

**6DQ6A**

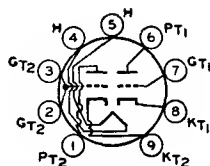
Refer to chart at end of section.

**6DQ6B**

Refer to chart at end of section.

**6DR7****10DR7, 13DR7****DUAL TRIODE**

Miniature type containing high- $\mu$  and low- $\mu$  triodes; used as combined vertical-deflection-oscillator and vertical-deflection-amplifier tube in television receivers. Outlines section, 6E; requires miniature 9-contact socket. Types 10DR7 and 13DR7 are identical with type 6DR7 except for heater ratings.

**9HF**

|                               |     |
|-------------------------------|-----|
| Heater Voltage (ac/dc)        | 6.3 |
| Heater Current                | 0.9 |
| Heater Warm-up Time (Average) | —   |
| Heater-Cathode Voltage:       |     |

| 6DR7 | 10DR7 | 13DR7 |         |
|------|-------|-------|---------|
| 6.3  | 9.7   | 13    | volts   |
| 0.9  | 0.6   | 0.45  | ampere  |
| —    | 11    | 11    | seconds |

|               |          |          |          |       |
|---------------|----------|----------|----------|-------|
| Peak value    | ±200 max | ±200 max | ±200 max | volts |
| Average value | 100 max  | 100 max  | 100 max  | volts |

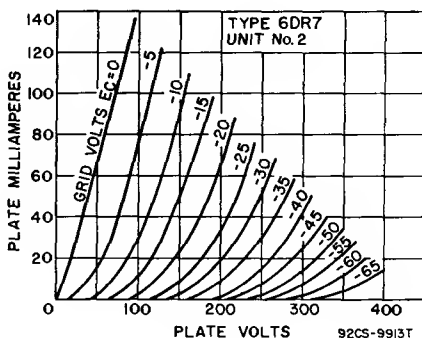
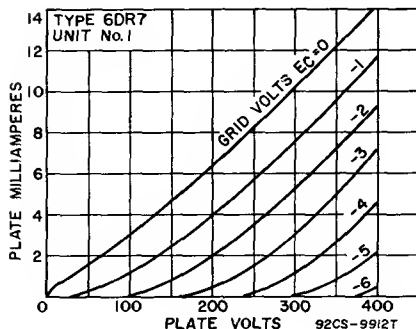
**Direct Interelectrode Capacitances (Approx.):**

|                             | Unit No.1 | Unit No.2 |    |
|-----------------------------|-----------|-----------|----|
| Grid to Plate               | 4.5       | 8.5       | pF |
| Grid to Cathode and Heater  | 2.2       | 5.5       | pF |
| Plate to Cathode and Heater | 0.34      | 1         | pF |

**Class A<sub>1</sub> Amplifier****CHARACTERISTICS**

|                                                   |       |       |       |
|---------------------------------------------------|-------|-------|-------|
| Plate Voltage                                     | 250   | 150   | volts |
| Grid Voltage                                      | —3    | —17.5 | volts |
| Amplification Factor                              | 68    | 6     |       |
| Plate Resistance (Approx.)                        | 40000 | 925   | ohms  |
| Transconductance                                  | 1600  | 6500  | μmhos |
| Plate Current                                     | 1.4   | 35    | mA    |
| Plate Current for grid voltage of —24 volts       | —     | 10    | mA    |
| Grid Voltage (Approx.) for plate current of 10 μA | —5.5  | —     | volts |
| Grid Voltage (Approx.) for plate current of 50 μA | —     | —44   | volts |

| Unit No.1 | Unit No.2 |       |
|-----------|-----------|-------|
| 250       | 150       | volts |
| —3        | —17.5     | volts |
| 68        | 6         |       |
| 40000     | 925       | ohms  |
| 1600      | 6500      | μmhos |
| 1.4       | 35        | mA    |
| —         | 10        | mA    |
| —5.5      | —         | volts |
| —         | —44       | volts |

