



6CM7

6CM7

MEDIUM-MU DUAL TRIODE**With Dissimilar Units**

9-PIN MINIATURE TYPE

*Intended for use in equipment having
series heater-string arrangement***GENERAL DATA****Electrical:**

Heater, for Unipotential Cathodes:

Voltage.	6.3	ac or dc volts
Current.	0.6	amp
Warm-up time (Average)	11	sec

*For definition of heater warm-up time and method of determining
it, see sheet HEATER WARM-UP TIME MEASUREMENT at front of
this Section.*

Direct Interelectrode Capacitances (Approx.):^o

	Unit No. 1 Oscillator	Unit No. 2 Amplifier	
Grid to plate.	3.8	3	μf
Grid to cathode and heater	2	3.5	μf
Plate to cathode and heater	0.5	0.4	μf

Characteristics, Class A₁ Amplifier:

	Unit No. 1 Oscillator	Unit No. 2 Amplifier	
Plate Voltage.	200	250	volts
Grid Voltage.	-7	-8	volts
Amplification Factor	20	18	
Plate Resistance (Approx.)	11000	4100	ohms
Transconductance	2000	4400	μmhos
Plate Current.	5	20	ma
Plate Current for grid voltage of -10 volts	1	-	ma
Grid Voltage (Approx.) for plate current of 10 microamperes.	-14	-	volts

Mechanical:

Mounting Position.	Any
Maximum Overall Length	2-5/8"
Maximum Seated Length.	2-3/8"
Length, Base Seat to Bulb Top (Excluding tip).	2" $\pm$ 3/32"
Maximum Diameter	7/8"
Dimensional Outline.	See General Section
Bulb	T-6-1/2

^o Without external shield.

JULY 1, 1955

TUBE DIVISION

TENTATIVE DATA 1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

6CM7



6CM7

MEDIUM-MU DUAL TRIODE

With Dissimilar Units

Base Small-Button Noval 9-Pin (JETEC No. E9-1)

Basing Designation for BOTTOM VIEW 9ES

Pin 1-Plate of

Unit No. 2

Pin 2-No Connection

Pin 3-Cathode of

Unit No. 1

Pin 4-Heater

Pin 5-Heater



Pin 6-Plate of

Unit No. 1

Pin 7-Grid of

Unit No. 1

Pin 8-Grid of

Unit No. 2

Pin 9-Cathode of

Unit No. 2

VERTICAL DEFLECTION OSCILLATOR

Values are for Unit No. 1

Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE 500 max. volts

PEAK NEGATIVE-PULSE GRID VOLTAGE 200 max. volts

CATHODE CURRENT:

Peak 70 max. ma

Average 15 max. ma

PLATE DISSIPATION 1.25 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode. . . 200 max. volts

Heater positive with respect to cathode. . . 200[▲]max. volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias, grid-resistor bias, or

cathode-bias operation 2.2 max. megohms

VERTICAL DEFLECTION AMPLIFIER

Values are for Unit No. 2

Maximum Ratings, Design-Center Values Except as Noted:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE 500 max. volts

PEAK POSITIVE-PULSE PLATE VOLTAGE[#]

(Absolute maximum) 2200[■]max. volts

PEAK NEGATIVE-PULSE GRID VOLTAGE 200 max. volts

CATHODE CURRENT:

Peak 70 max. ma

Average 20 max. ma

PLATE DISSIPATION 5.5 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode. . . 200 max. volts

Heater positive with respect to cathode. . . 200[▲]max. volts

[▲] The dc component must not exceed 100 volts.

[□], [■]: See next page.

JULY 1, 1955

TUBE DIVISION

TENTATIVE DATA 1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



6CM7

6CM7

MEDIUM-MU DUAL TRIODE

With Dissimilar Units

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias operation 1.0 max. megohm
For cathode-bias operation 2.5 max. megohms

□ As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

* This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

■ Under no circumstances should this absolute value be exceeded.

