

# 6X8

## Medium-Mu Triode— Sharp-Cutoff Pentode

### 9-PIN MINIATURE TYPE

#### GENERAL DATA

#### Electrical: ←

Heater, for Unipotential Cathode:

Voltage (AC or DC) . . . . .	6.3 ± 10%	volts
Current at 6.3 volts . . . . .	0.45	amp

Direct Interelectrode Capacitances:

	<i>Without External Shield</i>	<i>With External Shield<sup>▲</sup></i>	
<i>Triode Unit:</i>			
Grid to plate . . . . .	1.5	1.5	μf
Grid to cathode and heater . . . . .	2	2.4	μf
Plate to cathode and heater . . . . .	0.5	1	μf
<i>Pentode Unit:</i>			
Grid No.1 to plate . . . . .	0.09 max.	0.06 max.	μf
Grid No.1 to cathode, grid No.3, grid No.2, and heater . . . . .	4.6	4.8	μf
Plate to cathode, grid No.3, grid No.2, and heater . . . . .	0.9	1.6	μf
Pentode grid No.1 to triode plate . . . . .	0.05 max.	0.04 max.	μf
Pentode plate to triode plate . . . . .	0.05 max.	0.008 max.	μf
Heater to cathode . . . . .	6.5	6.5 <sup>●</sup>	μf

#### Characteristics, Class A<sub>1</sub> Amplifier: ←

	<i>Triode Unit</i>	<i>Pentode Unit</i>	
Plate Voltage . . . . .	125	100	125 volts
Grid No.3 . . . . .	—	<i>Connected to cathode at socket</i>	
Grid-No.2 Voltage . . . . .	—	70	125 volts
Grid-No.1 Voltage . . . . .	-1	—	-1 volt
Amplification Factor . . . . .	40	—	—
Plate Resistance (Approx.) . . . . .	6000	—	300000 ohms
Transconductance . . . . .	6500	5700	5500 μmhos
Plate Current . . . . .	12	—	9 ma
Grid-No.2 Current . . . . .	—	—	2.2 ma
Grid-No.1 Voltage (Approx.) for plate μa = 20 . . . . .	-7	—	-6.5 volts

← Indicates a change.



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## Mechanical:

Operating 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" ± 3/32"  
 → Diameter. . . . . 0.750" to 0.875"  
 Dimensional Outline . . . . . See *General Section*  
 Bulb. . . . . T6-1/2  
 Base. . . . . Small-Button Noval 9-Pin (JEDEC No. E9-1)  
 Basing Designation for BOTTOM VIEW. . . . . 9AK

Pin 1 - Pentode Grid No.3		Pin 6 - Cathode
Pin 2 - Triode Grid		Pin 7 - Pentode Grid No.1
Pin 3 - Triode Plate		Pin 8 - Pentode Grid No.2
Pin 4 - Heater		Pin 9 - Pentode Plate
Pin 5 - Heater		

## → AMPLIFIER — Class A<sub>1</sub>

### Maximum Ratings, Design-Maximum Values:

	<i>Triode Unit</i>	<i>Pentode Unit</i>
PLATE VOLTAGE . . . . .	275 max.	275 max. volts
GRID No.3 (SUPPRESSOR GRID) . . . . .	-	Connect to cathode at socket
GRID-No.2 (SCREEN-GRID)		
SUPPLY VOLTAGE. . . . .	-	275 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
GRID-No.2 INPUT:		
For grid-No.2 voltages		
up to 137.5 volts . . . . .	-	0.45 max. watt
For grid-No.2 voltages		
between 137.5 and 275 volts . . . . .	-	See Grid-No.2 Input Rating Chart at front of Receiving Tube Section
PLATE DISSIPATION . . . . .	1.7 max.	2.3 max. watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with		
respect to cathode. . . . .	200 max.	200 max. volts
Heater positive with		
respect to cathode. . . . .	200* max.	200* max. volts

