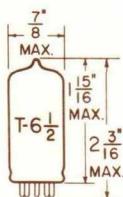


## TUNG-SOL

# DUPLEX-DIODE TRIODE MINIATURE TYPE



GLASS BULB

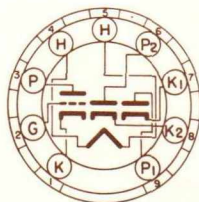
COATED UNIPOTENTIAL CATHODE

HEATER

 $6.3 \pm 10\%$  VOLTS 0.6 AMP.

AC OR DC

ANY MOUNTING POSITION


 BOTTOM VIEW  
 SMALL BUTTON  
 9 PIN BASE

9FJ

THE 6BV8 IS A MINIATURE DUPLEX-DIODE MEDIUM MU TRIODE IN WHICH SEPARATE CATHODE AND PLATE CONNECTIONS ARE PROVIDED FOR EACH DIODE SECTION. THE TUBE IS INTENDED PRIMARILY FOR SERVICE AS A COMBINED SYNCHRONOUS DETECTOR AND CHROMINANCE AMPLIFIER IN COLOR TELEVISION RECEIVERS. THE HIGH PERVEANCE CHARACTERISTIC OF THE TRIODE SECTION ADAPTS THE TUBE PARTICULARLY TO THIS SERVICE. IT IS ALSO SUITABLE FOR USE AS A COMBINED FM DETECTOR AND AUDIO-FREQUENCY VOLTAGE AMPLIFIER. 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 WITHOUT EXTERNAL SHIELD

|                                             |      |                  |
|---------------------------------------------|------|------------------|
| TRIODE GRID TO PLATE                        | 2.0  | $\mu\mu\text{f}$ |
| TRIODE INPUT                                | 3.6  | $\mu\mu\text{f}$ |
| TRIODE OUTPUT                               | 0.4  | $\mu\mu\text{f}$ |
| GRID TO DIODE #1 PLATE (MAX.)               | 0.03 | $\mu\mu\text{f}$ |
| GRID TO DIODE #2 PLATE (MAX.)               | 0.07 | $\mu\mu\text{f}$ |
| DIODE #1 PLATE TO DIODE #1 CATHODE & HEATER | 2.4  | $\mu\mu\text{f}$ |
| DIODE #2 PLATE TO DIODE #2 CATHODE & HEATER | 2.4  | $\mu\mu\text{f}$ |

## RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

|                                                           |                |         |
|-----------------------------------------------------------|----------------|---------|
| HEATER VOLTAGE                                            | $6.3 \pm 10\%$ | VOLTS   |
| MAXIMUM PLATE VOLTAGE                                     | 330            | VOLTS   |
| MAXIMUM POSITIVE DC GRID VOLTAGE                          | 0              | VOLTS   |
| MAXIMUM PLATE DISSIPATION                                 | 2.7            | WATTS   |
| MAXIMUM HEATER-CATHODE VOLTAGE:                           |                |         |
| HEATER POSITIVE WITH RESPECT TO CATHODE                   |                |         |
| DC COMPONENT                                              | 100            | VOLTS   |
| TOTAL DC AND PEAK                                         | 200            | VOLTS   |
| HEATER NEGATIVE WITH RESPECT TO CATHODE                   |                |         |
| TOTAL DC AND PEAK                                         | 200            | VOLTS   |
| MAXIMUM GRID CIRCUIT RESISTANCE                           |                |         |
| FIXED BIAS                                                | 0.1            | MEGOHMS |
| CATHODE BIAS                                              | 0.5            | MEGOHMS |
| MAXIMUM DIODE CURRENT FOR CONTINUOUS OPERATION (EA.DIODE) | 10             | MA.     |
| HEATER WARM-UP TIME*                                      | 11.0           | SECONDS |

