



4E27/8001

4E27

TRANSMITTING BEAM POWER AMPLIFIERGENERAL DATA**Electrical:**

Filament, Thoriated Tungsten:

Voltage 5.0 a-c or d-c volts

Current 7.5 amp.

Transconductance for plate

current of 75 ma. 2800 μ hos

Direct Interelectrode Capacitances:

Grid to Plate 0.06 μ fInput 12 μ fOutput 6.5 μ f**Physical:**Overall Length 5-15/16" $\pm$ 1/4" $\leftarrow$ Seated Length 5-5/16" $\pm$ 1/4" $\leftarrow$

Maximum Diameter 2-11/16"

Mounting Position Vertical Only: Base up or down

Bulb T-21

Base Medium Metal Shell Giant 7-Pin, Bayonet

Basing Designation for BOTTOM VIEW 7BM

Pin 1-Filament

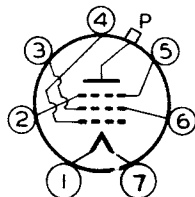
Pin 2-Grid No.3

Pin 3-Grid No.2

Pin 4-Grid No.1

Pin 5-Grid No.3

Pin 6-Grid No.2



Pin 7 - Filament

Bulb }

Ter- } - Plate

minal }

Base } - {Internal

Shell } - {Shield

A-F POWER AMPLIFIER & MODULATOR - Class A1**Maximum Ratings, Absolute Values:**

D-C PLATE VOLTAGE 2000 max. volts

D-C SCREEN VOLTAGE (Grid No.2). 750 max. volts $\leftarrow$ D-C PLATE CURRENT 150 max. ma. $\leftarrow$ D-C SCREEN CURRENT 40 max. ma. $\leftarrow$ PLATE INPUT 75 max. watts $\leftarrow$ SCREEN INPUT 30 max. watts $\leftarrow$

PLATE DISSIPATION 75 max. watts

Typical Operation:

D-C Plate Voltage 500 1000 volts

D-C Suppressor Voltage (Grid No.3) $\diamond$ 60 0 volts

D-C Screen Voltage 500 300 volts

D-C Grid Voltage (Grid No.1) * #. -47 -27 volts

Peak A-F Grid Voltage 47 27 volts

D-C Plate Current 150 75 ma.

D-C Screen Current 10 5 ma.

Load Resistance 2600 12000 ohms

Power Output 30 34 approx. watts

* ; #: See next page. $\diamond$: See end of tabulation. $\leftarrow$ Indicates a change.

MAR. 30, 1945

RCA VICTOR DIVISION

DATA 1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



TRANSMITTING BEAM POWER AMPLIFIER

(continued from preceding page)

SUPPRESSOR-MODULATED R-F POWER AMPLIFIER - Class C Telephony

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

Maximum Ratings, Absolute Values:

D-C PLATE VOLTAGE	2000 max. . volts
D-C SUPPRESSOR VOLTAGE (Grid No.3)	-500 max. . volts
→ D-C SCREEN VOLTAGE (Grid No.2)	600 max. . volts
D-C GRID VOLTAGE (Grid No.1)	-500 max. . volts
D-C PLATE CURRENT	100 max. . ma.
→ D-C GRID CURRENT	25 max. . ma.
PLATE INPUT	110 max. . watts
→ SCREEN INPUT	27 max. . watts
PLATE DISSIPATION	75 max. . watts

Typical Operation:

D-C Plate Voltage	1500	2000	 volts
D-C Suppressor Voltage ^o	-210	-300	 volts
D-C Screen Voltage**	{ 500	600	 volts
	{ 22000	30000	 ohms
D-C Grid Voltage	-130	-130	 volts
Peak A-F Suppressor Voltage	210	300	 volts
Peak R-F Grid Voltage	195	150	 volts
D-C Plate Current	70	55	 ma.
D-C Screen Current	44	45	 ma.
D-C Grid Current	8	3	approx. ma.
Driving Power ^o	1.4	0.4	approx. watts
Power Output	33	35	approx. watts

* For a-c filament supply.

Obtained from fixed supply or by cathode resistor. The d-c resistance in the grid circuit should not exceed 50000 ohms with fixed bias, or 500000 ohms with cathode bias.

