



# 207

## POWER TRIODE

WATER COOLED

### GENERAL DATA

#### Electrical:

Filament, Tungsten:

Voltage. . . . . 22 . . . . . ac or dc volts

Current. . . . . 52 . . . . . amp

Starting Current: The filament current must never exceed 100 amperes, even momentarily.

Cold Resistance. . . . . 0.03 . . . . . ohm

NOTE: This tube can often be operated with reduced filament voltage as explained on sheet TYPES OF CATHODES in the General Section.

Amplification Factor . . . . . 20

Direct Interelectrode Capacitances (Approx.):

Grid to Plate. . . . . 27 . . . . .  $\mu\mu\text{f}$

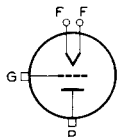
Grid to Filament . . . . . 18 . . . . .  $\mu\mu\text{f}$

Plate to Filament. . . . . 2 . . . . .  $\mu\mu\text{f}$

#### Mechanical:

Terminal Connections:

F - Filament  
G - Grid  
Terminal



P - Water-Cooled  
Plate  
Terminal

Mounting Position. . . . . Vertical, Filament End Up

Maximum Overall Length . . . . . 20-1/4"

Maximum Radius . . . . . 6-1/2"

Water Flow . . . . . 3 to 8 gpm

The water flow must start before the application of any voltages and must continue for 2 minutes after the removal of all voltages.

Outlet Water Temperature . . . . . 70 max. °C

Water Pressure in Jacket . . . . . 80 max. psi

#### Components:

Water Jacket . . . . . RCA MI-7415

Gasket . . . . . RCA MI-7440

### AF POWER AMPLIFIER & MODULATOR - Class B

#### Maximum CCS\* Ratings, Absolute Values:

DC PLATE VOLTAGE . . . . . 15000 max. volts

MAX.-SIGNAL DC PLATE CURRENT\*. . . . . 2 max. amp

MAX.-SIGNAL PLATE INPUT\* . . . . . 20 max. kw

PLATE DISSIPATION\* . . . . . 7.5 max. kw

#### Typical Operation:

Values are for 2 tubes

DC Plate Voltage . . . . . 6000 10000 12500 volts

DC Grid Voltage† . . . . . -210 -410 -575 volts

Peak AF Grid-to-Grid Voltage . . . . . 1520 2140 2300 volts

Zero-Signal DC Plate Current . . . . . 0.5 0.5 0.4 amp

Max.-Signal DC Plate Current . . . . . 2.5 3.2 2.8 amp

\* , \* , †: See next page.

← Indicates a change.

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## POWER TRIODE

Effective Load Resistance (Plate-to-plate) . . .	4200	6400	10000	ohms
Max.-Signal Driving Power (Approx.) . . .	190	380	400	watts
Max.-Signal Power Output (Approx.) . . .	8	20	22.5	kw

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

## 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 . . . . .	15000	max.	volts
DC PLATE CURRENT . . . . .	1	max.	amp
PLATE INPUT . . . . .	15	max.	kw
PLATE DISSIPATION . . . . .	10	max.	kw

## Typical Operation:

DC Plate Voltage . . . . .	6000	10000	14000	volts
DC Grid Voltage† . . . . .	-225	-440	-650	volts
Peak RF Grid Voltage . . . . .	400	600	730	volts
DC Plate Current . . . . .	0.62	0.93	1	amp
Driving Power (Approx.) <sup>▲</sup> . . . .	72	16	0	watts
Power Output (Approx.) . . . . .	1	2.5	4	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 . . . . .	10000	max.	volts
DC GRID VOLTAGE . . . . .	-3000	max.	volts
DC PLATE CURRENT . . . . .	1	max.	amp
DC GRID CURRENT . . . . .	0.2	max.	amp
PLATE INPUT . . . . .	10	max.	kw
PLATE DISSIPATION . . . . .	6.6	max.	kw

## Typical Operation:

DC Plate Voltage . . . . .	6000	8000	10000	volts
DC Grid Voltage <sup>⊕</sup> * . . . . .	-1200	-1600	-2000	volts
Peak RF Grid Voltage . . . . .	1860	2300	2660	volts
DC Plate Current . . . . .	0.76	0.78	0.75	amp
DC Grid Current (Approx.) . . . .	0.15	0.14	0.07	amp
Driving Power (Approx.) . . . . .	280	325	185	watts
Power Output (Approx.) . . . . .	3.5	5	6	kw

† For dc filament supply.

