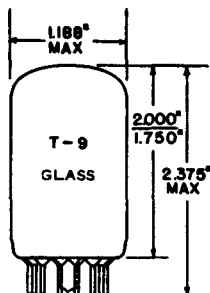


## TUNG-SOL

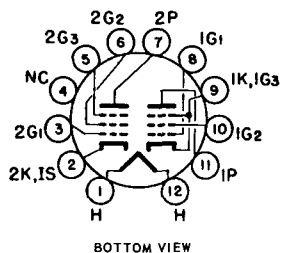
## DUAL PENTODE

## COMPACTRON

OUTLINE  
JEDEC 9-58BASE 12 PIN BUTTON  
JEDEC E12-70

FOR  
FM DETECTOR  
AND AUDIO OUTPUT  
IN T.V. RECEIVERS

COATED UNIPOTENTIAL CATHODE  
ANY MOUNTING POSITION

BASING DIAGRAM  
JEDEC 12EZ

BOTTOM VIEW

THE TUNG-SOL 17BF11 IS A 12-PIN T-9 COMPACTRON CONTAINING TWO DISSIMILAR PENTODES. SECTION 1 IS A POWER PENTODE FOR AUDIO APPLICATION. SECTION 2 IS A DUAL CONTROL PENTODE INTENDED FOR USE AS FM DETECTOR IN TV CIRCUITS. ELECTRICALLY, SECTION 2 IS SIMILAR TO TYPE 6DT6. EXCEPT FOR HEATER CHARACTERISTICS, THE 17BF11 IS IDENTICAL TO THE 6BF11.

### DIRECT INTERELECTRODE CAPACITANCES WITHOUT EXTERNAL SHIELD

|                                                                                      |       |    |
|--------------------------------------------------------------------------------------|-------|----|
| PENTODE 1 - GRID 1 TO PLATE                                                          | 0.24  | pf |
| INPUT: (G <sub>1</sub> TO H + K + I.S. + G <sub>2</sub> )                            | 13    | pf |
| OUTPUT: (P TO H + K + I.S. + G <sub>2</sub> )                                        | 10    | pf |
| PENTODE 2 - GRID 1 TO PLATE                                                          | 0.036 | pf |
| GRID 1 TO ALL (G <sub>1</sub> TO H + K + I.S. + G <sub>2</sub> + G <sub>3</sub> + P) | 6.5   | pf |
| GRID 3 TO PLATE                                                                      | 3.2   | pf |
| GRID 3 TO ALL (G <sub>3</sub> TO H + K + I.S. + G <sub>1</sub> + G <sub>2</sub> + P) | 8.0   | pf |
| GRID 1 TO GRID 3                                                                     | 0.11  | pf |
| COUPLING - PLATE TO PLATE                                                            | 0.13  | pf |

### HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM SYSTEM - SEE EIA STANDARD RS-239

|                                              |            |             |       |
|----------------------------------------------|------------|-------------|-------|
| AVERAGE CHARACTERISTICS                      | 16.8 VOLTS | 0.45        | AMPS. |
| HEATER WARM-UP TIME                          |            | 11          | SEC.  |
| LIMITS OF SUPPLIED CURRENT                   |            | 0.45 ± 0.03 | AMPS. |
| MAXIMUM HEATER-CATHODE VOLTAGE-BOTH SECTIONS |            |             |       |
| 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 |

CONTINUED ON FOLLOWING PAGE

## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## MAXIMUM RATINGS

DESIGN MAXIMUM SYSTEM - SEE EIA STANDARD RS-239

|                            | SECTION 1       | SECTION 2 |         |
|----------------------------|-----------------|-----------|---------|
| PLATE VOLTAGE              | 165             | 330       | VOLTS   |
| GRID 2 VOLTAGE             | 150             | -         | VOLTS   |
| GRID 2 SUPPLY VOLTAGE      | -               | 330       | VOLTS   |
| POSITIVE DC GRID 3 VOLTAGE | -               | 28        | VOLTS   |
| PLATE DISSIPATION          | 6.5             | 1.7       | WATTS   |
| GRID 2 DISSIPATION         | 1.8             | SEE CHART | WATTS   |
|                            | UP TO 150 VOLTS | 1.1       | WATTS   |
| CATHODE CURRENT            | 65              | -         | MA      |
| GRID 1 CIRCUIT RESISTANCE  |                 |           |         |
| FIXED BIAS                 | 0.25            | -         | MEGOHMS |
| SELF BIAS                  | 0.5             | -         | MEGOHMS |

## AVERAGE CHARACTERISTICS

|                                     | SECTION 1 | SECTION 2 |            |
|-------------------------------------|-----------|-----------|------------|
| PLATE VOLTAGE                       | 145       | 150       | VOLTS      |
| GRID 2 VOLTAGE                      | 110       | 100       | VOLTS      |
| GRID 3 VOLTAGE                      | -         | 0         | VOLTS      |
| GRID 1 VOLTAGE                      | -6.0      | 0         | VOLTS      |
| CATHODE RESISTOR                    | -         | 560       | OHMS       |
| PLATE CURRENT                       | 36        | 1.3       | MA         |
| GRID 2 CURRENT                      | 3.0       | 2.0       | MA         |
| TRANSCONDUCTANCE GRID 1 TO PLATE    | 8,600     | 1,000     | $\mu$ MHOS |
| GRID 3 TO PLATE                     | -         | 400       | $\mu$ MHOS |
| PLATE RESISTANCE - APPROX.          | 0.03      | 0.15      | MEGOHMS    |
| GRID 1 VOLTAGE FOR $I_b = 10 \mu A$ | -         | -4.5      | VOLTS      |
| GRID 3 VOLTAGE FOR $I_b = 10 \mu A$ | -         | -4.5      | VOLTS      |

## TYPICAL OPERATION - CLASS A1 POWER AMPLIFIER

|                               | SECTION 1 |       |
|-------------------------------|-----------|-------|
| PLATE VOLTAGE                 | 145       | VOLTS |
| GRID 2 VOLTAGE                | 110       | VOLTS |
| GRID 1 VOLTAGE                | -6.0      | VOLTS |
| PEAK AUDIO GRID 1 VOLTAGE     | 6.0       | VOLTS |
| LOAD RESISTANCE               | 3,000     | OHMS  |
| MAXIMUM SIGNAL PLATE CURRENT  | 40        | MA    |
| MAXIMUM SIGNAL GRID 2 CURRENT | 9.0       | MA    |
| TOTAL HARMONIC DISTORTION     | 10        | %     |
| POWER OUTPUT                  | 2.4       | WATTS |

