

# Beam Power Tube

90 WATTS CW INPUT (ICAS) UP TO 60 Mc  
 60 WATTS CW INPUT (ICAS) UP TO 175 Mc

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

|                                           |       |       |
|-------------------------------------------|-------|-------|
| Voltage (AC or DC) <sup>a</sup> . . . . . | 13.5  | volts |
| Current at heater volts = 13.5 . . . . .  | 0.585 | amp   |
| Minimum heating time . . . . .            | 60    | sec   |

Transconductance, for plate volts =

|                                                              |      |           |
|--------------------------------------------------------------|------|-----------|
| 200, grid-No.2 volts = 200, and<br>plate ma. = 100 . . . . . | 7000 | $\mu$ hos |
|--------------------------------------------------------------|------|-----------|

Mu-Factor, Grid No.2 to Grid No.1

|                                                                               |     |  |
|-------------------------------------------------------------------------------|-----|--|
| for plate volts = 200, grid-No.2<br>volts = 200 and plate ma. = 100 . . . . . | 4.5 |  |
|-------------------------------------------------------------------------------|-----|--|

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

|                              |           |    |
|------------------------------|-----------|----|
| Grid No.1 to plate . . . . . | 0.24 max. | pf |
|------------------------------|-----------|----|

|                                                                                                        |      |    |
|--------------------------------------------------------------------------------------------------------|------|----|
| Grid No.1 to cathode & grid No.3<br>& internal shield, grid No.2,<br>base sleeve, and heater . . . . . | 13.0 | pf |
|--------------------------------------------------------------------------------------------------------|------|----|

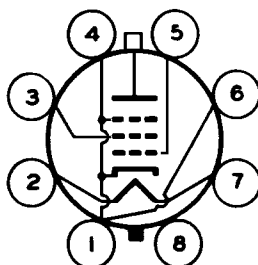
|                                                                                                    |     |    |
|----------------------------------------------------------------------------------------------------|-----|----|
| Plate to cathode & grid No.3<br>& internal shield, grid No.2,<br>base sleeve, and heater . . . . . | 8.5 | pf |
|----------------------------------------------------------------------------------------------------|-----|----|

### Mechanical:

|                                  |                                                                         |
|----------------------------------|-------------------------------------------------------------------------|
| Operating Position . . . . .     | Any                                                                     |
| Maximum Overall Length . . . . . | 3-13/16"                                                                |
| Seated Length . . . . .          | 3-1/8" $\pm$ 1/8"                                                       |
| Maximum Diameter . . . . .       | 1-21/32"                                                                |
| Weight (Approx.) . . . . .       | 2.3 oz                                                                  |
| Bulb . . . . .                   | T12                                                                     |
| Cap . . . . .                    | Small (JEDEC No.C1-1)                                                   |
| Base . . . . .                   | Small-Wafer Octal 8-Pin with "770" Sleeve<br>(JEDEC Group 1, No.B8-150) |

Basing Designation for BOTTOM VIEW . . . . . 7CK

Pin 1 - Cathode,  
Grid No.3,  
Internal  
Shield  
Pin 2 - Heater  
Pin 3 - Grid No.2  
Pin 4 - Same as  
Pin 1



Pin 5 - Grid No.1  
Pin 6 - Same as  
Pin 1  
Pin 7 - Heater  
Pin 8 - Base  
Sleeve  
P Cap - Plate



AF POWER AMPLIFIER & MODULATOR — Class AB<sub>1</sub><sup>c</sup>

## Maximum Ratings, Absolute-Maximum Values:

|                                                                 | CCS <sup>d</sup> | ICAS <sup>e</sup> |       |
|-----------------------------------------------------------------|------------------|-------------------|-------|
| DC PLATE VOLTAGE . . . . .                                      | 600 max.         | 750 max.          | volts |
| DC GRID-NO.2 VOLTAGE . . . . .                                  | 250 max.         | 250 max.          | volts |
| MAX.-SIGNAL DC PLATE CURRENT <sup>f</sup> . . . . .             | 125 max.         | 135 max.          | ma    |
| MAX.-SIGNAL PLATE INPUT <sup>f</sup> . . . . .                  | 60 max.          | 85 max.           | watts |
| MAX.-SIGNAL GRID-NO.2 INPUT <sup>f</sup> . . . . .              | 3 max.           | 3 max.            | watts |
| PLATE DISSIPATION <sup>f</sup> . . . . .                        | 20 max.          | 25 max.           | watts |
| PEAK HEATER-CATHODE VOLTAGE:                                    |                  |                   |       |
| Heater negative with<br>respect to cathode . . . . .            | 135 max.         | 135 max.          | volts |
| Heater positive with<br>respect to cathode . . . . .            | 135 max.         | 135 max.          | volts |
| BULB TEMPERATURE (At hottest<br>point on bulb surface). . . . . | 220 max.         | 220 max.          | °C    |

## Typical CCS Push-Pull Operation:

Values are for 2 tubes

|                                                         |      |      |      |       |
|---------------------------------------------------------|------|------|------|-------|
| DC Plate Voltage . . . . .                              | 400  | 500  | 600  | volts |
| DC Grid-No.2 Voltage <sup>g</sup> . . . . .             | 190  | 185  | 180  | volts |
| DC Grid-No.1 Voltage:                                   |      |      |      |       |
| With fixed-bias source . . . . .                        | -40  | -40  | -45  | volts |
| Peak AF Grid-No.1-to-                                   |      |      |      |       |
| Grid-No.1 Voltage <sup>h</sup> . . . . .                | 80   | 80   | 90   | volts |
| Zero-Signal DC Plate Current . . . . .                  | 63   | 57   | 26   | ma    |
| Max.-Signal DC Plate Current . . . . .                  | 228  | 215  | 200  | ma    |
| Zero-Signal DC Grid-No.2 Current . . . . .              | 2.5  | 2    | 1    | ma    |
| Max.-Signal DC Grid-No.2 Current . . . . .              | 25   | 25   | 23   | ma    |
| Effective Load Resistance<br>(Plate to plate) . . . . . | 4000 | 5500 | 7000 | ohms  |
| Max.-Signal Driving<br>Power (Approx.). . . . .         | 0    | 0    | 0    | watts |
| Max.-Signal Power Output (Approx.) . . . . .            | 55   | 70   | 82   | watts |

