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 ± 10%	volts
Current at 6.3 volts	0.15	amp
Direct Interelectrode Capacitances:[a]		
Pentode Connection:		
Grid No.1 to plate	0.11 max.	μμf
Grid No.1 to cathode, grid No.3, grid No.2, heater, and pins 2 and 6	2.7	μμf
Plate to cathode, grid No.3, grid No.2, heater, and pins 2 and 6	2.4	μμf
Triode Connection:[b]		
Grid No.1 to plate	1.4	μμf
Grid No.1 to cathode	1.4	μμf
Plate to cathode	0.85	μμf

Characteristics, Class A_1 Amplifier:

	Triode Connection[b]		*Pentode Connection*	
Plate Voltage	100	250	250	volts
Grid No.3	–	–	*Connected to cathode at socket*	
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 $\mu a = 10$	–	–	-8	volts

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)

◄Indicates a change.

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 A_1

→Maximum Ratings, *Design-Maximum Values:*

	Triode Connection[b]	*Pentode Connection*	
PLATE VOLTAGE.	275 max.	330 max.	volts
GRID No.3 (SUPPRESSOR GRID).	–	*Connect to cathode at socket*	
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE	–	330 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:			
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.	–	See *Grid-No.2 Input Rating Chart* at front of Receiving Tube Section	
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:

	Triode Connection[b]	*Pentode Connection*	
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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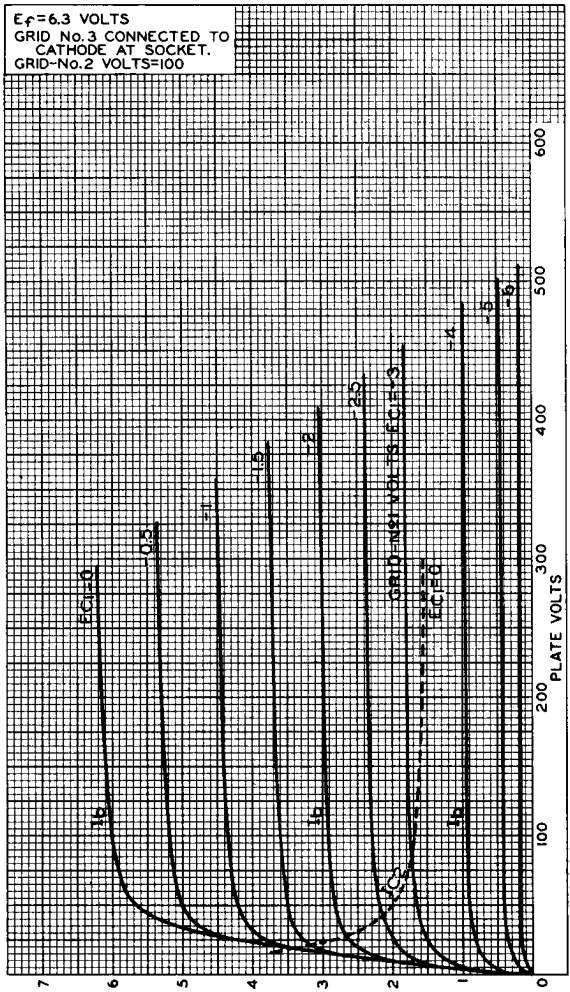
AVERAGE CHARACTERISTICS
Pentode Connection



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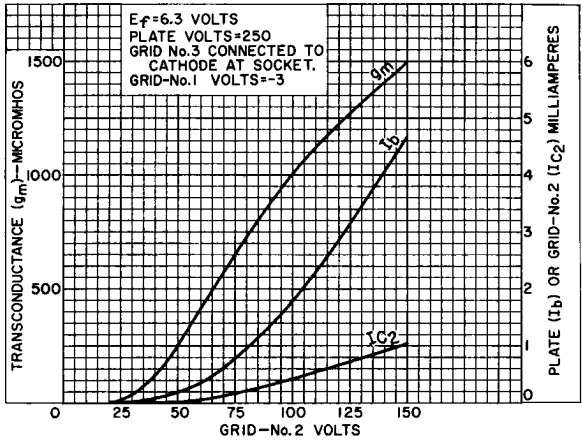
AVERAGE CHARACTERISTICS
Pentode Connection



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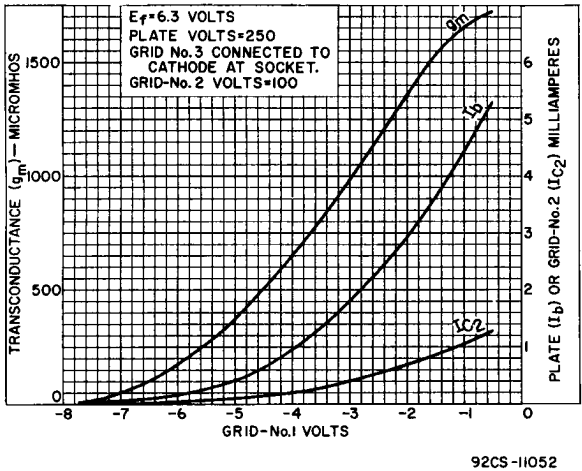

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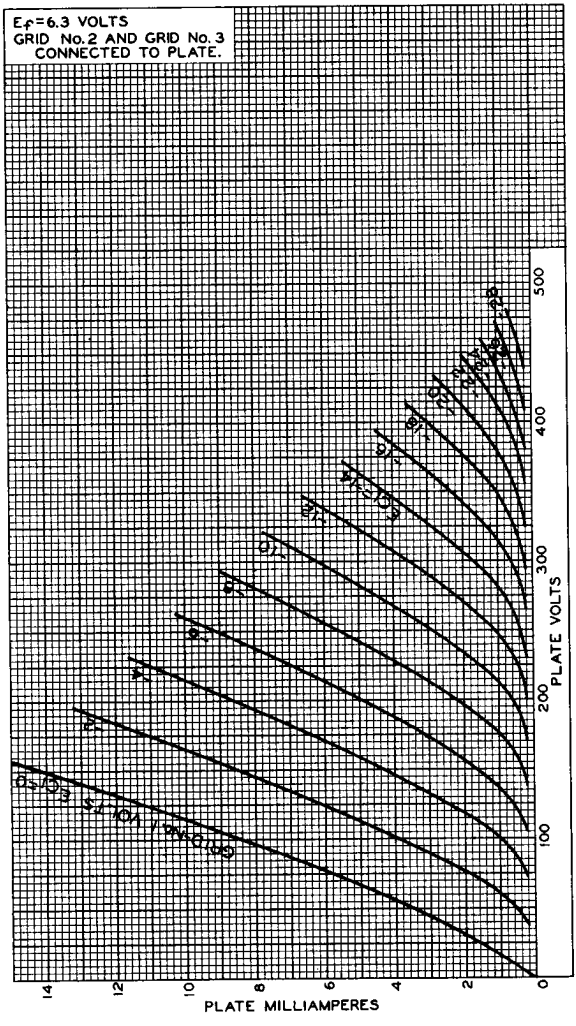
AVERAGE PLATE CHARACTERISTICS
Triode Connection



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