6CM7

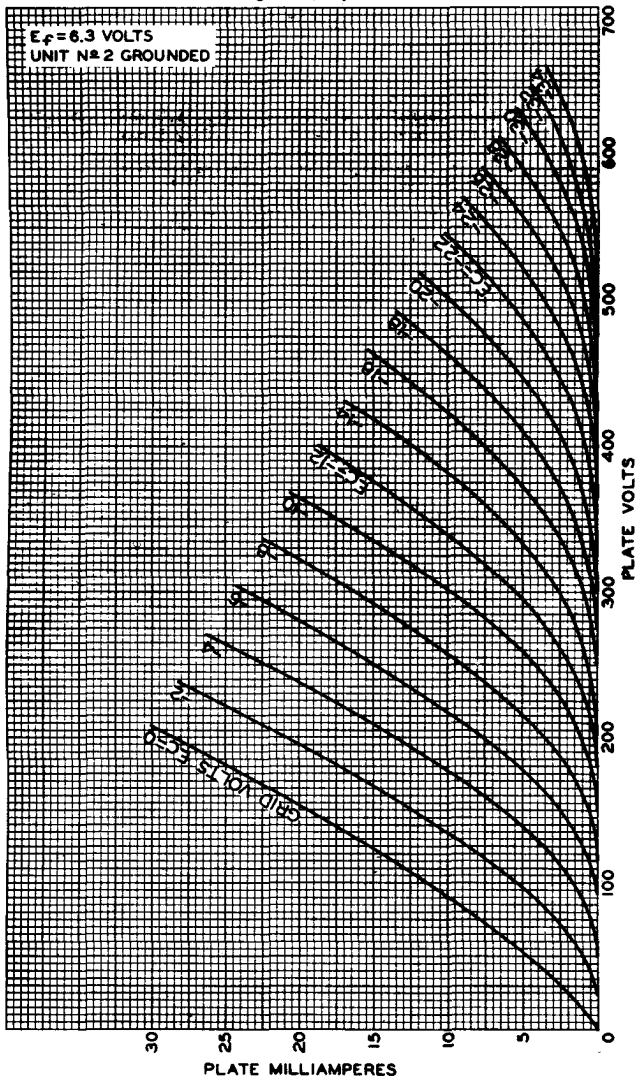


6CM7

AVERAGE PLATE CHARACTERISTICS

UNIT N^o 1

$E_f = 6.3$ VOLTS
UNIT N^o 2 GROUNDED



MAY 17, 1955

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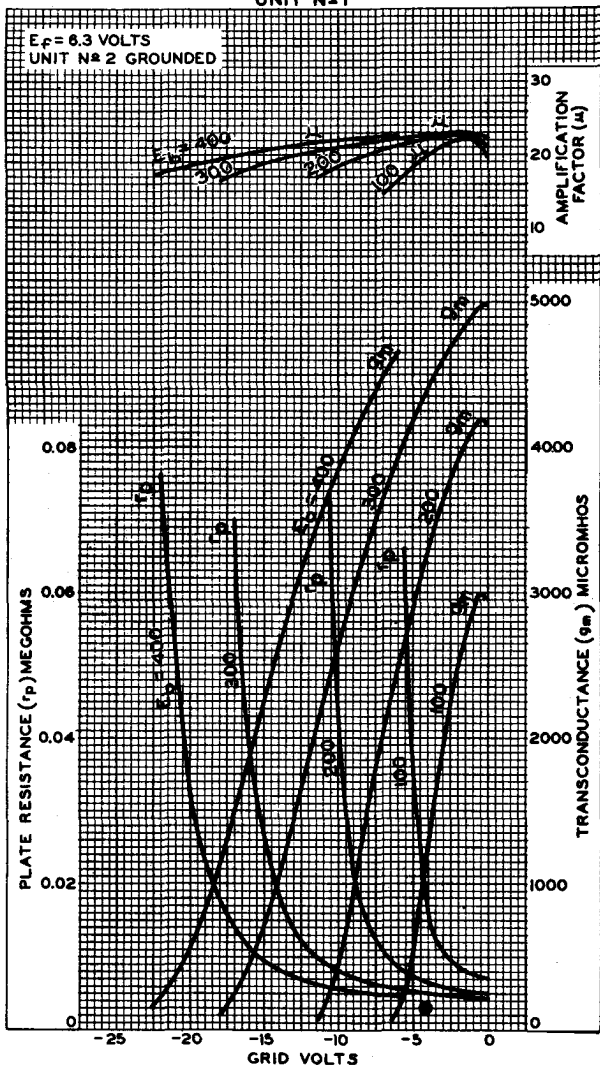
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6CM7

