

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 ± 6%	amp ←
Warm-up time (Average)	11	sec

Direct Interelectrode Capacitances (Approx.):^a

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

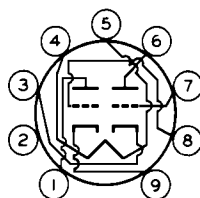
Characteristics, Class A₁ Amplifier:

	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	μmhos
Plate Current	5	20	ma
Plate Current for grid volts = -10.	-1	-	ma
Grid Voltage (Approx.) for plate μa = 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" ± 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 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

← 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.

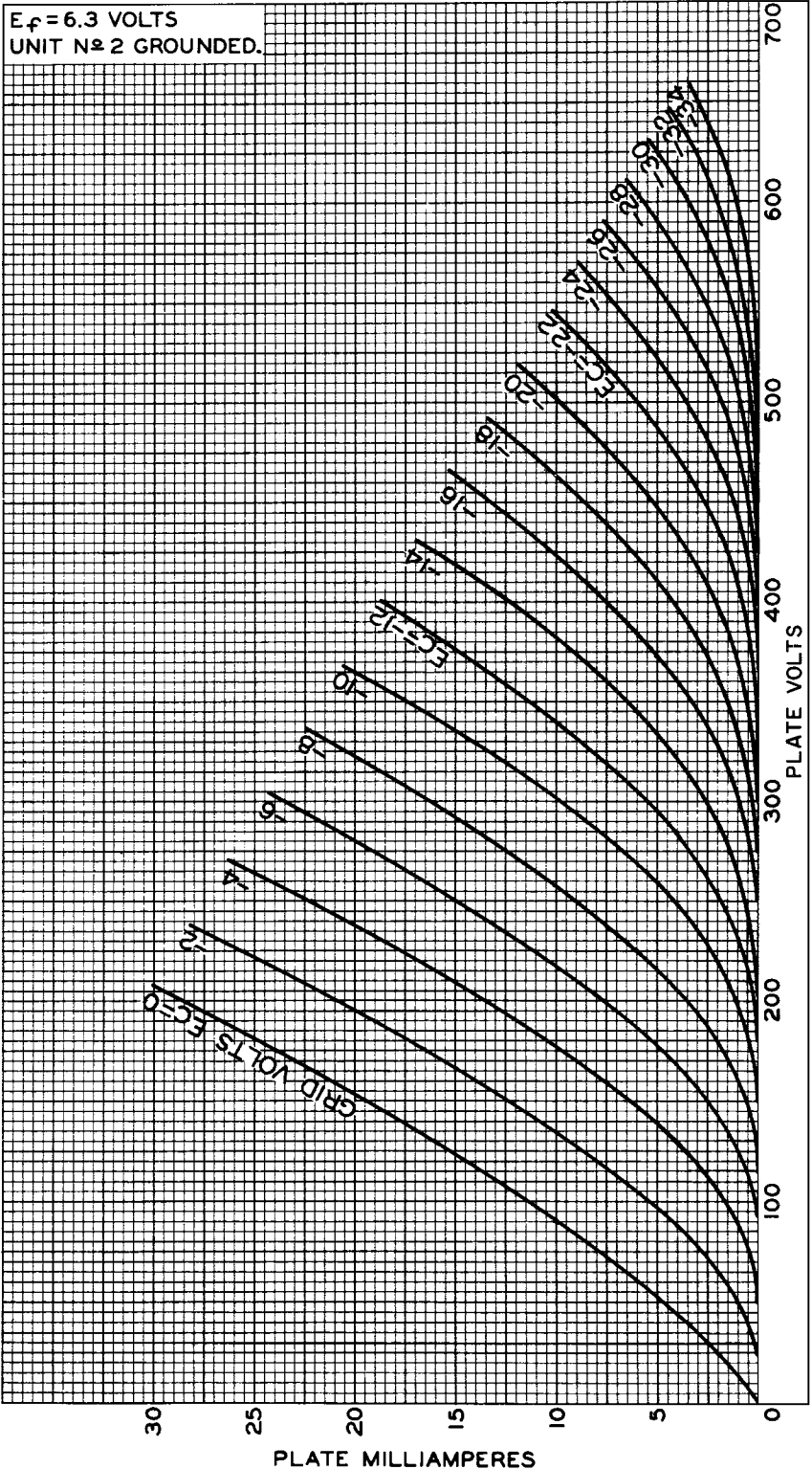
^c The dc component must not exceed 100 volts.

