



4E27A

4E27A/5-125B

POWER PENTODE

GENERAL DATA

Electrical:

Filament, Thoriated Tungsten:

Voltage. 5.0 ac or dc volts
Current. 7.5 amp

Transconductance (Approx.) for plate volts =
2500, grid-No.3 volts = 0, grid-No.2 volts = 500,
and plate ma. = 50 2150 μ hos

Mu-Factor, Grid No.2 to Grid No.1. 5

Direct Interelectrode Capacitances:

Grid No.1 to Plate*. . . 0.08 μ f
Input. 10.5 μ f
Output 4.7 μ f

Mechanical:

Mounting Position. Vertical, base down

Overall Length 5-15/16" $\pm$ 1/4"

Seated Length. 5-3/8" $\pm$ 1/4"

Maximum Diameter 2-3/4"

Plate Terminal See Outline Drawing

Base Ventilated Medium-Metal-Shell Giant 7-Pin

Basing Designation for BOTTOM VIEW 7BM

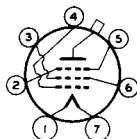
Pin 1-Filament

Pin 2-Grid No.3

Pin 3-Grid No.2

Pin 4-Grid No.1

Pin 5-Same as Pin 2



Pin 6-Same as Pin 3

Pin 7-Filament

Bulb Terminal-
Plate

Seal Temperature (Plate and stem). 225 max. $^{\circ}$ C

Bulb Temperature (At hottest point). 250 max. $^{\circ}$ C

Components:

Socket Johnson No.122-237, or equivalent

Heat-Radiating Plate Connector

(Supplied with tube). Eimac HR-5

AF POWER AMPLIFIER & MODULATOR--Class B

Maximum CCS^o Ratings, Absolute Values:

Values are per tube

DC PLATE VOLTAGE 4000 max. volts

DC GRID-No.2 (SCREEN) VOLTAGE. 750 max. volts

DC GRID-No.1 (CONTROL-GRID) VOLTAGE. -500 max. volts

DC PLATE CURRENT 200 max. ma

PLATE DISSIPATION. 125 max. watts

GRID-No.3 (SUPPRESSOR) DISSIPATION 20 max. watts

* with no external shielding and base shell connected to ground.

o: See next page.

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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GRID-No.2 DISSIPATION.	20 max. watts
GRID-No.1 DISSIPATION.	5 max. watts

PLATE-MODULATED RF POWER AMPLIFIER--Class C Telephony

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

Maximum CCS^o Ratings, Absolute Values:

DC PLATE VOLTAGE	3200 max. volts
DC GRID-No.2 (SCREEN) VOLTAGE.	750 max. volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE.	-500 max. volts
DC PLATE CURRENT	160 max. ma
PLATE DISSIPATION.	85 max. watts
GRID-No.3 (SUPPRESSOR) DISSIPATION	20 max. watts
GRID-No.2 DISSIPATION.	20 max. watts
GRID-No.1 DISSIPATION.	5 max. watts

→ Typical Operation with Grid No.3 Grounded and Grid-No.2 Volts = 500:

DC Plate Voltage	2000	2500	volts
DC Grid-No.2 Voltage	500	500	volts
DC Grid-No.1 Voltage	-200	-200	volts
Peak AF Grid-No.2 Voltage.	350	350	volts
Peak RF Grid-No.1 Voltage.	270	270	volts
DC Plate Current	150	152	ma
DC Grid-No.2 Current	17	17	ma
DC Grid-No.1 Current (Approx.)	7	7	ma
Driving Power (Approx.)	2	2	watts
Power Output (Approx.)	220	295	watts

RF POWER AMPLIFIER & OSCILLATOR--Class C Telegraphy^o and

RF POWER AMPLIFIER--Class C FM Telephony

Maximum CCS^o Ratings, Absolute Values:

DC PLATE VOLTAGE	4000 max. volts
DC GRID-No.2 (SCREEN) VOLTAGE.	750 max. volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE.	-500 max. volts
DC PLATE CURRENT	200 max. ma
PLATE DISSIPATION.	125 max. watts
GRID-No.3 (SUPPRESSOR) DISSIPATION	20 max. watts
GRID-No.2 DISSIPATION.	20 max. watts
GRID-No.1 DISSIPATION.	5 max. watts

Typical Operation with Grid No.3 Grounded and Grid-No.2 Volts = 500:

DC Plate Voltage	1000	2000	3000	volts
DC Grid-No.2 Voltage	500	500	500	volts
DC Grid-No.1 Voltage	-120	-150	-200	volts
Peak RF Grid-No.1 Voltage.	170	240	270	volts
DC Plate Current	145	200	167	ma

^o, [□]: See next page.