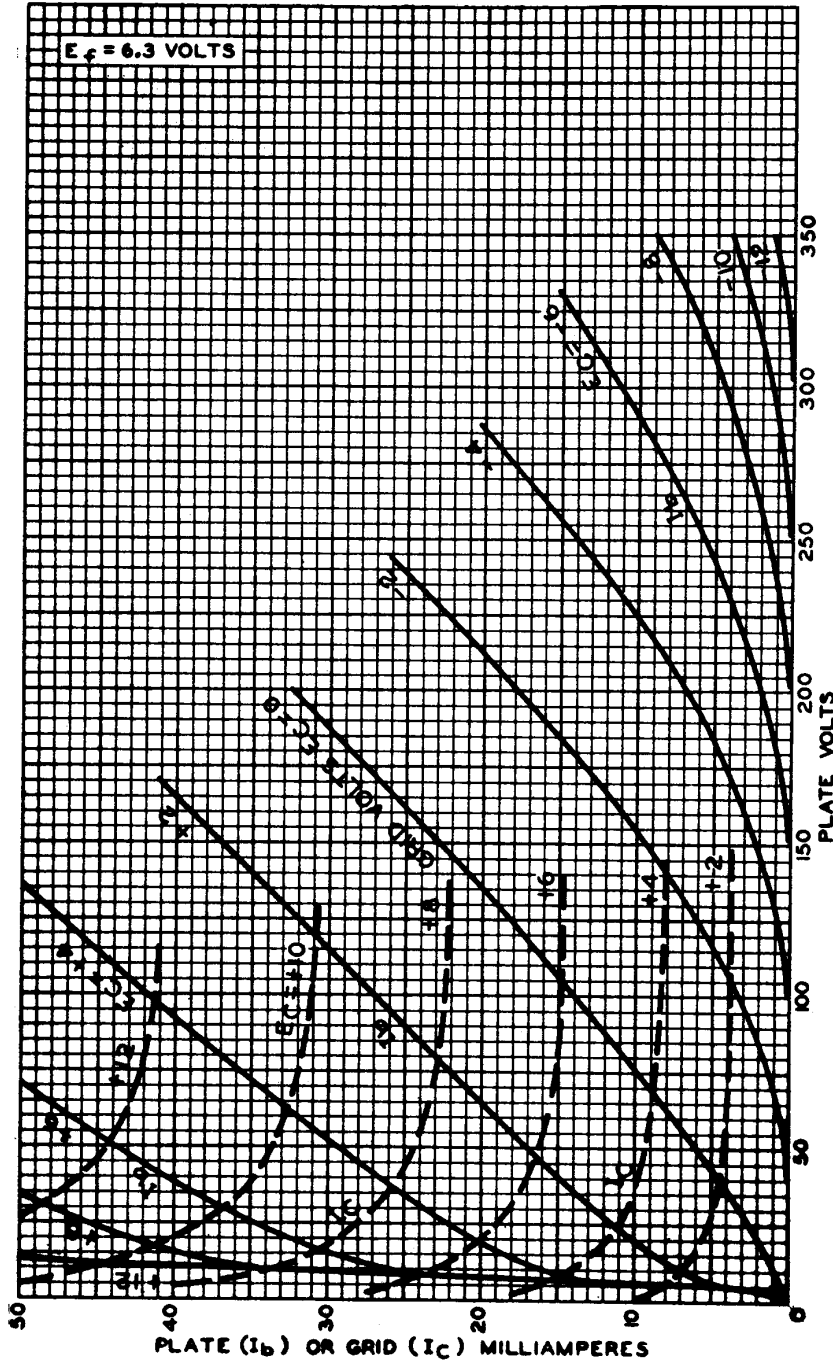
- ▲ With external shield JEDEC No.315 connected to cathode except as noted.
- With external shield JEDEC No.315 connected to pentode plate.
- ★ The dc component must not exceed 100 volts.

→ Indicates a change.



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AVERAGE CHARACTERISTICS  
Triode Unit



