

## Dual Triode

## With Medium-Mu Unit and Low-Mu Unit

## 9-PIN MINIATURE TYPE

## GENERAL DATA

## Electrical:

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

|                                         |           |       |
|-----------------------------------------|-----------|-------|
| Voltage (AC or DC) . . . . .            | 6.3 ± 0.6 | volts |
| Current at heater volts = 6.3 . . . . . | 0.900     | amp   |

Peak heater-cathode voltage (Each unit):

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

|                                                   |                  |      |       |
|---------------------------------------------------|------------------|------|-------|
| Heater positive with respect to cathode . . . . . | 200 <sup>a</sup> | max. | volts |
|---------------------------------------------------|------------------|------|-------|

Direct Interelectrode Capacitances (Approx.):<sup>b</sup>

|                                       | Unit No. 1 | Unit No. 2 |     |
|---------------------------------------|------------|------------|-----|
| Grid to plate . . . . .               | 4.0        | 8.5        | μμf |
| Grid to cathode and heater . . . . .  | 2.2        | 5.5        | μμf |
| Plate to cathode and heater . . . . . | 0.52       | 1.0        | μμf |

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

|                                                    | Unit No. 1 | Unit No. 2         |       |
|----------------------------------------------------|------------|--------------------|-------|
| Plate Voltage . . . . .                            | 250        | 60 150             | volts |
| Grid Voltage . . . . .                             | -11        | 0 -17.5            | volts |
| Amplification Factor . . . . .                     | 17.5       | - 6                |       |
| Plate Resistance (Approx.) . . . . .               | 8750       | - 925              | ohms  |
| Transconductance . . . . .                         | 2000       | - 6500             | μmhos |
| Plate Current . . . . .                            | 5.5        | 80 <sup>c</sup> 35 | ma    |
| Plate Current for grid volts = -24 . . . . .       | -          | - 10               | ma    |
| Grid Voltage (Approx.) for plate μa = 10 . . . . . | -20        | - -                | volts |
| Grid Voltage (Approx.) for plate μa = 50 . . . . . | -          | - -44              | volts |

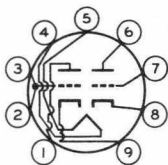
## Mechanical:

|                                                         |                                           |
|---------------------------------------------------------|-------------------------------------------|
| Operating Position . . . . .                            | Any                                       |
| Type of Cathodes . . . . .                              | Coated Unipotential                       |
| Maximum Overall Length . . . . .                        | 2-5/8"                                    |
| Maximum Seated Length . . . . .                         | 2-3/8"                                    |
| Length, Base Seat to Bulb Top (Excluding tip) . . . . . | 2" ± 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. . . . . 9HF

Pin 1-Plate of  
Unit No.2  
Pin 2-Grid of  
Unit No.2  
Pin 3-Grid of  
Unit No.2  
Pin 4-Heater  
Pin 5-Heater



Pin 6-Plate of  
Unit No.1  
Pin 7-Grid of  
Unit No.1  
Pin 8-Cathode of  
Unit No.1  
Pin 9-Cathode of  
Unit No.2

## VERTICAL-DEFLECTION OSCILLATOR

*Values are for Unit No.1*

### Maximum Ratings, Design-Maximum Values:

*For operation in a 525-line, 30-frame system<sup>d</sup>*

|                                           |          |       |
|-------------------------------------------|----------|-------|
| DC PLATE VOLTAGE. . . . .                 | 330 max. | volts |
| PEAK NEGATIVE-PULSE GRID VOLTAGE. . . . . | 400 max. | volts |
| CATHODE CURRENT:                          |          |       |
| Peak. . . . .                             | 77 max.  | ma    |
| Average . . . . .                         | 22 max.  | ma    |
| → PLATE DISSIPATION . . . . .             | 1.5 max. | watts |

### Maximum Circuit Values:

Grid-Circuit Resistance:

