# 9C25

# POWER TRIODE

## FORCED-AIR-COOLED, GROUNDED-GRID TYPE

### GENERAL DATA

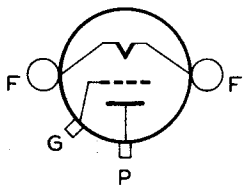
**Electrical:**

| | | |
|---|---|---|
| Filament, Multistrand Thoriated Tungsten: | | |
| Excitation | Single Phase AC or DC | |
| Voltage | 6.0 | ac or dc volts |
| Current | 285 | amp |
| Starting Current: | The filament current should never exceed 425 amperes, even momentarily. | |
| Cold Resistance | 0.0025 | ohms |
| Amplification Factor | 32 | |
| Direct Interelectrode Capacitances (Approx.): | | |
| Grid to Plate | 40 | μμf |
| Grid to Filament | 58 | μμf |
| Plate to Filament | 0.9 | μμf |

**Mechanical:**

Terminal Connections:

F – Filament
G – Grid-Flange Terminal




P – Radiator-Cooled Plate Terminal

| | | |
|---|---|---|
| Mounting Position | Vertical, Filament End Up | |
| Maximum Overall Length | 17-3/8" | |
| Maximum Diameter | 14-1/4" | |
| Radiator | Integral Part of Tube | |
| Mounting | Special | |
| Air Flow: | | |
| Upward through Radiator | 1000 min. | cfm |
| The specified air flow at a pressure of 2 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. | | |
| Output Air Temperature (from Radiator) | 70 max. | °C |
| Radiator Temperature (measured in thermometer well) | 180 max. | °C |
| Bulb Temperature | 180 max. | °C |
| Filament-Seal Temperature | 165 max. | °C |

### AF POWER AMPLIFIER & MODULATOR—Class B

**Maximum CCS● Ratings,** *Absolute Values*:

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

● *: See next page.

# 9C25
# POWER TRIODE

**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 |

RF POWER AMPLIFIER—Class B Telephony

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

**Maximum CCS● Ratings,** ***Absolute Values:***

| | | |
|---|---|---|
| DC PLATE VOLTAGE | 11500 max. | volts |
| DC PLATE CURRENT | 3.2 max. | amp |
| PLATE INPUT | 26 max. | kw |
| PLATE DISSIPATION | 17.5 max. | kw |

**Typical Operation in Grounded-Filament Circuit:**

| | | |
|---|---|---|
| DC Plate Voltage | 10000 | volts |
| DC Grid Voltage | -230 | volts |
| Peak RF Grid Voltage | 400 | volts |
| DC Plate Current | 2.5 | amp |
| DC Grid Current (Approx.)** | 0.016 | amp |
| Driving Power (Approx.)**○ | 800 | watts |
| Power Output (Approx.) | 9.2 | kw |

**Typical Operation in Grounded-Grid Circuit:**

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

| | | |
|---|---|---|
| Driving Power (Approx.): | | |
| Carrier | 800 | watts |
| Crest○ | 4000 | watts |
| Power Output (Approx.) | 10 | kw |

PLATE-MODULATED RF POWER AMPLIFIER—Class C Telephony

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

**Maximum CCS● Ratings,** ***Absolute 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 |

●, *, **, ○: See next page.

# 9C25
# POWER TRIODE

**Typical Operation in Grounded-Filament Circuit:**

| | | |
|---|---|---|
| DC Plate Voltage | 8000 | volts |
| DC Grid Voltage: | | |
| *from a fixed supply of* | -650 | volts |
| *from a grid resistor of* | 1280 | ohms |
| Peak RF Grid Voltage | 1100 | volts |
| DC Plate Current | 2.5 | amp |
| DC Grid Current (Approx.)** | 0.51 | amp |
| Driving Power (Approx.)** | 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.)◊ | 3000 | watts |
| Power Output (Approx.) | 18 | kw |

RF POWER AMPLIFIER & OSCILLATOR—Class C Telegraphy

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

**Maximum CCS● Ratings,** *Absolute 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: | | | |
| *from a fixed supply of* | -500 | -540 | volts ← |
| *from a grid resistor of* | 860 | 900 | ohms |
| *from a cathode resistor of* | 125 | 130 | ohms |
| Peak RF Grid Voltage | 1000 | 1050 | volts |
| DC Plate Current | 3.5 | 3.6 | amp |
| DC Grid Current (Approx.)** | 0.58 | 0.61 | amp |
| Driving Power (Approx.)** | 515 | 575 | watts |
| Power Output (Approx.) | 25 | 29.5 | kw |

**Typical Operation in Grounded-Grid Circuit:**

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

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

● CCS - Continuous Commercial Service.