92CM-7531

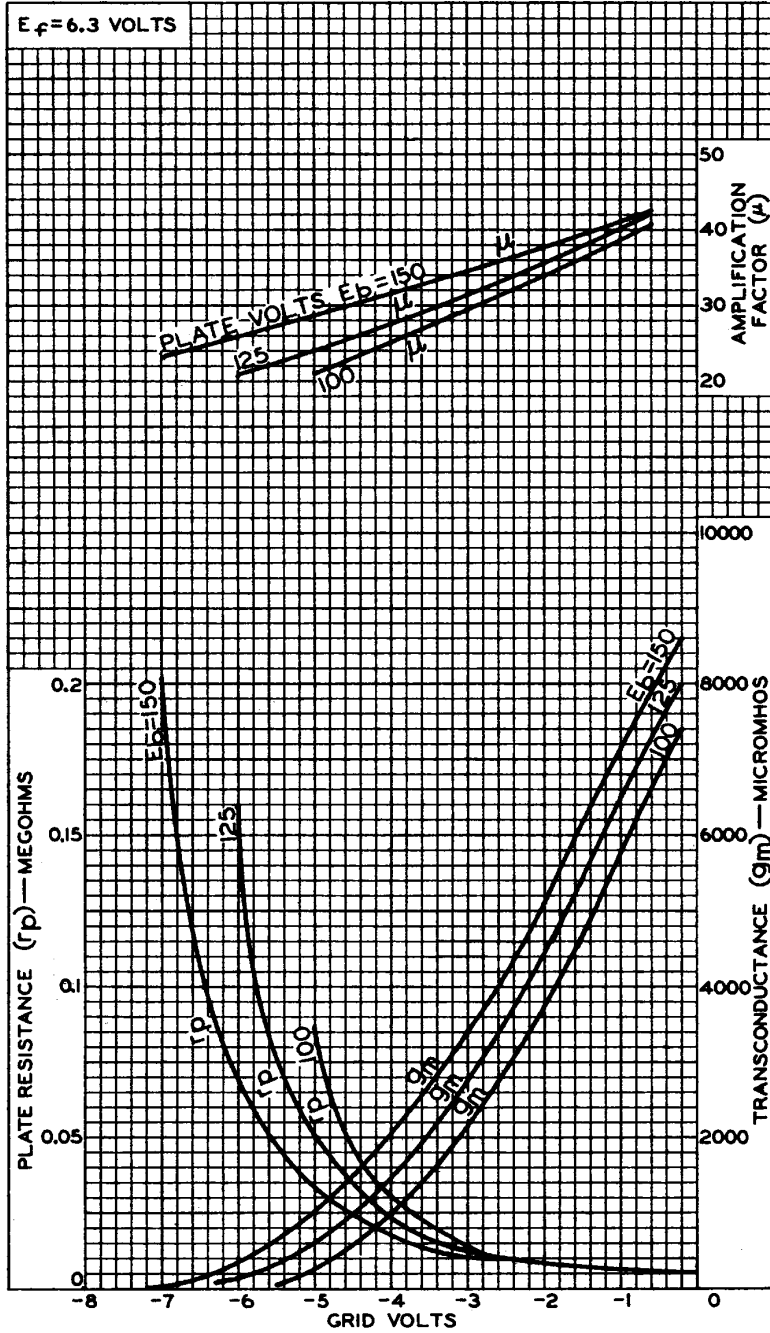


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DATA 2  
8-60

# 6X8

## AVERAGE CHARACTERISTICS Triode Unit



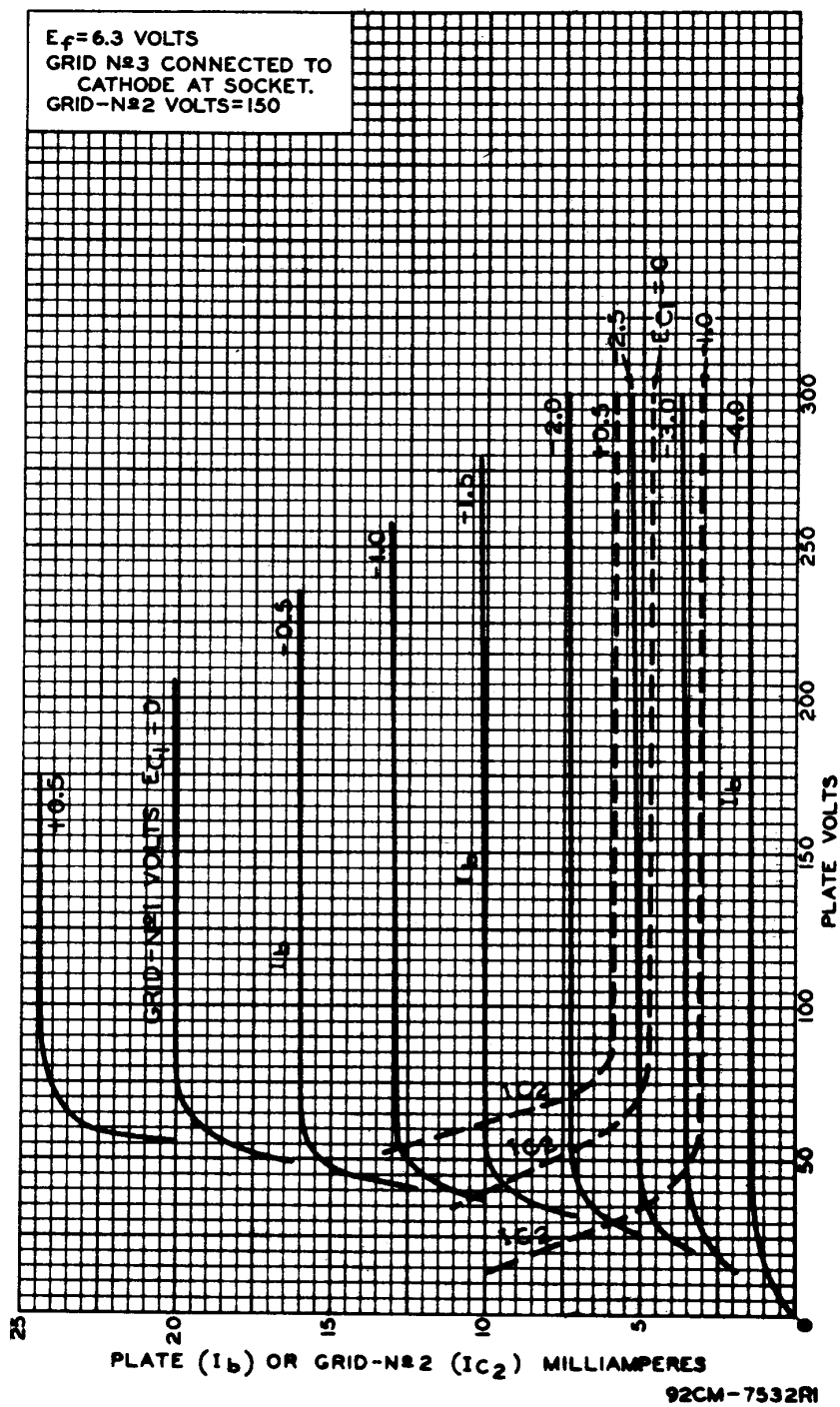