** Obtained preferably from plate-voltage supply through series resistor of value shown.

^o At crest of a-f cycle with modulation factor of 1.0.

PLATE-MODULATED R-F POWER AMPLIFIER - Class C Telephony

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

Maximum Ratings, Absolute Values:

→ D-C PLATE VOLTAGE	3000 max. . volts
→ D-C SCREEN VOLTAGE (Grid No.2)	600 max. . volts
D-C GRID VOLTAGE (Grid No.1)	-500 max. . volts
D-C PLATE CURRENT	135 max. . ma.
→ D-C SCREEN CURRENT	30 max. . ma.
D-C GRID CURRENT	25 max. . ma.
→ PLATE INPUT	250 max. . watts
→ SCREEN INPUT	18 max. . watts
PLATE DISSIPATION	65 max. . watts

← Indicates a change.



4E27

4E27

TRANSMITTING BEAM POWER AMPLIFIER

(continued from preceding page)

Typical Operation:

D-C Plate Voltage.	1500	2500	. . . volts
D-C Suppressor Voltage(Grid No.3) [◇]	60	60	. . . volts
D-C Screen Voltage ^{##}	{ 600	600	. . . volts
		82000	240000 . . . ohms
	-200	-200	. . . volts
D-C Grid Voltage ^{***}	{ 145000	330000	. . . ohms
		110000	250000 . . . ohms
	310	450	. . . ohms
Peak R-F Grid Voltage.	255	220	. . . volts
D-C Plate Current.	135	100	. . . ma.
D-C Screen Current	11	8	. . . ma.
D-C Grid Current	1.4	0.6	<u>approx. ma.</u>
Driving Power.	0.4	0.1	<u>approx. watt</u>
Power Output	145	200	<u>approx. watts</u>

^{##} Obtained preferably from modulated fixed supply. May also be obtained from modulated plate-voltage supply through series resistor of values shown.

^{***} Obtained from fixed supply, grid resistor (145000,330000), or combination of cathode resistor (310,450) and grid resistor (110000,250000).

R-F POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Key-down conditions per tube without modulation[▲]

Maximum Ratings, Absolute Values:

D-C PLATE VOLTAGE.	4000 max.	. volts	←
D-C SCREEN VOLTAGE (Grid No.2)	750 max.	. volts	←
D-C GRID VOLTAGE (Grid No.1)	-500 max.	. volts	
D-C PLATE CURRENT.	150 max.	. ma.	
D-C SCREEN CURRENT	30 max.	. ma.	←
D-C GRID CURRENT	25 max.	. ma.	
PLATE INPUT.	300 max.	. watts	
SCREEN INPUT	25 max.	. watts	
PLATE DISSIPATION.	75 max.	. watts	

Typical Operation:

D-C Plate Voltage.	2000	3000	. . . volts	←
D-C Suppressor Voltage (Grid No.3) [◇]	0	60	. . . volts	
D-C Screen Voltage ^Δ	{ 750	750	. . . volts	
		70000	280000 . . . ohms	
	-200	-200	. . . volts	
D-C Grid Voltage [□]	{ 300000	—	. . . ohms	
		1200	1800 . . . ohms	
Peak R-F Grid Voltage.	225	170	. . . volts	
D-C Plate Current.	150	100	. . . ma.	
D-C Screen Current	18	8	. . . ma.	
D-C Grid Current	0.7	0	<u>approx. ma.</u>	
Driving Power.	0.2	0	<u>approx. watt</u>	
Power Output	230	235	<u>approx. watts</u>	

◇; ▲; Δ; □: see next page.

← Indicates a change.