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TUNG-SOL

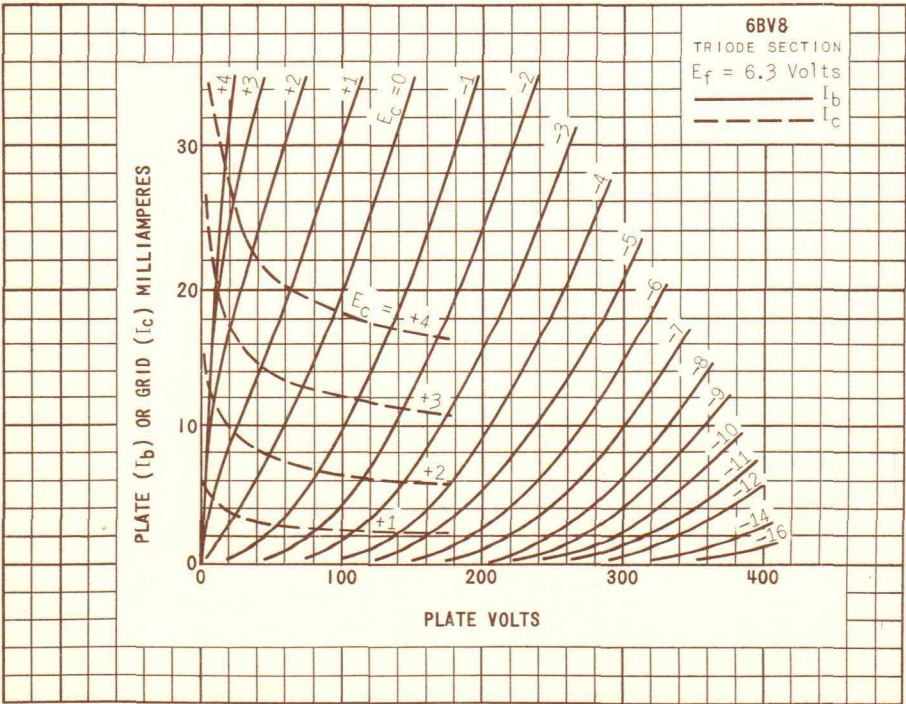
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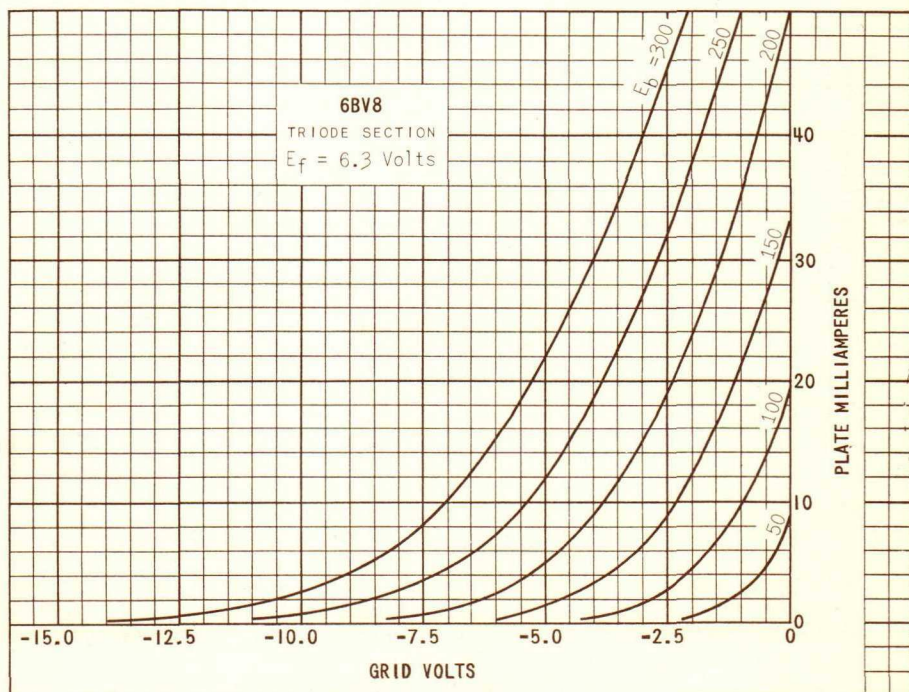
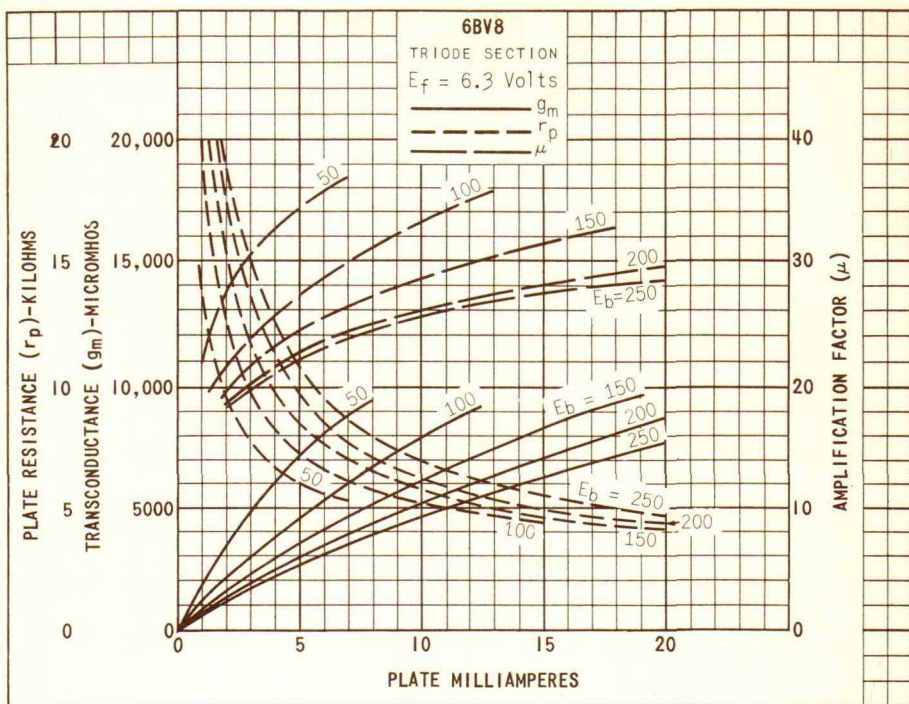
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

