

# High-Mu Triode— Sharp-Cutoff Pentode

## 9-PIN MINIATURE TYPE

### GENERAL DATA

#### Electrical:

Heater Characteristics and Ratings (*Design-Center Values*):

|                                     |           |       |
|-------------------------------------|-----------|-------|
| Voltage (AC or DC) . . . . .        | 6.3 ± 0.6 | volts |
| Current at heater volts = 6.3 . . . | 0.720     | amp   |

Peak heater-cathode voltage

(Each unit):

|                                                  |          |       |
|--------------------------------------------------|----------|-------|
| Heater negative with respect to cathode. . . . . | 200 max. | volts |
|--------------------------------------------------|----------|-------|

|                                                  |          |       |
|--------------------------------------------------|----------|-------|
| Heater positive with respect to cathode. . . . . | 200 max. | volts |
|--------------------------------------------------|----------|-------|

Direct Interelectrode Capacitances:<sup>a</sup>

*Triode Unit:*

|                         |     |     |
|-------------------------|-----|-----|
| Grid to plate . . . . . | 2.7 | μμf |
|-------------------------|-----|-----|

|                                                  |     |     |
|--------------------------------------------------|-----|-----|
| Grid to all other elements except plate. . . . . | 4.0 | μμf |
|--------------------------------------------------|-----|-----|

|                                                   |     |     |
|---------------------------------------------------|-----|-----|
| Plate to all other elements except grid . . . . . | 2.3 | μμf |
|---------------------------------------------------|-----|-----|

|                         |          |     |
|-------------------------|----------|-----|
| Grid to heater. . . . . | 0.1 max. | μμf |
|-------------------------|----------|-----|

*Pentode Unit:*

|                             |          |     |
|-----------------------------|----------|-----|
| Grid No.1 to plate. . . . . | 0.1 max. | μμf |
|-----------------------------|----------|-----|

|                                                       |     |     |
|-------------------------------------------------------|-----|-----|
| Grid No.1 to all other elements except plate. . . . . | 9.0 | μμf |
|-------------------------------------------------------|-----|-----|

|                                                       |     |     |
|-------------------------------------------------------|-----|-----|
| Plate to all other elements except grid No.1. . . . . | 4.5 | μμf |
|-------------------------------------------------------|-----|-----|

|                               |          |     |
|-------------------------------|----------|-----|
| Grid No.1 to heater . . . . . | 0.1 max. | μμf |
|-------------------------------|----------|-----|

|                                             |           |     |
|---------------------------------------------|-----------|-----|
| Triode plate to pentode grid No.1 . . . . . | 0.01 max. | μμf |
|---------------------------------------------|-----------|-----|

|                                           |           |     |
|-------------------------------------------|-----------|-----|
| Triode grid to pentode grid No.1. . . . . | 0.01 max. | μμf |
|-------------------------------------------|-----------|-----|

#### Characteristics, Class A<sub>1</sub> Amplifier:

|                                             | <i>Triode Unit</i> | <i>Pentode Unit</i> |       |       |        |
|---------------------------------------------|--------------------|---------------------|-------|-------|--------|
| Plate Voltage . . . . .                     | 200                | 170                 | 200   | 220   | volts  |
| Grid-No.2 Voltage . . . . .                 | —                  | 170                 | 200   | 220   | volts  |
| Grid-No.1 Voltage . . . . .                 | -1.7               | -2.1                | -2.9  | -3.4  | volts  |
| Amplification Factor. . . . .               | 65                 | —                   | —     | —     |        |
| Mu Factor, Grid No.2 to Grid No.1 . . . . . | —                  | 36                  | 36    | 36    |        |
| Plate Resistance (Approx.). . . . .         | —                  | 0.1                 | 0.13  | 0.15  | megohm |
| Transconductance. . . . .                   | 4000               | 11000               | 10400 | 10000 | μmhos  |
| Plate Current . . . . .                     | 3                  | 18                  | 18    | 18    | ma     |
| Grid-No.2 Current . . . . .                 | —                  | 3                   | 3     | 3     | ma     |