MAR. 30, 1945

RCA VICTOR DIVISION

DATA 2

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

4E27



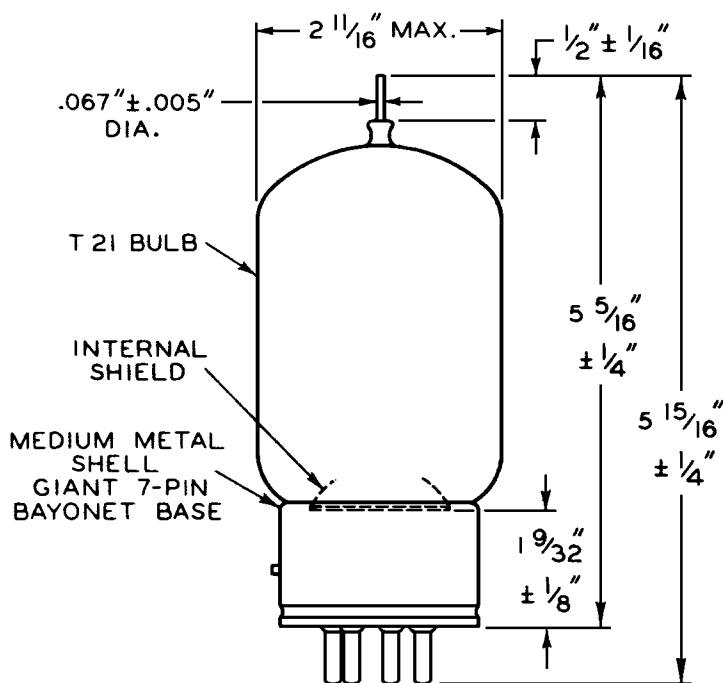
4E27

TRANSMITTING BEAM POWER AMPLIFIER

(continued from preceding page)

- ◇ Suppressor should be connected to the mid-point of filament circuit operated on a.c., or to the negative end of the filament operated on d.c.
- ▲ 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 a separate source, or from the plate-voltage supply with a voltage divider, or through a series resistor of the value shown. Series screen resistor should be used only where 4E27 is employed as buffer amplifier and is not keyed. The screen voltage must not exceed 1500 volts under key-up conditions.
- Obtained from fixed supply, grid resistor (300000), or cathode resistor (1200, 1800). When a preceding stage is keyed, sufficient fixed bias must be used to maintain the plate current at a low value when the key is up.

Data on operating frequencies for the 4E27/8001 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.



92CM-6260R1

← Indicates a change.

MAR. 30, 1945

RCA VICTOR DIVISION

DATA 2

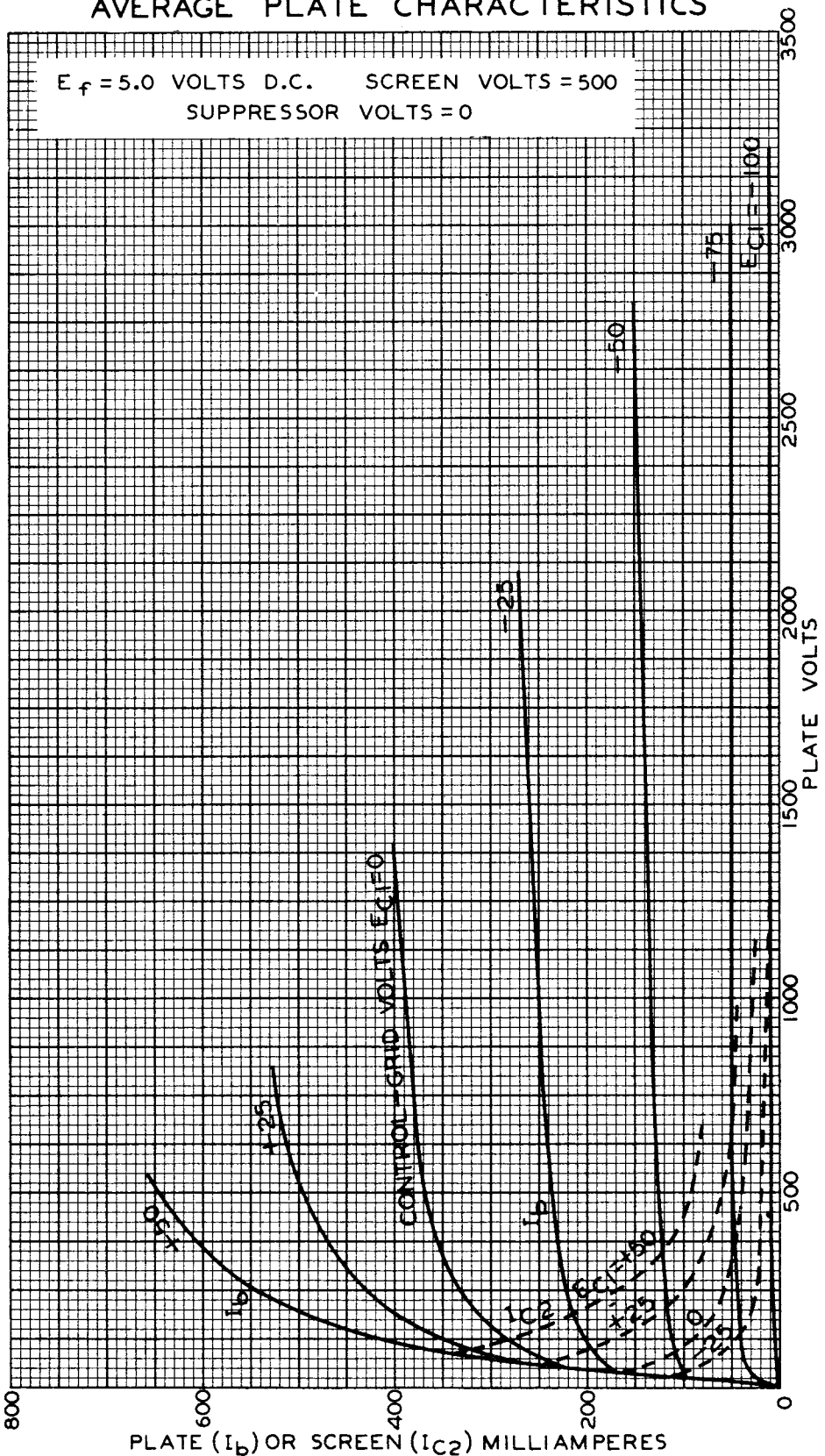
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