## Typical ICAS Push-Pull Operation:

Values are for 2 tubes

|                                                         |      |      |       |
|---------------------------------------------------------|------|------|-------|
| DC Plate Voltage . . . . .                              | 600  | 750  | volts |
| DC Grid-No.2 Voltage <sup>g</sup> . . . . .             | 200  | 195  | volts |
| DC Grid-No.1 Voltage:                                   |      |      |       |
| From fixed-bias source . . . . .                        | -50  | -50  | volts |
| Peak AF Grid-No.1-to-                                   |      |      |       |
| Grid-No.1 Voltage <sup>h</sup> . . . . .                | 100  | 100  | volts |
| Zero-Signal DC Plate Current . . . . .                  | 28   | 23   | ma    |
| Max.-Signal DC Plate Current . . . . .                  | 229  | 220  | ma    |
| Zero-Signal DC Grid-No.2 Current . . . . .              | 1    | 1    | ma    |
| Max.-Signal DC Grid-No.2 Current . . . . .              | 27   | 26   | ma    |
| Effective Load Resistance<br>(Plate to plate) . . . . . | 6000 | 8000 | ohms  |
| Max.-Signal Driving Power (Approx.). . . . .            | 0    | 0    | watts |
| Max.-Signal Power Output (Approx.) . . . . .            | 95   | 120  | watts |



**Maximum Circuit Values (CCS or ICAS):**

Grid-No.1-Circuit Resistance

under any condition:<sup>j</sup>

With fixed bias . . . . . 0.1 max. megohm

With cathode bias . . . . . Not recommended

**AF POWER AMPLIFIER & MODULATOR — Class AB<sub>1</sub>***Triode Connection—Grid No.2 Connected to Plate*

CCS

ICAS

**Maximum Ratings, Absolute-Maximum Values:**

DC PLATE VOLTAGE. . . . . 400 max. 400 max. volts

MAX.—SIGNAL DC PLATE CURRENT<sup>f</sup>. . . 90 max. 90 max. maMAX.—SIGNAL PLATE INPUT<sup>f</sup>. . . . 35 max. 35 max. wattsPLATE DISSIPATION<sup>f</sup>. . . . . 20 max. 25 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with

respect to cathode. . . . . 135 max. 135 max. volts

Heater positive with

respect to cathode. . . . . 135 max. 135 max. volts

BULB TEMPERATURE (At hottest

point on bulb surface) . . . . . 220 max. 220 max. °C

**Typical Push-Pull Operation:***Values are for 2 tubes*

DC Plate Voltage. . . . . 250 400 400 volts

DC Grid-No.1 Voltage. . . . . -50 -100 -100 volts

Peak AF Grid-No.1-to-

Grid-No.1 Voltage<sup>h</sup>. . . . . 100 200 200 volts

Zero-Signal DC Plate Current. . . 120 40 40 ma

Max.—Signal DC Plate Current. . . 125 100 100 ma

Effective Load Resistance

(Plate-to-plate). . . . . 5000 8000 8000 ohms

Max.—Signal Driving

Power (Approx.) . . . . . 0 0 0 watts

Max.—Signal Power

Output (Approx.). . . . . 10 22 22 watts

**Maximum Circuit Values (CCS or ICAS):**

Grid-No.1-Circuit Resistance

under any condition:<sup>j</sup>

With fixed bias . . . . . 0.1 max. megohm

With cathode bias . . . . . 0.5 max. megohm

**AF POWER AMPLIFIER & MODULATOR — Class AB<sub>2</sub><sup>k</sup>****Maximum Ratings, Absolute-Maximum Values:**

CCS

ICAS

DC PLATE VOLTAGE. . . . . 600 max. 750 max. volts

DC GRID-No.2 VOLTAGE. . . . . 250 max. 250 max. volts



|                                                               | CCS       | ICAS     |       |
|---------------------------------------------------------------|-----------|----------|-------|
| MAX.—SIGNAL DC PLATE CURRENT <sup>f</sup> . . . . .           | 125 max.  | 135 max. | ma    |
| MAX.—SIGNAL PLATE INPUT <sup>f</sup> . . . . .                | 62.5 max. | 90 max.  | watts |
| MAX.—SIGNAL GRID-No.2 INPUT <sup>f</sup> . . . . .            | 3 max.    | 3 max.   | watts |
| PLATE DISSIPATION <sup>f</sup> . . . . .                      | 20 max.   | 25 max.  | watts |
| PEAK HEATER-CATHODE VOLTAGE:                                  |           |          |       |
| Heater negative with respect to cathode. . . . .              | 135 max.  | 135 max. | volts |
| Heater positive with respect to cathode. . . . .              | 135 max.  | 135 max. | volts |
| BULB TEMPERATURE (At hottest point on bulb surface) . . . . . | 220 max.  | 220 max. | °C    |

### Typical CCS Push-Pull Operation:

*Values are for 2 tubes*

|                                                            |      |      |      |       |
|------------------------------------------------------------|------|------|------|-------|
| DC Plate Voltage. . . . .                                  | 400  | 500  | 600  | volts |
| DC Grid-No.2 Voltage <sup>g</sup> . . . . .                | 175  | 175  | 165  | volts |
| DC Grid-No.1 Voltage:                                      |      |      |      |       |
| From fixed-bias source. . . . .                            | -41  | -44  | -44  | volts |
| Peak AF Grid-No.1-to-Grid-No.1 Voltage . . . . .           | 95   | 102  | 97   | volts |
| Zero-Signal DC Plate Current. . . . .                      | 33   | 27   | 22   | ma    |
| Max.—Signal DC Plate Current. . . . .                      | 232  | 242  | 207  | ma    |
| Zero-Signal DC Grid-No.2 Current. . . . .                  | 1.1  | 0.7  | 0.6  | ma    |
| Max.—Signal DC Grid-No.2 Current. . . . .                  | 18   | 18   | 17   | ma    |
| Max.—Signal DC Grid-No.1 Current. . . . .                  | 1.6  | 1.9  | 1.1  | ma    |
| Effective Load Resistance (Plate to plate). . . . .        | 3700 | 4600 | 6800 | ohms  |
| Max.—Signal Driving Power (Approx.) <sup>m</sup> . . . . . | 0.2  | 0.3  | 0.2  | watt  |
| Max.—Signal Power Output (Approx.) . . . . .               | 62   | 83   | 90   | watts |