* Averaged over any audio-frequency cyle of sine-wave form.

**, ○, ◊, □: See next page. ← Indicates a change.

# 9C25
# POWER TRIODE

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

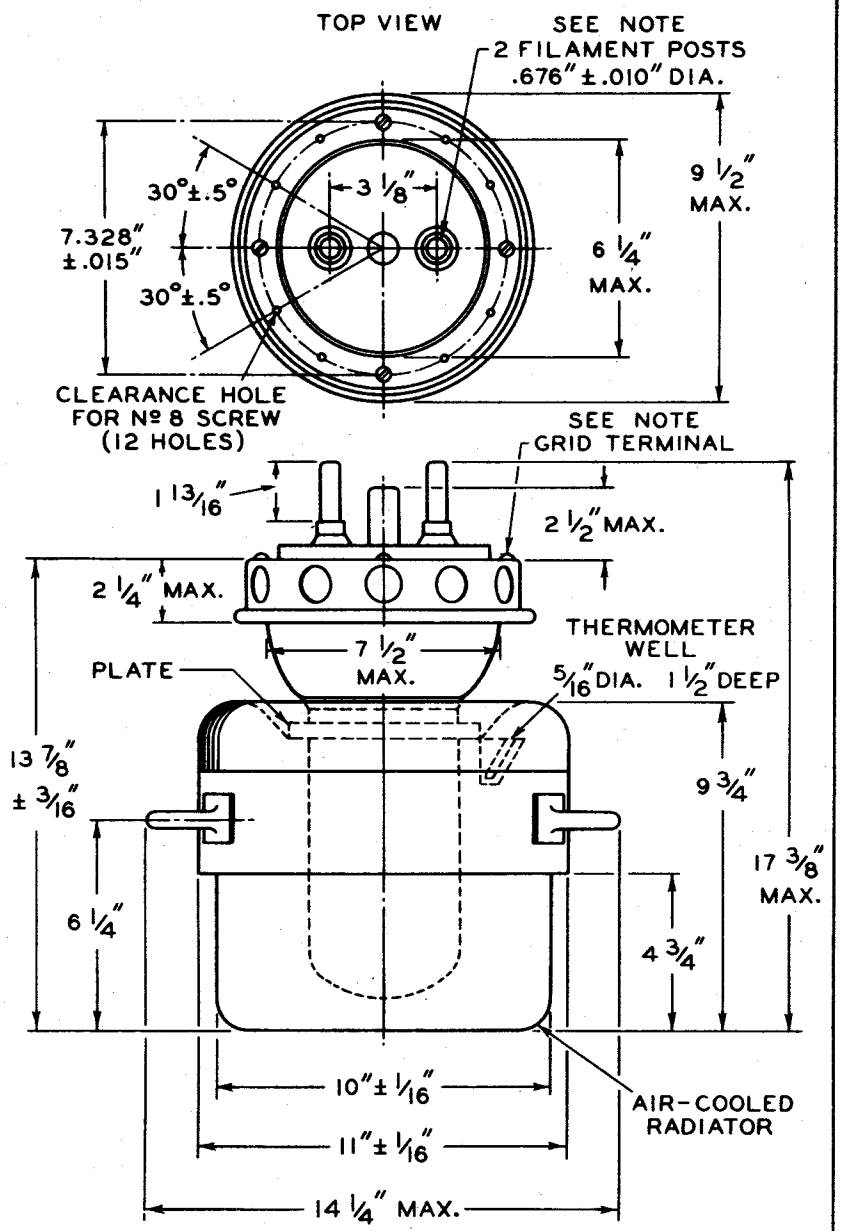
o At crest of audio-frequency cycle with modulation factor of 1.0.

