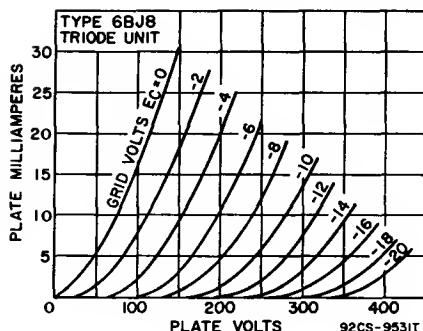


**6BK4**

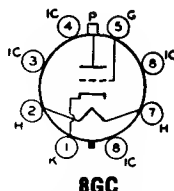
Refer to chart at end of section.

**6BK4A**

Refer to chart at end of section.

**6BK4B****BEAM TRIODE**

Glass octal type used for the voltage regulation of high-voltage, low-current dc power supplies in color and black-and-white television receivers. Outlines section, 21B; requires octal socket. Socket terminals 3, 4, 6, and 8 should not be used for tie points. For high voltage and X-ray safety considerations, refer to type 1G3GT/1B3GT.



|                                                |           |        |
|------------------------------------------------|-----------|--------|
| Heater Voltage (ac/dc)                         | 6.3       | volts  |
| Heater Current                                 | 0.2       | ampere |
| Peak Heater-Cathode Voltage                    | —460* max | volts  |
| Direct Interelectrode Capacitances (Approx.):† |           |        |
| Grid to Plate                                  | 0.03      | pF     |
| Grid to Cathode and Heater                     | 2.6       | pF     |
| Plate to Cathode and Heater                    | 1         | pF     |

\* Series impedance should be used with the cathode to limit the cathode current under prolonged short-circuit conditions to 460 mA.

† Without external shield.

**Shunt Voltage-Regulator Service****MAXIMUM RATINGS (Design-Maximum Values)**

|                               |       |       |
|-------------------------------|-------|-------|
| DC Plate Voltage              | 27000 | volts |
| Unregulated DC Supply Voltage | 60000 | volts |
| DC Grid Voltage               | —136  | volts |
| Peak Grid Voltage*            | —440  | mA    |
| Average Plate Current         | 1.6   | mA    |
| Plate Dissipation             | 40    | watts |

**TYPICAL OPERATION**

|                                                      |       |         |
|------------------------------------------------------|-------|---------|
| Unregulated DC Supply Voltage                        | 36000 | volts   |
| Equivalent Resistance of Unregulated Supply          | 11    | megohms |
| Voltage Divider Values:                              |       |         |
| R <sub>1</sub> (5 watts)                             | 220   | megohms |
| R <sub>2</sub> (2 watts)                             | 1     | megohm  |
| R <sub>3</sub> (0.5 watt)                            | 0.82  | megohm  |
| DC Reference Voltage Supply                          | 200   | volts   |
| Equivalent Resistance of Reference Voltage           | 1000  | ohms    |
| Effective Grid-Plate Transconductance                | 200   | μmhos   |
| DC Plate Current for Load Current of 0 mA            | 1000  | μA      |
| DC Plate Current for Load Current of 1 mA            | 46    | μA      |
| Regulated DC Output Voltage for Load Current of 0 mA | 26000 | volts   |
| Regulated DC Output Voltage for Load Current of 1 mA | 24500 | volts   |

**MAXIMUM CIRCUIT VALUE**

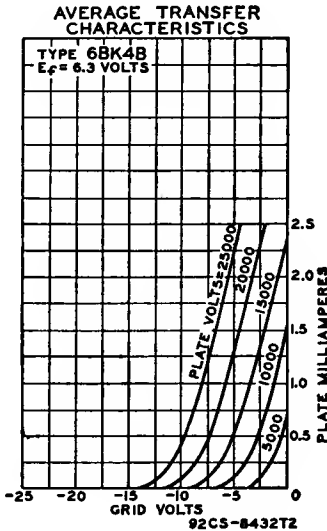
|                         |   |         |
|-------------------------|---|---------|
| Grid-Circuit Resistance | 3 | megohms |
|-------------------------|---|---------|

\* For interval of 20 seconds maximum duration during equipment warm-up period.

CHARACTERISTICS RANGE VALUES

|                           | Note | Min | Max |       |
|---------------------------|------|-----|-----|-------|
| Grid Voltage (1) .....    | 1    | -7  | —   | volts |
| Grid Voltage (2) .....    | 2    | —   | -40 | volts |
| Grid-Voltage Change ..... | 3    | —   | 9   | volts |

Note 1: With dc plate voltage of 30000 volts and dc plate current of 1 mA.  
Note 2: With dc plate voltage of 30000 volts and dc plate current of 0.1 mA.  
Note 3: Difference between grid voltage (1) and grid voltage (2).

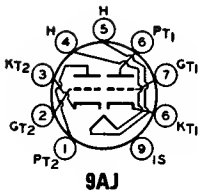


Refer to chart at end of section.

6BK5

Refer to chart at end of section.

6BK7A



MEDIUM-MU TWIN TRIODE

6BK7B

5BK7A

Miniature type used as a cascode amplifier in vhf color and black-and-white television tuners and in push-pull cathode-drive rf amplifiers. Outlines section, 6B; requires miniature 9-contact socket. For typical operation as a resistance-coupled amplifier, refer to Resistance-Coupled Amplifier section. Type 5BK7A is identical with type 6BK7B except for heater ratings.

|                                                  | 5BK7A     | 6BK7B     |         |
|--------------------------------------------------|-----------|-----------|---------|
| Heater Voltage (ac/dc) .....                     | 4.7       | 6.3       | volts   |
| Heater Current .....                             | 0.6       | 0.45      | ampere  |
| Heater Warm-up Time (Average) .....              | 11        | 11        | seconds |
| Heater-Cathode Voltage:                          |           |           |         |
| Peak value .....                                 | ±200*max  | ±200*max  | volts   |
| Average value .....                              | 100 max   | 100 max   | volts   |
| Direct Interelectrode Capacitances:              | Unit No.1 | Unit No.2 |         |
| Grid to Plate .....                              | 1.8       | 1.8       | pF      |
| Grid to Cathode, Heater, and Internal Shield ..  | 3         | 3         | pF      |
| Plate to Cathode, Heater, and Internal Shield .. | 1         | 0.9       | pF      |
| Cathode to Grid, Heater, and Internal Shield ..  | 6         | 6         | pF      |
| Plate to Grid, Heater, and Internal Shield ..... | 2.4       | 2.4       | pF      |