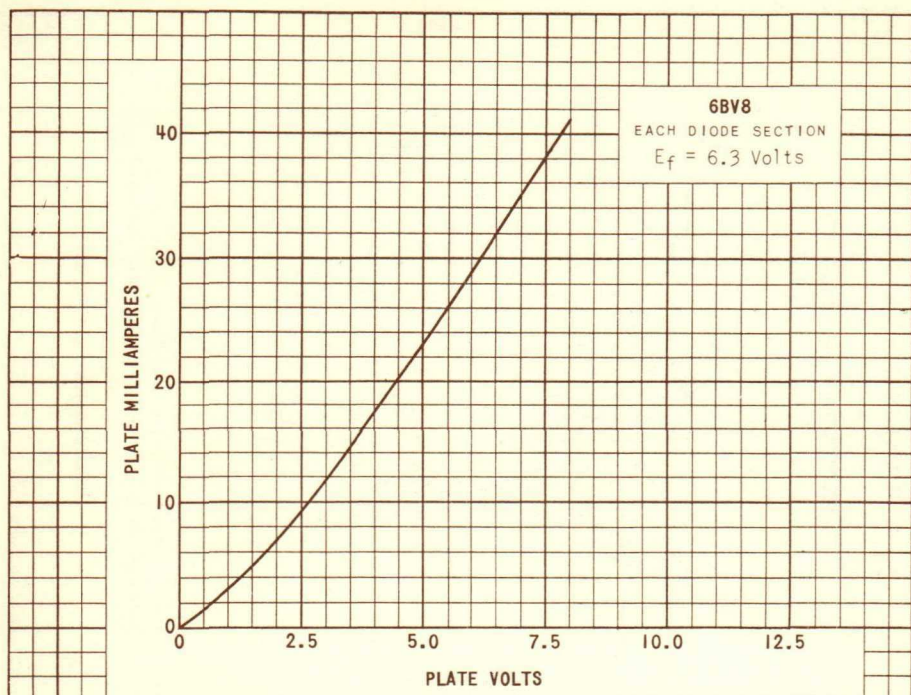
|                                    |         |         |       |
|------------------------------------|---------|---------|-------|
| HEATER VOLTAGE                     | 6.3±10% | 6.3±10% | VOLTS |
| HEATER CURRENT                     | 0.6     | 0.6     | AMP.  |
| PLATE VOLTAGE                      | 75      | 200     | VOLTS |
| GRID VOLTAGE                       | 0       | ---     | VOLTS |
| CATHODE-BIAS RESISTOR              | ---     | 330     | OHMS  |
| AMPLIFICATION FACTOR               | ---     | 33      |       |
| PLATE RESISTANCE (APPROX.)         | ---     | 5 900   | OHMS  |
| TRANSCONDUCTANCE                   | ---     | 5 600   | μMHOS |
| PLATE CURRENT                      | 14      | 11      | MA.   |
| GRID VOLTAGE (APPROX.)             | ---     | -       |       |
| I <sub>b</sub> = 100 μAMPS         | ---     | -11     | VOLTS |
| AVERAGE DIODE CURRENT (EACH DIODE) |         |         |       |
| WITH 5.0 VOLTS DC APPLIED          | ---     | 23      | MA.   |

\*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.

