

# RCA-6LM8

## MEDIUM-MU TRIODE— SEMIREMOTE-CUTOFF PENTODE

Triode  $\mu = 46$   
RCA Dark Heater

9-PIN MINIATURE TYPE

$E_{c1}$  Volts for  
 $10 \mu A I_b = 14$

RCA-6LM8 is a multiunit tube of the nine-pin miniature type containing a medium-mu triode and a semiremote-cutoff pentode in one envelope. This tube is useful in a wide variety of circuit applications in color and black-and-white TV receivers.

The pentode unit features a high value of plate current and is particularly suited for use in the burst-amplifier circuit of color-TV receivers. The triode unit may be used as a general-purpose amplifier tube.

The 6LM8 has an internal shield to reduce interaction between units, and separate base-pin connections for the cathodes of the triode and pentode units. This basing arrangement permits use of this type in a variety of circuit configurations. In addition, the 6LM8 utilizes the RCA Dark Heater for long life and dependable performance.

### GENERAL DATA

#### Electrical:

##### Heater Characteristics and Ratings:

Voltage (AC or DC) . . . . .	6.3 $\pm$ 0.6	volts
Current at 6.3 volts . . . . .	0.450	amp
Peak heater-cathode voltage (Each unit):		
Heater negative with respect to cathode . . . . .	200 max.	volts
Heater positive with respect to cathode . . . . .	200 <sup>a</sup> max.	volts

##### Direct Interelectrode Capacitances (With external shield JEDEC No. 315):<sup>b</sup>

<i>Triode Unit:</i>		
Grid to Plate . . . . .	1.8	pf
Input: $G_T$ to ( $K_T, K_p+G3p+IS, H$ ) . . . . .	3.2	pf
Output: $P_T$ to ( $K_T, K_p+G3p+IS, H$ ) . . . . .	1.9	pf
<i>Pentode Unit:</i>		
Grid to Plate . . . . .	0.015 max.	pf
Input: $G_p$ to ( $K_p+G3p+IS, G2p, H$ ) . . . . .	5.5	pf
Output: $P_p$ to ( $K_p+G3p+IS, G2p, H$ ) . . . . .	3.8	pf
Heater to Cathode (Each unit) . . . . .	3.2	pf

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

	<i>Triode Unit</i>	<i>Pentode Unit</i>	
Plate Voltage . . . . .	125	125	volts
Grid-No.2 Voltage . . . . .	-	125	volts
Grid-No.1 Voltage . . . . .	-1	-2	volts
Amplification Factor . . . . .	46	-	
Plate Resistance (Approx.) . . . . .	5400	150,000	ohms
Transconductance . . . . .	8500	6000	$\mu$ mhos
Plate Current . . . . .	13.5	12	ma
Grid-No.2 Current . . . . .	-	4	ma
Grid-No.1 Voltage (Approx.) for plate $\mu_a \approx 10$ . . . . .	-8	-14	volts

#### Mechanical:

Operating Position . . . . .	Any
Type of Cathode . . . . .	Coated Unipotential
Maximum Overall Length . . . . .	2-3/16"
Maximum Seated Length . . . . .	1-15/16"
Length from 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)
Basing Designation . . . . .	9AE

### AMPLIFIER — Class A<sub>1</sub>

#### Maximum Ratings, Design-Maximum Values:

	<i>Triode Unit</i>	<i>Pentode Unit</i>	
Plate Voltage . . . . .	330 max.	350 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) Voltages:			
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.	2.5 max.	watts

#### Maximum Circuit Values:

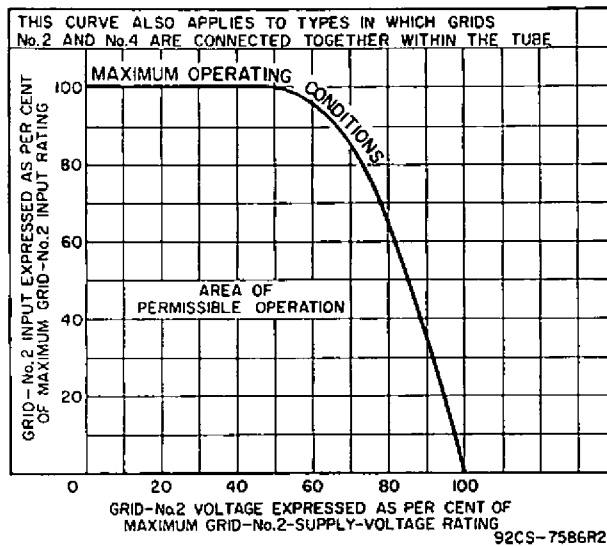
Grid-No.1-Circuit Resistance:			
For fixed-bias operation . . . . .	0.5 max.	0.25 max.	megohm
For cathode-bias operation . . . . .	1.0 max.	0.5 max.	megohm

<sup>a</sup> The dc component must not exceed 100 volts.

