



5876

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**UHF HIGH-MU TRIODE**

"PENCIL TYPE" FOR GROUNDED-GRID SERVICE

**GENERAL DATA****Electrical:**

Heater, for Unipotential Cathode:

Voltage. . . . . 6.3 . . . . . ac or dc volts

Current. . . . . 0.135 . . . . . amp

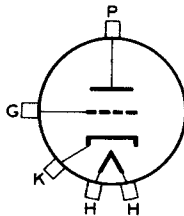
Direct Interelectrode Capacitances:

Grid to Plate. . . . . 1.4 . . . . .  $\mu\text{f}$ Grid to Cathode. . . . . 2.5 . . . . .  $\mu\text{f}$ Plate to Cathode . . . . . 0.035 max. . . . .  $\mu\text{f}$ **Mechanical:**

Terminal Connections:

H -- Heater

K -- Cathode



G--Grid

P--Plate

Mounting Position. . . . . Any

Dimensions . . . . . See Outline Drawing

**AMPLIFIER- Class A<sub>1</sub>****Maximum Ratings, Absolute Values:**

DC PLATE VOLTAGE . . . . . 300 max. volts

DC GRID VOLTAGE. . . . . -100 max. volts

DC PLATE CURRENT . . . . . 25 max. ma

PLATE DISSIPATION  $\diamond$  . . . . . 6.25 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode. 90 max. volts

Heater positive with respect to cathode. 90 max. volts

PLATE-SEAL TEMPERATURE . . . . . 175 max.  $^{\circ}\text{C}$ **Characteristics:**

Plate Voltage. . . . . 250 volts

Cathode-Bias Resistor. . . . . 75 ohms

Amplification Factor . . . . . 56

Plate Resistance . . . . . 8625 ohms

Transconductance . . . . . 6500  $\mu\text{mhos}$ 

Plate Current. . . . . 18 ma

**Maximum Circuit Values:**

Grid-Circuit Resistance. . . . . 0.5 max. megohm

**PLATE-MODULATED RF POWER AMPLIFIER- Class C Telephony**

Carrier conditions per tube for use with a max. modulation factor of 1.0

**Maximum CCS<sup>o</sup> Ratings, Absolute Values:**

DC PLATE VOLTAGE . . . . . 275 max. volts

 $\diamond$ ,  $^{\circ}$ : See next page.

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TUBE DEPARTMENT

TENTATIVE DATA 1

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|                                          |           |                    |
|------------------------------------------|-----------|--------------------|
| DC GRID VOLTAGE. . . . .                 | -100 max. | volts              |
| DC PLATE CURRENT . . . . .               | 22 max.   | ma                 |
| DC GRID CURRENT. . . . .                 | 8 max.    | ma                 |
| PLATE INPUT. . . . .                     | 6.0 max.  | watts              |
| PLATE DISSIPATION $\diamond$ . . . . .   | 4.25 max. | watts              |
| PEAK HEATER-CATHODE VOLTAGE:             |           |                    |
| Heater negative with respect to cathode. | 90 max.   | volts              |
| Heater positive with respect to cathode. | 90 max.   | volts              |
| PLATE-SEAL TEMPERATURE . . . . .         | 175 max.  | $^{\circ}\text{C}$ |

## Maximum Circuit Values:

|                                  |          |        |
|----------------------------------|----------|--------|
| Grid-Circuit Resistance. . . . . | 0.1 max. | megohm |
|----------------------------------|----------|--------|

## RF POWER AMPLIFIER & OSCILLATOR- Class C Telegraphy

*Key-down conditions per tube without amplitude modulation\**

## Maximum CCS $^{\circ}$ Ratings, Absolute Values:

|                                          |           |                    |
|------------------------------------------|-----------|--------------------|
| DC PLATE VOLTAGE . . . . .               | 360 max.  | volts              |
| DC GRID VOLTAGE. . . . .                 | -100 max. | volts              |
| DC PLATE CURRENT . . . . .               | 25 max.   | ma                 |
| DC GRID CURRENT. . . . .                 | 8 max.    | ma                 |
| PLATE INPUT. . . . .                     | 9 max.    | watts              |
| PLATE DISSIPATION $\diamond$ . . . . .   | 6.25 max. | watts              |
| PEAK HEATER-CATHODE VOLTAGE:             |           |                    |
| Heater negative with respect to cathode. | 90 max.   | volts              |
| Heater positive with respect to cathode. | 90 max.   | volts              |
| PLATE-SEAL TEMPERATURE . . . . .         | 175 max.  | $^{\circ}\text{C}$ |