### Typical ICAS Push-Pull Operation:

*Values are for 2 tubes*

|                                                            |      |      |       |
|------------------------------------------------------------|------|------|-------|
| DC Plate Voltage. . . . .                                  | 600  | 750  | volts |
| DC Grid-No.2 Voltage <sup>g</sup> . . . . .                | 190  | 165  | volts |
| DC Grid-No.1 Voltage:                                      |      |      |       |
| From fixed-bias source. . . . .                            | -48  | -46  | volts |
| Peak AF Grid-No.1-to-Grid-No.1 Voltage. . . . .            | 109  | 108  | volts |
| Zero-Signal DC Plate Current. . . . .                      | 28   | 22   | ma    |
| Max.—Signal DC Plate Current. . . . .                      | 270  | 240  | ma    |
| Zero-Signal DC Grid-No.2 Current. . . . .                  | 1.2  | 0.3  | ma    |
| Max.—Signal DC Grid-No.2 Current. . . . .                  | 20   | 20   | ma    |
| Max.—Signal DC Grid-No.1 Current. . . . .                  | 2    | 2.6  | ma    |
| Effective Load Resistance (Plate to plate). . . . .        | 5000 | 7400 | ohms  |
| Max.—Signal Driving Power (Approx.) <sup>m</sup> . . . . . | 0.3  | 0.4  | watt  |
| Max.—Signal Power Output (Approx.) . . . . .               | 113  | 131  | watts |

### Maximum Circuit Values (CCS or ICAS):

|                                            |                  |
|--------------------------------------------|------------------|
| Grid-No.1-Circuit Resistance: <sup>n</sup> |                  |
| With fixed bias . . . . .                  | 30000 max. volts |
| With cathode bias . . . . .                | Not recommended  |

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

*Carrier conditions per tube for use with a maximum modulation factor of 1 and at frequencies up to 60 Mc*

CCS

ICAS

**Maximum Ratings, Absolute-Maximum Values:**

*For maximum plate voltage and maximum plate input above 60 Mc, see Rating Chart I*

|                                                              |           |           |       |
|--------------------------------------------------------------|-----------|-----------|-------|
| DC PLATE VOLTAGE. . . . .                                    | 480 max.  | 600 max.  | volts |
| DC GRID-No.2 VOLTAGE. . . . .                                | 250 max.  | 250 max.  | volts |
| DC GRID-No.1 VOLTAGE. . . . .                                | -150 max. | -150 max. | volts |
| DC PLATE CURRENT. . . . .                                    | 117 max.  | 125 max.  | ma    |
| DC GRID-No.1 CURRENT. . . . .                                | 3.5 max.  | 4 max.    | ma    |
| PLATE INPUT. . . . .                                         | 45 max.   | 67.5 max. | watts |
| GRID-No.2 INPUT. . . . .                                     | 2 max.    | 2 max.    | watts |
| PLATE DISSIPATION. . . . .                                   | 13.3 max. | 16.7 max. | watts |
| PEAK HEATER-CATHODE VOLTAGE:                                 |           |           |       |
| Heater negative with respect to cathode. . . . .             | 135 max.  | 135 max.  | volts |
| Heater positive with respect to cathode. . . . .             | 135 max.  | 135 max.  | volts |
| BULB TEMPERATURE (At hottest point on bulb surface). . . . . | 220 max.  | 220 max.  | °C    |

**Typical Operation:**

|                                             |       |       |       |       |
|---------------------------------------------|-------|-------|-------|-------|
| DC Plate Voltage. . . . .                   | 400   | 475   | 600   | volts |
| DC Grid-No.2 Voltage <sup>P</sup> . . . . . | 150   | 135   | 150   | volts |
| From a series resistor of. . . . .          | 33000 | 51000 | 56000 | ohms  |
| DC Grid-No.1 Voltage <sup>r</sup> . . . . . | -87   | -77   | -87   | volts |
| From a grid resistor of. . . . .            | 27000 | 27000 | 27000 | ohms  |
| Peak RF Grid-No.1 Voltage. . . . .          | 107   | 95    | 107   | volts |
| DC Plate Current. . . . .                   | 112   | 94    | 112   | ma    |
| DC Grid-No.2 Current. . . . .               | 7.8   | 6.4   | 7.8   | ma    |
| DC Grid-No.1 Current (Approx.) . . . . .    | 3.4   | 2.8   | 3.4   | ma    |
| Driving Power (Approx.) . . . . .           | 0.4   | 0.3   | 0.4   | watt  |
| Power Output (Approx.) . . . . .            | 32    | 34    | 52    | watts |

**Maximum Circuit Values (CCS or ICAS):**

|                                                     |            |      |
|-----------------------------------------------------|------------|------|
| Grid-No.1-Circuit Resistance <sup>s</sup> . . . . . | 30000 max. | ohms |
|-----------------------------------------------------|------------|------|

**RF POWER AMPLIFIER & OSCILLATOR — Class C Telegraphy and****RF POWER AMPLIFIER — Class C FM Telephony**

CCS

ICAS

**Maximum Ratings, Absolute-Maximum Values:**

*At frequencies up to 60 Mc. For maximum plate voltage and maximum plate input above 60 Mc, see Rating Chart II.*

|                               |           |           |       |
|-------------------------------|-----------|-----------|-------|
| DC PLATE VOLTAGE. . . . .     | 600 max.  | 750 max.  | volts |
| DC GRID-No.2 VOLTAGE. . . . . | 250 max.  | 250 max.  | volts |
| DC GRID-No.1 VOLTAGE. . . . . | -150 max. | -150 max. | volts |
| DC PLATE CURRENT. . . . .     | 140 max.  | 150 max.  | ma    |



|                                                              | CCS       | ICAS     |       |
|--------------------------------------------------------------|-----------|----------|-------|
| DC GRID-No.1 CURRENT. . . . .                                | 3.5 max.  | 4 max.   | ma    |
| PLATE INPUT . . . . .                                        | 67.5 max. | 90 max.  | watts |
| GRID-No.2 INPUT . . . . .                                    | 3 max.    | 3 max.   | watts |
| PLATE DISSIPATION . . . . .                                  | 20 max.   | 25 max.  | watts |
| PEAK HEATER-CATHODE VOLTAGE:                                 |           |          |       |
| Heater negative with respect to cathode. . . . .             | 135 max.  | 135 max. | volts |
| Heater positive with respect to cathode. . . . .             | 135 max.  | 135 max. | volts |
| BULB TEMPERATURE (At hottest point on bulb surface). . . . . | 220 max.  | 220 max. | °C    |