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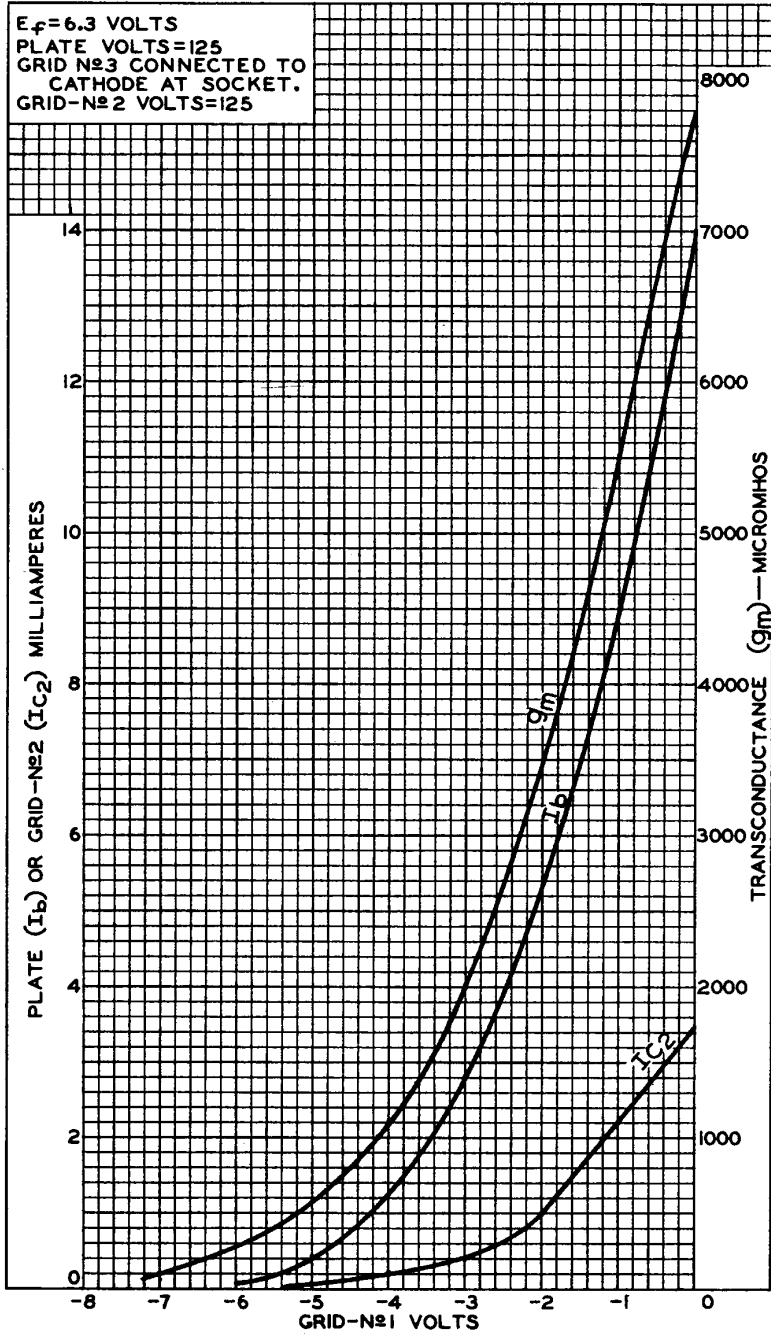


## AVERAGE CHARACTERISTICS Pentode Unit



# 6X8

## AVERAGE CHARACTERISTICS Pentode Unit



92CM-10810

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