## Typical Operation as Oscillator in Grounded-Grid Circuit:

|                                               | 500 Mc | 1700 Mc |       |
|-----------------------------------------------|--------|---------|-------|
| DC Plate Voltage . . . . .                    | 250    | 250     | volts |
| DC Grid Voltage $\blacklozenge$ . . . . .     | -12    | -2      | volts |
| DC Plate Current . . . . .                    | 23     | 23      | ma    |
| DC Grid Current (Approx.) $\square$ . . . . . | 6      | 3       | ma    |
| Useful Power Output (Approx.). . . . .        | 3      | 0.75    | watts |

## Typical Operation as RF Power Amplifier

### in Grounded-Grid Circuit:

|                                                     | 500 Mc |       |
|-----------------------------------------------------|--------|-------|
| DC Plate Voltage . . . . .                          | 275    | volts |
| DC Grid Voltage $\blacklozenge$ . . . . .           | -51    | volts |
| DC Plate Current . . . . .                          | 23     | ma    |
| DC Grid Current (Approx.) $\square$ . . . . .       | 7      | ma    |
| Driver Power Output (Approx.) $\square^*$ . . . . . | 2      | watts |
| Useful Power Output (Approx.). . . . .              | 5      | watts |

## Maximum Circuit Values:

|                                  |          |        |
|----------------------------------|----------|--------|
| Grid-Circuit Resistance. . . . . | 0.1 max. | megohm |
|----------------------------------|----------|--------|

$\diamond$ ,  $\bullet$ ,  $\circ$ ,  $\blacklozenge$ ,  $\square$ ,  $*$ : See next page.

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## UHF HIGH-MU TRIODE

## FREQUENCY MULTIPLIER

## Maximum CCSO Ratings, Absolute Values:

|                                          |           |       |
|------------------------------------------|-----------|-------|
| DC PLATE VOLTAGE . . . . .               | 330 max.  | volts |
| DC GRID VOLTAGE. . . . .                 | -100 max. | volts |
| DC PLATE CURRENT . . . . .               | 22 max.   | ma    |
| DC GRID CURRENT. . . . .                 | 8 max.    | ma    |
| PLATE INPUT. . . . .                     | 7.5 max.  | watts |
| PLATE DISSIPATION <sup>o</sup> . . . . . | 6.25 max. | watts |

## PEAK HEATER-CATHODE VOLTAGE:

|                                          |          |       |
|------------------------------------------|----------|-------|
| Heater negative with respect to cathode. | 90 max.  | volts |
| Heater positive with respect to cathode. | 90 max.  | volts |
| PLATE-SEAL TEMPERATURE . . . . .         | 175 max. | °C    |

## Typical Operation in Grounded-Grid Circuit:

|                                                        | <i>Tripler<br/>to 480 Mc</i> | <i>Doubler<br/>to 960 Mc</i> |       |
|--------------------------------------------------------|------------------------------|------------------------------|-------|
| DC Plate Voltage . . . . .                             | 300                          | 300                          | volts |
| DC Grid Voltage <sup>o</sup> . . . . .                 | -90                          | -70                          | volts |
| DC Plate Current . . . . .                             | 18                           | 17.3                         | ma    |
| DC Grid Current (Approx.) <sup>o</sup> . . . . .       | 6                            | 7                            | ma    |
| Driver Power Output (Approx.) <sup>o</sup> * . . . . . | 2.1                          | 2                            | watts |
| Useful Power Output (Approx.) . . . . .                | 2.1                          | 2                            | watts |

## Maximum Circuit Values:

|                                  |          |        |
|----------------------------------|----------|--------|
| Grid-Circuit Resistance. . . . . | 0.1 max. | megohm |
|----------------------------------|----------|--------|

## CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

|                                        | <i>Note</i> | <i>Min.</i> | <i>Max.</i> |     |
|----------------------------------------|-------------|-------------|-------------|-----|
| Heater Current . . . . .               | 1           | 0.125       | 0.145       | amp |
| Grid-to Plate Capacitance. . . . .     | -           | 1.2         | 1.6         | μf  |
| Grid-to Cathode Capacitance. . . . .   | -           | 2.2         | 2.8         | μf  |
| Plate-to Cathode Capacitance . . . . . | -           | -           | 0.035       | μf  |

Note 1: With 6.3 volts ac or dc on heater.

◇ In applications where the plate dissipation exceeds 2.5 watts, it is important that a large area of contact be provided between the plate cylinder and the terminal to provide adequate heat conduction.

o Continuous Commercial Service.

● Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115 percent of the carrier conditions.