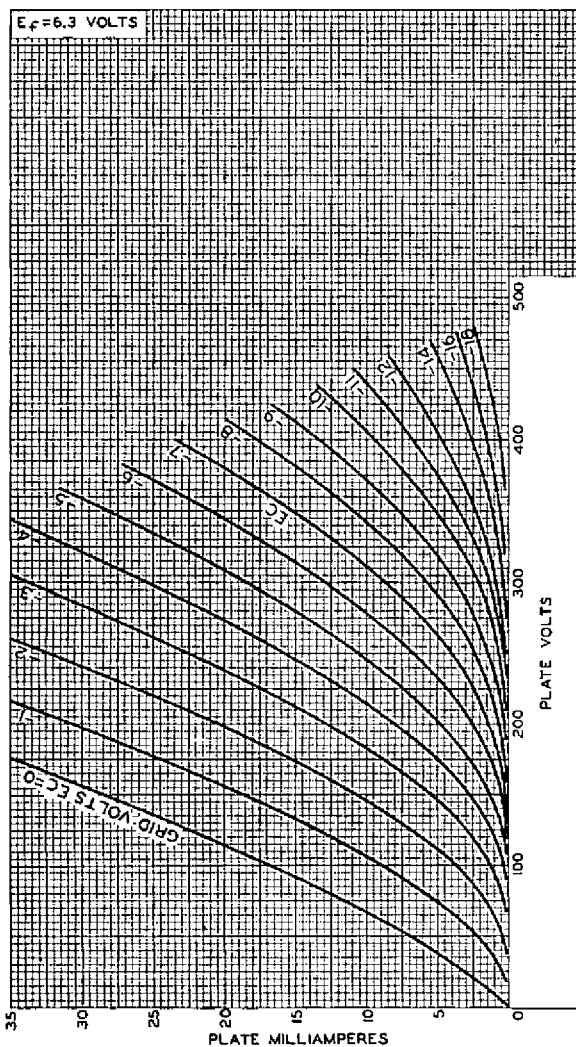
<sup>b</sup> Measured in accordance with EIA Standard RS-191-A.



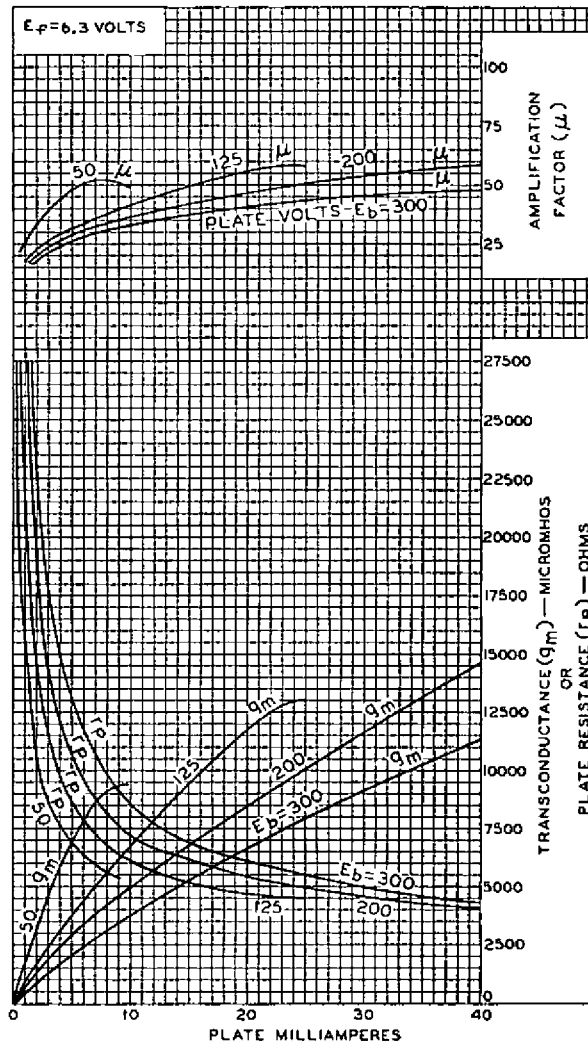
GRID-No.2 INPUT RATING CHART



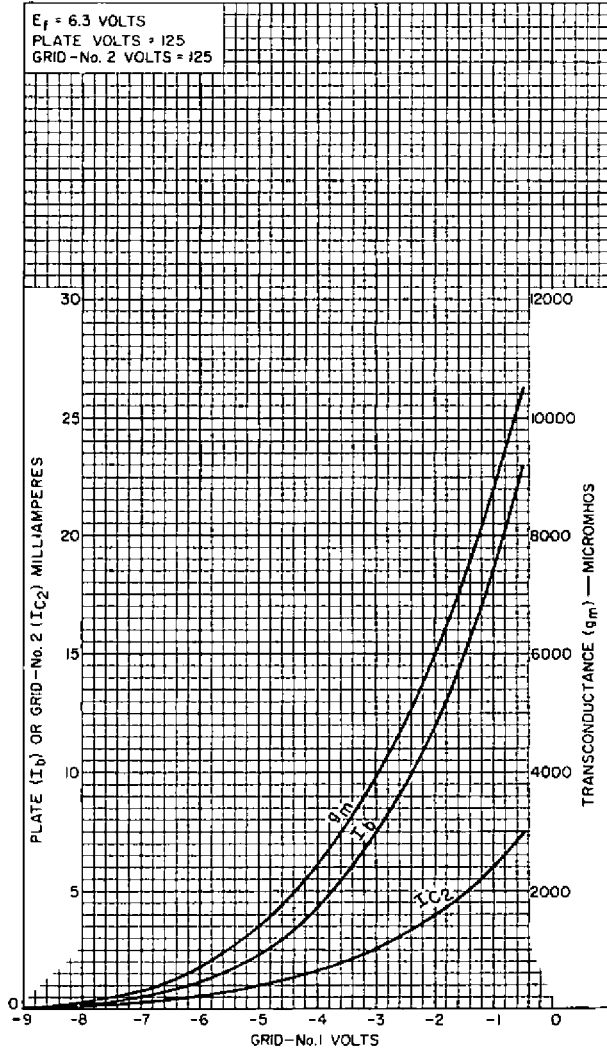
AVERAGE PLATE CHARACTERISTICS TRIODE UNIT