AVERAGE CHARACTERISTICS UNIT N^o 1

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MAY 16, 1955

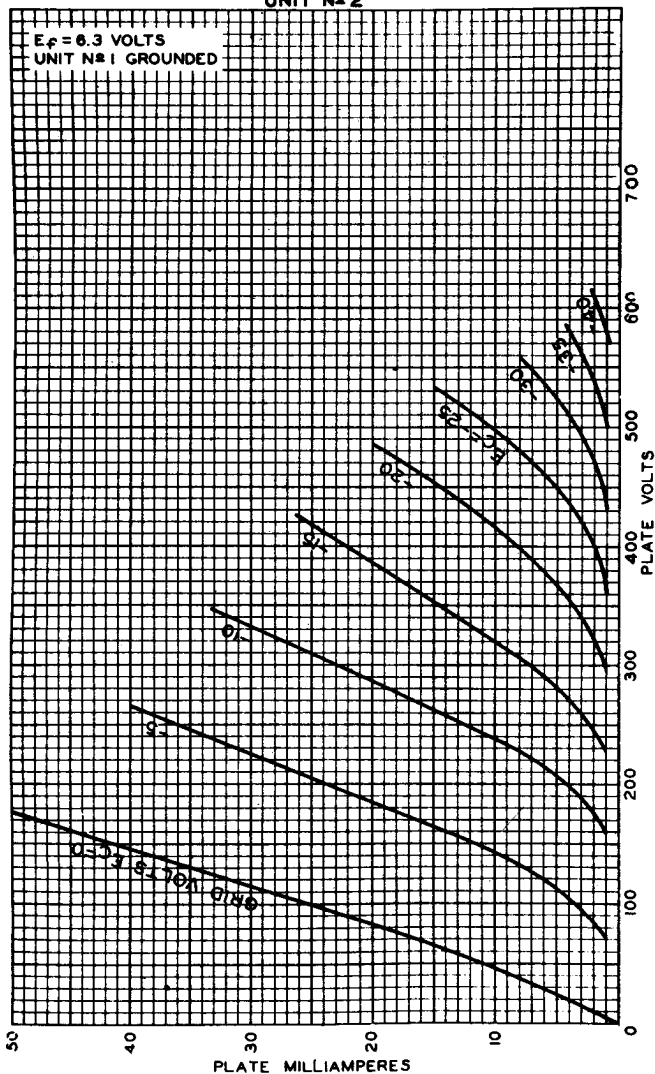
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6CM7



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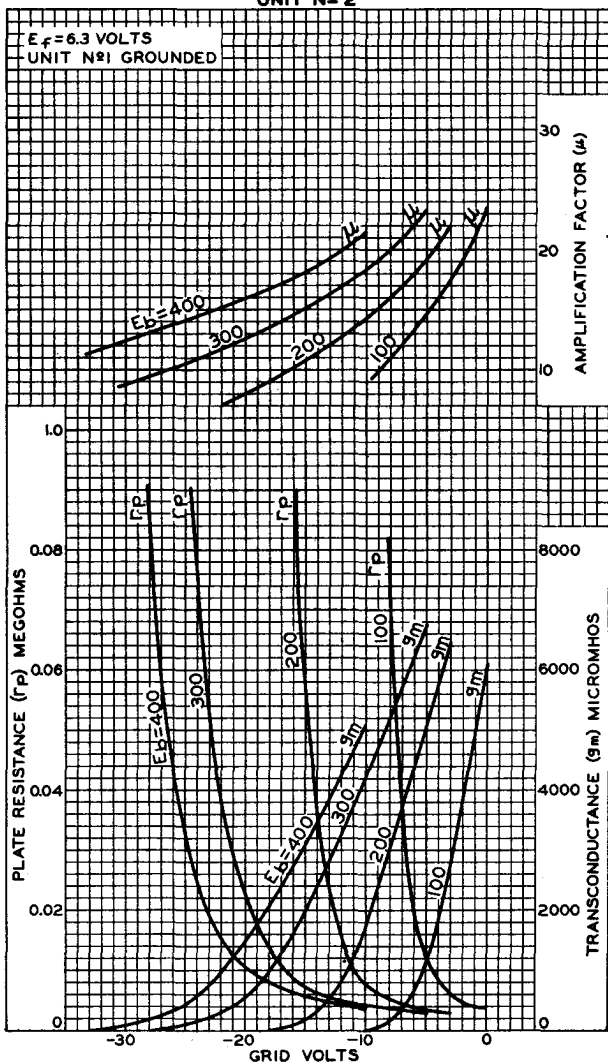
AVERAGE PLATE CHARACTERISTICS
UNIT N^o 2