→ Indicates a change.

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POWER PENTODE

DC Grid-No.2 Current	17	23	12	ma
DC Grid-No.1 Current (Approx.)	6	11	7	ma
Driving Power (Approx.)	1	2.6	1.9	watts
Power Output (Approx.)	90	275	375	watts

Typical Operation with Grid No.3 Grounded

and Grid-No.2 Volts = 750:

DC Plate Voltage	1000	2000	3000	volts
DC Grid-No.2 Voltage	750	750	750	volts
DC Grid-No.1 Voltage	-170	-200	-250	volts
Peak RF Grid-No.1 Voltage . . .	205	257	290	volts
DC Plate Current	160	200	167	ma
DC Grid-No.2 Current	21	22	9	ma
DC Grid-No.1 Current (Approx.)	3	6	3	ma
Driving Power (Approx.)	0.6	1.5	0.9	watts
Power Output (Approx.)	115	300	375	watts

Typical Operation with Grid-No.3 Volts = 60

and Grid-No.2 Volts = 500:

DC Plate Voltage	1000	2000	3000	volts
DC Grid-No.3 Voltage	60	60	60	volts
DC Grid-No.2 Voltage	500	500	500	volts
DC Grid-No.1 Voltage	-120	-150	-200	volts
Peak RF Grid-No.1 Voltage . . .	170	222	260	volts
DC Plate Current	167	200	167	ma
DC Grid-No.3 Current	6	4	3	ma
DC Grid-No.2 Current	11	11	5	ma
DC Grid-No.1 Current (Approx.)	6	8	6	ma
Driving Power (Approx.)	1	1.8	1.6	watts
Power Output (Approx.)	120	300	375	watts

⁰ continuous commercial service.

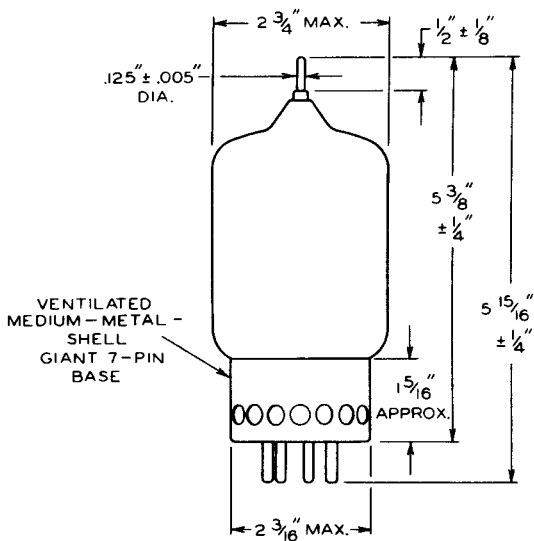
□ key-down conditions per tube without amplitude modulation. Amplitude modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

The 4E27A/5-125B may be operated with maximum rated plate voltage and plate input at frequencies up to 75 megacycles per second

