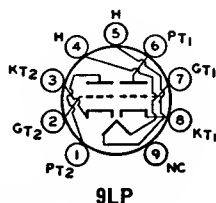


**6FM8**

Refer to chart at end of section.

**6FQ5A**Refer to chart at end of section.  
For replacement use type 6GK5/6FQ5A.**6FQ7**

Refer to chart at end of section.

**6FQ7/  
6CG7****MEDIUM-MU TWIN TRIODE****8FQ7/8CG7, 12FQ7**

Miniature type used as combined vertical- and horizontal-deflection oscillator in color and black-and-white television receivers. Outlines section, 6E; requires miniature 9-contact socket. Types 8FQ7/8CG7 and 12FQ7 are identical with type 6FQ7/6CG7 except for heater ratings. For typical operation as a resistance-coupled amplifier, refer to Resistance-Coupled Amplifier section.

|                                                      | <b>6FQ7/6CG7</b> | <b>8FQ7/8CG7</b> | <b>12FQ7</b>     |         |
|------------------------------------------------------|------------------|------------------|------------------|---------|
| Heater Voltage (ac/dc) .....                         | 6.3              | 8.4              | 12.6             | volts   |
| Heater Current .....                                 | 0.6              | 0.45             | 0.3              | ampere  |
| Heater Warm-up Time (Average) .....                  | 11               | —                | —                | seconds |
| <b>Heater-Cathode Voltage:</b>                       |                  |                  |                  |         |
| Peak value .....                                     | ±200 max         | ±200 max         | ±200 max         | volts   |
| Average value .....                                  | 100 max          | 100 max          | 100 max          | volts   |
| <b>Direct Interelectrode Capacitances (Approx.):</b> |                  |                  |                  |         |
|                                                      | <b>Unit No.1</b> |                  | <b>Unit No.2</b> |         |
| Grid to Plate .....                                  | 3.6              |                  | 3.8              | pF      |
| Grid to Cathode and Heater .....                     | 2.4              |                  | 2.4              | pF      |
| Plate to Cathode and Heater .....                    | 0.34             |                  | 0.26             | pF      |
| Plate of Unit No.1 to Plate of Unit No.2 .....       | 1                |                  |                  | pF      |

**MAXIMUM RATINGS (Design-Maximum Values)**

|                                                 |     |       |
|-------------------------------------------------|-----|-------|
| Plate Voltage .....                             | 330 | volts |
| Grid Voltage, Positive-bias value .....         | 0   | volts |
| Cathode Current .....                           | 22  | mA    |
| <b>Plate Dissipation:</b>                       |     |       |
| For either plate .....                          | 4   | watts |
| For both plates with both units operating ..... | 5.7 | watts |

**CHARACTERISTICS**

|                                                         |      |      |       |
|---------------------------------------------------------|------|------|-------|
| Plate Voltage .....                                     | 90   | 250  | volts |
| Grid Voltage .....                                      | 0    | —8   | volts |
| Amplification Factor .....                              | 20   | 20   |       |
| Plate Resistance (Approx.) .....                        | 6700 | 7700 | ohms  |
| Transconductance .....                                  | 3000 | 2600 | μmhos |
| Plate Current .....                                     | 10   | 9    | mA    |
| Grid Voltage (Approx.) for plate current of 10 μA ..... | —7   | —18  | volts |
| Plate Current for grid voltage of —12.5 volts .....     | —    | 1.3  | mA    |

**MAXIMUM CIRCUIT VALUE**

|                                                         |   |        |
|---------------------------------------------------------|---|--------|
| Grid Circuit Resistance, for fixed-bias operation ..... | 1 | megohm |
|---------------------------------------------------------|---|--------|