6CM7

6CM7

AVERAGE CHARACTERISTICS UNIT N° 2



MAY 16, 1955

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-8613

Medium-Mu Dual Triode

With Dissimilar Units

9-PIN MINIATURE TYPE

With Heater Having Controlled Warm-Up Time

GENERAL DATA

Electrical:

Heater, for Unipotential Cathodes:

Voltage (AC or DC)	6.3	volts
Current	0.6 $\pm$ 6%	amp $\leftarrow$
Warm-up time (Average)	11	sec

Direct Interelectrode Capacitances (Approx.):^a

	Unit No. 1	Unit No. 2	
Grid to plate	3.8	3	μ f
Grid to cathode and heater. . .	2	3.5	μ f
Plate to cathode and heater . .	0.5	0.4	μ f

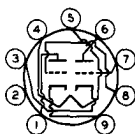
Characteristics, Class A₁ Amplifier:

	Unit No. 1	Unit No. 2	
Plate Voltage	200	250	volts
Grid Voltage.	-7	-8	volts
Amplification Factor.	21	18	
Plate Resistance (Approx.) . . .	10500	4100	ohms
Transconductance.	2000	4400	μ mhos
Plate Current	5	20	ma
Plate Current for grid volts = -10.	-1	-	ma
Grid Voltage (Approx.) for plate μ a = 10	-14	-	volts

Mechanical:

Operating Position.	Any
Maximum Overall Length.	2-5/8"
Maximum Seated Length	2-3/8"
Length, Base Seat to Bulb Top (Excluding tip) . .	2" $\pm$ 3/32"
Diameter.	0.750" to 0.875"
Dimensional Outline	See <i>General Section</i>
Bulb.	T6-1/2
Base.	Small-Button Noval 9-Pin (JEDEC No. E9-1)
Basing Designation for BOTTOM VIEW.	9ES

- Pin 1—Plate of
Unit No. 2
Pin 2—No Con-
nection
Pin 3—Cathode of
Unit No. 1
Pin 4—Heater
Pin 5—Heater



- Pin 6—Plate of
Unit No. 1
Pin 7—Grid of
Unit No. 1
Pin 8—Grid of
Unit No. 2
Pin 9—Cathode of
Unit No. 2

$\leftarrow$ Indicates a change.



VERTICAL-DEFLECTION OSCILLATOR

Values are for Unit No. 1

→ Maximum Ratings, Design-Maximum Values:

For operation in a 525-line, 30-frame system^b

DC PLATE VOLTAGE.	550	max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE. . . .	220	max.	volts
CATHODE CURRENT:			
Peak.	77	max.	ma
Average	17	max.	ma
PLATE DISSIPATION	1.45	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode.	200	max.	volts
Heater positive with respect to cathode.	200 ^c	max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias, grid-resistor-bias, or cathode-bias operation.	2.2	max.	megohms
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VERTICAL-DEFLECTION AMPLIFIER

Values are for Unit No. 2

→ Maximum Ratings, Design-Maximum Values:

For operation in a 525-line, 30-frame system^b

DC PLATE VOLTAGE.	550	max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE ^d . . .	2200	max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE. . . .	220	max.	volts
CATHODE CURRENT:			
Peak.	77	max.	ma
Average	22	max.	ma
PLATE DISSIPATION	6	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode.	200	max.	volts
Heater positive with respect to cathode.	200 ^c	max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias operation.	1	max.	megohm
For cathode-bias operation.	2.5	max.	megohms

^a Without external shield.

^b As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.