♦ Carrier power of driver modulated 100%.

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

Data on operating frequencies for the 9C25 are given on the Sheet TRANS. TUBE RATINGS vs FREQUENCY.

# 9C25
# POWER TRIODE




NOTE: FLEXIBLE CONNECTIONS ARE REQUIRED.

92CM-6750

9C25

# 9C25

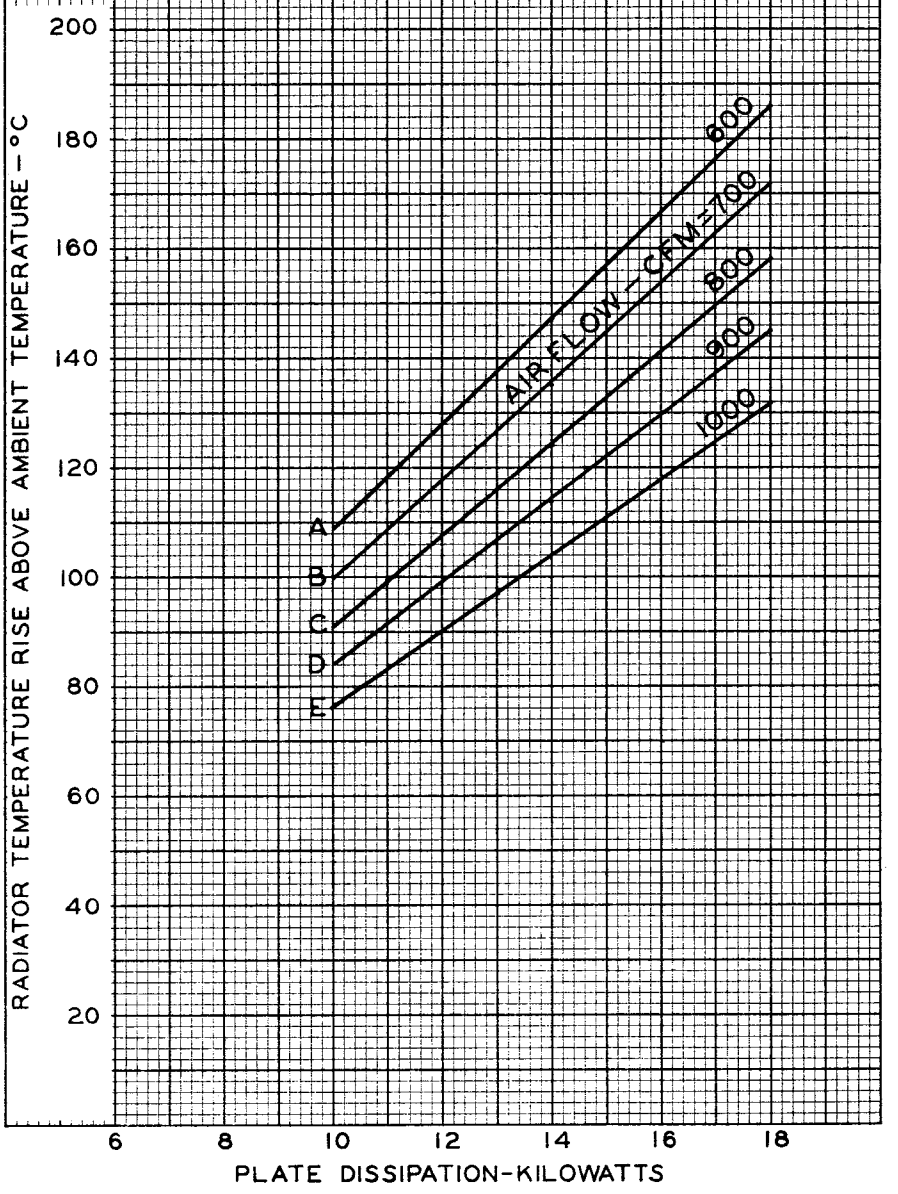
## COOLING REQUIREMENTS

$E_f$ = 6 VOLTS
MAXIMUM RADIATOR TEMPERATURE = 180°C

| CURVE | PRESSURE DROP INCHES OF WATER |
|---|---|
| A | 0.74 |
| B | 1.0 |
| C | 1.3 |
| D | 1.65 |
| E | 2.0 |

CURVES TAKEN ACCORDING TO NAFM* STANDARDS — BULLETIN Nº 103

*NATIONAL ASSOCIATION OF FAN MFGRS., GENERAL MOTORS BLDG., DETROIT, MICH.