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4E27A/5-125B POWER PENTODE



92CS-7437

MAY 1, 1951

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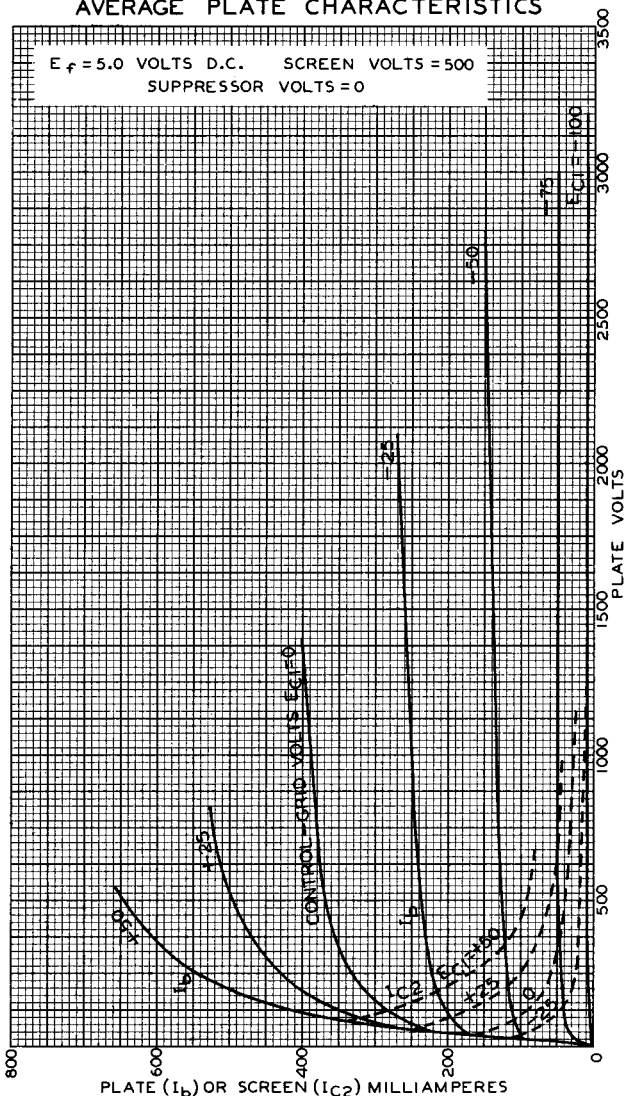
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4E27

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AVERAGE PLATE CHARACTERISTICS



MAR. 26, 1945

RCA VICTOR DIVISION

92CM-6261R1

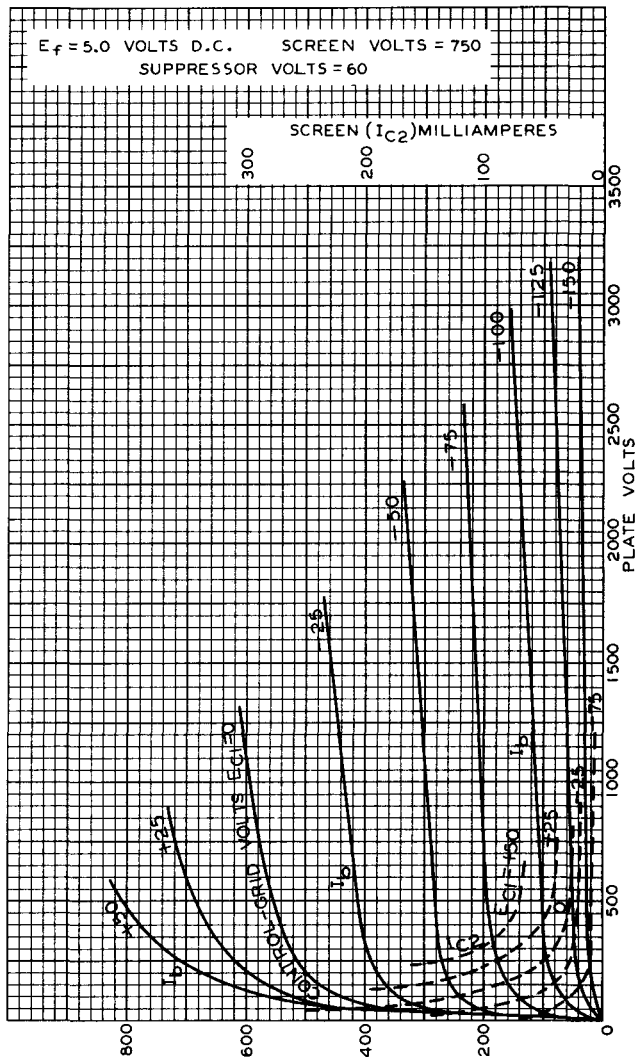
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

