

Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE

For Audio-Amplifier Applications Critical
as to Microphonism, Leakage Noise, and Hum

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:
Voltage (AC or DC) $6.3 \pm 10\%$ volts
Current at 6.3 volts 0.15 amp
Direct Interelectrode Capacitances:^a

Pentode Connection:

Grid No.1 to plate 0.11 max. μmf
Grid No.1 to cathode, grid No.3,
grid No.2, heater, and pins 2 and 6. 2.7 μmf
Plate to cathode, grid No.3,
grid No.2, heater, and pins 2 and 6. 2.4 μmf

Triode Connection:^b

Grid No.1 to plate 1.4 μmf
Grid No.1 to cathode 1.4 μmf
Plate to cathode 0.85 μmf

Characteristics, Class A₁ Amplifier:

| | <i>Triode Connection^b</i> | | <i>Pentode Connection</i> | |
|---|--------------------------------------|--------|---------------------------------------|------------------|
| Plate Voltage | 100 | 250 | 250 | volts |
| Grid No.3 | - | - | <i>Connected to cathode at socket</i> | |
| Grid-No.2 Voltage | - | - | 100 | volts |
| Grid-No.1 Voltage | -3 | -8 | -3 | volts |
| Amplification Factor | 21 | 21 | - | |
| Plate Resistance (Approx.) | 0.017 | 0.0137 | 2 | megohms |
| Transconductance | 1240 | 1530 | 1000 | μmhos |
| Plate Current | 2.2 | 5.5 | 1.8 | ma |
| Grid-No.2 Current | - | - | 0.4 | ma |
| Grid-No.1 Voltage (Approx.) for plate | - | - | -8 | volts |
| $\mu\text{a} = 10$ | - | - | -8 | volts |

Mechanical:

Operating Position Any
Maximum Overall Length $2\text{-}3/16"$
Maximum Seated Length $1\text{-}15/16"$
Length, Base Seat to Bulb Top (Excluding tip) $1\text{-}9/16" \pm 3/32"$
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)

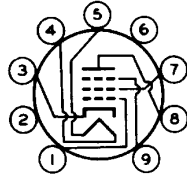
← Indicates a change.



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Basing Designation for BOTTOM VIEW. 9AD

Pin 1-Grid No.1
 Pin 2-No Connection
 Pin 3-Cathode
 Pin 4-Heater
 Pin 5-Heater



Pin 6-No Connection
 Pin 7-Grid No.2
 Pin 8-Plate
 Pin 9-Grid No.3

AMPLIFIER — Class A₁

→ Maximum Ratings, Design-Maximum Values:

| | <i>Triode Connection^b</i> | <i>Pentode Connection</i> | |
|---|--|--|-------|
| PLATE VOLTAGE. | 275 max. | 330 max. | volts |
| GRID No.3 (SUPPRESSOR GRID). | - | <i>Connect to cathode at socket</i> | |
| GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE | - | 330 max. | volts |
| GRID-No.2 VOLTAGE. | - | <i>See Grid-No.2 Input Rating Chart at front of Receiving Tube Section</i> | |
| GRID-No.1 (CONTROL-GRID) VOLTAGE: | | | |
| Negative-bias value. | 55 max. | 55 max. | volts |
| Positive-bias value. | 0 max. | 0 max. | volts |
| GRID-No.2 INPUT: | | | |
| For grid-No.2 voltages up to 165 volts | - | 0.25 max. | watt |
| For grid-No.2 voltages between 165 and 330 volts. | - | <i>See Grid-No.2 Input Rating Chart at front of Receiving Tube Section</i> | |
| PLATE DISSIPATION. | 1.7 max. | 1.25 max. | watts |
| PEAK HEATER-CATHODE VOLTAGE: | | | |
| Heater negative with respect to cathode | 100 max. | 100 max. | volts |
| Heater positive with respect to cathode | 100 max. | 100 max. | volts |

Typical Operation as Resistance-Coupled Amplifier:

See *RESISTANCE-COUPLED-AMPLIFIER CHARTS No.26 & No.27*
 at front of this Section

Maximum Circuit Values:

| | <i>Triode Connection^b</i> | <i>Pentode Connection</i> | |
|------------------------------|--|-------------------------------|---------|
| Grid-No.1-Circuit Resistance | 2.2 max. | 2.2 max. | megohms |

^a Without external shield.

^b Grid No.3 and grid No.2 connected to plate.

→ Indicates a change.