### Typical Operation:

#### As amplifier up to 60 Mc

|                                             |       |       |       |       |       |
|---------------------------------------------|-------|-------|-------|-------|-------|
| DC Plate Voltage. . . . .                   | 500   | 600   | 600   | 750   | volts |
| DC Grid-No.2 Voltage <sup>t</sup> . . . . . | 170   | 150   | 180   | 160   | volts |
| From a series resistor of . . . . .         | 36000 | 51000 | 43000 | 56000 | ohms  |
| DC Grid-No.1 Voltage <sup>u</sup> . . . . . | -66   | -58   | -71   | -62   | volts |
| From a grid-No.1 resistor of . . . . .      | 27000 | 20000 | 24000 | 20000 | ohms  |
| From a cathode resistor of . . . . .        | 470   | 470   | 430   | 470   | ohms  |
| Peak RF Grid-No.1 Voltage . . . . .         | 84    | 73    | 91    | 79    | volts |
| DC Plate Current. . . . .                   | 135   | 112   | 150   | 120   | ma    |
| DC Grid-No.2 Current. . . . .               | 9     | 9     | 10    | 11    | ma    |
| DC Grid-No.1 Current (Approx.) . . . . .    | 2.5   | 2.8   | 2.8   | 3.1   | ma    |
| Driving Power (Approx.) . . . . .           | 0.2   | 0.2   | 0.3   | 0.2   | watt  |
| Power Output (Approx.) . . . . .            | 48    | 52    | 66    | 70    | watts |

#### As amplifier at 175 Mc

|                                             |       |       |       |
|---------------------------------------------|-------|-------|-------|
| DC Plate Voltage. . . . .                   | 320   | 400   | volts |
| DC Grid-No.2 Voltage <sup>t</sup> . . . . . | 180   | 190   | volts |
| From a series resistor of . . . . .         | 13000 | 20000 | ohms  |
| DC Grid-No.1 Voltage <sup>u</sup> . . . . . | -51   | -54   | volts |
| From a grid resistor of . . . . .           | 27000 | 24000 | ohms  |
| From a cathode resistor of . . . . .        | 330   | 330   | ohms  |
| Peak RF Grid-No.1 Voltage . . . . .         | 64    | 68    | volts |
| DC Plate Current. . . . .                   | 140   | 150   | ma    |
| DC Grid-No.2 Current. . . . .               | 10    | 10.4  | ma    |
| DC Grid-No.1 Current (Approx.) . . . . .    | 2     | 2.2   | ma    |
| Driving Power (Approx.) . . . . .           | 3     | 3     | watts |
| Power Output (Approx.) . . . . .            | 25    | 35    | watts |

### Maximum Circuit Values (CCS or ICAS):

|                                                     |            |      |
|-----------------------------------------------------|------------|------|
| Grid-No.1-Circuit Resistance <sup>s</sup> . . . . . | 30000 max. | ohms |
|-----------------------------------------------------|------------|------|

<sup>a</sup> Heater voltage fluctuations will cause variations in power output. The 8032 is designed to meet the EIA Standard RS152A.

<sup>b</sup> With no external shield.

<sup>c</sup> Subscript 1 indicates that grid-No.1 current does not flow during any part of the input cycle.

<sup>d</sup> Continuous Commercial Service.

<sup>e</sup> Intermittent Commercial and Amateur Service.



- f** Averaged over any audio-frequency cycle or sine-wave form.
- g** Obtained preferably from a separate source or from the plate voltage supply with a voltage divider.
- h** The driver stage should be capable of supplying the No.1 grids of the class AB<sub>1</sub> stage with the specified driving voltage at low distortion.
- j** The type of input coupling network used should not introduce too much resistance in the grid-No.1 circuit. Transformer or impedance coupling devices are recommended.
- k** Subscript 2 indicates that grid-No.1 current flows during some part of the input cycle.
- m** Driver stage should be capable of supplying the specified driving power at low distortion to the No.1 grids of the AB<sub>2</sub> stage.
- n** To minimize distortion, the effective resistance per grid-No.1 circuit of the AB<sub>2</sub> stage should be held at a low value. For this purpose the use of transformer coupling is recommended. In no case, however, should the total dc grid-No.1-circuit resistance exceed 30,000 ohms when the 8032 is operated at maximum ratings. For operation at less than maximum ratings, the dc grid-No.1-circuit resistance may be as high as 100,000 ohms.
- p** Obtained preferably from a separate source modulated with the plate supply, or from the modulated plate supply through a series resistor.
- r** Obtained from grid-No.1 resistor or from a combination of grid-No.1 resistor with either fixed supply or cathode resistor.
- s** When grid No.1 is driven positive and the 8032 is operated at maximum ratings, the total dc grid-No.1-circuit resistance should not exceed the specified value of 30,000 ohms. If this value is insufficient to provide adequate bias, the additional required bias must be supplied by a cathode resistor or fixed supply. For operation at less than maximum ratings, the dc grid-No.1-circuit resistance may be as high as 100,000 ohms.
- t** Obtained preferably from separate source, or from the plate-supply voltage with a voltage divider, or through a series resistor. A series grid-No.2 resistor should be used only when the 8032 is used in a circuit which is not keyed. Grid-No.2 voltage must not exceed 400 volts under key-up conditions.
- u** Obtained from fixed supply, by grid-No.1 resistor, by cathode resistor, or by combination methods.

