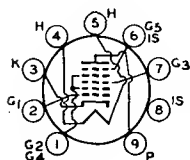


resistor method of obtaining grid-No.2 voltage from a higher voltage supply necessitates the use of the variable cathode-resistor method of controlling volume in order to prevent too high a voltage on grid No.2. When grid-No.2 and control-grid voltage are obtained in this manner, the remote "cutoff" advantage of the 6BA6 can be fully realized. However, it should be noted that the use of a resistor in the grid-No.2 circuit has an effect on the change in plate resistance with variation in grid-No.3 (suppressor-grid) voltage in case grid No.3 is utilized for control purposes.



8CT

## PENTAGRID CONVERTER

**6BA7**

Miniature type used as converter in AM and FM receivers. Outlines section, 6E; requires miniature 9-contact socket.

|                                                    |          |        |
|----------------------------------------------------|----------|--------|
| Heater Voltage                                     | 6.3      | volts  |
| Heater Current                                     | 0.3      | ampere |
| Peak Heater-Cathode Voltage                        | $\pm 90$ | volts  |
| Direct Interelectrode Capacitances:                |          |        |
| Grid No. 3 to All Other Electrodes                 | 9.5      | pF     |
| Plate to All Other Electrodes                      | 8.3      | pF     |
| Grid No. 1 to All Other Electrodes                 | 6.7      | pF     |
| Grid No. 3 to Plate                                | 0.19 max | pF     |
| Grid No. 3 to Grid No. 1                           | 0.1 max  | pF     |
| Grid No. 1 to Plate                                | 0.05 max | pF     |
| Grid No. 1 to All Other Electrodes, except Cathode | 3.4      | pF     |
| Grid No. 1 to Cathode                              | 3.3      | pF     |
| Cathode to All Other Electrodes except Grid No. 1  | 4        | pF     |

## Converter Service

## MAXIMUM RATINGS (Design-Center Values)

|                                           |     |       |
|-------------------------------------------|-----|-------|
| Plate Voltage                             | 300 | volts |
| Grid-No.5-and-Internal-Shield Voltage     | 0   | volts |
| Grids-No.2-and-No.4 (Screen-Grid) Voltage | 100 | volts |
| Grids-No.2-and-No.4 Supply Voltage        | 300 | volts |
| Plate Dissipation                         | 2   | watts |
| Grids-No.2-and-No.4 Input                 | 1.5 | watts |
| Total Cathode Current                     | 22  | mA    |
| Grid-No.3 Voltage:                        |     |       |
| Negative-bias value                       | 100 | volts |
| Positive-bias value                       | 0   | volts |

## CHARACTERISTICS (Separate Excitation)\*

|                                           | 100   | 250                          | volts      |
|-------------------------------------------|-------|------------------------------|------------|
| Plate Voltage                             |       |                              |            |
| Grid No.5 and Internal Shield             |       | Connected directly to ground |            |
| Grids-No.2-and-No.4 (Screen-Grid) Voltage | 100   | 100                          | volts      |
| Grid-No.3 (Control-Grid) Voltage          | -1    | -1                           | volt       |
| Grid-No.1 (Oscillator-Grid) Resistor      | 20000 | 20000                        | ohms       |
| Plate Resistance (Approx.)                | 0.5   | 1                            | megohm     |
| Conversion Transconductance               | 900   | 950                          | $\mu$ mhos |
| Conversion Transconductance (Approx.)**   | 3.5   | 3.5                          | $\mu$ mhos |
| Plate Current                             | 3.6   | 3.8                          | mA         |
| Grids-No.2-and-No.4 Current               | 10.2  | 10                           | mA         |
| Grid-No.1 Current                         | 0.35  | 0.35                         | mA         |
| Total Cathode Current                     | 14.2  | 14.2                         | mA         |

NOTE: The transconductance between grid No.1 and grids No.2 and No.4 connected to plate (not oscillating) is approximately 8000  $\mu$ mhos under the following conditions: signal applied to grid No.1 at zero bias; grids No.2 and No.4 and plate at 100 volts; grid No.3 grounded. Under the same conditions, the plate current is 32 milliamperes, and the amplification factor is 16.5.

\* The characteristics shown with separate excitation correspond very closely with those obtained in a self-excited oscillator circuit operating with zero bias.

\*\* With grid-No.3 bias of -20 volts.

† Internal Shield (pins No.6 and No.8) connected directly to ground.