

# Medium-Mu Twin Triode

## 9-PIN MINIATURE TYPE

With Heater Having Controlled Warm-Up Time

### GENERAL DATA

#### Electrical:

Heater, for Unipotential Cathodes:

|                                  |               |       |
|----------------------------------|---------------|-------|
| Voltage (AC or DC) . . . . .     | 6.3           | volts |
| Current . . . . .                | $0.6 \pm 6\%$ | amp   |
| Warm-up time (Average) . . . . . | 11            | sec   |

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

|                                                      | Unit No.1 | Unit No.2 |               |
|------------------------------------------------------|-----------|-----------|---------------|
| Grid to plate . . . . .                              | 3.6       | 3.8       | $\mu\text{f}$ |
| Grid to cathode and heater. . . . .                  | 2.4       | 2.4       | $\mu\text{f}$ |
| Plate to cathode and heater . . . . .                | 0.34      | 0.26      | $\mu\text{f}$ |
| Plate of unit No.1 to<br>plate of unit No.2. . . . . |           | 1         | $\mu\text{f}$ |

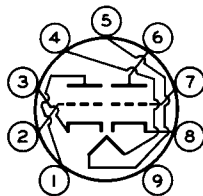
#### Characteristics, Class A<sub>1</sub> Amplifier (Each Unit):

|                                                                  |      |      |                  |
|------------------------------------------------------------------|------|------|------------------|
| Plate Voltage . . . . .                                          | 90   | 250  | volts            |
| Grid Voltage. . . . .                                            | 0    | -8   | volts            |
| Amplification Factor. . . . .                                    | 20   | 20   |                  |
| Plate Resistance (Approx.) . . . . .                             | 6700 | 7700 | ohms             |
| Transconductance. . . . .                                        | 3000 | 2600 | $\mu\text{mhos}$ |
| Plate Current . . . . .                                          | 10   | 9    | ma               |
| Plate Current for grid volts = -12.5. . . . .                    | -    | 1.3  | ma               |
| Grid Voltage (Approx.) for plate<br>$\mu\text{a} = 10$ . . . . . | -7   | -18  | 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 <i>General Section</i>               |
| Bulb. . . . .                                          | T6-1/2                                   |
| Base. . . . .                                          | Small-Button Noval 9-Pin (JEDEC No.E9-1) |
| Basing Designation for BOTTOM VIEW. . . . .            | 9LP                                      |

Pin 1 - Plate of  
Unit No.2  
Pin 2 - Grid of  
Unit No.2  
Pin 3 - Cathode 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 - No Connec-  
tion



# 6FQ7

## AMPLIFIER — Class A<sub>1</sub>

*Values are for Each Unit*

### Maximum Ratings, Design-Maximum Values:

|                                            |                  |      |       |
|--------------------------------------------|------------------|------|-------|
| PLATE VOLTAGE. . . . .                     | 330              | max. | volts |
| GRID VOLTAGE:                              |                  |      |       |
| Positive-bias value. . . . .               | 0                | max. | volts |
| CATHODE CURRENT. . . . .                   | 22               | max. | ma    |
| PLATE DISSIPATION:                         |                  |      |       |
| Either plate . . . . .                     | 4                | max. | watts |
| Both plates (Both units operating) . . .   | 5.7              | max. | watts |
| PEAK HEATER-CATHODE VOLTAGE:               |                  |      |       |
| Heater negative with respect to cathode. . | 200              | max. | volts |
| Heater positive with respect to cathode. . | 200 <sup>b</sup> | max. | volts |

### Typical Operation as Resistance-Coupled Amplifier:

See *RESISTANCE-COUPLED AMPLIFIER CHART No. 29*  
at front of this Section

### Maximum Circuit Values:

|                                    |   |      |        |
|------------------------------------|---|------|--------|
| Grid-Circuit Resistance:           |   |      |        |
| For fixed-bias operation . . . . . | 1 | max. | megohm |

## HORIZONTAL-DEFLECTION OSCILLATOR

*Values are for Each Unit*

### Maximum Ratings, Design-Maximum Values:

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

|                                           |                  |      |       |
|-------------------------------------------|------------------|------|-------|
| DC PLATE VOLTAGE. . . . .                 | 330              | max. | volts |
| PEAK NEGATIVE-PULSE GRID VOLTAGE. . . . . | 660              | max. | volts |
| CATHODE CURRENT:                          |                  |      |       |
| Peak. . . . .                             | 330              | max. | ma    |
| Average . . . . .                         | 22               | max. | ma    |
| PLATE DISSIPATION:                        |                  |      |       |
| Either plate. . . . .                     | 4                | max. | watts |
| Both plates (Both units operating). . .   | 5.7              | max. | watts |
| PEAK HEATER-CATHODE VOLTAGE:              |                  |      |       |
| Heater negative with respect to cathode . | 200              | max. | volts |
| Heater positive with respect to cathode . | 200 <sup>b</sup> | max. | volts |

