

RCA-6HB7

MEDIUM-MU TRIODE— SHARP-CUTOFF PENTODE

9-Pin Miniature Type

RCA Dark Heater

For UHF Oscillator-Mixer Service
in TV Receivers

Controlled Heater Warm-up Time

RCA-6HB7 is a multiunit tube of the 9-pin miniature type containing a medium-mu triode and a sharp-cutoff pentode in one envelope. This type is useful as a combined oscillator-mixer tube in television receivers utilizing an intermediate frequency in the order of 40 Mc.

The pentode unit of the 6HB7 has a relatively high value of transconductance and an excellent knee-current characteristic. In addition, the pentode unit has an exceptionally low value of grid-No.1-to-plate capacitance (0.010 pf maximum) to minimize feedback problems.

Two base pin connections to the cathode minimize the cathode lead inductance of the pentode unit. An inter-unit shield reduces interaction between units.

The heater of the 6HB7 has controlled warm-up time for use in series-heater-string arrangements. The RCA Dark Heater is utilized for long life and dependable performance.

Characteristics, Class A₁ Amplifier:

	Triode Unit	Pentode Unit	
Plate Supply Voltage.	150	125	volts
Grid-No.2 Supply Voltage. . . .	-	125	volts
Grid-No.1 Supply Voltage. . . .	0	-1	volts
Cathode Resistor.	56	-	ohms
Amplification Factor.	40	-	
Plate Resistance (Approx.). . .	5000	200,000	ohms
Transconductance.	8500	6400	μmhos
Plate Current	18	12	ma
Grid-No.2 Current	-	4	ma
Grid-No.1 Voltage (Approx.) for plate $\mu_a = 10$	-12	-9	volts

Mechanical:

Operating Position.	Any
Type of Cathode	Coated Unipotential
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"
Diameter.	0.750" to 0.875"
Dimensional Outline	JEDEC No.6-2
Bulb.	T6-1/2
Base.	Small-Button Noval 9-Pin (JEDEC No.E9-1)

GENERAL DATA

Electrical:

Heater Characteristics and Ratings:

Voltage (AC or DC).	6.3 ^a	volts
Current	0.450 $\pm$ 0.030	amp
Warm-up time (Average).	11	sec
Peak heater-cathode voltage:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200 ^b max.	volts

Direct Interelectrode Capacitances:^c

Triode Unit:

Grid to plate	1.9	pf
Grid to cathode & pentode grid No.3 & internal shield, and heater.	3.0	pf
Plate to cathode & pentode grid No.3 & internal shield, and heater.	1.9	pf

Pentode Unit:

Grid No.1 to plate.	0.010 max.	pf
Grid No.1 to cathode & grid No.3 & internal shield, grid No.2, and heater.	5.0	pf
Plate to cathode & grid No.3 & internal shield, grid No.2, and heater.	3.4	pf
Heater to cathode ^d	3.8	pf

AMPLIFIER – Class A₁

Maximum Ratings, Design-Maximum Values:

	Triode Unit	Pentode Unit
Plate Voltage	330 max.	330 max. volts
Grid-No.2 (Screen-Grid) Supply Voltage.	-	330 max. volts
Grid-No.2 Voltage	-	See Grid-No.2 Input Rating Chart
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 165 volts.	-	0.55 max. watt
For grid-No.2 voltages between 165 and 330 volts -	-	See Grid-No.2 Input Rating Chart
Plate Dissipation	2.5 max.	3.1 max. watts

Maximum Circuit Values:

Grid-No.1 Circuit Resistance:		
For fixed-bias operation. . . .	0.5 max.	0.25 max. megohm
For cathode-bias operation. . .	1.0 max.	0.5 max. megohm

^a At heater amperes = 0.450.

^b The dc component must not exceed 100 volts.

^c With external shield JEDEC No.315 connected to cathode except as noted.

^d With external shield JEDEC No.315 connected to ground.