For grid-resistor-bias or cathode-bias operation. . . . . 2.2 max. megohms

## VERTICAL-DEFLECTION AMPLIFIER

*Values are for Unit No.2*

### Maximum Ratings, Design-Maximum Values:

*For operation in a 525-line, 30-frame system<sup>d</sup>*

|                                                          |           |       |
|----------------------------------------------------------|-----------|-------|
| DC PLATE VOLTAGE. . . . .                                | 275 max.  | volts |
| PEAK POSITIVE-PULSE PLATE VOLTAGE <sup>a</sup> . . . . . | 1500 max. | volts |
| PEAK NEGATIVE-PULSE GRID VOLTAGE. . . . .                | 250 max.  | volts |
| CATHODE CURRENT:                                         |           |       |
| Peak. . . . .                                            | 175 max.  | ma    |
| Average . . . . .                                        | 50 max.   | ma    |
| PLATE DISSIPATION . . . . .                              | 7 max.    | watts |

### Maximum Circuit Values:

Grid-Circuit Resistance:

For grid-resistor-bias or cathode-bias operation. . . . . 2.2 max. megohms

<sup>a</sup> The dc component must not exceed 100 volts.

<sup>b</sup> Without external shield.

<sup>c</sup> This value can be measured by a method involving a recurrent wave form such that the maximum ratings of the tube will not be exceeded.

<sup>d</sup> As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.

→ Indicates a change.



6DE7

6DE7

## DUAL TRIODE

With Medium-Mu Unit and Low-Mu Unit

9-PIN MINIATURE TYPE

## GENERAL DATA

## Electrical:

Heater, for Unipotential Cathodes:

Voltage. . . . . 6.3  $\pm$  10% . . . ac or dc volts

Current. . . . . 0.9 . . . . . amp

Direct Interelectrode Capacitances (Approx.):<sup>0</sup>

|                              | Unit No.1 | Unit No.2 |         |
|------------------------------|-----------|-----------|---------|
| Grid to plate. . . . .       | 4         | 8.5       | $\mu$ f |
| Grid to cathode and heater . | 2.2       | 5.5       | $\mu$ f |
| Plate to cathode and heater. | 0.52      | 1         | $\mu$ f |

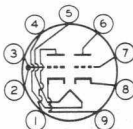
Characteristics, Class A<sub>1</sub> Amplifier:

|                                                                | Unit No.1 | Unit No.2 |            |
|----------------------------------------------------------------|-----------|-----------|------------|
| Plate Voltage . . . . .                                        | 250       | 60 150    | volts      |
| Grid Voltage . . . . .                                         | -11       | 0 -17.5   | volts      |
| Amplification Factor. . . . .                                  | 17.5      | - 6       |            |
| Plate Resistance (Approx.)..                                   | 8750      | - 925     | ohms       |
| Transconductance. . . . .                                      | 2000      | - 6500    | $\mu$ mhos |
| Plate Current . . . . .                                        | 5.5       | 80* 35    | ma         |
| Plate Current for grid voltage<br>of -24 volts . . . . .       | -         | - 10      | ma         |
| Grid Voltage (Approx.) for<br>plate current of 10 $\mu$ a. . . | -20       | - -       | volts      |
| Grid Voltage (Approx.) for<br>plate current of 50 $\mu$ a. . . | -         | - -44     | volts      |

## Mechanical:

|                                                     |                                          |
|-----------------------------------------------------|------------------------------------------|
| Operating Position. . . . .                         | Any                                      |
| Maximum Overall Length. . . . .                     | 2-5/8"                                   |
| Maximum Seated Length . . . . .                     | 2-3/8"                                   |
| 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. . . . .         | 9HF                                      |

Pin 1 - Plate of  
Unit No.2  
Pin 2 - Grid of  
Unit No.2  
Pin 3 - Grid of  
Unit No.2  
Pin 4 - Heater  
Pin 5 - Heater



Pin 6 - Plate of  
Unit No.1  
Pin 7 - Grid of  
Unit No.1  
Pin 8 - Cathode of  
Unit No.1  
Pin 9 - Cathode of  
Unit No.2



6DE7

## DUAL TRIODE

With Medium-Mu Unit and Low-Mu Unit

## VERTICAL-DEFLECTION OSCILLATOR

Values are for Unit No. 1

## Maximum Ratings, Design-Maximum Values:

For operation in a 525-line, 30-frame system<sup>□</sup>

|                                           |                  |      |       |
|-------------------------------------------|------------------|------|-------|
| DC PLATE VOLTAGE. . . . .                 | 330              | max. | volts |
| PEAK NEGATIVE-PULSE GRID VOLTAGE. . . . . | 400              | max. | volts |
| CATHODE CURRENT:                          |                  |      |       |
| Peak. . . . .                             | 77               | max. | ma    |
| Average . . . . .                         | 22               | max. | ma    |
| PLATE DISSIPATION <sup>⊕</sup> . . . . .  | 7                | max. | watts |
| PEAK HEATER-CATHODE VOLTAGE:              |                  |      |       |
| Heater negative with respect to cathode.  | 200              | max. | volts |
| Heater positive with respect to cathode.  | 200 <sup>▲</sup> | max. | volts |

