

Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE

For Equipment Having Series Heater-String Arrangement

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

	Series	Parallel	
Heater arrangement			
Voltage (AC or DC)	12.6 ± 10%	6.3	volts
Current	0.3	0.6 ± 6%	amp
Warm-up time (Average)	-	11	sec

Direct Interelectrode Capacitances:

Grid No.1 to plate	0.063	μf
Grid No.1 to cathode, grid No.3 & internal shield, grid No.2, and heater	10.2	μf
Plate to cathode, grid No.3 & internal shield, grid No.2, and heater	3.5	μf

Characteristics, Class A₁ Amplifier:

Plate Supply Voltage	250	volts
Grid No.3	<i>Connected to cathode at socket</i>	
Grid-No.2 Supply Voltage	180	volts
Cathode Resistor	100	ohms
Plate Resistance (Approx.)	93000	ohms
Transconductance	11000	μmhos
Plate Current	26	ma
Grid-No.2 Current	5.75	ma
Grid-No.1 Voltage (Approx.) for plate μa = 20	-11.6	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	9BF

- Pin 1 - Cathode
- Pin 2 - Grid No.1
- Pin 3 - Grid No.3,
Internal
Shield
- Pin 4 - Heater
- Pin 5 - Heater



- Pin 6 - Heater Tap
- Pin 7 - Plate
- Pin 8 - Grid No.2
- Pin 9 - Grid No.3,
Internal
Shield

← Indicates a change.



12BY7-A

AMPLIFIER — Class A₁

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE	330	max.	volts
GRID No.3 (SUPPRESSOR GRID)Connect to cathode at socket		
GRID-No.2 (SCREEN-GRID) VOLTAGE	190	max.	volts
GRID-No.1 (CONTROL-GRID) VOLTAGE:			
Negative-bias value	55	max.	volts
Positive-bias value	0	max.	volts
GRID-No.2 INPUT	1.2	max.	watts
PLATE DISSIPATION	6.5	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode.	200	max.	volts
Heater positive with respect to cathode.	200 ^b	max.	volts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:			
For fixed-bias operation.	0.25	max.	megohm
For cathode-bias operation.	1	max.	megohm

^a Without external shield.

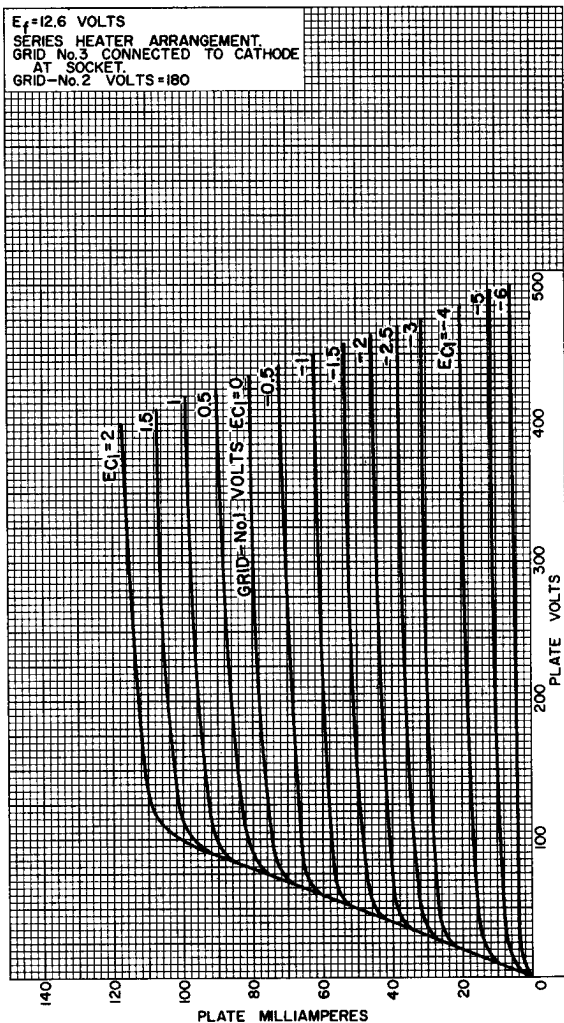
^b The dc component must not exceed 100 volts.

→ Indicates a change.



AVERAGE PLATE CHARACTERISTICS

$E_f = 12.6$ VOLTS
 SERIES HEATER ARRANGEMENT,
 GRID No. 3 CONNECTED TO CATHODE
 AT SOCKET.
 GRID-No. 2 VOLTS = 180



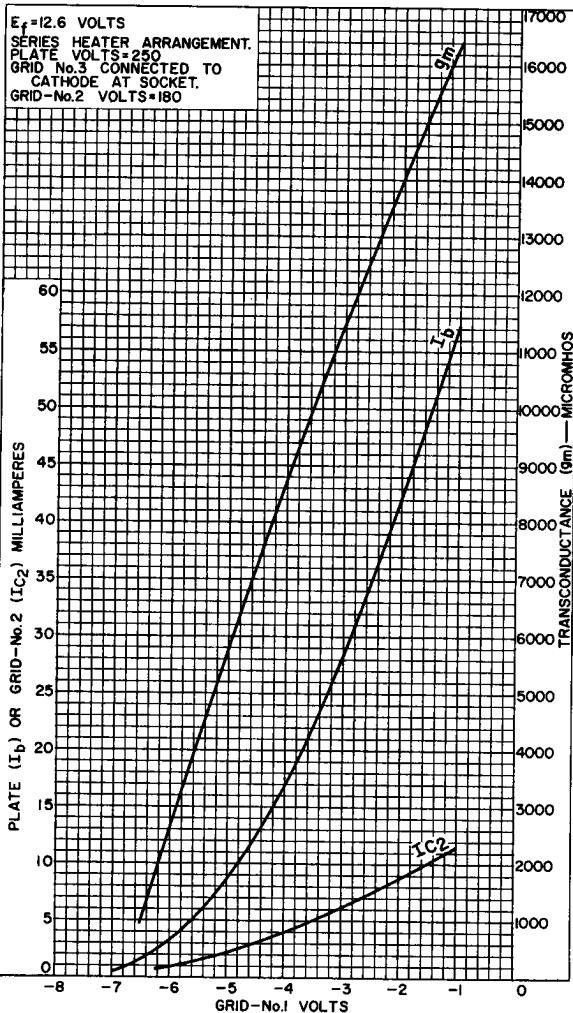
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12BY7-A

AVERAGE CHARACTERISTICS

$E_f = 12.6$ VOLTS
SERIES HEATER ARRANGEMENT.
PLATE VOLTS = 250
GRID No.3 CONNECTED TO
CATHODE AT SOCKET.
GRID-No.2 VOLTS = 180



92CM-11051

RADIO CORPORATION OF AMERICA
Electron Tube Division

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