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MEDIUM-MU TRIODE—

SEMIREMOTE-CUTOFF PENTODE

9-PIN MINIATURE TYPE

GENERAL DATA

Electrical:

Heater, for Unipotential Cathodes:

Voltage 6.3 ac or dc volts

Current 0.45 amp

Direct Interelectrode Capacitances:^o

Triode Unit:

Grid to plate 1.7 μf Grid to cathode, internal
shield & heater 2 μf Plate to cathode, internal
shield & heater 1.7 μf

Pentode Unit:

Grid No.1 to plate 0.02 μf Grid No.1 to cathode,
grid No.2, grid No.3 &
internal shield & heater 6.5 μf Plate to cathode, grid
No.2, grid No.3 &
internal shield & heater 2.2 μf Triode grid to pentode plate 0.027 max. μf Pentode grid No.1 to triode plate. 0.020 max. μf Pentode plate to triode plate. 0.045 max. μf Characteristics, Class A₁ Amplifier:

	Triode Unit	Pentode Unit	
Plate Supply Voltage	200	200	volts
Grid-No.2 Supply Voltage	—	150	volts
Grid-No.1 Voltage.	-6	—	volts
Cathode-Bias Resistor.	—	180	ohms
Amplification Factor	19	—	
Plate Resistance (Approx.)	5750	300000	ohms
Transconductance	3300	6000	μmhos
Plate Current.	13	9.5	ma
Grid-No.2 Current.	—	3	ma
Grid-No.1 Voltage (Approx.) for plate current of 10 μamp .	-19	—	volts
Grid-No.1 Voltage (Approx.) for transconductance of 10 μmhos	—	-12.5	volts

Mechanical:

Mounting Position. Any

Maximum Overall Length 2-3/16"

Maximum Seated Length. 1-15/16"

Length, Base Seat to Bulb Top (Excluding tip) 1-9/16" $\pm$ 3/32"

^o without external shield.

●: See next page.

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TENTATIVE DATA 1

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MEDIUM-MU TRIODE— SEMIREMOTE-CUTOFF PENTODE

Maximum Diameter 7/8"
 Bulb T-6-1/2
 Base Small-Button Noval 9-Pin (JETEC No.E9-1)
 Basing Designation for BOTTOM VIEW 9ED

Pin 1 - Pentode Plate

Pin 2 - Pentode

Grid No.2

Pin 3 - Pentode

Cathode

Pin 4 - Heater

Pin 5 - Pentode Grid

No.3, Internal
Shield, Heater

Pin 6 - Pentode

Grid No.1

Pin 7 - Triode

Cathode

Pin 8 - Triode

Plate

Pin 9 - Triode

Grid

AMPLIFIER - Class A₁

Maximum Ratings, Design-Center Values:

	Triode Unit	Pentode Unit*	
PLATE VOLTAGE.	300 max.	300 max.	volts
GRID-No.3 (SUPPRESSOR) VOLTAGE.	-	See Operating Considerations	
GRID-No.2 (SCREEN) SUPPLY VOLTAGE.	-	300 max.	volts
GRID-No.2 VOLTAGE.	-	See Grid-No.2 Input Rating	

Chart at front of Receiving Tube Section

GRID-No.1 (CONTROL-GRID) VOLTAGE:			
Positive bias value. . .	0 max.	0 max.	volts
PLATE DISSIPATION. . . .	2.5 max.	2 max.	watts

GRID-No.2 INPUT:

For grid-No.2 voltages
up to 150 volts. - 0.5 max. watt

For grid-No.2 voltages
between 150 and
300 volts. - See Grid-No.2 Input Rating

Chart at front of Receiving Tube Section

PEAK HEATER-CATHODE

VOLTAGE:			
Heater negative with respect to cathode . . .	200 max.	▲	volts
Heater positive with respect to cathode . . .	200#max.	▲	volts

* The pentode unit is provided with a separate base pin for the cathode and for grid No.3 and internal shield which are connected internally to one of the heater leads. This arrangement facilitates the use of an unbypassed cathode resistor to minimize changes in input resistance and input capacitance with bias without causing oscillation which otherwise might occur if grid No.3 were internally connected to the cathode.

* The dc component must not exceed 100 volts.

▲: See next page.

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MEDIUM-MU TRIODE— SEMIREMOTE-CUTOFF PENTODE

Maximum Circuit Values:

	<i>Triode Unit</i>	<i>Pentode Unit</i>
Grid-No.1-Circuit Resistance:*		
For fixed-bias operation. . .	0.5 max.	0.25 max. megohm
For cathode-bias operation. .	1.0 max.	1.0 max. megohm

OPERATING CONSIDERATIONS

Because *grid No.3* is connected within the tube to one side of the heater (pin No.5), it is important that pin No.5 be connected to ground to maintain grid No.3 at ground potential. If this precaution is not observed and pin No.5 is connected to the ungrounded side of the heater supply, grid No.3 will operate at the heater-supply voltage. As a result, tube characteristics will be changed. Furthermore, if an ac heater supply is used, ac voltage will be applied to grid No.3 with resulting amplitude modulation of the grid-No.3 voltage.