## Maximum Circuit Values:

Grid-Circuit Resistance:

For grid-resistor-bias or  
cathode-bias operation. . . . . 2.2 max. megohms

## VERTICAL-DEFLECTION AMPLIFIER

Values are for Unit No. 2

## Maximum Ratings, Design-Maximum Values:

For operation in a 525-line, 30-frame system<sup>□</sup>

|                                                          |                  |      |       |
|----------------------------------------------------------|------------------|------|-------|
| DC PLATE VOLTAGE. . . . .                                | 275              | max. | volts |
| PEAK POSITIVE-PULSE PLATE VOLTAGE <sup>#</sup> . . . . . | 1500             | max. | volts |
| PEAK NEGATIVE-PULSE GRID VOLTAGE. . . . .                | 250              | max. | volts |
| CATHODE CURRENT:                                         |                  |      |       |
| Peak. . . . .                                            | 175              | max. | ma    |
| Average . . . . .                                        | 50               | max. | ma    |
| PLATE DISSIPATION <sup>⊕</sup> . . . . .                 | 7                | max. | watts |
| PEAK HEATER-CATHODE VOLTAGE:                             |                  |      |       |
| Heater negative with respect to cathode.                 | 200              | max. | volts |
| Heater positive with respect to cathode.                 | 200 <sup>▲</sup> | max. | volts |

## Maximum Circuit Values:

Grid-Circuit Resistance:

For grid-resistor-bias or  
cathode-bias operation. . . . . 2.2 max. megohms

<sup>□</sup> Without external shield.<sup>\*</sup> This value can be measured by a method involving a recurrent wave form such that the maximum ratings of the tube will not be exceeded.<sup>□</sup> As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.<sup>⊕</sup> In stages operating with grid-resistor bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.<sup>▲</sup> The dc component must not exceed 100 volts.