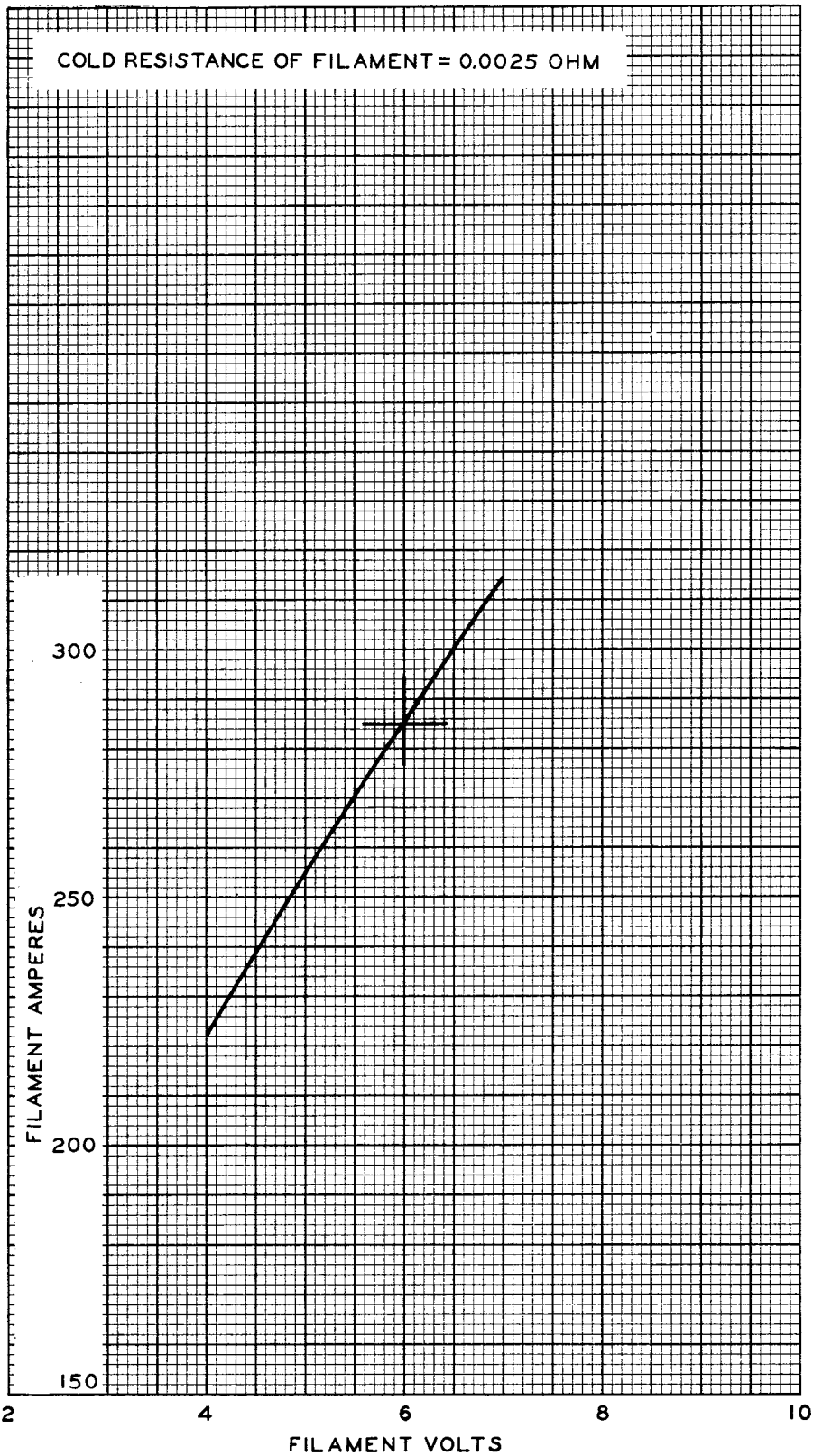

APRIL 29, 1946

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6761

# 9C25

## AVERAGE