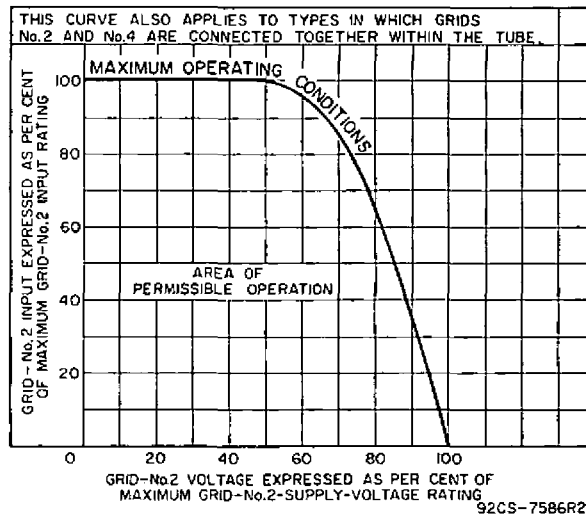
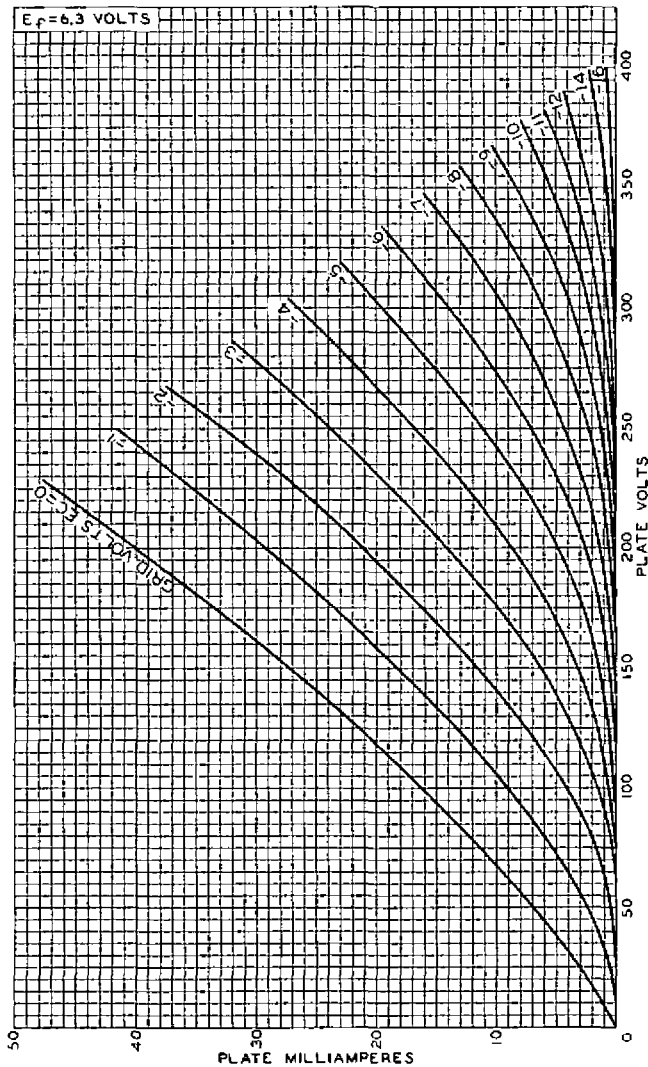


