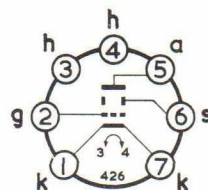


## V.H.F. FRAME GRID TRIODE



B7G Base

### GENERAL

This valve is a high slope, frame grid triode with low anode to grid capacitance for use as an R.F. amplifier in V.H.F. television tuners. The low anode to grid capacitance simplifies the problems of neutralising, and is achieved by specially shaped anodes and an internal shield.

|                |             |   |
|----------------|-------------|---|
| Heater Voltage | $V_h$ 6.3   | V |
| Heater Current | $I_h$ 0.215 | A |

### RATINGS

|                                      |                        |     |    |
|--------------------------------------|------------------------|-----|----|
| Maximum Anode Dissipation            | $P_a(\text{max})$      | 2.2 | W  |
| Maximum Anode Supply Voltage         | $V_{a(b)}(\text{max})$ | 550 | V  |
| Maximum Anode Voltage                | $V_a(\text{max})$      | 200 | V  |
| Maximum Negative Grid Voltage        | $-V_g(\text{max})$     | 50  | V  |
| Maximum Heater to Cathode Voltage    | $V_{h-k}(\text{max})$  | 100 | V  |
| Maximum Cathode Current              | $I_k(\text{max})$      | 20  | mA |
| Maximum Grid to Cathode Resistance   | $R_{g1-k}(\text{max})$ | 1.0 | MΩ |
| Maximum Heater to Cathode Resistance | $R_{h-k}(\text{max})$  | 20  | kΩ |

### INTER-ELECTRODE CAPACITANCES

|                                     | Shielded          | Unshielded |    |
|-------------------------------------|-------------------|------------|----|
| Anode to Grid                       | $C_{a-g}$ 0.48    | 0.5        | pF |
| Grid to Cathode                     | $C_{g-k}$ 3.2     | 3.2        | pF |
| Anode to Cathode                    | $C_{a-k}$ 0.21    | 0.25       | pF |
| Grid to Cathode, Heater and Shield  | $C_{g-k,h,s}$ 5.0 | 5.0        | pF |
| Anode to Cathode, Heater and Shield | $C_{a-k,h,s}$ 4.2 | 3.3        | pF |
| Grid to Heater                      | $C_{g-h}$ 0.28    | 0.28       | pF |
| Cathode to Heater                   | $C_{k-h}$ 2.5     | 2.5        | pF |

### CHARACTERISTICS

|                                                      |                       |      |      |
|------------------------------------------------------|-----------------------|------|------|
| Anode Voltage                                        | $V_a$                 | 135  | V    |
| Grid Voltage                                         | $V_g$                 | -1.0 | V    |
| Anode Current                                        | $I_a$                 | 11   | mA   |
| Amplification Factor                                 | $\mu$                 | 65   |      |
| Mutual Conductance                                   | $g_m$                 | 13   | mA/V |
| Valve Anode Resistance ( $\delta V_a / \delta I_a$ ) | $r_a$                 | 5.0  | kΩ   |
| Grid Voltage for $g_m$ reduction 20 : 1              | $V_{g(gm/20)}$        | -3.1 | V    |
| Grid Voltage for $g_m$ reduction 100 : 1             | $V_{g(gm/100)}$       | -5.0 | V    |
| Grid Voltage for $I_a = 100 \mu A$                   | $V_{g(I_a=100\mu A)}$ | -5.0 | V    |

### TYPICAL OPERATION

|                          | $V_b$                                    | 135  | 135  | 135  | 135 | 200  | 200  | 200  | 200   | V    |
|--------------------------|------------------------------------------|------|------|------|-----|------|------|------|-------|------|
| Supply Voltage           | $R_a$                                    | 1.0  | 1.0  | 2.2  | 2.2 | 5.6  | 5.6  | 6.8  | 6.8   | kΩ   |
| Anode Load Resistance    | $R_k$                                    | 82   | 0    | 0    | 0   | 82   | 0    | 0    | 0     | Ω    |
| Cathode Resistance       | $R_g$                                    | 0    | 1.0  | 0.22 | 1.0 | 0    | 1.0  | 0.22 | 0.56  | MΩ   |
| Grid Resistance          | $R_{g-a}$                                | —    | —    | 22   | 22  | —    | —    | 22   | 22    | MΩ   |
| Grid to Anode Resistance | $I_a$                                    | 10.5 | 13   | 14   | 14  | 12   | 13   | 14   | 14    | mA   |
| Anode Current            | $g_m$                                    | 13   | 15.5 | 16   | 16  | 14   | 15.5 | 16   | 16    | mA/V |
| Mutual Conductance       | Grid Voltage for $g_m$ reduction 100 : 1 | -5.0 | -4.8 | -6.0 | -11 | -7.5 | -7.3 | -9.0 | -12.5 | V    |

Characteristic curves are identical to those given for the PC97