4E27



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AVERAGE PLATE CHARACTERISTICS



JAN. 22, 1945

 RCA VICTOR DIVISION
 RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

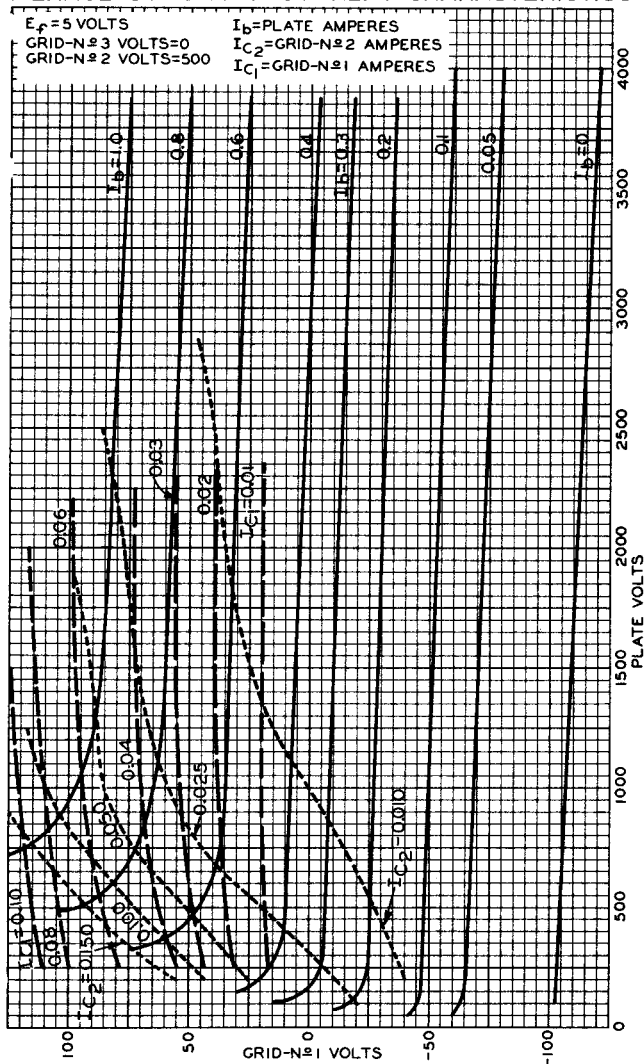
92CM-6259RI



4E27A

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AVERAGE CONSTANT-CURRENT CHARACTERISTICS

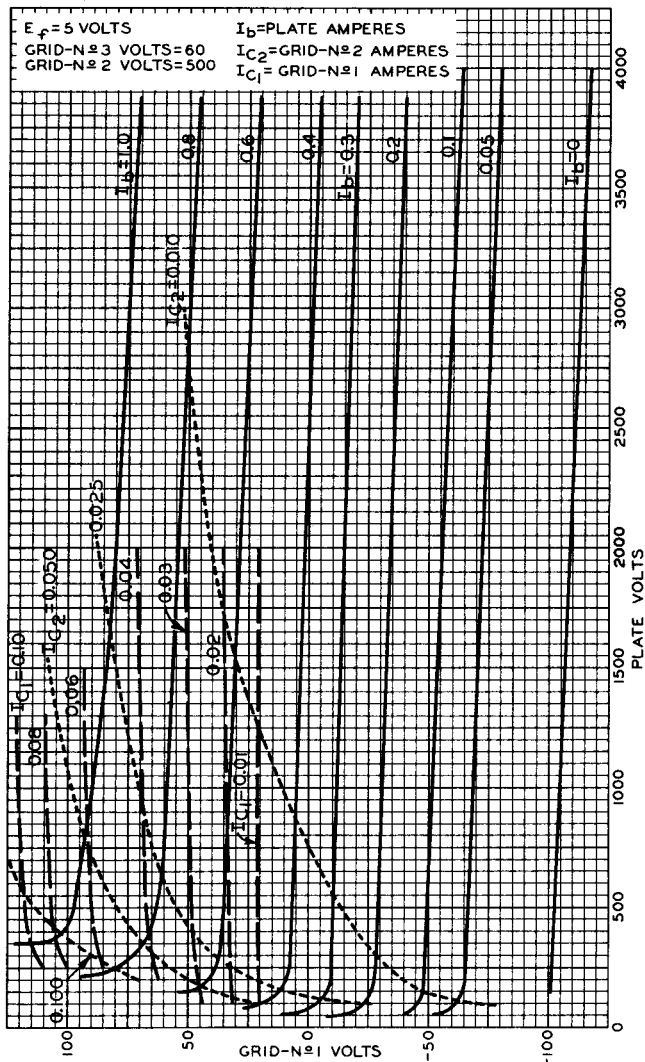


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AVERAGE CONSTANT-CURRENT CHARACTERISTICS



JULY 20, 1950

TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7513

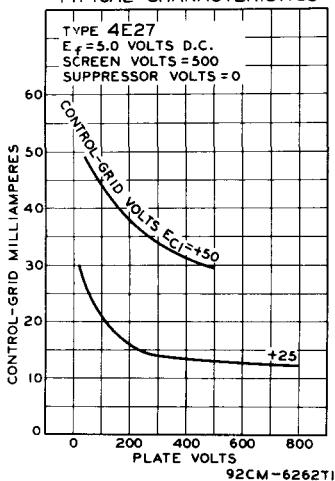


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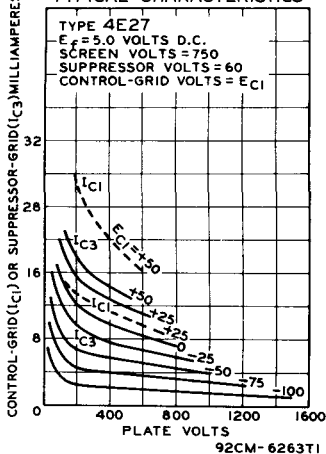
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TRANSMITTING BEAM POWER AMPLIFIER

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS





4E27A

4E27A/5-125B BEAM POWER TUBE

Full Input at Frequencies up to 75 Mc

GENERAL DATA

Electrical:

Filament, Thoriated Tungsten:

Voltage 5.0 ac or dc volts

Current 7.5 amp

Transconductance (Approx.) For plate volts =

2500, grid-no.3 volts = 0, grid-no.2 volts = 500,

and plate max. = 50 2150 μ hos