### CHARACTERISTICS RANGE VALUES

|                                                                                                  | Note | Min.  | Max.  |       |
|--------------------------------------------------------------------------------------------------|------|-------|-------|-------|
| Heater Current. . . . .                                                                          | 1    | 0.550 | 0.620 | amp   |
| Direct Interelectrode Capacitances:                                                              |      |       |       |       |
| Grid No.1 to plate. . . . .                                                                      | 2    | —     | 0.24  | pf    |
| Grid No.1 to cathode & grid<br>No.3 & internal shield, grid<br>No.2, base sleeve, and heater . . | 2    | 12.0  | 15.0  | pf    |
| Plate to cathode & grid<br>No.3 & internal shield, grid<br>No.2, base sleeve, and heater . .     | 2    | 7.3   | 9.5   | pf    |
| Plate Current . . . . .                                                                          | 3    | 46    | 94    | ma    |
| Grid-No.2 Current . . . . .                                                                      | 3    | —     | 5.5   | ma    |
| Dynamic Grid-No.2 Current . . . . .                                                              | 4    | 3     | 21    | ma    |
| Useful Power Output . . . . .                                                                    | 4    | 47    | —     | watts |

Note 1: With 13.5 volts ac on heater.

Note 2: With no external shield.

Note 3: With rated ac heater voltage, dc plate voltage of 300 volts, dc grid-No.2 voltage of 200 volts, and dc grid-No.1 voltage of -33 volts.

Note 4: In a single-tube, self-excited oscillator circuit, and with rated ac heater voltage, dc plate voltage of 600 volts, dc grid-No.2 voltage of 180 volts, grid-No.1 resistor of 30,000  $\pm$  10 per cent ohms, dc plate current of 100 to 112 ma., dc grid-No.1 current of 2 to 2.5 ma., and frequency of 15 Mc.



## MAXIMUM RATINGS vs OPERATING FREQUENCY

| OPERATING<br>FREQUENCY<br>Mc | MAXIMUM PERMISSIBLE PERCENTAGE<br>OF MAXIMUM RATED PLATE VOLTAGE & PLATE INPUT |              |                        |              |
|------------------------------|--------------------------------------------------------------------------------|--------------|------------------------|--------------|
|                              | TELEPHONY                                                                      |              | TELEGRAPHY             |              |
|                              | Class C<br>Plate-Modulated                                                     |              | Class C<br>Unmodulated |              |
|                              | <i>Voltage</i>                                                                 | <i>Input</i> | <i>Voltage</i>         | <i>Input</i> |
| 60                           | 100                                                                            | 100          | 100                    | 100          |
| 80                           | 84                                                                             | 92           | 84                     | 92           |
| 125                          | 65                                                                             | 78           | 65                     | 78           |
| 150                          | 58                                                                             | 72           | 58                     | 72           |
| 160                          | 56                                                                             | 70           | 56                     | 70           |
| 175                          | 53                                                                             | 67           | 53                     | 67           |

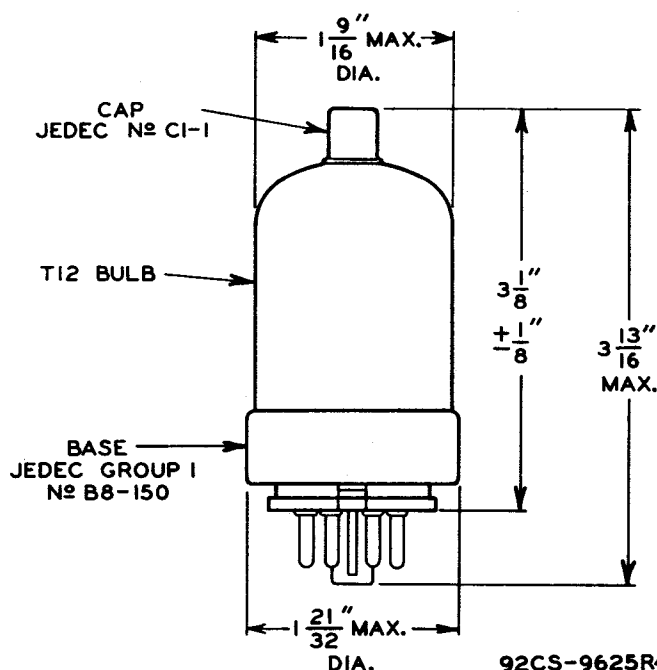
## OPERATING CONSIDERATIONS

The maximum bulb temperature is a tube rating and is to be observed in the same manner as other ratings. The temperature may be measured with temperature-sensitive paint, such as Tempilaq. The latter is made by the Tempil Corporation, 132 West 22nd Street, New York 11, New York.

To insure adequate cooling, it is essential that free circulation of air be provided around the tube. In most cases, no additional air is required.

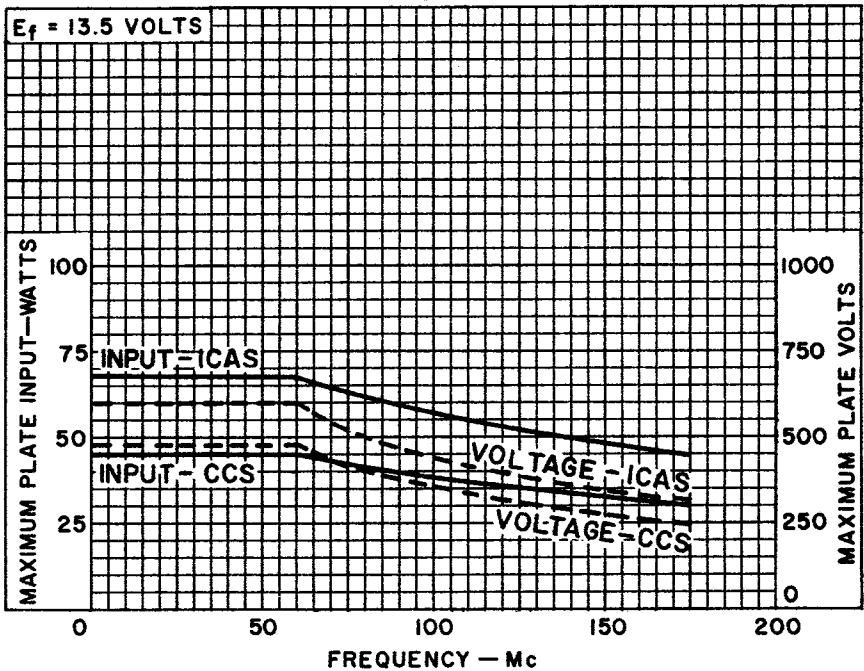
The plate shows no color when the 8032 is operated at full ratings under either CCS or ICAS conditions.