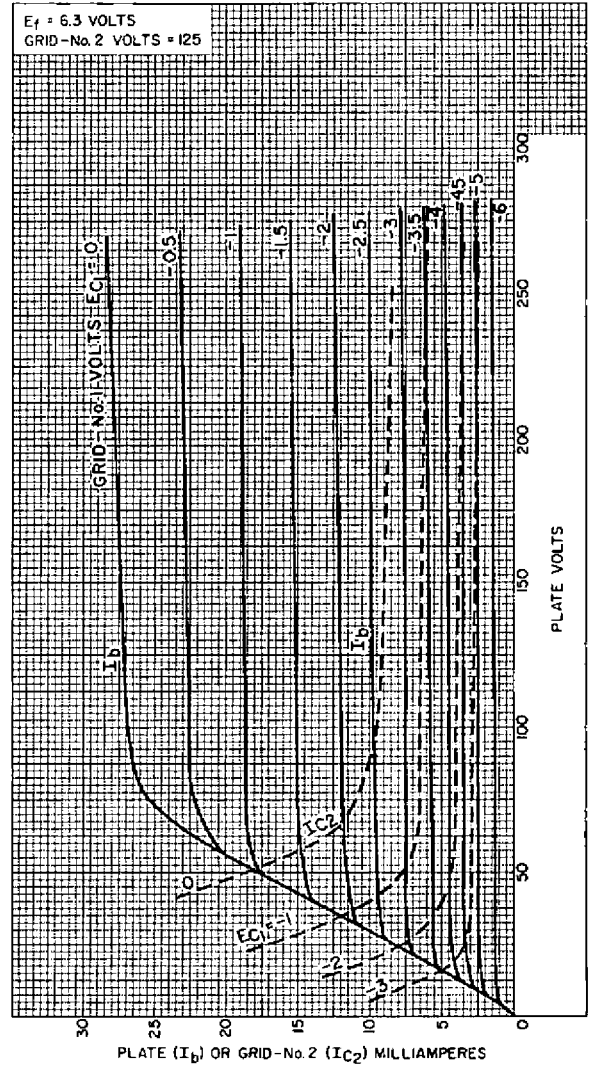
AVERAGE CHARACTERISTICS TRIODE UNIT



AVERAGE CHARACTERISTICS  
PENTODE UNIT



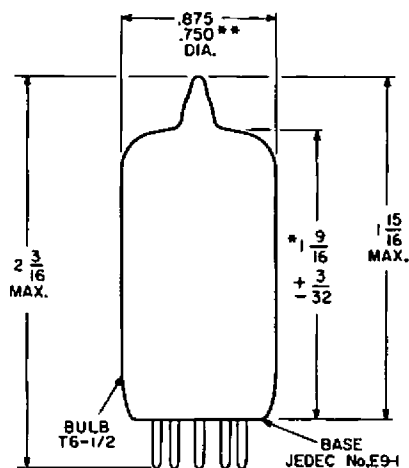
92CM-12558



92CM-12560

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## DIMENSIONAL OUTLINE



92CS-11893

## Dimensions In Inches

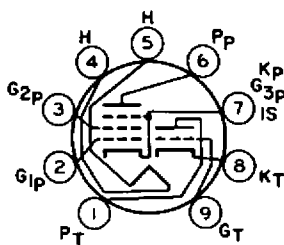
\* MEASURED FROM BASE SEAT TO BULB-TOP LINE AS DETERMINED BY RING GAUGE OF  $7/16$ " I.D.

\*\* APPLIES IN ZONE STARTING  $0.375$ " FROM BASE SEAT.

## TERMINAL DIAGRAM

## Bottom View

Pin 1 - Triode Plate  
 Pin 2 - Pentode Grid No.1  
 Pin 3 - Pentode Grid No.2  
 Pin 4 - Heater  
 Pin 5 - Heater



Pin 6 - Pentode Plate  
 Pin 7 - Pentode Cathode,  
 Pentode Grid No.3,  
 and Internal Shield  
 Pin 8 - Triode Cathode  
 Pin 9 - Triode Grid

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