

DIRECT INTERELECTRODE CAPACITANCES

|                     |        |
|---------------------|--------|
| Grid to Plate ..... | 0.8 Pf |
| Input .....         | 15 Pf  |
| Output .....        | 9.0 Pf |

RATINGS (Design Maximum Rating System)

Class A1 Amplifier

|                                     |            |
|-------------------------------------|------------|
| Plate Voltage (Max.) .....          | 330 Volts  |
| Grid No. 2 Voltage (Max.) .....     | 165 Volts  |
| Plate Dissipation (Max.) .....      | 12 Watts   |
| Grid No. 2 Dissipation (Max.) ..... | 1.35 Watts |
| Grid No. 1 Circuit Resistance       |            |
| Fixed Bias (Max.) .....             | 0.1 Megohm |
| Cathode Bias (Max.) .....           | 0.5 Megohm |

Vertical Deflection Amplifier—Triode Connected<sup>(1)</sup>

|                                                         |            |
|---------------------------------------------------------|------------|
| DC Plate Voltage (Max.) .....                           | 330 Volts  |
| Peak Positive Plate Voltage (Abs. Max.) .....           | 1200 Volts |
| Plate Dissipation (Max.) .....                          | 8.5 Watts  |
| Peak Negative Grid Voltage (Max.) .....                 | 275 Volts  |
| Average Cathode Current (Max.) .....                    | 65 Ma      |
| Peak Cathode Current (Max.) .....                       | 195 Ma     |
| Grid No. 1 Circuit Resistance Cathode Bias (Max.) ..... | 2.2 Megohm |

CHARACTERISTICS AND TYPICAL OPERATION

Class A1 Amplifier

|                                           |        |                 |
|-------------------------------------------|--------|-----------------|
| Plate Voltage .....                       | 110    | 200 Volts       |
| Grid No. 2 Voltage .....                  | 110    | 125 Volts       |
| Grid No. 1 Voltage .....                  | -7.5   | — Volts         |
| Cathode Bias Resistor .....               | —      | 180 Ohms        |
| Peak AF Grid No. 1 Voltage .....          | 7.5    | 8.5 Volts       |
| Plate Current (Zero-Signal) .....         | 49     | 46 Ma           |
| Plate Current (Maximum Signal) .....      | 50     | 47 Ma           |
| Grid No. 2 Current (Zero Signal) .....    | 4.0    | 2.2 Ma          |
| Grid No. 2 Current (Maximum Signal) ..... | 10     | 8.5 Ma          |
| Plate Resistance (Approx.) .....          | 13,000 | 28,000 Ohms     |
| Transconductance .....                    | 8000   | 8000 $\mu$ mhos |
| Load Resistance .....                     | 2000   | 4000 Ohms       |
| Maximum Signal Power Output .....         | 2.1    | 3.8 Watts       |
| Total Harmonic Distortion (Approx.) ..... | 10     | 10 Percent      |

Triode Connected

|                                                    |                 |
|----------------------------------------------------|-----------------|
| Plate Voltage .....                                | 225 Volts       |
| Grid No. 1 Voltage .....                           | -30 Volts       |
| Plate Current .....                                | 22 Ma           |
| Transconductance .....                             | 3800 $\mu$ mhos |
| Amplification Factor .....                         | 6.2             |
| Plate Resistance .....                             | 1600 Ohms       |
| Grid No. 1 Voltage (Approx.) for Ib = 0.5 Ma ..... | -42 Volts       |

NOTES:

- (1) For operation in a 525 line, 30 frame system as described in "Standards of Good Engineering Practice for Television Broadcast Stations; Federal Communications Commission," the duty cycle of the voltage pulse must not exceed 15% of one horizontal scanning cycle.
- (2) In stages operating with grid leak bias, an adequate cathode bias resistor or other suitable means is required to protect the tube in the absence of excitation.

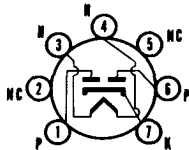
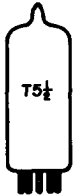
FULL-WAVE POWER RECTIFIER

6X4

12X4

Heater-Cathode Twin Diode

|                              |                    |
|------------------------------|--------------------|
| Construction .....           | Miniature T-5½     |
| Base .....                   | Button 7 Pin, E7-1 |
| Basing .....                 | 5BS                |
| Outline .....                | 5-3                |
| Maximum Diameter .....       | 0.750 In.          |
| Maximum Seated Height .....  | 2.375 In.          |
| Maximum Overall Height ..... | 2.625 In.          |