- ▲ The heater-cathode voltage should not exceed the value of the operating cathode bias. If the heater-cathode voltage exceeds the operating cathode bias value, grid No.3 will be made negative with respect to cathode, and thus possibly cause a change in tube characteristics.
- * If either unit is operated at maximum rated conditions, grid-No.1-circuit resistances for both units should not exceed the stated values.

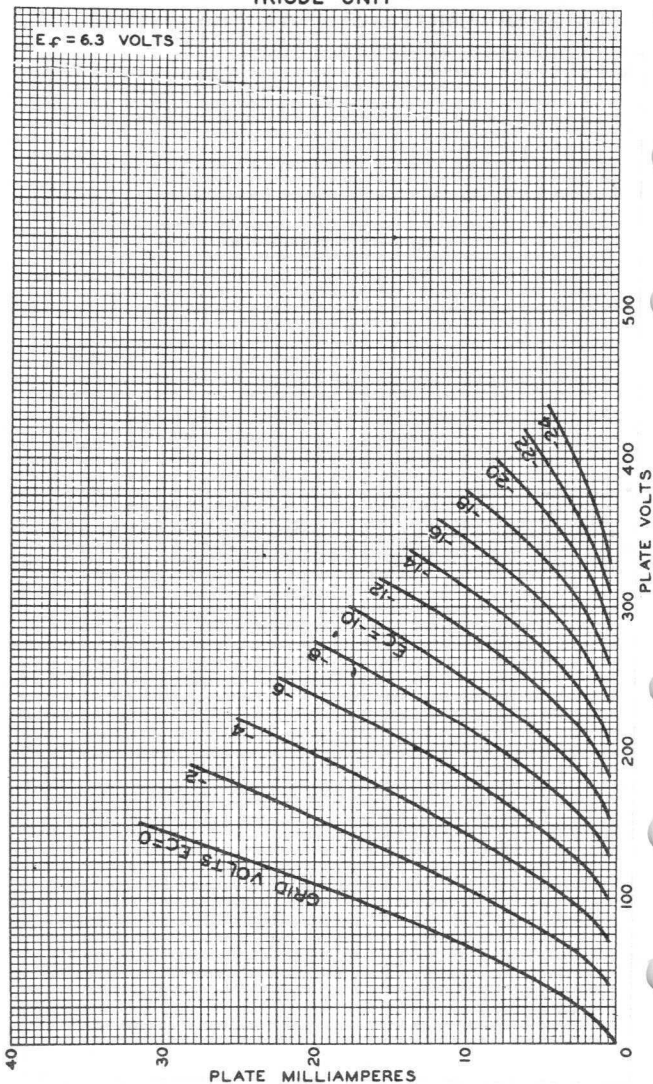
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AVERAGE PLATE CHARACTERISTICS TRIODE UNIT

$E_f = 6.3$ VOLTS



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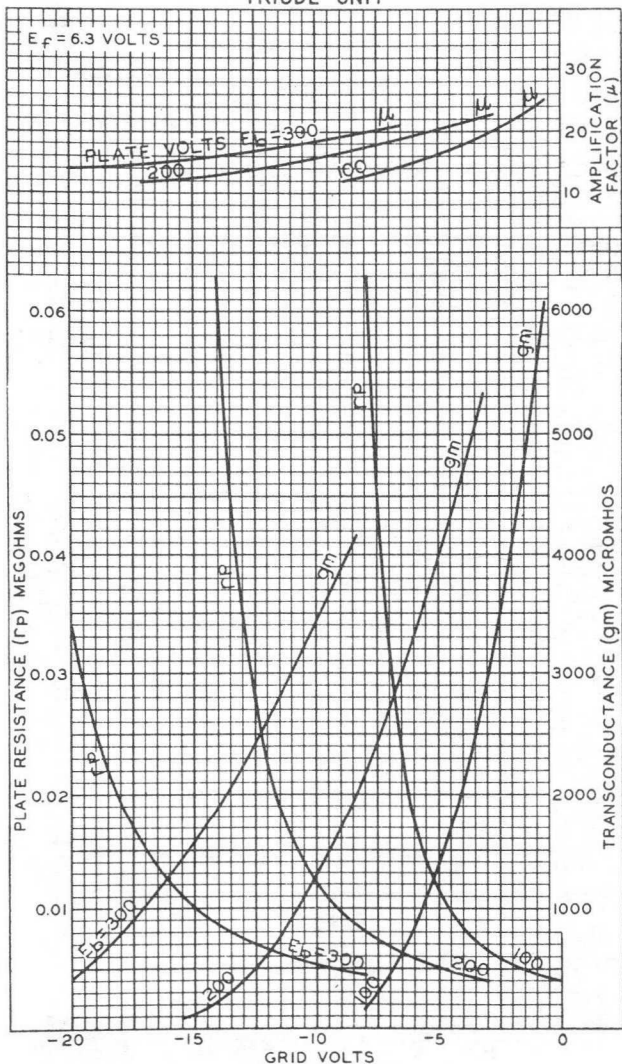
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AVERAGE CHARACTERISTICS TRIODE UNIT