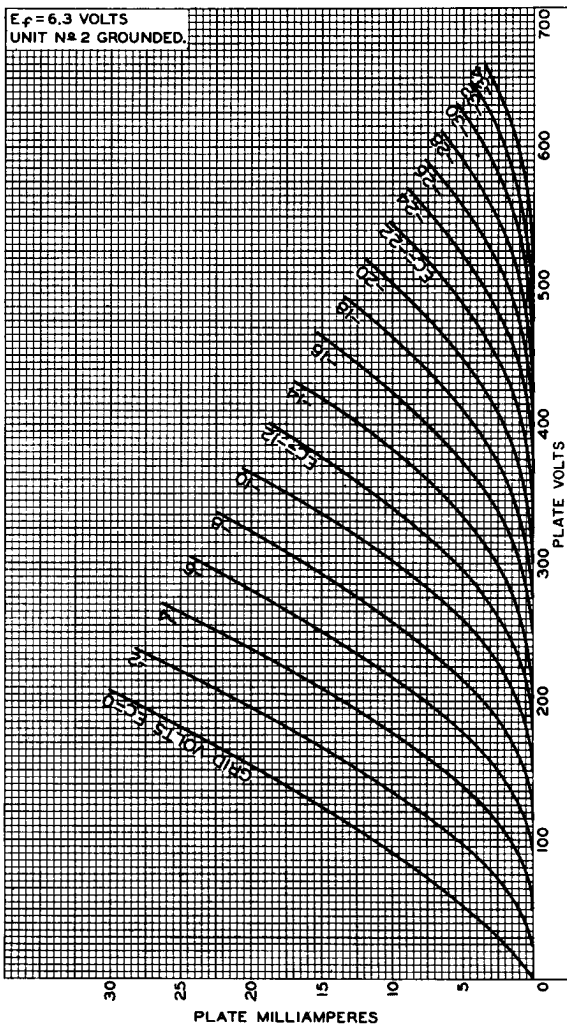
^c The dc component must not exceed 100 volts.

^d This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

→ indicates a change.