Connections to the plate should be made with a flexible lead to prevent any strain on the seal at the cap.

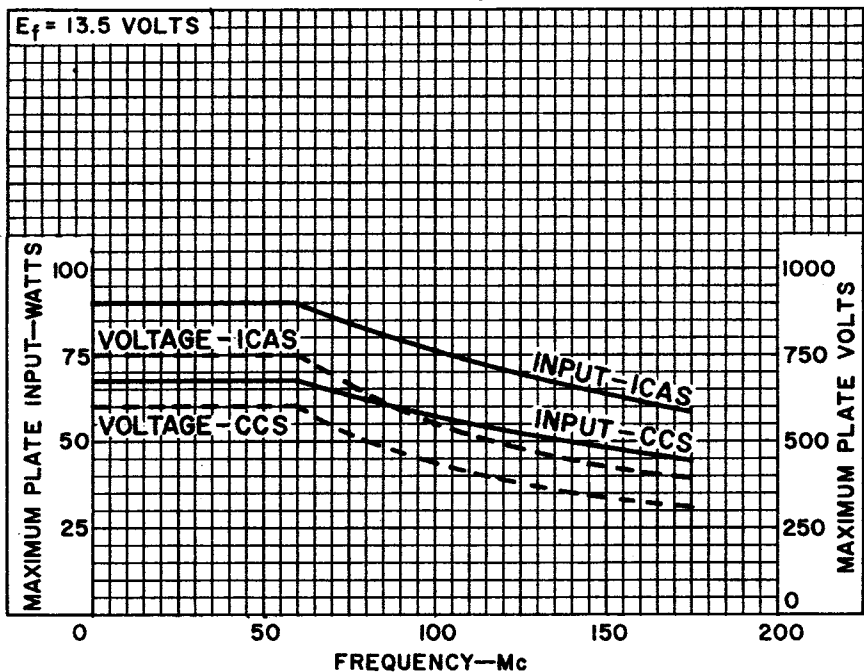


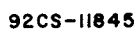
92CS-9625R4

## RATING CHART I Class C Telephony Service

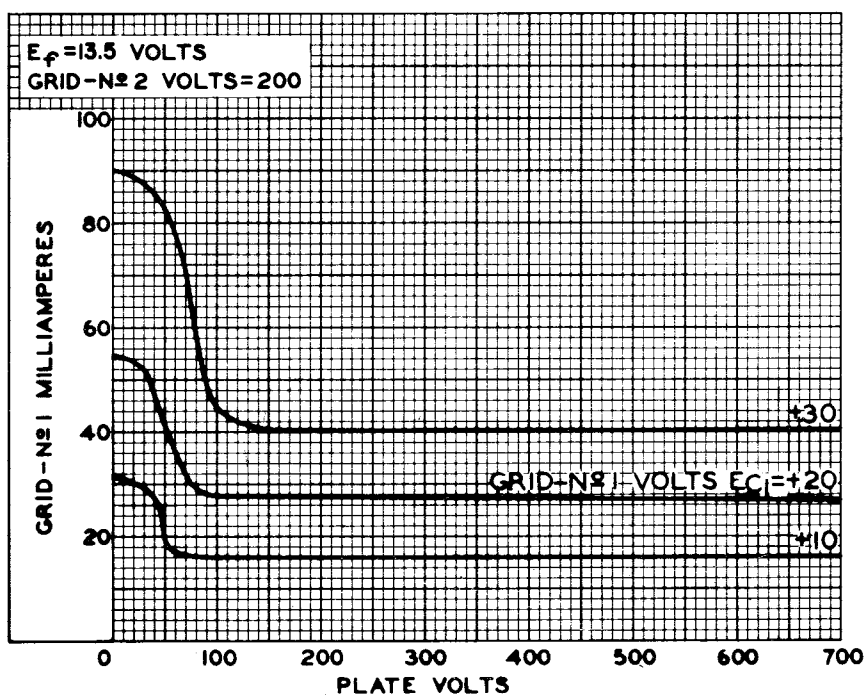