^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.



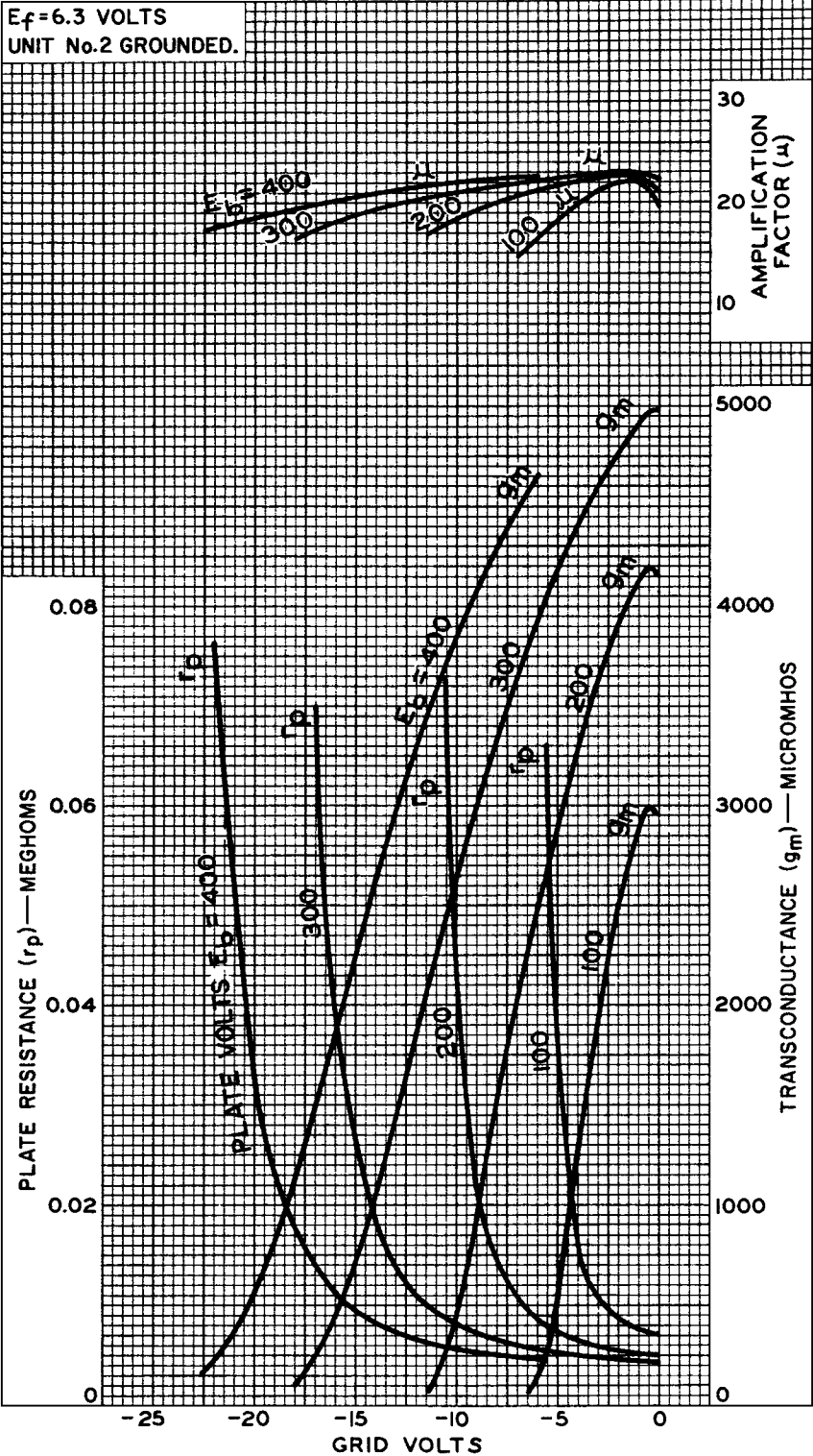
AVERAGE PLATE CHARACTERISTICS Unit No.1