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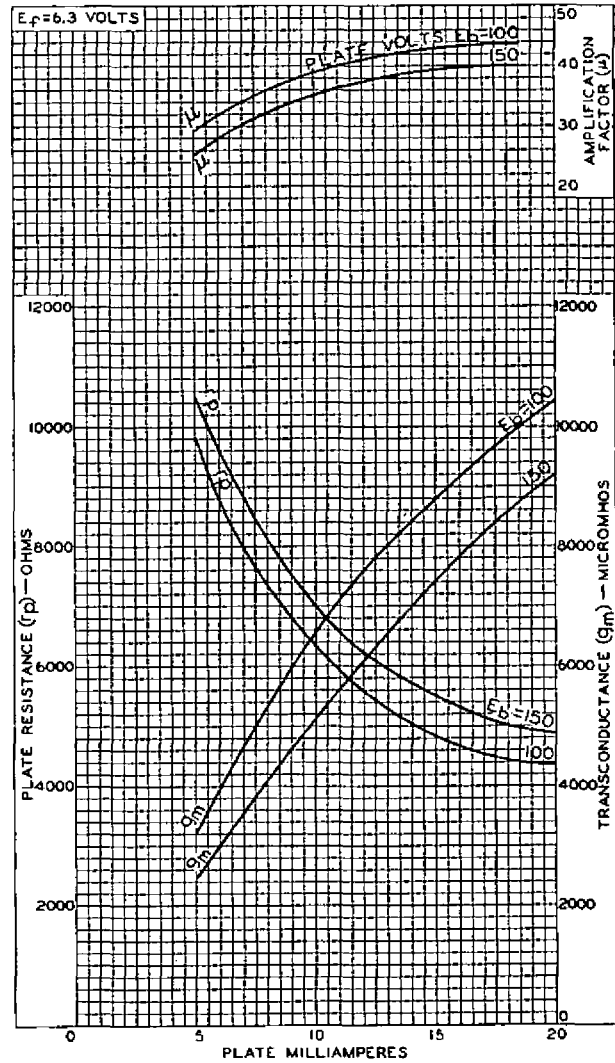
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6HB7 1-64
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GRID-No.2-INPUT RATING CHART