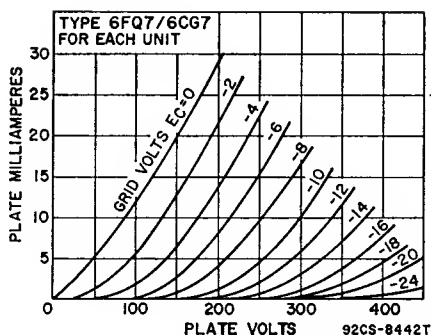
**Oscillator**

For operation in a 525-line, 30-frame system

|                                                 | <b>Vertical-Deflection Oscillator</b> | <b>Horizontal-Deflection Oscillator</b> |       |
|-------------------------------------------------|---------------------------------------|-----------------------------------------|-------|
| <b>MAXIMUM RATINGS (Design-Maximum Values)</b>  |                                       |                                         |       |
| DC Plate Voltage .....                          | 330                                   | 330                                     | volts |
| Peak Negative-Pulse Grid Voltage .....          | 440                                   | 660                                     | volts |
| Peak Cathode Current .....                      | 77                                    | 330                                     | mA    |
| Average Cathode Current .....                   | 22                                    | 22                                      | mA    |
| <b>Plate Dissipation:</b>                       |                                       |                                         |       |
| For either plate .....                          | 4                                     | 4                                       | watts |
| For both plates with both units operating ..... | 5.7                                   | 5.7                                     | watts |

**MAXIMUM CIRCUIT VALUES**

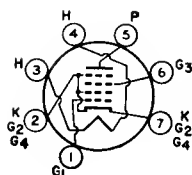
|                               |     |     |         |
|-------------------------------|-----|-----|---------|
| Grid-Circuit Resistance ..... | 2.2 | 2.2 | megohms |
|-------------------------------|-----|-----|---------|



## BEAM HEXODE

## 6FS5

2F55, 3F55



7GA

Miniature type used as rf-amplifier tube in vhf television receivers. In this tube, grid No.1 is the control grid, grid No.2 is a focusing grid, grid No.3 is the screen grid, and grid No.4 is the suppressor grid. Grid No.2 is internally connected to the cathode and grid No.4 and aligned with grid No.3. **Outlines section, 5C**; requires miniature 7-contact socket. Types 2F55 and 3F55 are identical with type 6F55 except for heater ratings.

|                                                                         | 2F55     | 3F55     | 6F55        |         |
|-------------------------------------------------------------------------|----------|----------|-------------|---------|
| Heater Voltage (ac/dc) .....                                            | 2.4      | 2.9      | 6.3         | volts   |
| Heater Current .....                                                    | 0.6      | 0.45     | 0.2         | ampere  |
| Heater Warm-up Time (Average) .....                                     | 11       | 11       | —           | seconds |
| Heater-Cathode Voltage:                                                 |          |          |             |         |
| Peak value .....                                                        | ±200 max | ±200 max | ±200 max    | volts   |
| Average value .....                                                     | 100 max  | 100 max  | 100 max     | volts   |
| Direct Interelectrode Capacitances:                                     |          | Shielded | Unshielded* |         |
| Grid No.1 to Plate .....                                                |          | 0.03     | 0.016       | pF      |
| Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Grid No.4 ..... |          | 4.8      | 4.8         | pF      |
| Plate to Cathode, Heater, Grid No.2, Grid No.3, and Grid No.4 .....     |          | 2        | 2.8         | pF      |

\* With external shield connected to pin 7.

Class A<sub>1</sub> Amplifier

## MAXIMUM RATINGS (Design-Maximum Values)

|                                       |      |       |
|---------------------------------------|------|-------|
| Plate Voltage .....                   | 300  | volts |
| Grid-No.3 (Screen-Grid) Voltage ..... | 150  | volts |
| Grid-No.1 (Control-Grid) Voltage:     |      |       |
| Negative-bias value .....             | 50   | volts |
| Positive-bias value .....             | 0    | volts |
| Cathode Current .....                 | 20   | mA    |
| Plate Dissipation .....               | 3.25 | watts |
| Grid-No.3 Input .....                 | 0.15 | watt  |

## CHARACTERISTICS

|                                                                     |       |        |
|---------------------------------------------------------------------|-------|--------|
| Plate Voltage .....                                                 | 275   | volts  |
| Grid-No.3 Voltage .....                                             | 135   | volts  |
| Grid-No.1 Voltage .....                                             | —0.2  | volt   |
| Plate Resistance (Approx.) .....                                    | 0.24  | megohm |
| Transconductance .....                                              | 10000 | μmhos  |
| Plate Current .....                                                 | 9     | mA     |
| Grid-No.3 Current .....                                             | 0.17  | mA     |
| Grid-No.1 Voltage (Approx.) for transconductance of 100 μmhos ..... | —5    | volts  |

## MAXIMUM CIRCUIT VALUE

|                                                              |     |        |
|--------------------------------------------------------------|-----|--------|
| Grid-No.1-Circuit Resistance, for fixed-bias operation ..... | 0.5 | megohm |
|--------------------------------------------------------------|-----|--------|

Refer to chart at end of section.

## 6FV6