#### Mechanical:

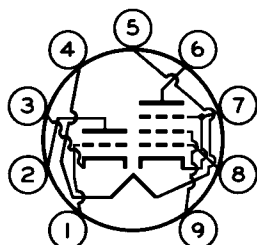
|                                 |                     |
|---------------------------------|---------------------|
| Operating Position. . . . .     | Any                 |
| Type of Cathodes. . . . .       | Coated Unipotential |
| Maximum Overall Length. . . . . | 2-5/8"              |
| Maximum Seated Length . . . . . | 2-3/8"              |



# 6DX8

Length, Base Seat to Bulb Top (Excluding tip). . . . . 2"  $\pm$  3/32"  
 Diameter. . . . . 0.750" to 0.875"  
 Dimensional Outline . . . . . See *General Section*  
 Bulb. . . . . T6-1/2  
 Base. . . . . Small-Button Noval 9-Pin (JEDEC No.E9-1)  
 Basing Designation for BOTTOM VIEW. . . . . 9HX

Pin 1—Triode  
 Grid  
 Pin 2—Triode  
 Plate  
 Pin 3—Triode  
 Cathode  
 Pin 4—Heater  
 Pin 5—Heater  
 Pin 6—Pentode  
 Plate



Pin 7—Pentode  
 Grid No.3,  
 Pentode  
 Cathode,  
 Internal  
 Shield  
 Pin 8—Pentode  
 Grid No.1  
 Pin 9—Pentode  
 Grid No.2

## AMPLIFIER — Class A<sub>1</sub>

### Maximum Ratings, Design-Center Values:

|                                                                           | Triode<br>Unit | Pentode<br>Unit |       |
|---------------------------------------------------------------------------|----------------|-----------------|-------|
| PLATE SUPPLY VOLTAGE. . . . .                                             | 550 max.       | 550 max.        | volts |
| PEAK PLATE VOLTAGE<br>with maximum plate ma. = 0.1 <sup>b</sup> . . . . . | 600 max.       | —               | volts |
| PLATE VOLTAGE . . . . .                                                   | 300 max.       | 300 max.        | volts |
| GRID-No.2 (SCREEN-GRID)<br>SUPPLY VOLTAGE. . . . .                        | —              | 550 max.        | volts |
| GRID-No.2 VOLTAGE . . . . .                                               | —              | 300 max.        | volts |
| CATHODE CURRENT . . . . .                                                 | 12 max.        | 40 max.         | ma    |
| GRID-No.2 INPUT . . . . .                                                 | —              | 1.7 max.        | watts |
| PLATE DISSIPATION . . . . .                                               | 1 max.         | 4 max.          | watts |

### Typical Operation (Pentode Unit):

#### As video-output tube

|                                 |       |       |      |            |
|---------------------------------|-------|-------|------|------------|
| Plate Supply Voltage. . . . .   | 170   | 200   | 220  | volts      |
| Series Plate Resistor . . . . . | 3000  | 3000  | 3000 | ohms       |
| Grid-No.2 Voltage . . . . .     | 170   | 200   | 220  | volts      |
| Grid-No.1 Voltage . . . . .     | -2    | -2.8  | -3.3 | volts      |
| Transconductance. . . . .       | 10400 | 10000 | 9700 | $\mu$ mhos |
| Plate Current . . . . .         | 18    | 18    | 18   | ma         |
| Grid-No.2 Current . . . . .     | 3.2   | 3.1   | 3.1  | ma         |

### Maximum Circuit Values:

|                                                                    | Triode<br>Unit | Pentode<br>Unit |         |
|--------------------------------------------------------------------|----------------|-----------------|---------|
| Grid-No.1—Circuit Resistance:<br>For fixed-bias operation. . . . . | 1 max.         | 1 max.          | megohm  |
| For cathode-bias operation. . . . .                                | 3 max.         | 2 max.          | megohms |

<sup>a</sup> without external shield.

<sup>b</sup> with duty factor = 0.18 maximum and pulse duration = 18 microseconds maximum.