## RATING CHART II Class C Telegraphy Service

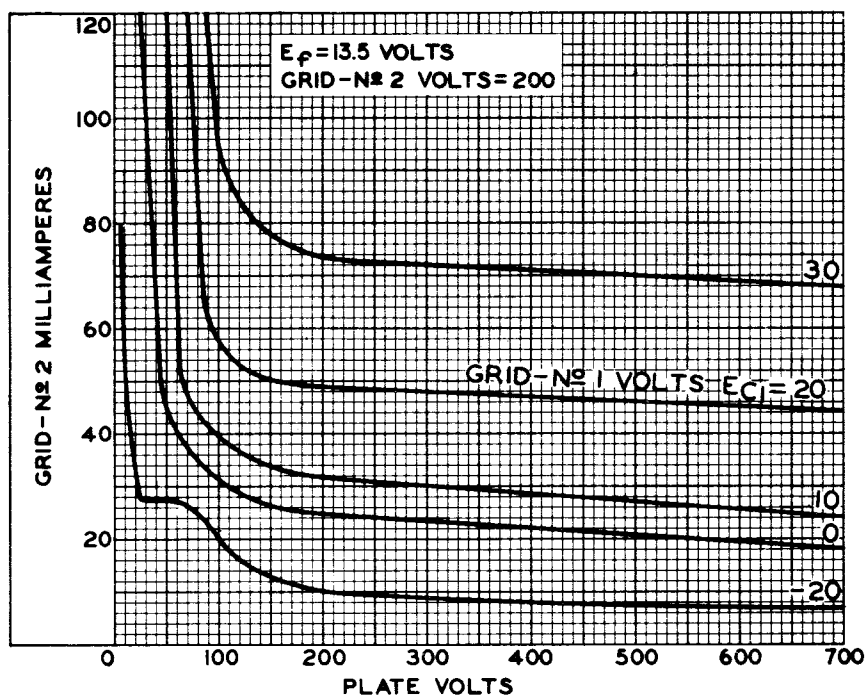




## TYPICAL CHARACTERISTICS



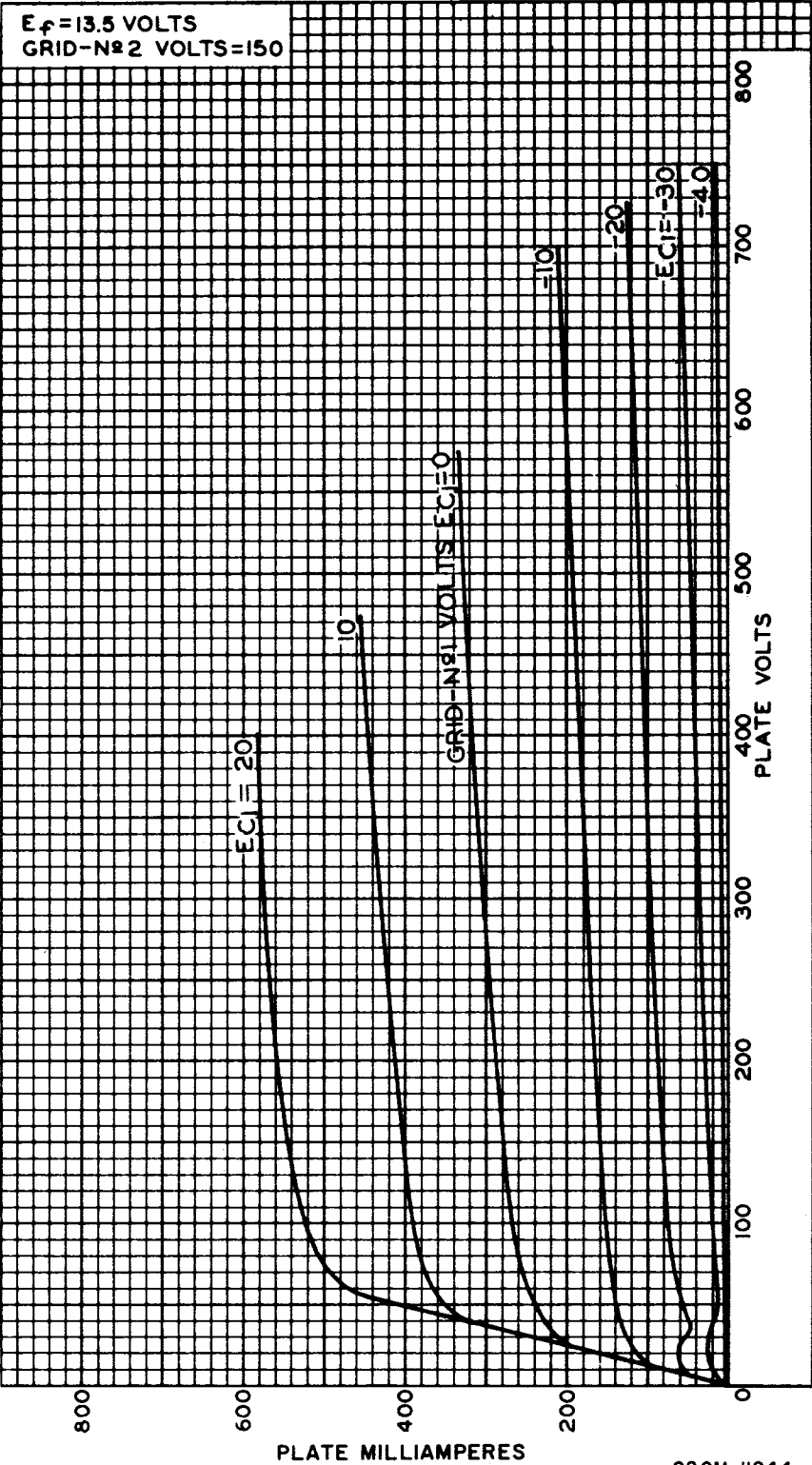
92CS-11847



92CS-11848



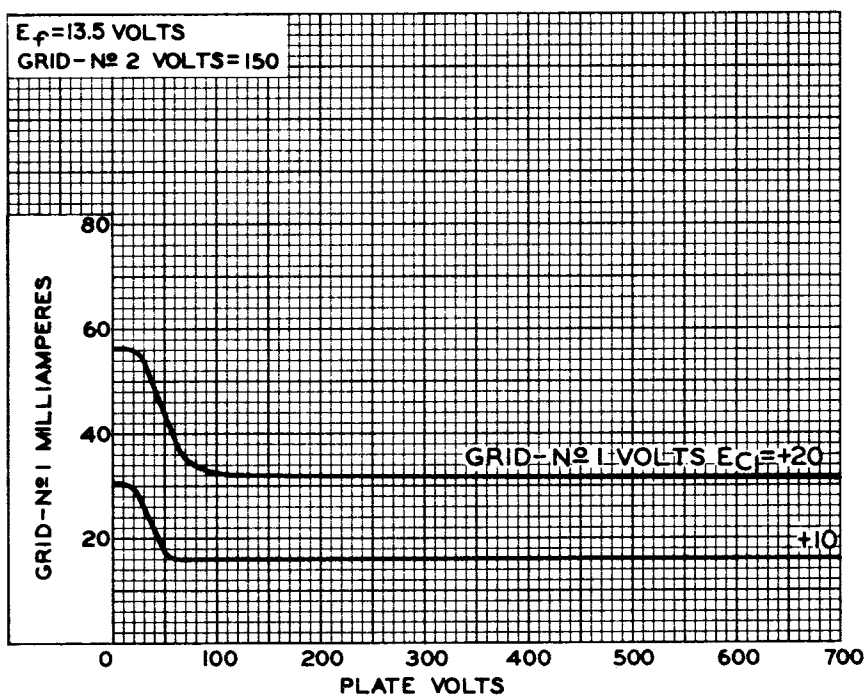