DESIGN-MAXIMUM RATINGS ARE THE LIMITING VALUES EXPRESSED WITH RESPECT TO BOGIE TUBES AT WHICH SATISFACTORY TUBE LIFE CAN BE EXPECTED TO OCCUR. TO OBTAIN SATISFACTORY CIRCUIT PERFORMANCE, THEREFORE, THE EQUIPMENT DESIGNER MUST ESTABLISH THE CIRCUIT DESIGN SO THAT NO DESIGN-MAXIMUM VALUE IS EXCEEDED WITH A BOGIE TUBE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, AND ENVIRONMENTAL CONDITIONS.







CLASS A RESISTANCE-COUPLED AMPLIFIER  
TRIODE SECTION

LOW IMPEDANCE DRIVE (APPROXIMATELY 200 OHMS)

| $R_L$ | $R_{gf}$ | $E_{bb} = 90$ Volts |       |      | $E_{bb} = 180$ Volts |       |      | $E_{bb} = 300$ Volts |       |      |
|-------|----------|---------------------|-------|------|----------------------|-------|------|----------------------|-------|------|
|       |          | $R_k$               | $E_o$ | Gain | $R_k$                | $E_o$ | Gain | $R_k$                | $E_o$ | Gain |
| 0.10  | 0.10     | 1600                | 7.5   | 18   | 1500                 | 16    | 20   | 1500                 | 28    | 21   |
| 0.10  | 0.24     | 1900                | 7.8   | 19   | 1900                 | 22    | 21   | 1900                 | 38    | 21   |
| 0.24  | 0.24     | 4200                | 9.4   | 18   | 3600                 | 19    | 19   | 3600                 | 33    | 20   |
| 0.24  | 0.51     | 5100                | 12    | 19   | 4300                 | 26    | 20   | 4200                 | 42    | 22   |
| 0.51  | 0.51     | 9200                | 10    | 18   | 7800                 | 22    | 19   | 7500                 | 36    | 20   |
| 0.51  | 1.0      | 11000               | 13    | 18   | 10000                | 28    | 19   | 9400                 | 46    | 20   |

HIGH IMPEDANCE DRIVE (APPROXIMATELY 100K OHMS)

| $R_L$ | $R_{gf}$ | $E_{bb} = 90$ Volts |       |      | $E_{bb} = 180$ Volts |       |      | $E_{bb} = 300$ Volts |       |      |
|-------|----------|---------------------|-------|------|----------------------|-------|------|----------------------|-------|------|
|       |          | $R_k$               | $E_o$ | Gain | $R_k$                | $E_o$ | Gain | $R_k$                | $E_o$ | Gain |
| 0.10  | 0.10     | 2000                | 11    | 17   | 1400                 | 24    | 20   | 1100                 | 39    | 22   |
| 0.10  | 0.24     | 2500                | 15    | 18   | 1800                 | 31    | 21   | 1600                 | 53    | 22   |
| 0.24  | 0.24     | 5300                | 13    | 18   | 3700                 | 28    | 20   | 3200                 | 45    | 21   |
| 0.24  | 0.51     | 6100                | 16    | 18   | 4700                 | 33    | 20   | 4100                 | 57    | 21   |
| 0.51  | 0.51     | 8100                | 14    | 17   | 8000                 | 28    | 19   | 7100                 | 48    | 20   |
| 0.51  | 1.0      | 13000               | 17    | 18   | 10000                | 34    | 19   | 9300                 | 59    | 20   |

NOTES:

- $E_o$  is maximum RMS voltage output for approximately five percent total harmonic distortion.
- Gain is measured for an output voltage of two volts RMS.
- $R_k$  is in ohms;  $R_L$  and  $R_{gf}$  are in megohms.
- Coupling capacitors (C) should be selected to give desired frequency response.  $R_k$  should be adequately by-passed.