ELECTRICAL DATA  
HEATER OPERATION

|                      |           |               |
|----------------------|-----------|---------------|
| Heater Voltage ..... | 12X4 12.6 | 6X4 6.3 Volts |
| Heater Current ..... | 300       | 600 Ma        |

|                                                                                             |              |
|---------------------------------------------------------------------------------------------|--------------|
| Maximum Heater-Cathode Voltage                                                              |              |
| Heater Negative with Respect to Cathode                                                     | 450 Volts    |
| Heater Positive with Respect to Cathode                                                     | 100 Volts    |
| <b>RATINGS (Design Center Rating System)</b>                                                |              |
| Peak Inverse Plate Voltage                                                                  | 1250 Volts   |
| AC Plate Supply Voltage (RMS) with DC Output Current of 35 Ma Per Plate                     | 325 Volts    |
| Steady State Peak Plate Current                                                             | 210 Ma       |
| Rectification Efficiency to keep within Steady State Peak Current Rating at 35 Ma Per Plate | 67.5 Percent |
| Transient Peak Plate Current Per Plate <sup>(1)</sup>                                       | 1.0 Ampere   |
| Minimum Plate Supply Resistance Per Plate for 325 Volt RMS Supply                           | 325 Ohms     |
| Tube Voltage Drop (70 Ma Per Plate)                                                         | 22 Volts     |
| DC Output Current Each Plate with 325 Volts AC Plate Supply Voltage (RMS)                   |              |
| Capacitor Input to Filter                                                                   | 35 Ma        |
| Choke Input to Filter                                                                       | 42 Ma        |

**CHARACTERISTICS AND TYPICAL OPERATION****Full Wave Rectifier**

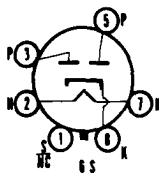
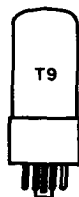
|                                                                   | Input to Filter |             |
|-------------------------------------------------------------------|-----------------|-------------|
|                                                                   | Capacitor       | Choke       |
| AC Plate Supply Voltage Per Plate (RMS)                           | 325             | 450 Volts   |
| Filter Input Capacitor <sup>(2)</sup>                             | 10              | — $\mu$ f   |
| Filter Input Choke (Minimum)                                      | —               | 10 Henrys   |
| Total Effective Plate Supply Impedance (Per Plate) <sup>(2)</sup> | 525             | — Ohms      |
| DC Output Current                                                 | 70              | 70 Ma       |
| DC Output Voltage at Filter Input (Approx.)                       |                 |             |
| For DC Cathode Current of 35 Ma                                   | 365             | 395 Volts   |
| For DC Cathode Current of 70 Ma                                   | 310             | 385 Volts   |
| Difference (Voltage Regulation)                                   | 55              | 10 Volts    |
| Percentage Regulation                                             | 15              | 2.5 Percent |

**NOTES:**

- (1) If capacitor input circuits are to be used, protect the circuits against the possibility of hot-switching and do not exceed a maximum peak current value of one (1) ampere during the initial cycles of the hot-switching transient.
- (2) When a filter capacitor larger than 10  $\mu$ f is used, it may be necessary to add additional plate supply impedance to limit the hot-switching transient plate current to rated maximum.

**6X5GT****FULL-WAVE POWER RECTIFIER****Heater-Cathode Twin Diode**

|                        |             |
|------------------------|-------------|
| Construction           | Octal T-9   |
| Base                   | Octal 6 Pin |
| Basing                 | .6S         |
| Outline                | 9-11        |
| Maximum Diameter       | 1.188 In.   |
| Maximum Seated Height  | 2.750 In.   |
| Maximum Overall Height | 3.212 In.   |

**ELECTRICAL DATA****HEATER OPERATION**

|                                |           |
|--------------------------------|-----------|
| Heater Voltage                 | 6.3 Volts |
| Heater Current                 | 600 Ma    |
| Maximum Heater-Cathode Voltage | 450 Volts |

**RATINGS (Design Center Rating System)**

|                                                     |            |
|-----------------------------------------------------|------------|
| Peak Inverse Voltage (Max.)                         | 1250 Volts |
| Steady State Peak Plate Current (Each Plate) (Max.) | 210 Ma     |
| Tube Voltage Drop (70 Ma Per Plate) (Max.)          | 22 Volts   |

**CHARACTERISTICS AND TYPICAL OPERATION****Capacitor Input to Filter**

|                                                              |           |
|--------------------------------------------------------------|-----------|
| Plate Voltage (Each Plate—RMS)                               | 325 Volts |
| DC Output Current                                            | 70 Ma     |
| Effective Plate Supply Impedance (Each Plate) <sup>(1)</sup> | 150 Ohms  |

**Choke Input to Filter**

|                                |           |
|--------------------------------|-----------|
| Plate Voltage (Each Plate—RMS) | 450 Volts |
| DC Output Current              | 70 Ma     |
| Input Choke Value (Min.)       | 10 Henrys |

**NOTE:**

- (1) Additional impedance may be required when a filter of more than 40  $\mu$ f is used.