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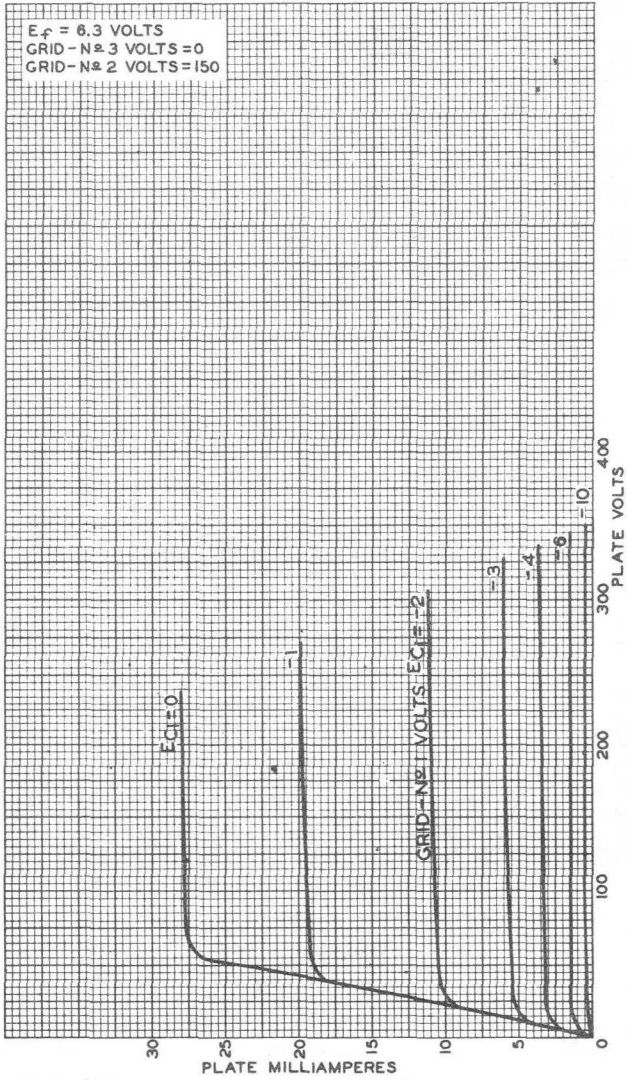
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AVERAGE PLATE CHARACTERISTICS PENTODE UNIT

$E_f = 6.3$ VOLTS
GRID - N^o 3 VOLTS = 0
GRID - N^o 2 VOLTS = 150



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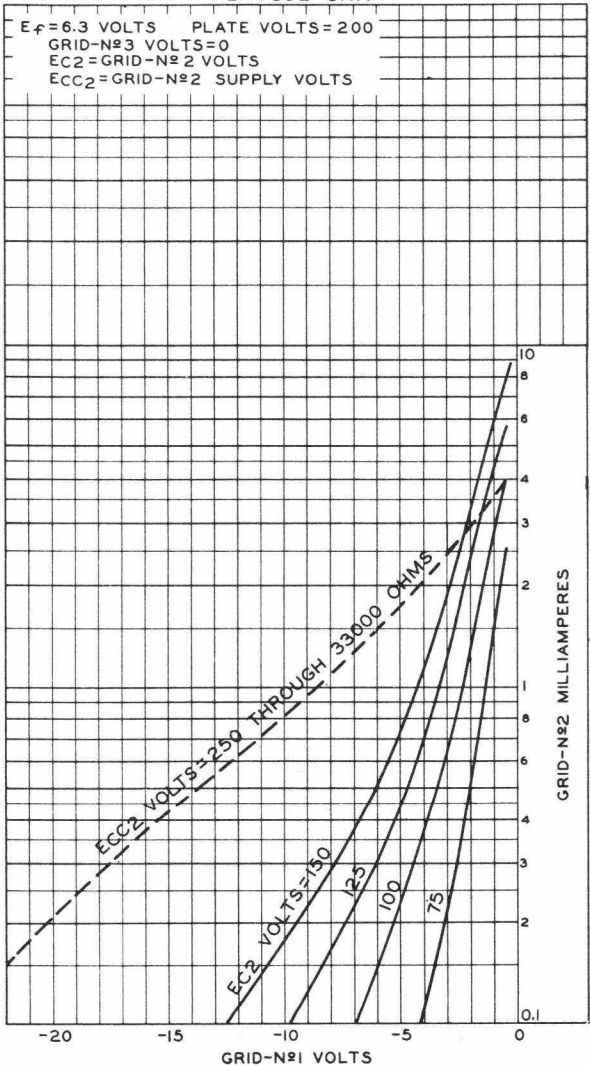
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AVERAGE CHARACTERISTICS PENTODE UNIT