OPERATING CONSIDERATIONS

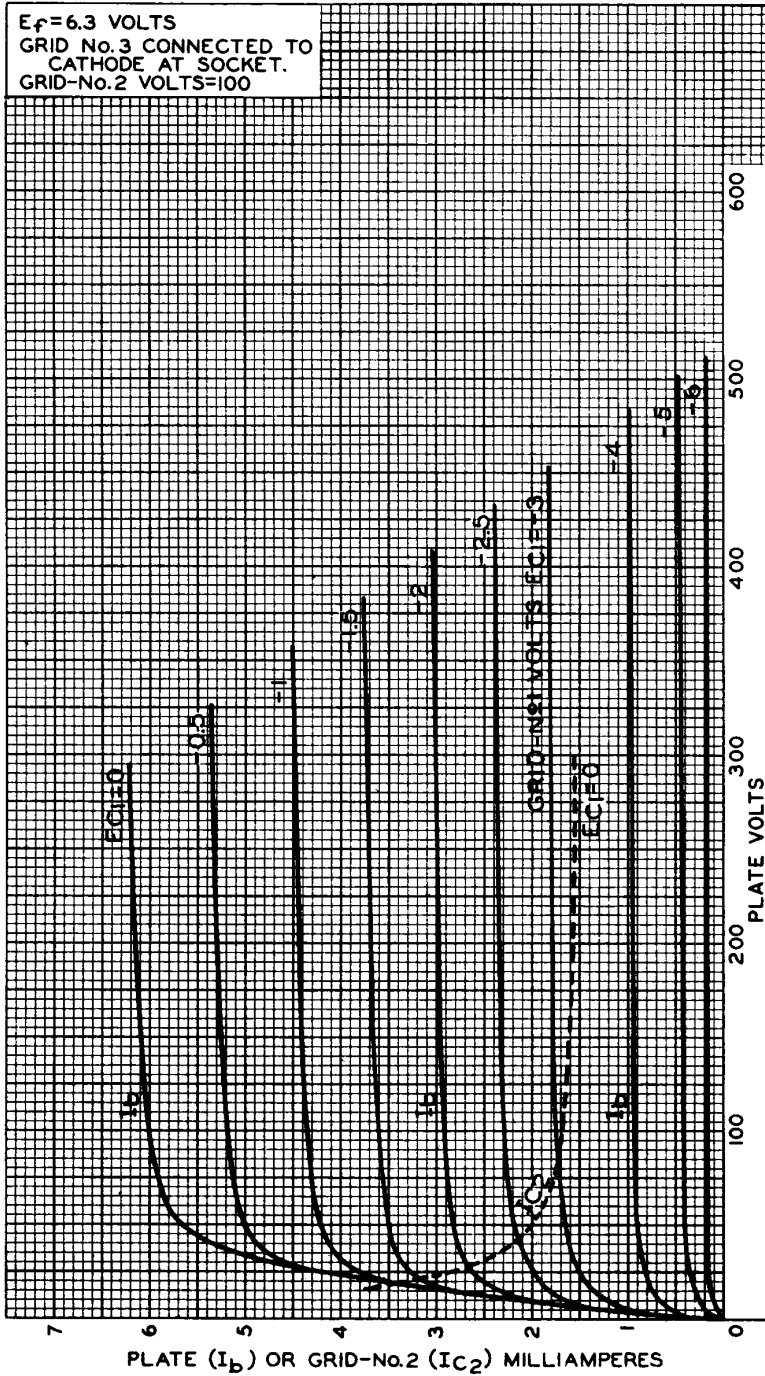
It is recommended that pins 2 and 6 be grounded in all applications. Grounding of these pins will effectively shield grid No.1 and plate from heater and help to reduce hum level when an ac heater supply is used.

← Indicates a change.



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AVERAGE CHARACTERISTICS Pentode Connection



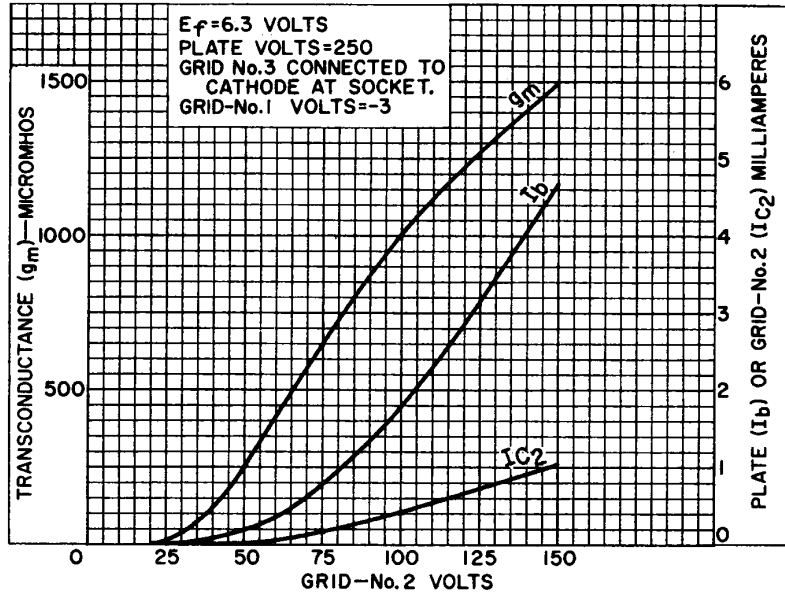
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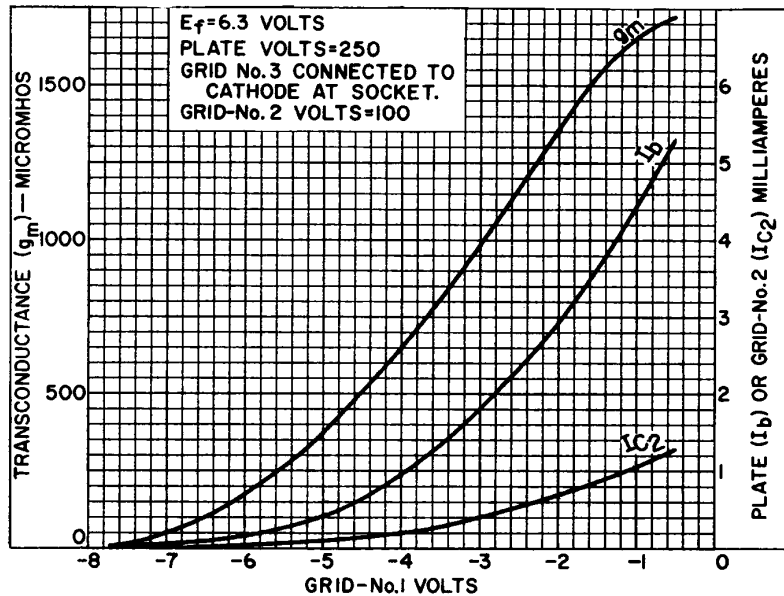
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AVERAGE CHARACTERISTICS
Pentode Connection