Mu-Factor, Grid No.2 to Grid No.1 5

Direct Interelectrode Capacitances:

Grid No.1 to plate* 0.08 μ mfInput 10.5 μ mfOutput 4.7 μ mf

Mechanical:

Mounting Position Vertical, base down or up

Maximum Overall Length 5-9/16"

Seated Length 5-3/8" $\pm$ 1/4"

Maximum Diameter 2-3/4"

Plate Terminal See Dimensional Outline

Weight 6 ounces

Base Ventilated Medium-Metal-Shell Giant 7-Pin

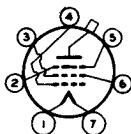
Basing Designation for BOTTOM VIEW 7BM

Pin 1-Filament

Pin 2-Grid No.3

Pin 3-Grid No.2

Pin 4-Grid No.1



Pin 5-Grid No.3

Pin 6-Grid No.2

Pin 7-Filament

Bulb Terminal-
PlateSeal Temperature (Plate and stem) 225 max. $^{\circ}$ CBulb Temperature (At hottest point) 250 max. $^{\circ}$ C

Components:

Socket Johnson No.122-237, or equivalent

Heat-Radiating Plate Connector

(Supplied with tube) Eimac HR-5

AF POWER AMPLIFIER & MODULATOR - Class AB₁[†]

Maximum CCS[®] Ratings, Absolute Values:

DC PLATE VOLTAGE 4000 max. volts

DC GRID-No.2 (SCREEN) VOLTAGE 750 max. volts

DC GRID-No.1 (CONTROL-GRID) VOLTAGE -500 max. volts

[†] Subscript 1 indicates that grid-no.1 current does not flow during any part of the input cycle.