4E27

4E27

AVERAGE PLATE CHARACTERISTICS



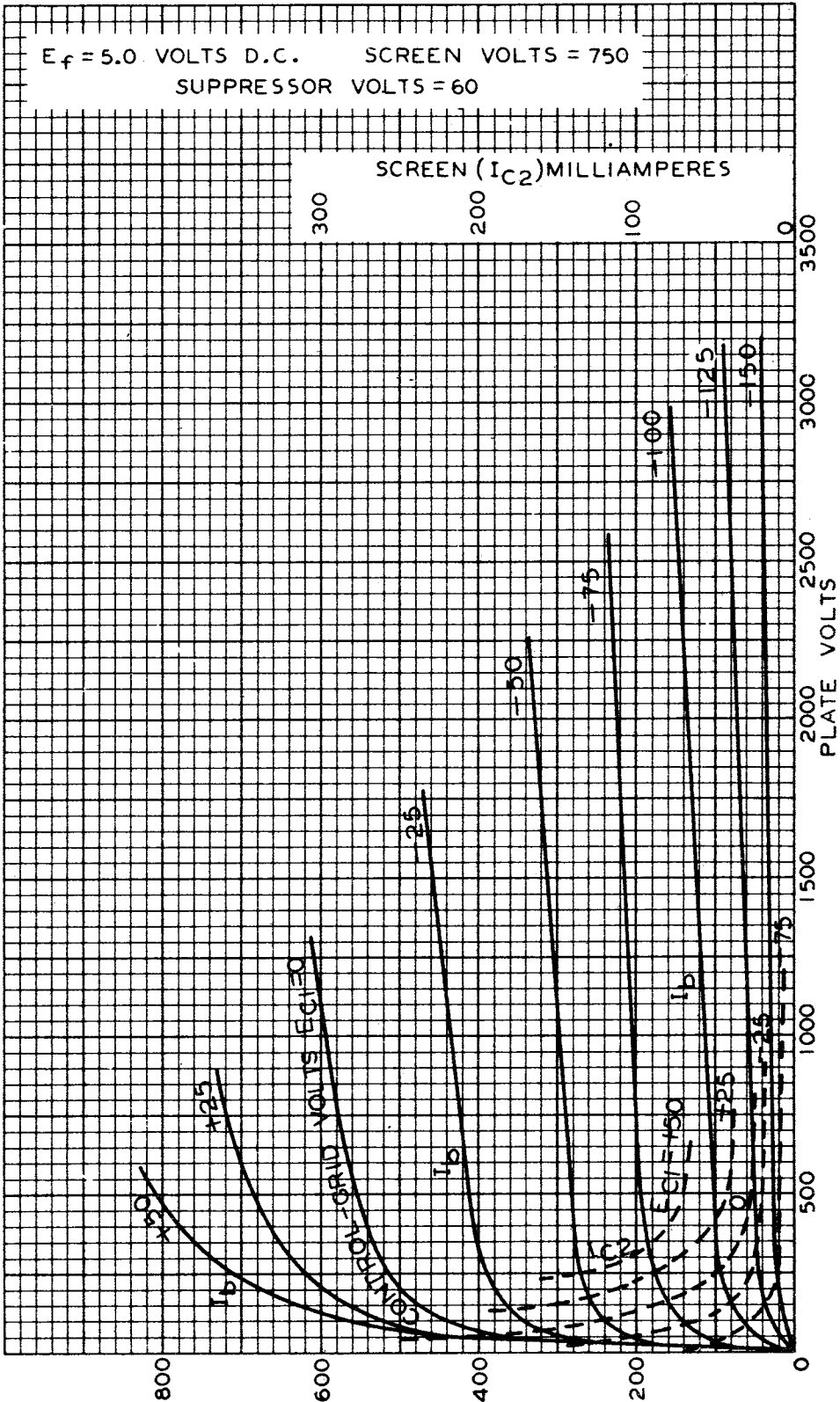
MAR. 26, 1945

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

92CM-6261RI

4E27

AVERAGE PLATE CHARACTERISTICS



JAN. 22, 1945

PLATE (I_b) MILLIAMPERES
RCA VICTOR DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6259R1