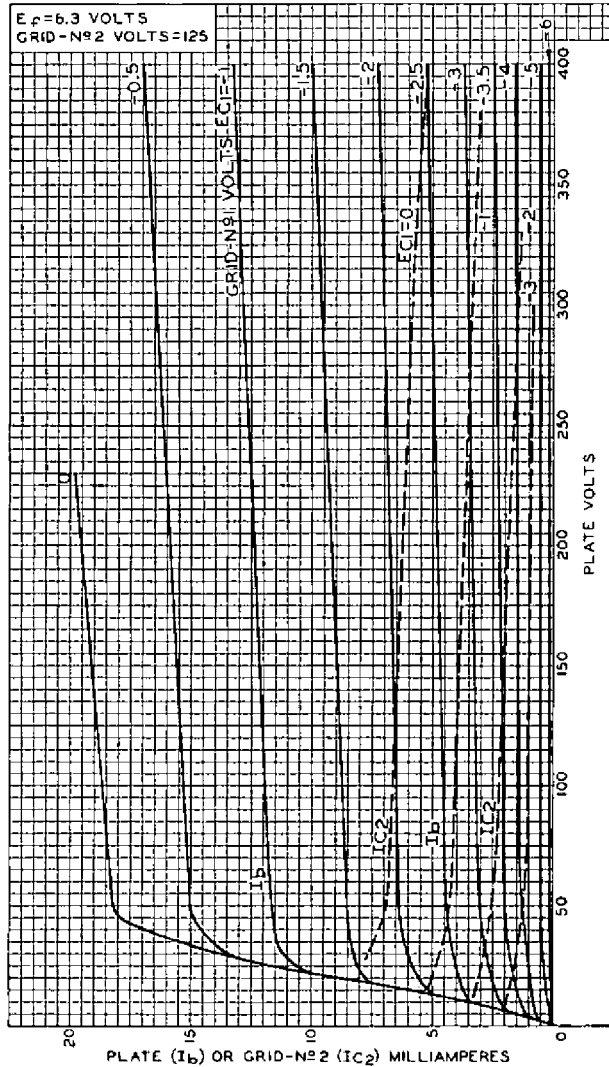
AVERAGE CHARACTERISTICS
Triode Unit

92CM-9866

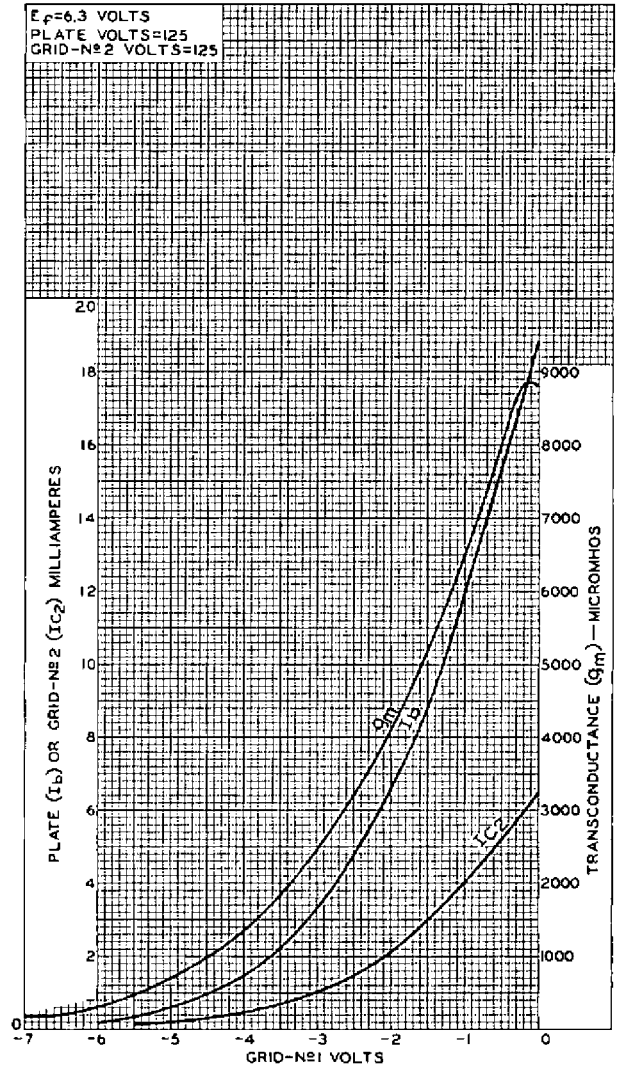


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AVERAGE CHARACTERISTICS Pentode Unit



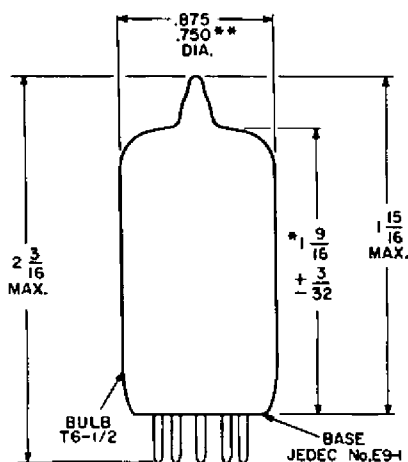
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DIMENSIONAL OUTLINE JEDEC No.6-2



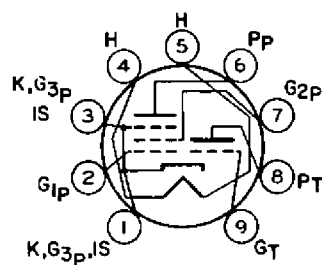
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Dimensions in Inches

- * Measured from base seat to bulb-top line as determined by ring gauge of 7/16" inside diameter.
 ** Applies in zone starting 0.375" from base seat.

TERMINAL DIAGRAM

Bottom View



JEDEC 9QA

- | | |
|--|-------------------------------|
| Pin 1 - Cathode,
Pentode
Grid No. 3,
Internal
Shield | Pin 5 - Heater |
| Pin 2 - Pentode
Grid No. 1 | Pin 6 - Pentode
Plate |
| Pin 3 - Same as
Pin 1 | Pin 7 - Pentode
Grid No. 2 |
| Pin 4 - Heater | Pin 8 - Triode
Plate |
| | Pin 9 - Triode
Grid |