FILAMENT CHARACTERISTIC




MAY 4,1949

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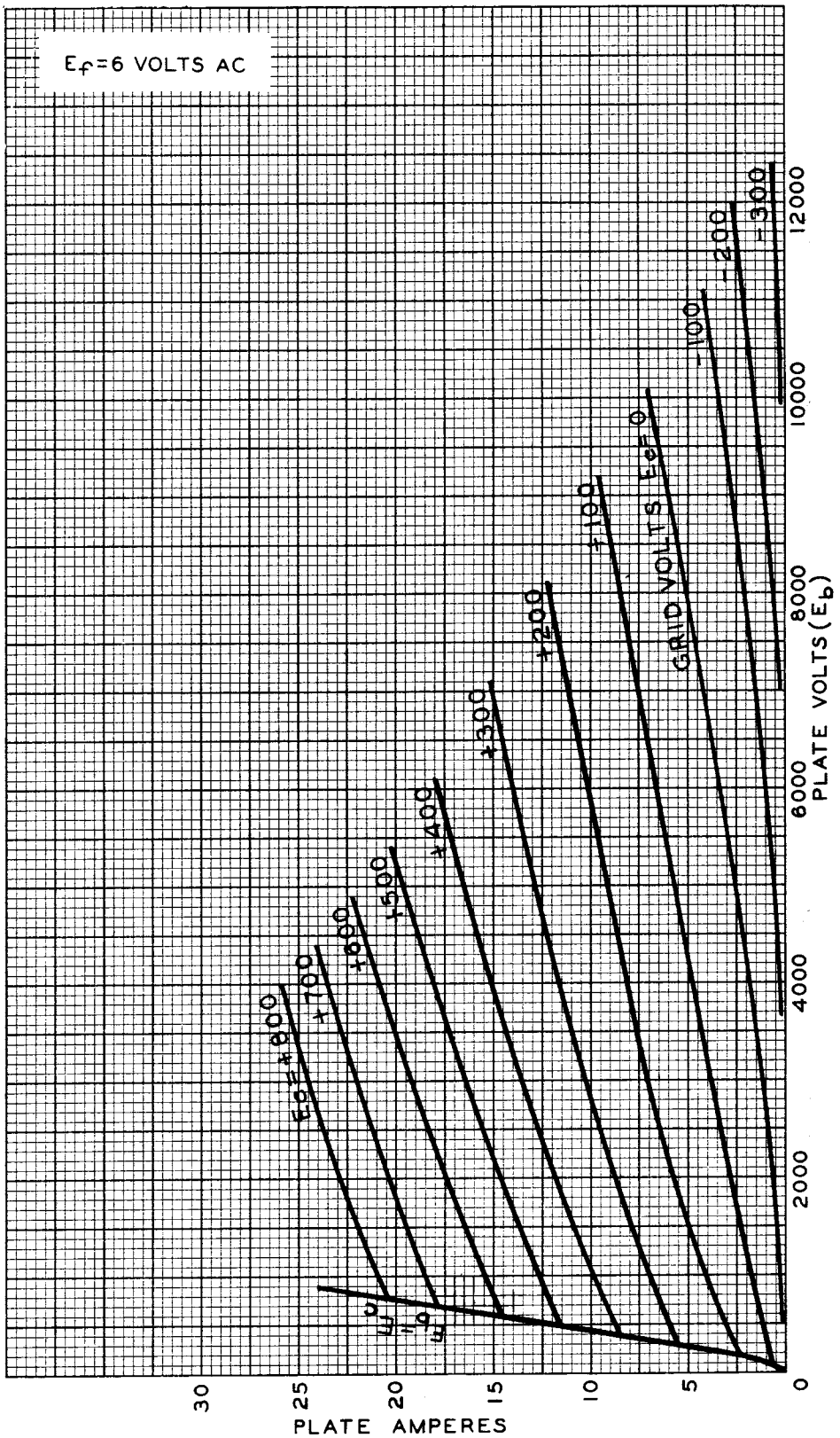
92CM-7269

