

Beam Power Tube

FORCED-AIR COOLED

GROUNDING-GRID TYPE

GENERAL DATA

Electrical:

Filament, Multistrand Thoriated Tungsten:

| | |
|------------------------------|-----------------------|
| Excitation | DC or Single Phase AC |
| Voltage (AC or DC) | 6.0 volts |
| Current | 285 amp |
| Cold Resistance | 0.0025 ohms |

Amplification Factor 32

Direct Interelectrode Capacitances (Approx.):

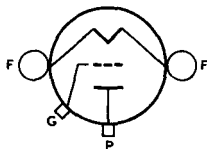
| | | |
|-----------------------------|------|----|
| Grid to plate | 34.0 | pf |
| Grid to filament | 60.0 | pf |
| Plate to filament | 1.0 | pf |

Mechanical:

| | |
|----------------------------------|---------------------------|
| Operating Position | Vertical, filament end up |
| Maximum Overall Length | 17-3/8" |
| Maximum Diameter | 14-1/4" |
| Weight (Approx.) | 85 lbs |
| Radiator | Integral part of tube |
| Mounting | Special |

Terminal Diagram (See *Dimensional Outline*):

F - Filament
G - Grid



P - Plate

Thermal:

Air Flow:

Upward through radiator 1000 min. cfm

The specified air flow at a pressure of 2.1 inches of water should be delivered by a blower vertically upward through the radiator before and during the application of any voltages.

To filament seals 10 cfm

The specified air flow must be directed into the filament header before and during the application of any voltages in order to limit the temperature of the filament and grid seals to the maximum value.

Incoming Air Temperature 45 max. °C

Radiator Temperature 210 max. °C

Bulb Temperature 180 max. °C

Seal Temperature (Filament, grid, and plate) 165 max. °C

← Indicates a change.



AF POWER AMPLIFIER and MODULATOR — Class B

Maximum CCS^a Ratings, Absolute-Maximum Values:

| | | |
|-----------------------------------------------------|------------|-------|
| DC PLATE VOLTAGE. | 11500 max. | volts |
| MAX.—SIGNAL DC PLATE CURRENT ^b | 4 max. | amp |
| MAX.—SIGNAL PLATE INPUT ^b | 40 max. | kw |
| PLATE DISSIPATION ^b | 17.5 max. | kw |

Typical Operation:

Values are for 2 tubes

| | | |
|-----------------------------------------------------|-------|-------|
| DC Plate Voltage. | 10500 | volts |
| DC Grid Voltage | -250 | volts |
| Peak AF Grid-to-Grid Voltage. | 1310 | volts |
| Zero-Signal DC Plate Current. | 1.7 | amp |
| Max.—Signal DC Plate Current. | 7 | amp |
| Effective Load Resistance (plate to plate). | 3300 | ohms |
| Max.—Signal Driving Power (Approx.) | 1500 | watts |
| Max.—Signal Power Output (Approx.) | 50 | kw |

PLATE-MODULATED RF POWER AMPLIFIER — Class C Telephony

*Carrier conditions per tube for use
with a maximum modulation factor of 1*

Maximum CCS^a Ratings, Absolute-Maximum Values:

| | | |
|-----------------------------|------------|-------|
| DC PLATE VOLTAGE. | 9000 max. | volts |
| DC GRID VOLTAGE | -2000 max. | volts |
| DC PLATE CURRENT | 3.2 max. | amp |
| DC GRID CURRENT | 0.65 max. | amp |
| PLATE INPUT | 26 max. | kw |
| PLATE DISSIPATION | 11.5 max. | kw |

Typical Operation in Grounded-Filament Circuit:

| | | |
|--------------------------------------------------|------|-------|
| DC Plate Voltage. | 8000 | volts |
| DC Grid Voltage: ^c | | |
| From a grid resistor of: | | |
| 1280 ohms | -650 | volts |
| Peak RF Grid Voltage. | 1100 | volts |
| DC Plate Current. | 2.5 | amp |
| DC Grid Current (Approx.) ^d | 0.51 | amp |
| Driving Power (Approx.) ^d | 510 | watts |
| Power Output (Approx.) | 15.8 | kw |

Typical Operation in Grounded-Grid Circuit:

*Same values as for Grounded-Filament
Circuit with the following exceptions:*

| | | |
|------------------------------------------------|------|-------|
| Driving Power (Approx.) ^e | 3000 | watts |
| Power Output (Approx.) | 18 | kw |