* With no external shielding and base shell connected to ground.

* See next page.

← indicates a change.

NOV. 5, 1954

TUBE DIVISION

DATA 1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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BEAM POWER TUBE

DC PLATE CURRENT*	200 max.	ma
PLATE DISSIPATION*	125 max.	watts
GRID-No.3 (SUPPRESSOR) DISSIPATION*	20 max.	watts
GRID-No.2 DISSIPATION*	20 max.	watts
GRID-No.1 DISSIPATION*	5 max.	watts

→ Typical Operation:

Values are for 2 tubes

DC Plate Voltage	1500	2000	2500	volts
DC Grid-No.3 Voltage	0	0	0	volts
DC Grid-No.2 Voltage	500	500	500	volts
DC Grid-No.1 (Control-Grid) Voltage ⁰	-70	-80	-85	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	140	160	170	volts
Zero-Signal DC Plate Current	110	85	65	ma
Max.-Signal DC Plate Current	205	210	220	ma
Zero-Signal DC Grid-No.2 Current (Approx.)	0	0	0	ma
Max.-Signal DC Grid-No.2 Current (Approx.)	15	13	8	ma
Effective Load Resistance (Plate to plate)	13700	18000	20000	ohms
Max.-Signal Driving Power (Approx.)	0	0	0	watts
Max.-Signal Power Input	310	420	550	watts
Max.-Signal Power Output (Approx.)	200	250	300	watts

→ Maximum Circuit Values:

DC Resistance in Series with Grid No.1 of Each Tube	0.25 max.	megohm
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→ AF POWER AMPLIFIER & MODULATOR—Class AB₂Maximum CCS[®] Ratings, Absolute Values:

DC PLATE VOLTAGE	4000 max.	volts
DC GRID-No.2 (SCREEN) VOLTAGE	750 max.	volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE	-500 max.	volts
DC PLATE CURRENT	200 max.	ma
PLATE DISSIPATION	125 max.	watts
GRID-No.3 (SUPPRESSOR) DISSIPATION	20 max.	watts
GRID-No.2 DISSIPATION	20 max.	watts
GRID-No.1 DISSIPATION	5 max.	watts

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

* Subscript 2 indicates that grid-no.1 current flows during some part of the input cycle.

*⁰: See next page.

→ indicates a change.

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TUBE DIVISION

DATA 1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



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BEAM POWER TUBE

Typical Operation:

Values are for 2 tubes

DC Plate Voltage	1500	2000	2500	volts
DC Grid-No.3 Voltage	60	0	0	volts
DC Grid-No.2 Voltage	500	500	500	volts
DC Grid-No.1 (Control-Grid) Voltage	-70	-80	-85	volts
Grid-No.1-to-Grid- No.1 Voltage	200	200	190	volts
Zero-Signal DC Plate Current . .	110	85	65	ma
Max.-Signal DC Plate Current . .	365	295	250	ma
Zero-Signal DC Grid-No.2 Current (Approx.)	0	0	0	ma
Max.-Signal DC Grid-No.2 Current (Approx.)	11	16	13	ma
Effective Load Resistance (Plate to plate)	7300	13000	20000	ohms
Max.-Signal Driving Power (Approx.)	0.5	0.3	0.2	watt
Max.-Signal Power Input	550	590	625	watts
Max.-Signal Power Output (Approx.)	300	350	400	watts

GRID No.3-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	4000 max.	volts
DC GRID-No.2 (SCREEN) VOLTAGE	750 max.	volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE	-500 max.	volts
DC PLATE CURRENT	200 max.	ma
PLATE DISSIPATION	125 max.	watts
GRID-No.3 (SUPPRESSOR) DISSIPATION	20 max.	watts
GRID-No.2 DISSIPATION	20 max.	watts
GRID-No.1 DISSIPATION	5 max.	watts

Typical Operation:

DC Plate Voltage	1500	2000	2500	volts
DC Grid-No.3 Voltage	-220	-260	-305	volts
Fixed DC Grid-No.2 Supply Voltage	610	645	650	volts
DC Grid-No.2 Voltage	400	400	400	volts
From a series grid-No.2 resistor of	5500	9100	10000	ohms
DC Grid-No.1 Voltage	-170	-180	-190	volts
Peak AF Grid-No.3 Voltage	220	260	305	volts
Peak RF Grid-No.1 Voltage	230	235	245	volts
DC Plate Current	59	59	59	ma

◊ Adjust to stated zero-signal dc plate current.