TYPICAL PLATE CHARACTERISTICS



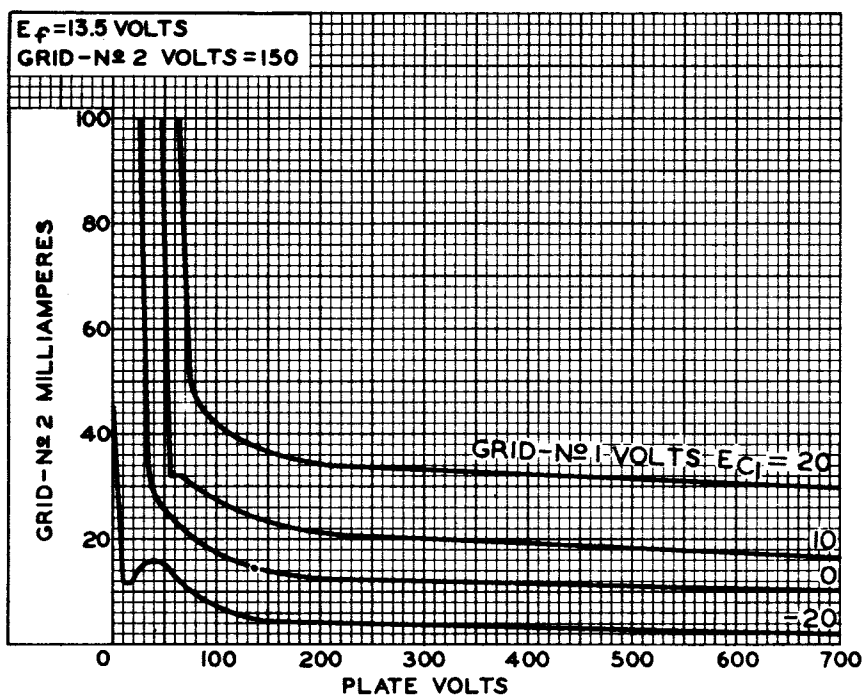
92CM-11844



## TYPICAL CHARACTERISTICS



92CS-11849

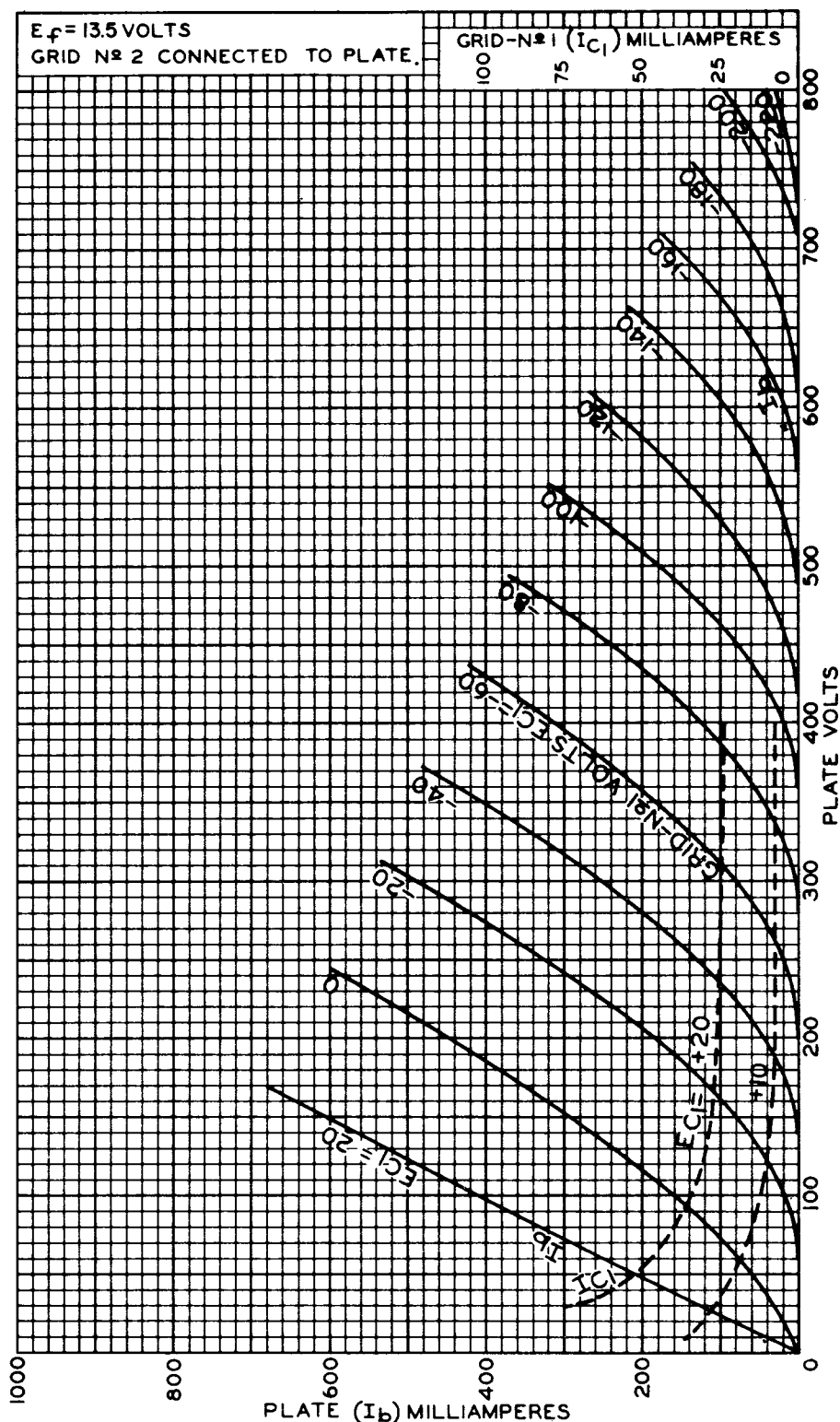


92CS-11850



## TYPICAL CHARACTERISTICS

### Triode Connection



92CM-11846