<sup>▲</sup> At crest of audio-frequency cycle with modulation factor of 1.0.

• obtained by grid resistor or by partial self-bias methods.

⊕, \*; See next page.



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## RF POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Key-down conditions per tube without modulation <sup>□</sup>

### Maximum CCS<sup>●</sup> Ratings, Absolute Values:

DC PLATE VOLTAGE . . . . .	15000 max.	volts
DC GRID VOLTAGE. . . . .	-3000 max.	volts
DC PLATE CURRENT . . . . .	2 max.	amp
DC GRID CURRENT. . . . .	0.2 max.	amp
PLATE INPUT. . . . .	30 max.	kw
PLATE DISSIPATION. . . . .	10 max.	kw

### Typical Operation:

DC Plate Voltage . . . . .	8000	10000	12000	volts
DC Grid Voltage <sup>▲▲*</sup> . . . . .	-1000	-1200	-1600	volts
Peak RF Grid Voltage . . . . .	1730	2050	2650	volts
DC Plate Current . . . . .	1.10	1.33	1.67	amp
DC Grid Current (Approx.) . . . . .	0.17	0.12	0.09	amp
Driving Power (Approx.) . . . . .	295	245	235	watts
Power Output (Approx.) . . . . .	6.5	10	15	kw

● Continuous Commercial Service.

\* For ac filament supply.

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

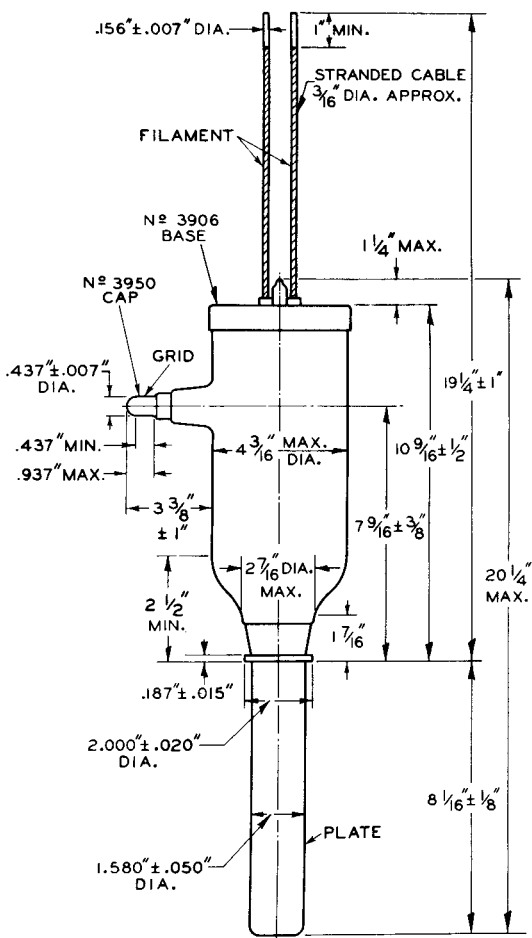
▲▲ obtained from fixed supply, by grid resistor, or by cathode resistor.

Data on operating frequencies for the 207 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.

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# 207 POWER TRIODE



92CM-4326R3

SEPT. 30, 1948

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

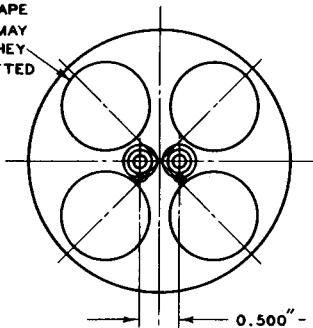
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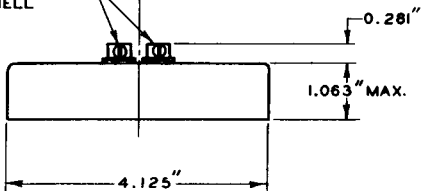
# 207 POWER TRIODE