←Indicates a change.



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BEAM POWER TUBE

DC Grid-No.2 Current (Approx.)	38	27	25	ma
DC Grid-No.1 Current (Approx.)	6	5	5	ma
Driving Power (Approx.)	1.4	1.3	1.2	watts
Power Output (Approx.)	35	50	61	watts

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	3200 max.	volts
DC GRID-No.2 (SCREEN) VOLTAGE	750 max.	volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE	-500 max.	volts
DC PLATE CURRENT	160 max.	ma
PLATE DISSIPATION	85 max.	watts
GRID-No.3 (SUPPRESSOR) DISSIPATION	20 max.	watts
GRID-No.2 DISSIPATION	20 max.	watts
GRID-No.1 DISSIPATION	5 max.	watts

► Typical Operation with Grid No.3 Grounded

and Grid-No.2 Volts = 500:

DC Plate Voltage	1500	2000	2500	volts
DC Grid-No.2 Voltage	500	500	500	volts
DC Grid-No.1 Voltage	-195	-200	-205	volts
Peak AF Grid-No.2 Voltage	350	350	350	volts
Peak RF Grid-No.1 Voltage	265	270	275	volts
DC Plate Current	150	151	152	ma
DC Grid-No.2 Current (Approx.)	18	17	16	ma
DC Grid-No.1 Current (Approx.)	7	8	8	ma
Driving Power (Approx.)	2	2	2	watts
Power Output (Approx.)	153	220	295	watts

RF POWER AMPLIFIER & OSCILLATOR—Class C Telegraphy[□]
and

RF POWER AMPLIFIER—Class C FM Telephony

Maximum CCS* Ratings, Absolute Values:

DC PLATE VOLTAGE	4000 max.	volts
DC GRID-No.2 (SCREEN) VOLTAGE	750 max.	volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE	-500 max.	volts
DC PLATE CURRENT	200 max.	ma
PLATE DISSIPATION	125 max.	watts
GRID-No.3 (SUPPRESSOR) DISSIPATION	20 max.	watts
GRID-No.2 DISSIPATION	20 max.	watts
GRID-No.1 DISSIPATION	5 max.	watts

* Continuous Commercial Service.

□ key-down conditions per tube without amplitude modulation. Amplitude modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

*, □: See next page.

→ indicates a change.



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BEAM POWER TUBE

Typical Operation with Grid No.3 Grounded

and Grid-No.2 Volts = 500:

DC Plate Voltage	1000	2000	3000	volts
DC Grid-No.2 Voltage	500	500	500	volts
DC Grid-No.1 Voltage	-120	-150	-200	volts
Peak RF Grid-No.1 Voltage	170	240	270	volts
DC Plate Current	145	200	167	ma
DC Grid-No.2 Current (Approx.)	17	23	12	ma
DC Grid-No.1 Current (Approx.)	6	11	7	ma
Driving Power (Approx.)	1	2.6	1.9	watts
Power Output (Approx.)	90	275	375	watts

Typical Operation with Grid No.3 Grounded

and Grid-No.2 Volts = 750:

DC Plate Voltage	1000	2000	3000	volts
DC Grid-No.2 Voltage	750	750	750	volts
DC Grid-No.1 Voltage	-170	-200	-250	volts
Peak RF Grid-No.1 Voltage	205	257	290	volts
DC Plate Current	160	200	167	ma
DC Grid-No.2 Current (Approx.)	21	22	9	ma
DC Grid-No.1 Current (Approx.)	3	6	3	ma
Driving Power (Approx.)	0.6	1.5	0.9	watts
Power Output (Approx.)	115	300	375	watts