92CM-8617



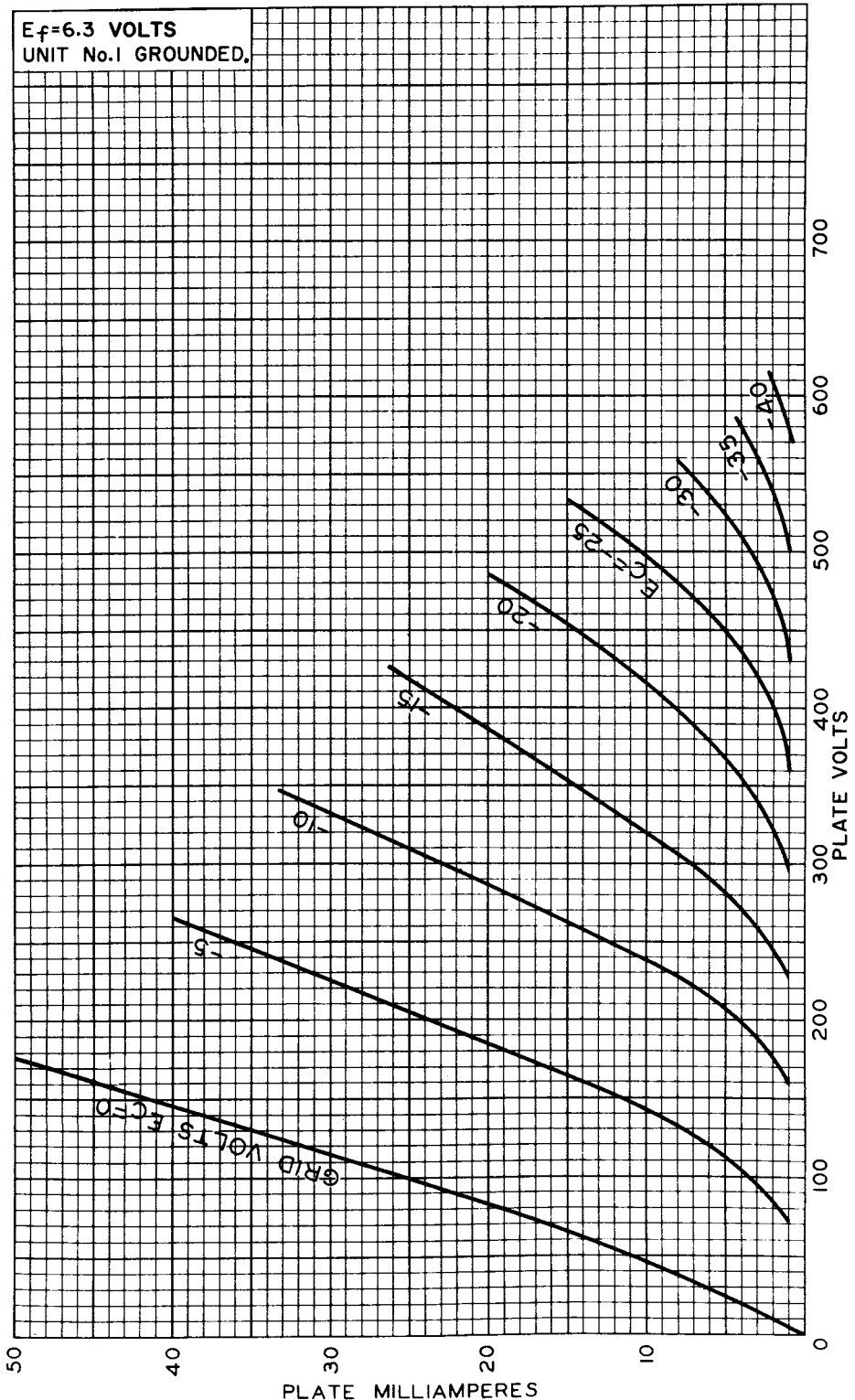
AVERAGE CHARACTERISTICS
Unit No.1



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