● Obtained from grid resistor.

\* In grounded-grid circuits the grid-driving voltage and the developed rf plate voltage act in series to supply the load circuit. As a result, the required driving power is increased over that needed for grounded-cathode circuits. The increased driving power is not lost because it appears as output from the grounded-grid stage. If the driving voltage and grid current are increased, the output will always increase.

□ For effect of load resistance on grid current and driving power, refer to TUBE RATINGS—Grid Current and Driving Power in General Section.

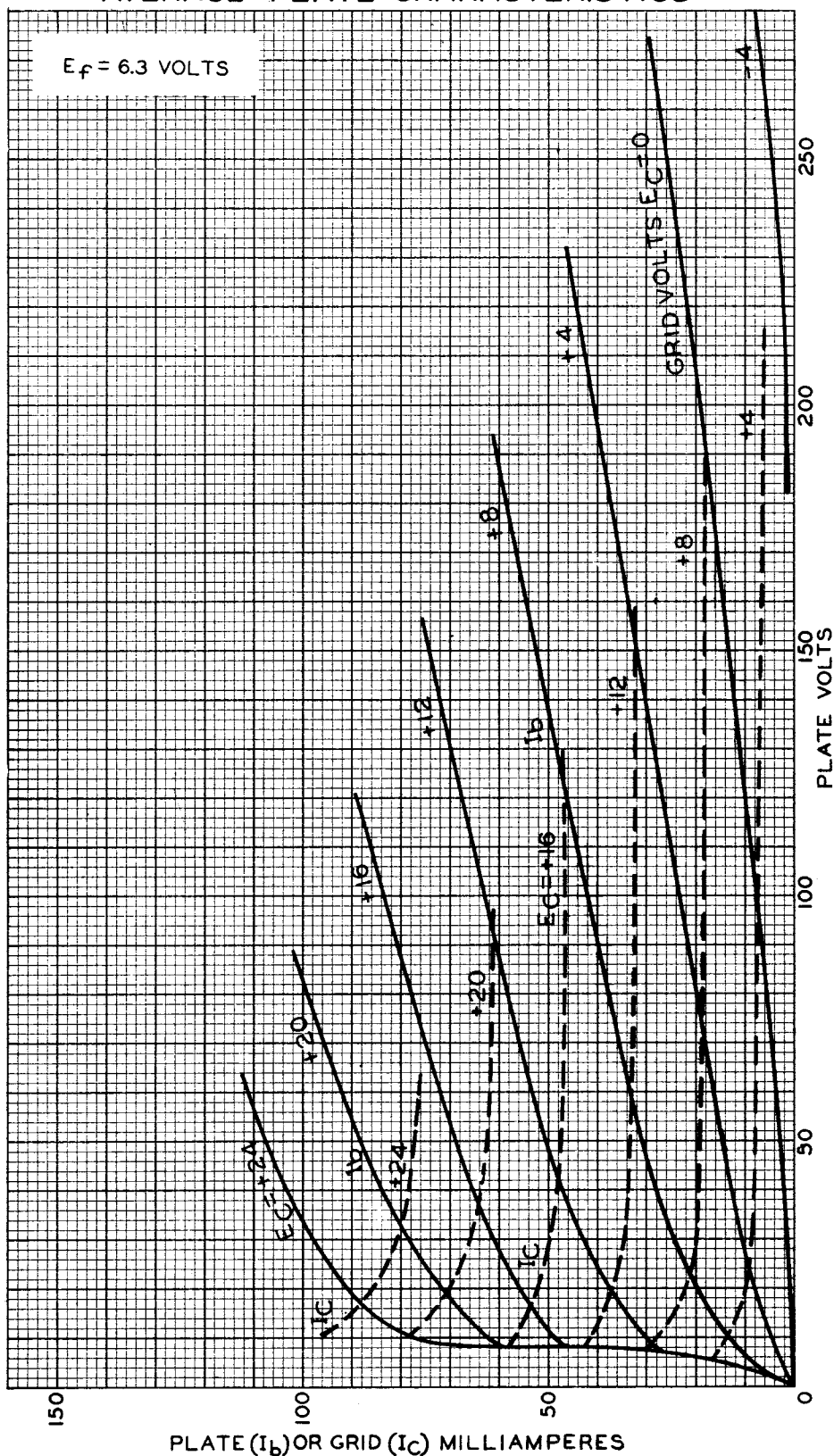
OUTLINE DIMENSIONS and INSTALLATION NOTES for the 5876 are the same as those shown for Type 5675.

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## AVERAGE PLATE CHARACTERISTICS



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