## TERMINAL-SUPPORT SHELL N<sup>o</sup> 3906

SIZE AND SHAPE  
OF HOLES MAY  
VARY OR THEY  
MAY BE OMITTED



BOTH BUSHINGS  
INSULATED FROM  
SHELL



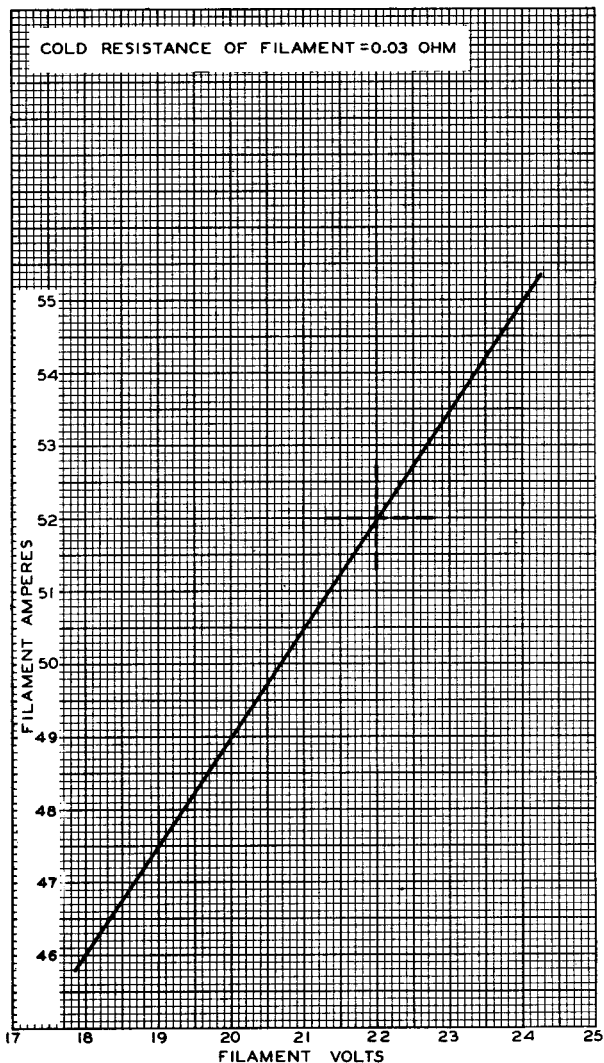
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## AVERAGE FILAMENT CHARACTERISTIC



SEPT. 2, 1948

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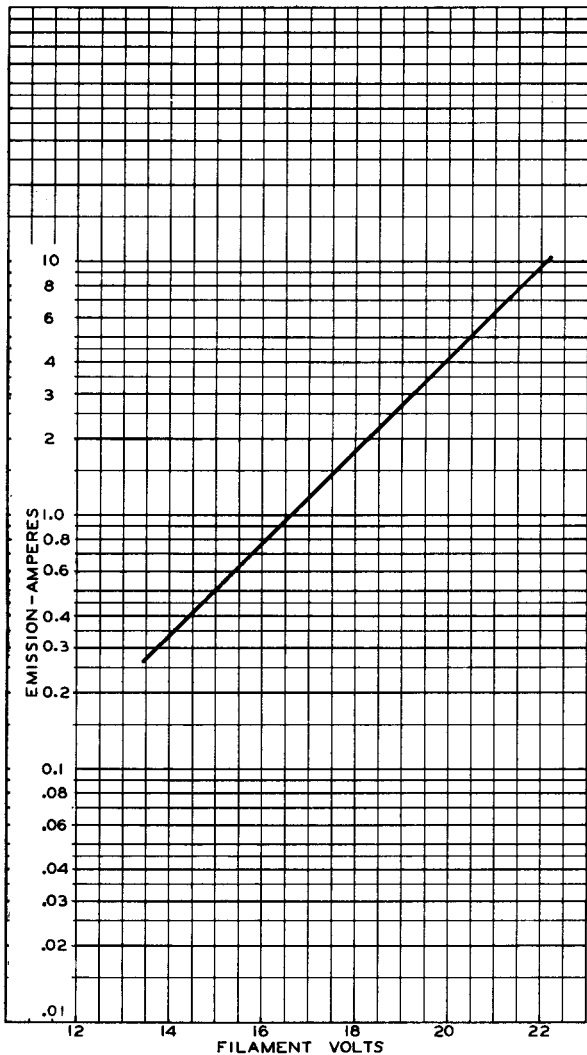
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### AVERAGE FILAMENT-EMISSION CHARACTERISTIC