### Maximum Circuit Values:

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

## VERTICAL-DEFLECTION OSCILLATOR

*Values are for Each Unit*

### Maximum Ratings, Design-Maximum Values:

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

|                                           |     |      |       |
|-------------------------------------------|-----|------|-------|
| DC PLATE VOLTAGE. . . . .                 | 330 | max. | volts |
| PEAK NEGATIVE-PULSE GRID VOLTAGE. . . . . | 440 | max. | volts |
| CATHODE CURRENT:                          |     |      |       |
| Peak. . . . .                             | 77  | max. | ma    |
| Average . . . . .                         | 22  | max. | ma    |

## PLATE DISSIPATION:

|                                         |     |      |       |
|-----------------------------------------|-----|------|-------|
| Either plate. . . . .                   | 4   | max. | watts |
| Both plates (Both units operating). . . | 5.7 | max. | watts |

## PEAK HEATER-CATHODE VOLTAGE:

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

## Maximum Circuit Values:

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

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

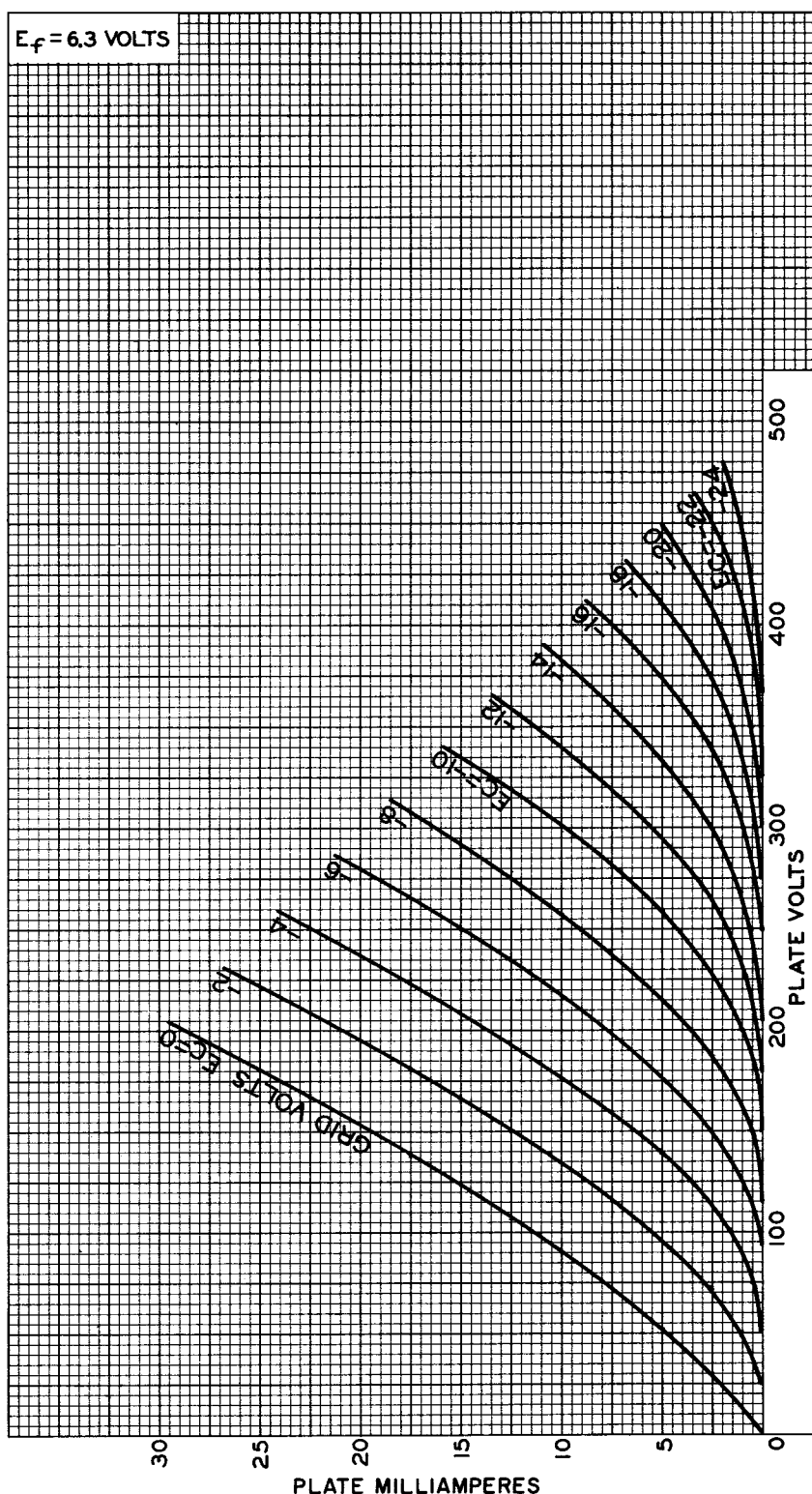
<sup>b</sup> The dc component must not exceed 100 volts.