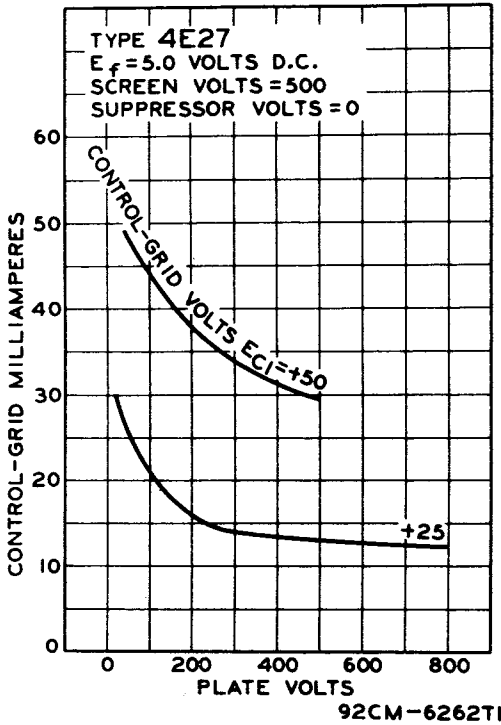


4E27

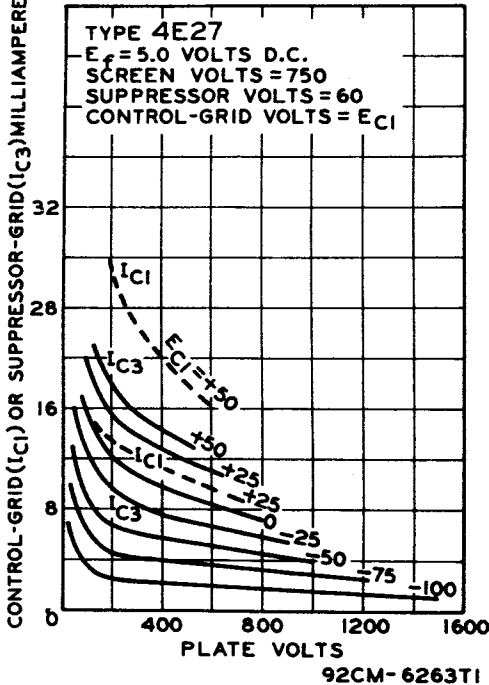
4E27

TRANSMITTING BEAM POWER AMPLIFIER

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



MAR. 30, 1945

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

92CM-6262T1
92CM-6263T1