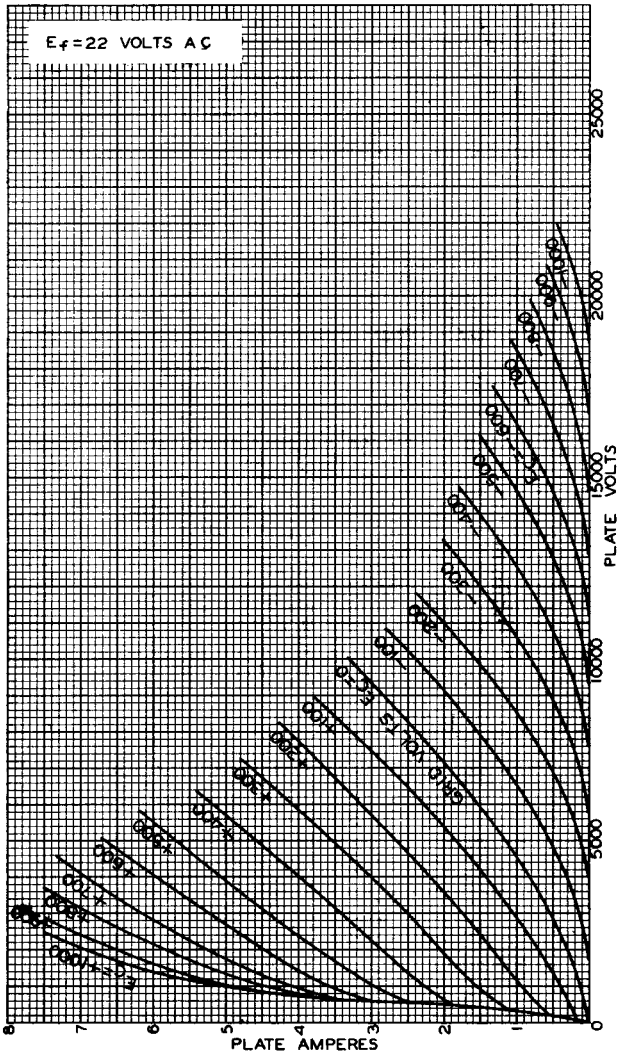
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92CM-4551



## AVERAGE PLATE CHARACTERISTICS



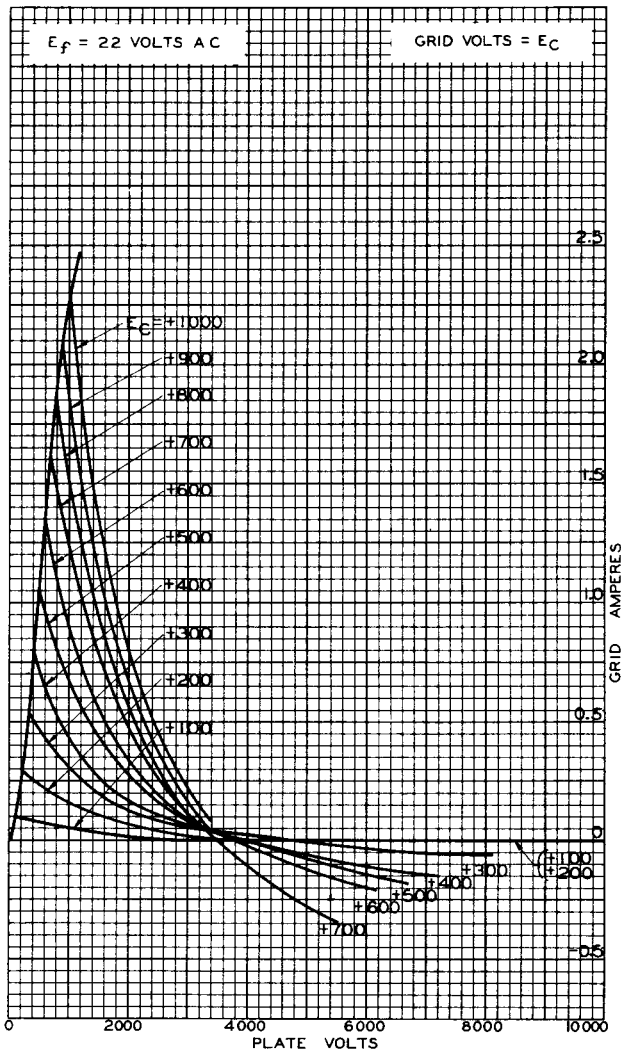




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### TYPICAL CHARACTERISTICS



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## AVERAGE CONSTANT-CURRENT CHARACTERISTICS