AVERAGE PLATE CHARACTERISTICS

Unit No.1

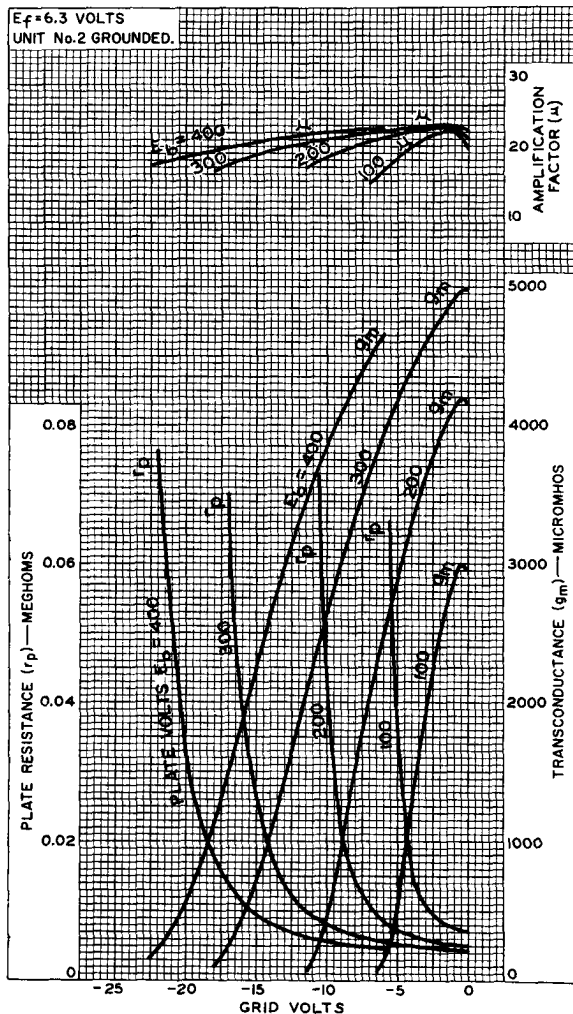


92CM-8617



AVERAGE CHARACTERISTICS

Unit No.1

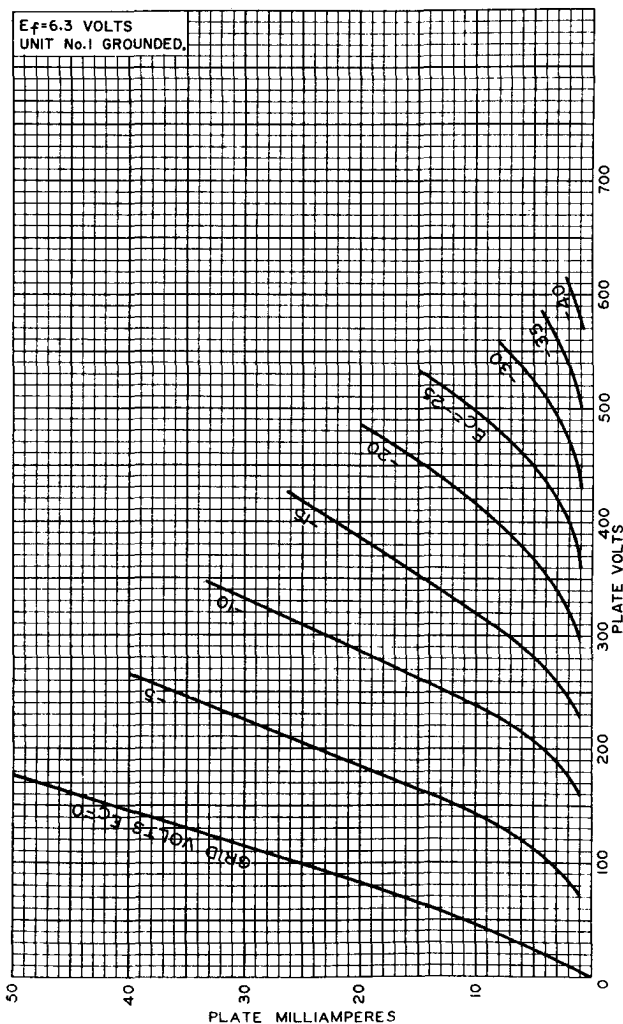


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AVERAGE PLATE CHARACTERISTICS

Unit No.2

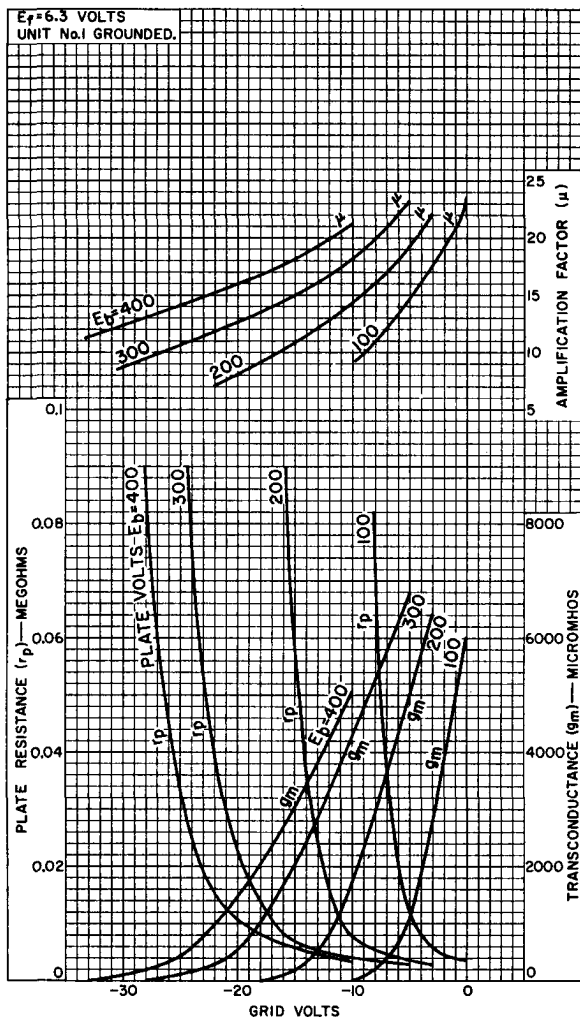


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6CM7

AVERAGE CHARACTERISTICS Unit No.2



92CM-8613R1