RF POWER AMPLIFIER & OSCILLATOR — Class C Telegraphy^fMaximum CCS^a Ratings, Absolute-Maximum Values:

| | | |
|-----------------------------|------------|-------|
| DC PLATE VOLTAGE. | 11500 max. | volts |
| DC GRID VOLTAGE | -2000 max. | volts |
| DC PLATE CURRENT. | 4 max. | amp |
| DC GRID CURRENT | 0.65 max. | amp |
| PLATE INPUT | 40 max. | kw |
| PLATE DISSIPATION | 17.5 max. | kw |

Typical Operation in Grounded-Filament Circuit:

| | | | |
|--------------------------------------------------|-------|-------|-------|
| DC Plate Voltage. | 10000 | 11000 | volts |
| DC Grid Voltage: ^g | | | |
| From a grid resistor of: | | | |
| 860 ohms. | -500 | - | volts |
| 900 ohms. | - | -540 | volts |
| From a cathode resistor of: | | | |
| 125 ohms. | -500 | - | volts |
| 130 ohms. | - | -540 | volts |
| Peak RF Grid Voltage. | 1000 | 1050 | volts |
| DC Plate Current. | 3.5 | 3.6 | amp |
| DC Grid Current (Approx.) ^d | 0.58 | 0.61 | amp |
| Driving Power (Approx.) ^d | 515 | 575 | watts |
| Power Output (Approx.). | 25 | 29.5 | kw |

Typical Operation in Grounded-Grid Circuit:

Same values as for Grounded-Grid Circuit with the following exceptions:

| | | | |
|-----------------------------------|------|------|-------|
| Driving Power (Approx.) | 3400 | 3750 | watts |
| Power Output (Approx.). | 28 | 32.5 | kw |

^a Continuous Commercial Service.

^b Averaged over any audio-frequency cycle of sine-wave form.

^c Obtained from a fixed supply, grid resistor, or a combination of both.

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

^e Carrier power of driver modulated 100 per cent.

^f Key-down conditions per tube without amplitude modulation. Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.

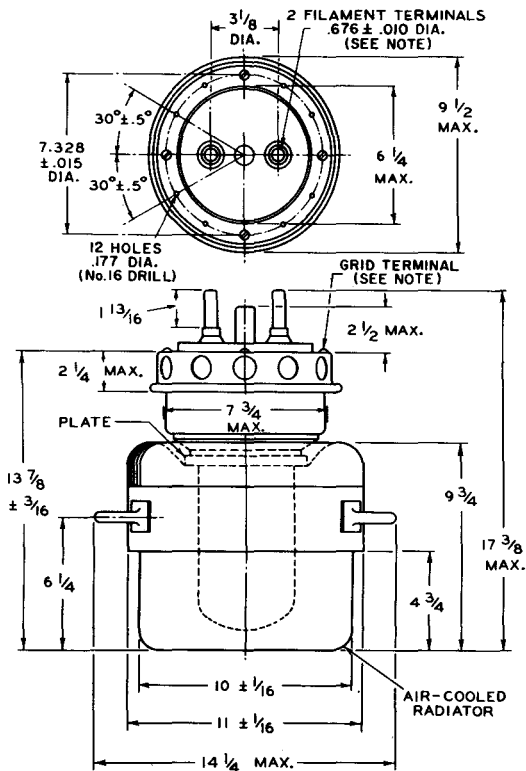
^g Obtained from a fixed supply, a cathode resistor, a grid resistor, or from a combination of a fixed supply and self-bias.



MAXIMUM RATINGS vs OPERATING FREQUENCY

| OPERATING FREQUENCY Mc | MAXIMUM PERMISSIBLE PERCENTAGE OF MAXIMUM-RATED PLATE VOLTAGE & PLATE INPUT | | |
|------------------------------|--------------------------------------------------------------------------------|----------------------------|------------------------|
| | TELEPHONY | | TELEGRAPHY |
| | Class B, Class C Grid or Suppressor Modulated | Class C Plate-Modulated | Class C Unmodulated |
| 30 | 100 | 100 | 100 |
| 50 | 93 | 87 | 87 |
| 75 | 87 | 74 | 74 |
| 100 | 80 | 61 | 61 |