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



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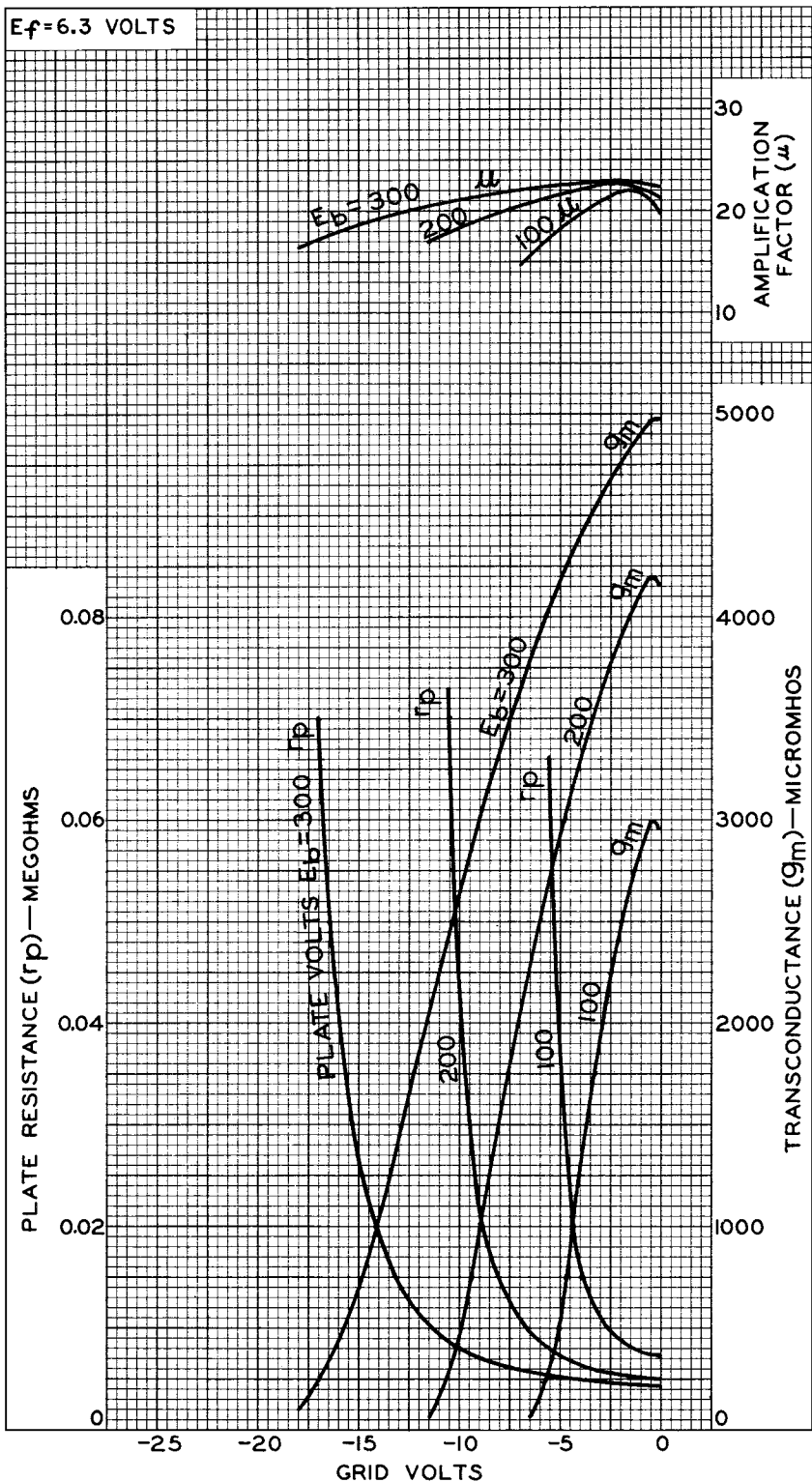
## AVERAGE PLATE CHARACTERISTICS Each Unit



92CM-8442



## AVERAGE CHARACTERISTICS Each Unit



92CM-8441R1