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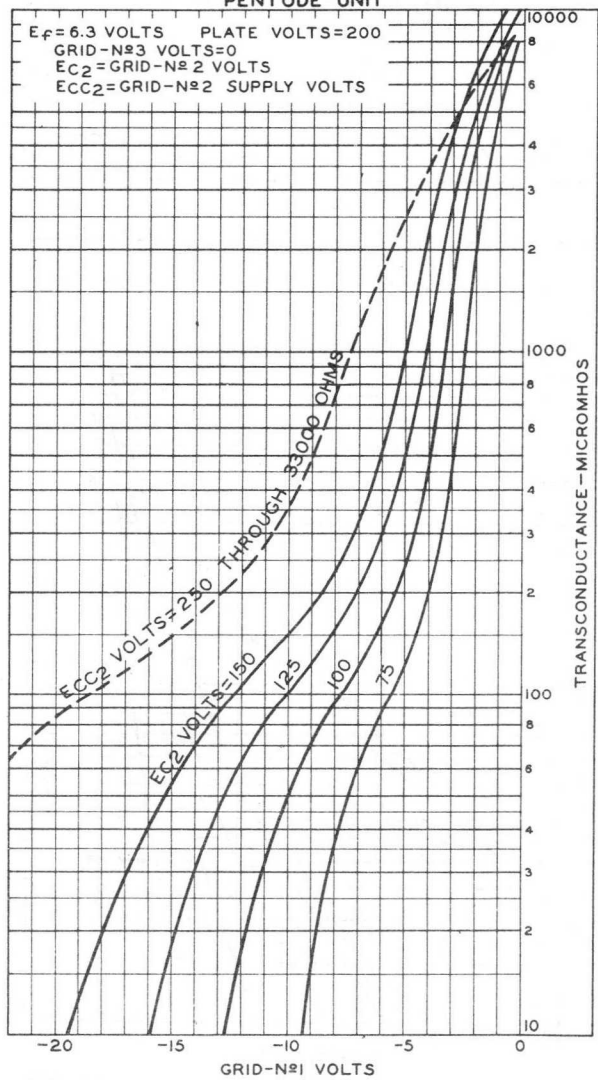
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AVERAGE CHARACTERISTICS PENTODE UNIT

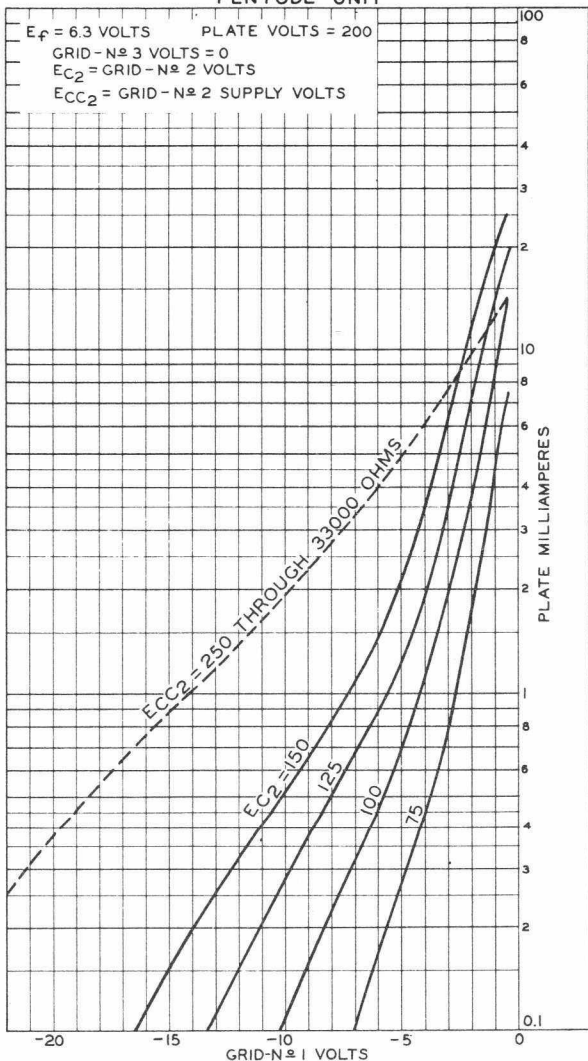




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AVERAGE CHARACTERISTICS PENTODE UNIT

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