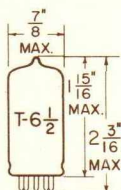


## TUNG-SOL

## DOUBLE TRIODE

MINIATURE TYPE



GLASS BULB

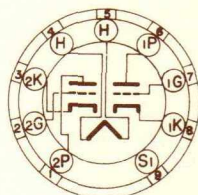
COATED UNIPOTENTIAL CATHODE

HEATER

4.2 VOLTS 0.6 AMP.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

MINIATURE BUTTON  
9 PIN BASE

9AJ

THE 4BZ7 IS A MEDIUM-MU DOUBLE TRIODE USING THE 9 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED FOR USE IN 600 MA. SERIES HEATER OPERATED RECEIVERS AND IS INTENDED FOR SERVICE IN LOW NOISE VHF CASCODE AMPLIFIER APPLICATIONS. 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 THE 6BZ7.

## DIRECT INTERELECTRODE CAPACITANCES

WITH RETMA SHIELD #315

|                                              | TRIODE<br>UNIT #1 | TRIODE<br>UNIT #2 |                |
|----------------------------------------------|-------------------|-------------------|----------------|
| GRID TO PLATE                                | 1.15              | 1.15              | $\mu\text{uf}$ |
| INPUT                                        | 2.85              | ---               | $\mu\text{uf}$ |
| INPUT (GROUNDED GRID)                        | ---               | 4.95              | $\mu\text{uf}$ |
| OUTPUT                                       | 1.35              | ---               | $\mu\text{uf}$ |
| OUTPUT (GROUNDED GRID)                       | ---               | 2.27              | $\mu\text{uf}$ |
| PLATE TO CATHODE (MAX.)                      | 0.15              | 0.15              | $\mu\text{uf}$ |
| HEATER TO CATHODE                            | 2.20              | 2.30              | $\mu\text{uf}$ |
| PLATE UNIT #1 TO PLATE UNIT #2 (MAX.)        |                   | 0.01              | $\mu\text{uf}$ |
| PLATE UNIT #2 TO PLATE & GRID UNIT #1 (MAX.) |                   | 0.024             | $\mu\text{uf}$ |

## RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

## EACH TRIODE UNIT

|                                         |      |         |
|-----------------------------------------|------|---------|
| HEATER VOLTAGE                          | 4.2  | VOLTS   |
| MAXIMUM HEATER CATHODE VOLTAGE:         |      |         |
| HEATER NEGATIVE WITH RESPECT TO CATHODE |      | VOLTS   |
| TOTAL DC AND PEAK                       | 200  | VOLTS   |
| HEATER POSITIVE WITH RESPECT TO CATHODE |      |         |
| DC                                      | 100  | VOLTS   |
| TOTAL DC AND PEAK                       | 200  | VOLTS   |
| MAXIMUM PLATE VOLTAGE                   | 250  | VOLTS   |
| MAXIMUM PLATE DISSIPATION               | 2    | WATTS   |
| MAXIMUM CATHODE CURRENT                 | 20   | MA.     |
| HEATER WARM-UP TIME (APPROX.)*          | 11.0 | SECONDS |

\*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.

CONTINUED ON FOLLOWING PAGE

## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

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

|                                                    |       |       |
|----------------------------------------------------|-------|-------|
| HEATER VOLTAGE                                     | 4.2   | VOLTS |
| HEATER CURRENT                                     | 0.6   | AMP.  |
| PLATE VOLTAGE                                      | 150   | VOLTS |
| CATHODE BIAS RESISTOR                              | 220   | OHMS  |
| AMPLIFICATION FACTOR                               | 38    |       |
| PLATE RESISTANCE                                   | 5 600 | OHMS  |
| TRANSCONDUCTANCE                                   | 6 800 | UMHOS |
| PLATE CURRENT                                      | 10    | MA.   |
| GRID VOLTAGE FOR PLATE CURRENT OF 10 MA. (APPROX.) | 11    | VOLTS |