Typical Operation with Grid-No.3 Volts = 60

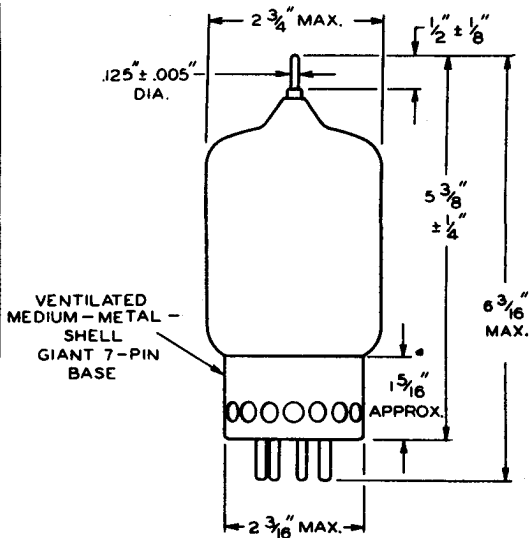
and Grid-No.2 Volts = 500:

DC Plate Voltage.	1000	2000	3000	volts
DC Grid-No.3 Voltage.	60	60	60	volts
DC Grid-No.2 Voltage.	500	500	500	volts
DC Grid-No.1 Voltage.	-120	-150	-200	volts
Peak RF Grid-No.1 Voltage	170	222	260	volts
DC Plate Current.	167	200	167	ma
DC Grid-No.3 Current (Approx.)	6	4	3	ma
DC Grid-No.2 Current (Approx.)	11	11	5	ma
DC Grid-No.1 Current (Approx.)	6	8	6	ma
Driving Power (Approx.)	1	1.8	1.6	watts
Power Output (Approx.)	120	300	375	watts

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4E27A BEAM POWER TUBE



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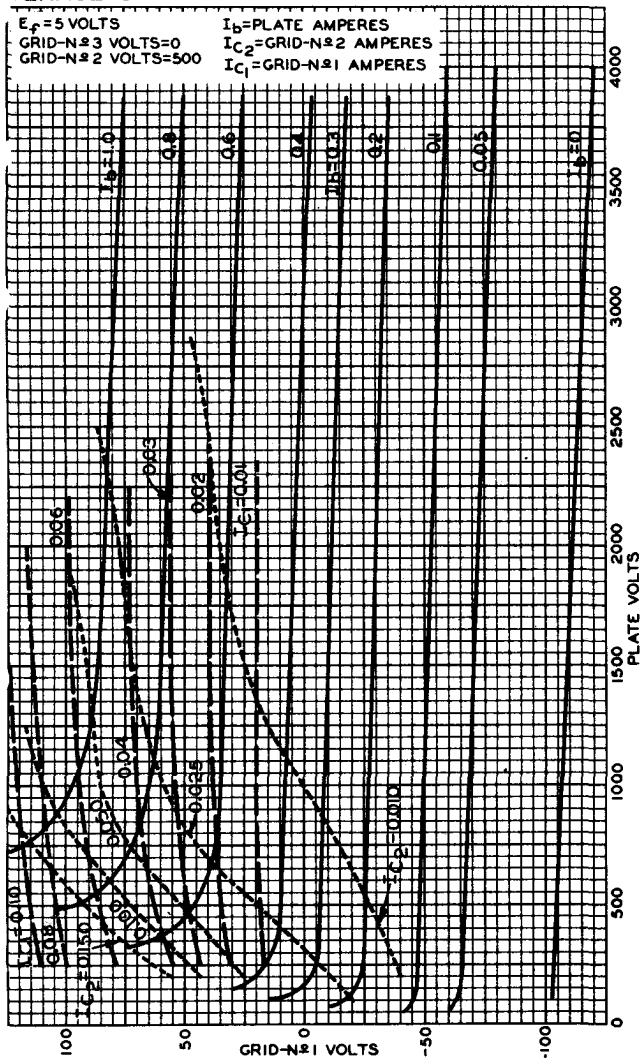
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AVERAGE CONSTANT-CURRENT CHARACTERISTICS



JULY 19, 1950

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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AVERAGE CONSTANT-CURRENT CHARACTERISTICS