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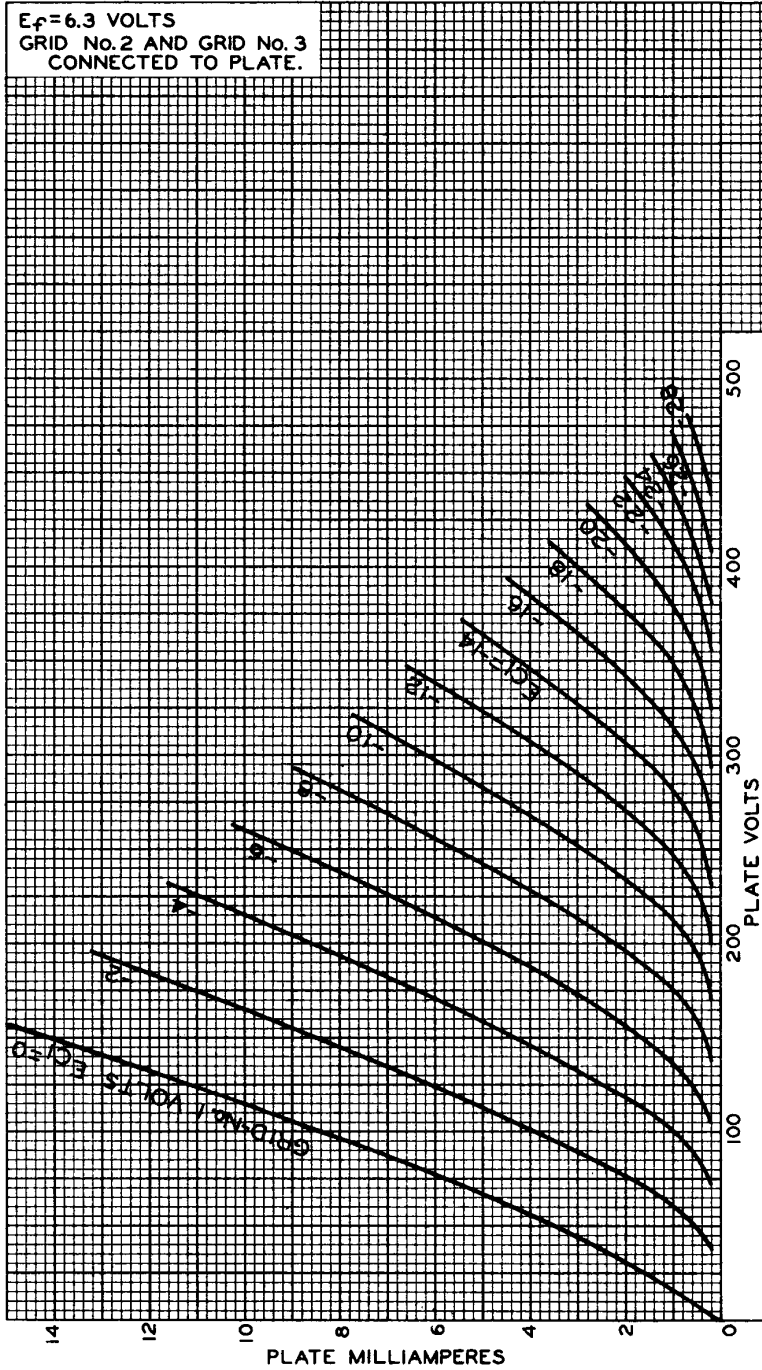


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AVERAGE PLATE CHARACTERISTICS Triode Connection



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