO TRIODE PLATE (MAX.)   | 0.17 | $\mu\mu\text{f}$ |

## RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM<sup>A</sup>

|                                  | TRIODE SECTION | PENTODE SECTION |       |
|----------------------------------|----------------|-----------------|-------|
| HEATER VOLTAGE                   | 10.5           | 10.5            | VOLTS |
| MAXIMUM PLATE VOLTAGE            | 330            | 330             | VOLTS |
| MAXIMUM GRID #2 SUPPLY VOLTAGE   |                | 330             | VOLTS |
| MAXIMUM GRID #2 VOLTAGE          |                |                 |       |
| MAXIMUM POSITIVE GRID #1 VOLTAGE | 0              | 0               | VOLTS |
| MAXIMUM PLATE DISSIPATION        | 1.0            | 5.0             | WATTS |
| MAXIMUM GRID #2 DISSIPATION      |                | 1.1             | WATTS |

CONTINUED ON FOLLOWING PAGE

## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

### RATINGS - CONT'D.

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

## MAXIMUM HEATER-CATHODE VOLTAGE:

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

## MAXIMUM GRID #1 CIRCUIT RESISTANCE

FIXED BIAS

0.5

0.25

MEGOHM

CATHODE BIAS

1.0

1.0

MEGOHM

HEATER WARM-UP TIME\* (APPROX.)

11.0

SECONDS

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

|                                                 | TRIODE<br>SECTION | PENTODE<br>SECTION |       |
|-------------------------------------------------|-------------------|--------------------|-------|
| HEATER VOLTAGE                                  | 10.5              | 10.5               | VOLTS |
| HEATER CURRENT                                  | 0.45              | 0.45               | AMP.  |
| PLATE VOLTAGE                                   | 250               | 200                | VOLTS |
| GRID #2 VOLTAGE                                 |                   | 125                | VOLTS |
| GRID #1 VOLTAGE                                 | -2                |                    | VOLTS |
| CATHODE BIAS RESISTOR                           |                   | 68                 | OHMS  |
| PLATE CURRENT                                   | 2                 | 25                 | MA.   |
| GRID #2 CURRENT                                 |                   | 7                  | MA.   |
| TRANSCONDUCTANCE                                | 2 700             | 12 500             | μMHOS |
| AMPLIFICATION FACTOR                            | 100               |                    |       |
| PLATE RESISTANCE (APPROX.)                      | 37 000            | 75 000             | OHMS  |
| GRID #1 VOLTAGE FOR $I_b = 100 \mu A$ (APPROX.) |                   | -9                 | VOLTS |
| GRID #1 VOLTAGE FOR $I_b = 20 A$ (APPROX.)      | -5                |                    |       |

## PLATE KNEE CHARACTERISTICS - INSTANTANEOUS VALUES

 $E_b = 45$  VOLTS,  $E_{c2} = 125$  VOLTS AND  $E_{c1} = 0$  VOLTS

PLATE CURRENT

40

MA.

GRID #2 CURRENT

15

MA.

DESIGN-MAXIMUM RATINGS ARE LIMITING VALUES OF OPERATING AND ENVIRONMENTAL CONDITIONS APPLICABLE TO A BOGEY ELECTRON DEVICE OF A SPECIFIED TYPE AS DEFINED BY ITS PUBLISHED DATA, AND SHOULD NOT BE EXCEEDED UNDER THE WORST PROBABLE CONDITIONS. THE DEVICE MANUFACTURER CHOOSES THESE VALUES TO PROVIDE ACCEPTABLE SERVICEABILITY OF THE DEVICE, TAKING RESPONSIBILITY FOR THE EFFECTS OF CHANGES IN OPERATING CONDITIONS DUE TO VARIATIONS IN DEVICE CHARACTERISTICS. THE EQUIPMENT MANUFACTURER SHOULD DESIGN SO THAT INITIALLY AND THROUGHOUT LIFE NO DESIGN-MAXIMUM VALUE FOR THE INTENDED SERVICE IS EXCEEDED WITH A BOGEY DEVICE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, SIGNAL VARIATION, AND ENVIRONMENTAL CONDITIONS.

\* 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.