6DE7

6DE7

## DUAL TRIODE

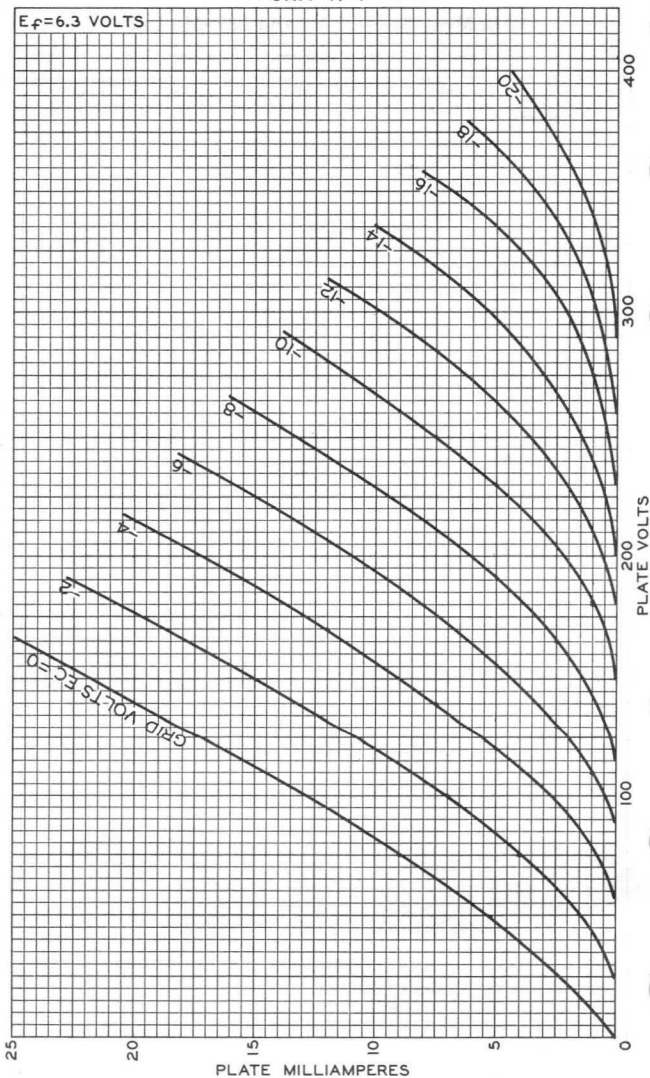
With Medium-Mu Unit and Low-Mu Unit

# This rating is applicable when the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

6DE7



6DE7

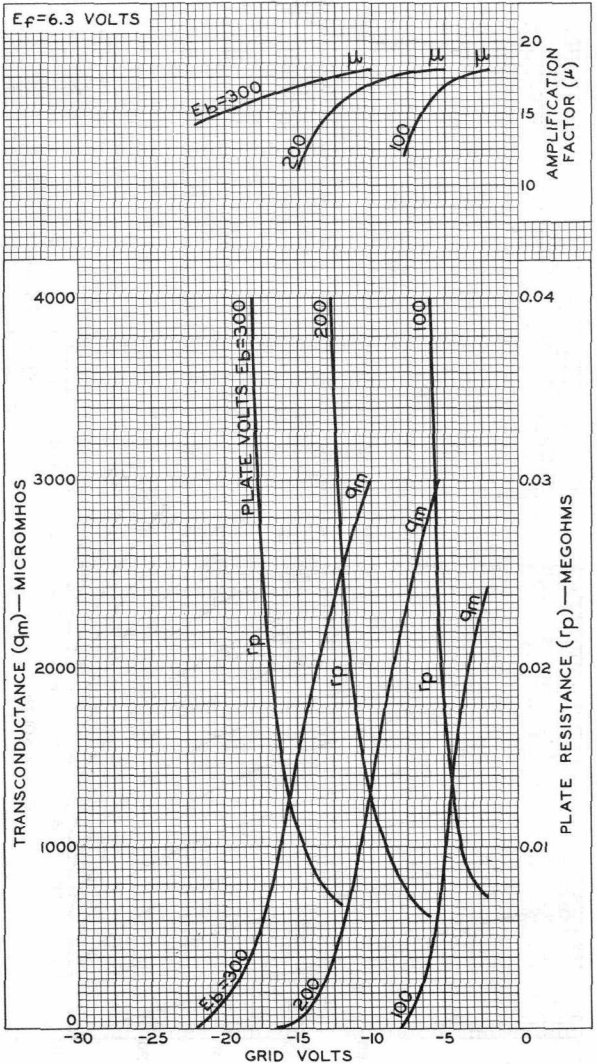
AVERAGE PLATE CHARACTERISTICS  
UNIT №1 $E_f = 6.3$  VOLTS



6DE7

# AVERAGE CHARACTERISTICS UNIT №1

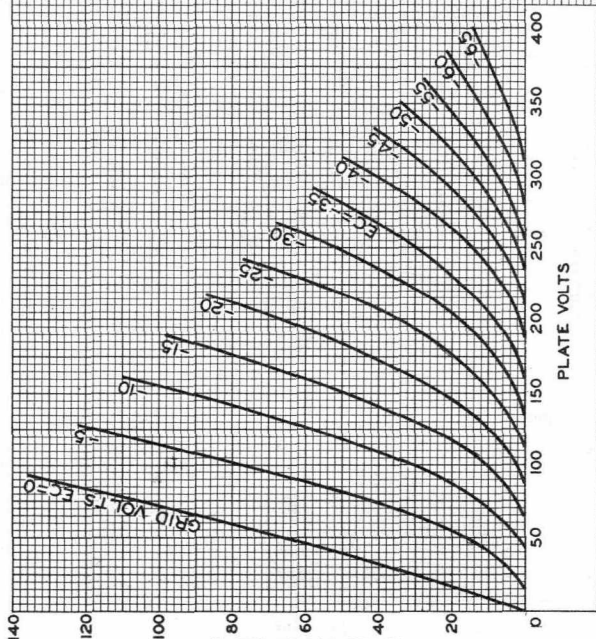
6DE7



6DE7



6DE7

AVERAGE PLATE CHARACTERISTICS  
UNIT No 2 $E_f = 6.3$  VOLTSPLATE MILLIAMPERES  
ELECTRON TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-9913



6DE7

6DE7

# AVERAGE CHARACTERISTICS UNIT No 2