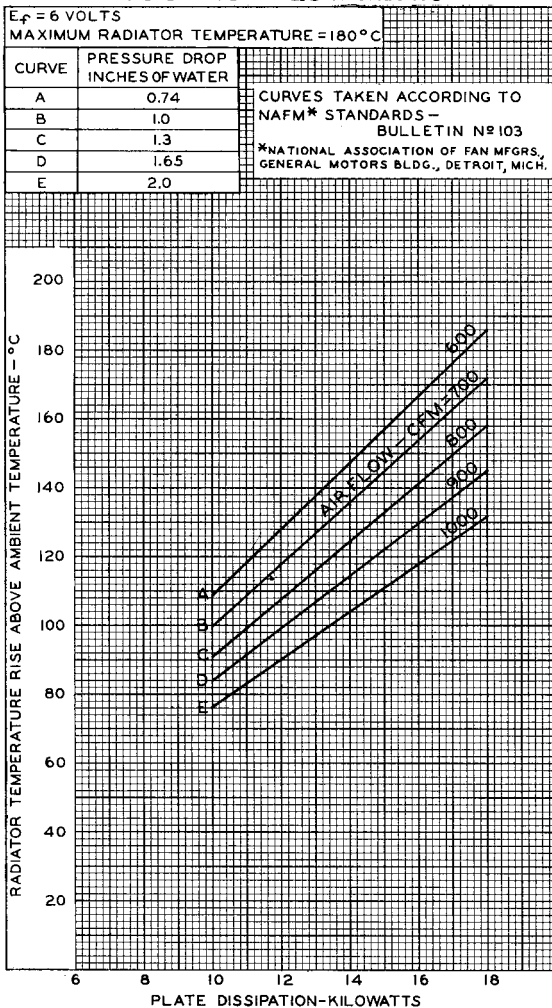
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ALL DIMENSIONS IN INCHES

NOTE: FLEXIBLE CONNECTIONS ARE REQUIRED.



COOLING REQUIREMENTS



92CM-6761



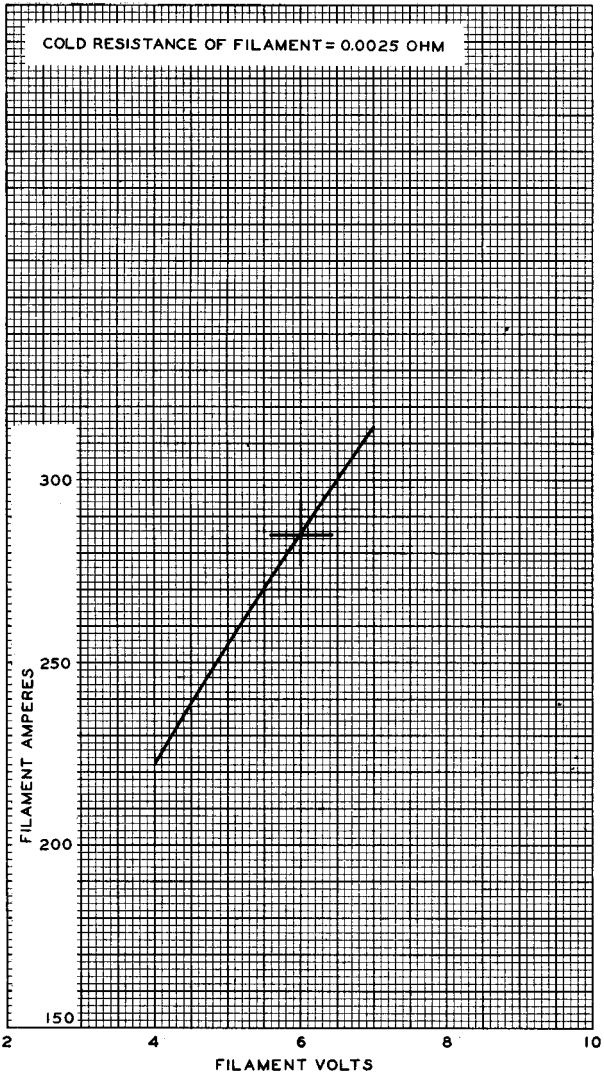


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AVERAGE FILAMENT CHARACTERISTIC