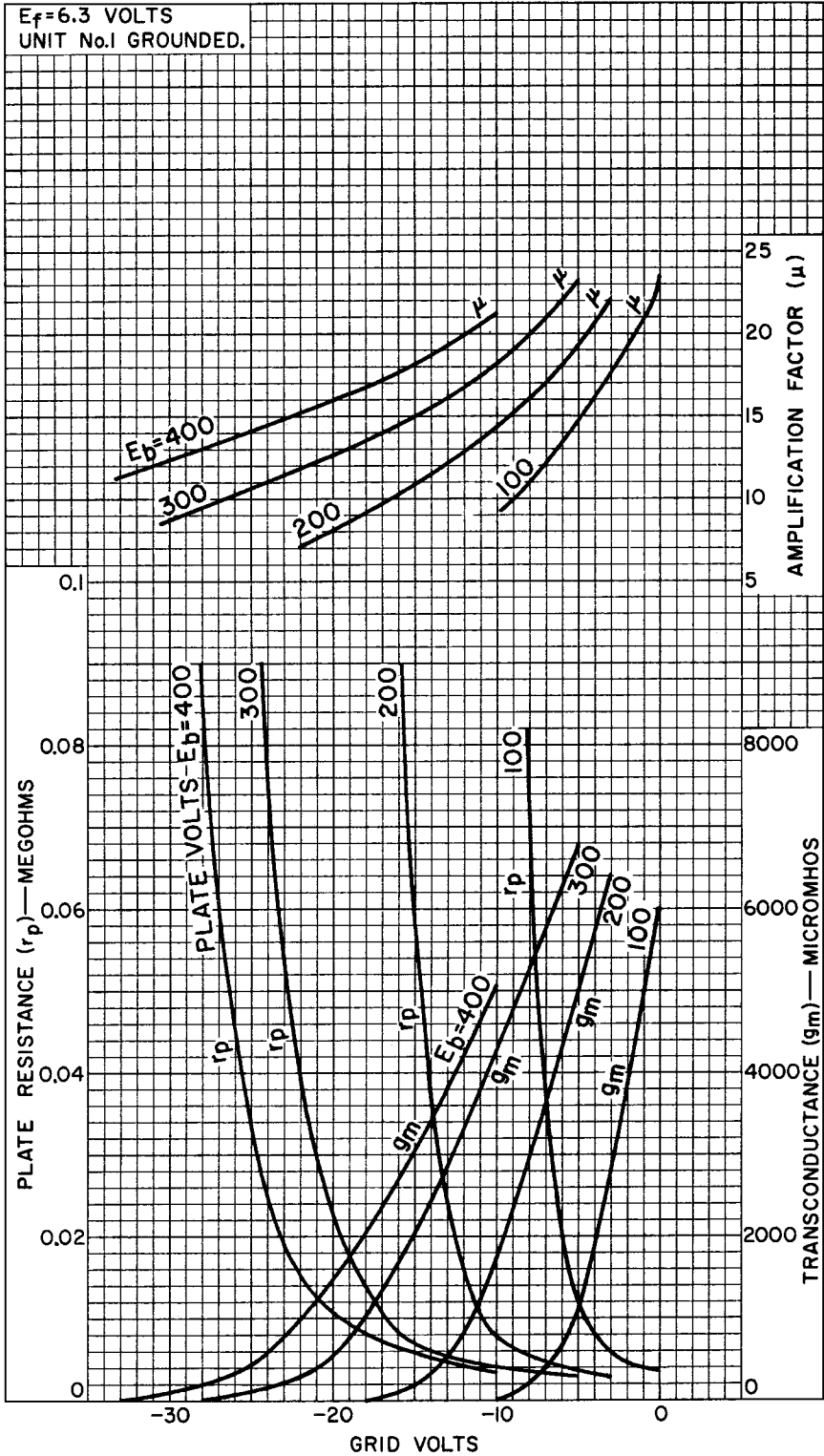
AVERAGE PLATE CHARACTERISTICS Unit No.2



92CM-8615



AVERAGE CHARACTERISTICS
Unit No.2



92CM-8613RI