9C25

# 9C25

## AVERAGE PLATE CHARACTERISTICS




MAY 4,1949

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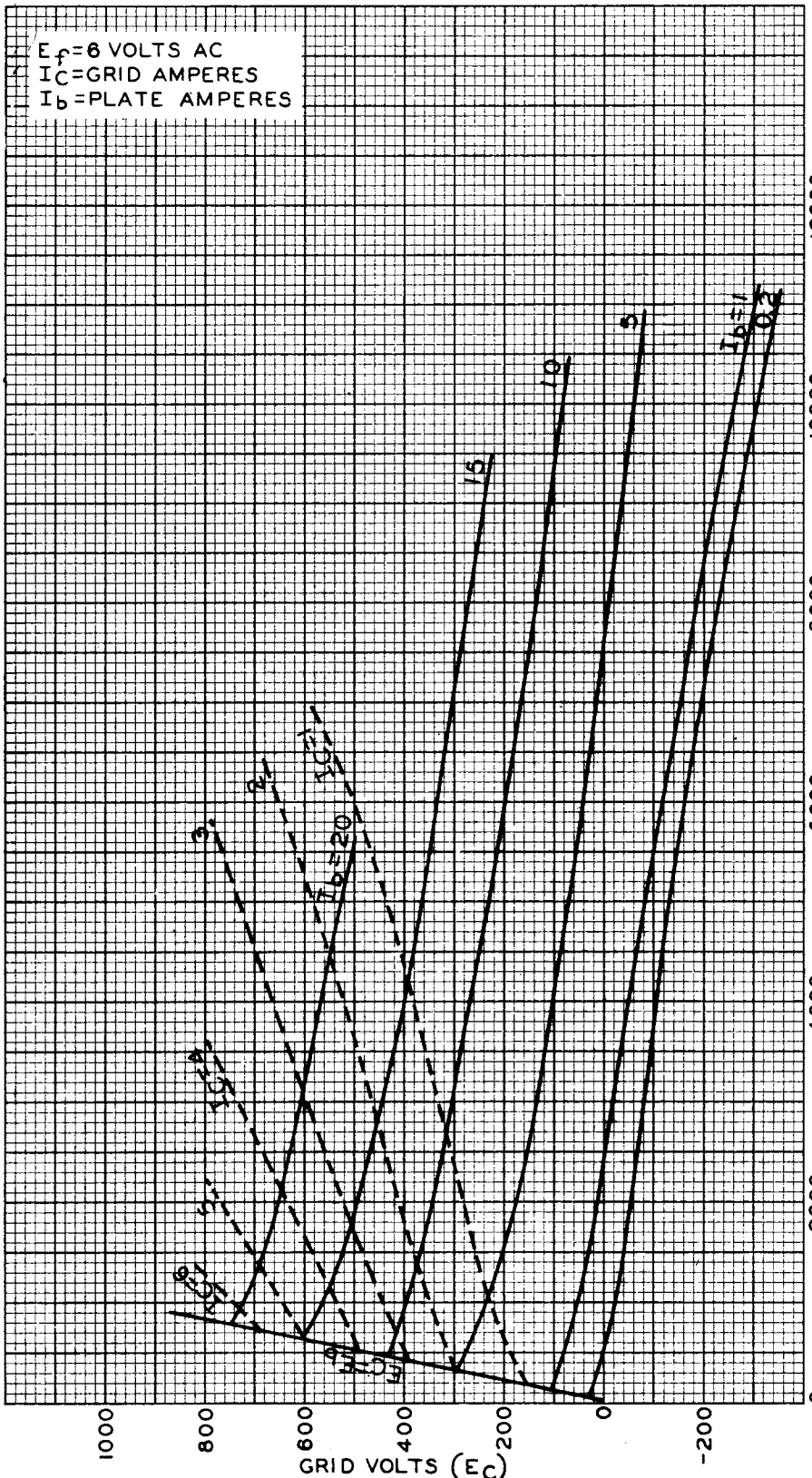
92CM-7270

RCA

# 9C25

## AVERAGE CONSTANT-CURRENT CHARACTERISTICS




MAR.30,1949

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92CM-7234

9C25

# 9C25

## TYPICAL GRID CHARACTERISTICS