COLD RESISTANCE OF FILAMENT = 0.0025 OHM



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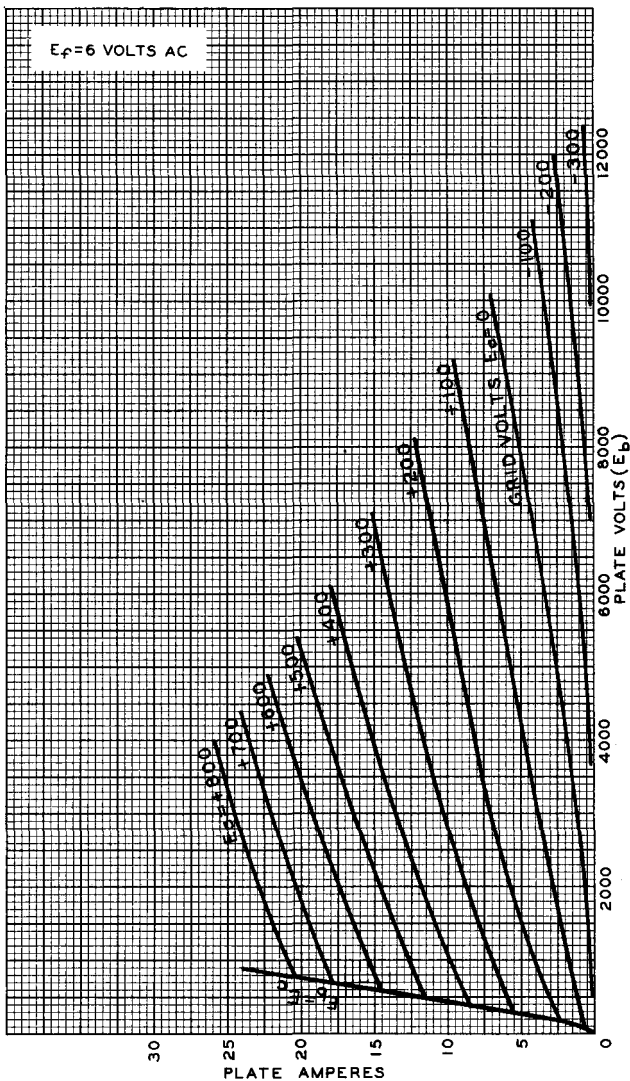
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AVERAGE PLATE CHARACTERISTICS



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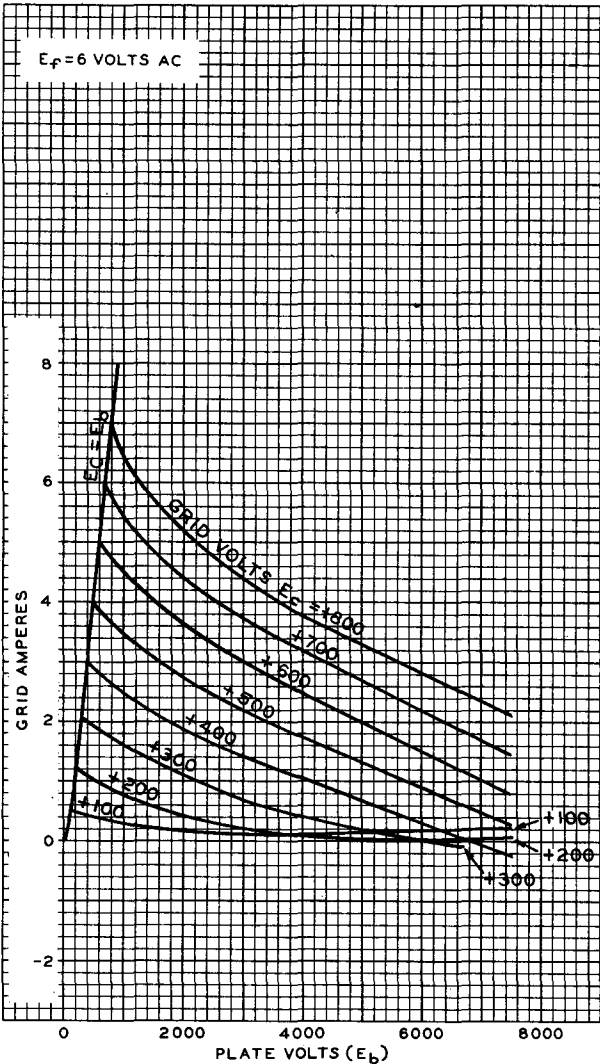
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TYPICAL GRID CHARACTERISTICS

$E_f = 6$ VOLTS AC



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