**Vertical-Deflection Oscillator and Amplifier**

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

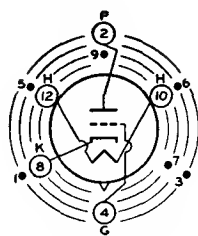
**MAXIMUM RATINGS (Design-Maximum Values)**

|                                    |     |      |       |
|------------------------------------|-----|------|-------|
| DC Plate Voltage                   | 330 | 275  | volts |
| Peak Positive-Pulse Plate Voltage# | —   | 1500 | volts |
| Peak Negative-Pulse Grid Voltage   | 400 | 250  | volts |
| Peak Cathode Current               | 70  | 175  | mA    |
| Average Cathode Current            | 20  | 50   | mA    |
| Plate Dissipation                  | 1   | 7    | watts |

**MAXIMUM CIRCUIT VALUES**

|                                                    |     |     |         |
|----------------------------------------------------|-----|-----|---------|
| Grid-Circuit Resistance:                           |     |     |         |
| For grid-resistance-bias or cathode-bias operation | 2.2 | 2.2 | megohms |

# Pulse duration must not exceed 15% of a vertical scanning cycle (2.5 milliseconds).



INDEX=LARGE LUG  
● = PIN CUT OFF

**12AQ****HIGH-MU TRIODE**

Nuvistor type used as grounded-cathode, neutralized rf amplifier in vhf tuners of color and black-and-white television and FM receivers. **Outlines section, 1;** requires nuvistor socket. Type 2DS4 is identical with type 6DS4 except for heater ratings.

**6DS4****2DS4**

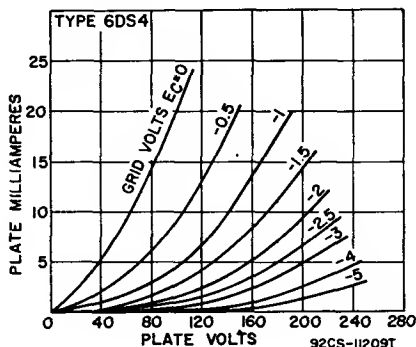
|                                              | <b>2DS4</b> | <b>6DS4</b> |         |
|----------------------------------------------|-------------|-------------|---------|
| Heater Voltage (ac/dc)                       | 2.1         | 6.3         | volts   |
| Heater Current                               | 0.45        | 0.135       | ampere  |
| Heater Warm-up Time (Average)                | 8           | —           | seconds |
| Peak Heater-Cathode Voltage                  | ±100 max    | ±100 max    | volts   |
| Direct Interelectrode Capacitances (Approx.) |             |             |         |
| Grid to Plate                                |             | 0.92        | pF      |
| Grid to Cathode, Heater, and Shell           |             | 4.3         | pF      |
| Plate to Cathode, Heater, and Shell          |             | 1.8         | pF      |
| Plate to Cathode                             |             | 0.18        | pF      |
| Heater to Cathode                            |             | 1.6         | pF      |

**Class A<sub>1</sub> Amplifier****MAXIMUM RATINGS (Design-Maximum Values)**

|                                   |      |       |
|-----------------------------------|------|-------|
| Plate Supply Voltage              | 300° | volts |
| Plate Voltage                     | 135  | volts |
| Grid Voltage, Negative-bias value | 55   | volts |
| Grid Voltage, Peak positive value | 0    | volts |
| Cathode Current                   | 15   | mA    |
| Plate Dissipation                 | 1.5  | watt  |

**CHARACTERISTICS**

|                                                    |      |       |
|----------------------------------------------------|------|-------|
| Plate Supply Voltage                               | 110  | volts |
| Grid Supply Voltage                                | 0    | volts |
| Cathode-Bias Resistor                              | 130  | ohms  |
| Amplification Factor                               | 63   |       |
| Plate Resistance (Approx.)                         | 7000 | ohms  |
| Transconductance                                   | 9000 | μmhos |
| Plate Current                                      | 6.5  | mA    |
| Grid Voltage (Approx.) for plate current of 100 μA | —5   | volts |
| Grid Voltage (Approx.) for plate current of 10 μA  | —6.8 | volts |

**TYPICAL OPERATION**

|                            |       |       |
|----------------------------|-------|-------|
| Plate Voltage              | 70    | volts |
| Grid Supply Voltage        | 0     | volts |
| Grid Resistor              | 47000 | ohms  |
| Amplification Factor       | 63    |       |
| Plate Resistance (Approx.) | 5440  | ohms  |
| Transconductance           | 12500 | μmhos |
| Plate Current              | 7     | mA    |