

RCA-6LC8, 8LC8

HIGH-MU TRIODE— SHARP-CUTOFF PENTODES

9-Pin Miniature Types

Triode Mu = 70

For Sync-Separator and Noise-Immune
Gated-AGC-Amplifier Applications in Color
and Black-and-White TV Receivers

RCA Dark Heater

RCA-6LC8 and 8LC8 are multiunit tubes of the 9-pin miniature type containing a high-mu triode and a sharp-cutoff pentode in the same envelope. These types are useful in both color and black-and-white television receivers.

The triode unit is useful in sync-separator circuits. The pentode unit is useful in noise-immune gated-agc-amplifier circuits. In such circuits, the pentode unit can provide high inverted-noise output at grid No.2 for use in the cancellation of positive-going noise pulses at the signal grid of the triode unit.

The 6LC8 and 8LC8 are like the 6KA8 and 8KA8, but differ in that they have a separate cathode for each unit and internal connections between pentode grid No.3, the triode cathode, and the internal shield.

The 6LC8 has a 6.3-volt/0.600-ampere heater having a controlled 11-second warm-up time. The 8LC8 is identical to the 6LC8 except that the 8LC8 has a 0.450-ampere/8.4-volt heater.

The RCA Dark Heater is utilized in both of these types for long life and dependable performance.

GENERAL DATA

Electrical:

Heater Characteristics and Ratings:

	6LC8	8LC8	
Voltage (AC or DC).	6.3 ^a	6.3±0.6	8.4 ^c volts
Current.	0.600±0.040	0.600 ^b	0.450±0.030 amp
Warm-up time (Av.).	11	-	11 sec

Peak heater-cathode voltage (Each unit):

Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 ^d max.	volts

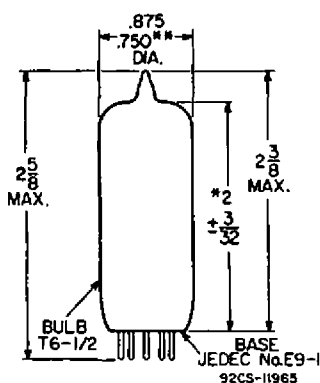
Direct Interelectrode Capacitances:^e

Triode Unit:

Grid to plate.	2.2	pf
Grid to cathode & pentode grid No.3 & internal shield, and heater	2.8	pf
Plate to cathode & pentode grid No.3 & internal shield, and heater	2.2	pf

Pentode Unit:

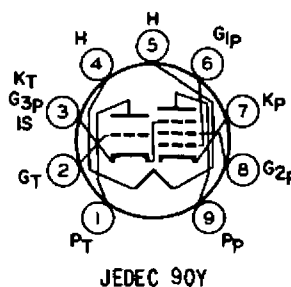
Grid No.1 to plate	0.10 max.	pf
Grid No.1 to cathode, triode cathode & grid No.3 & internal shield, grid No.2, and heater	10	pf
Grid No.3 & triode cathode & internal shield to plate.	3.4	pf
Grid No.1 to grid No.3 & triode cathode & internal shield	0.36	pf
Grid No.3 & triode cathode & internal shield to plate, cathode, grid No.2, grid No.1, and heater. . .	12.5	pf



*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.

All Dimensions in Inches



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



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6LC8, 8LC8 6-63
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Characteristics, Class A₁ Amplifier:

	Triode Unit	Pentode Unit	
Plate Supply Voltage	200	150	volts
Grid No. 3.	-	Connected to negative end of cathode resistor	
Grid-No. 2 Supply Voltage . .	-	100	volts
Grid-No. 1 Voltage.	-2	-	volts
Grid No. 1.	-	Connected to negative end of cathode resistor	
Cathode Resistor	-	180	ohms
Amplification Factor	70	-	
Plate Resistance (Approx.) .	17500	100000	ohms
Transconductance, Grid No. 1 to Plate	4000	4400	μ hos
Transconductance, Grid No. 3 to Plate ^f	-	600	μ hos
Plate Current.	4	4	ma
Grid-No. 2 Current.	-	2.8	ma
Grid-No. 1 Supply Voltage (Approx.) for plate μ a =			
10	-5	-	volts
20	-	-4	volts
Grid-No. 3 Supply Voltage (Approx.) ^f for plate μ a = 20 ^f	-	-7	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" $\pm$ 3/32"
Diameter	0.750" to 0.875"
Dimensional Outline.	JEDEC No. 6-3
Bulb	T6-1/2
Base	Small-Button Noval 9-Pin (JEDEC No. E9-1)

GATED AGC AMPLIFIER & NOISE INVERTER

Pentode Unit

For operation in a 525-line, 30-frame system^g

Maximum Ratings, Design-Maximum Values:

DC Plate Voltage	300 max.	volts
Peak Positive-Pulse Plate Voltage ^h .	600 max.	volts
Grid-No. 3 (Control-Grid) Voltage:		
Negative-bias value.	100 max.	volts
Positive-bias value.	0 max.	volts

^a At heater amperes = 0.600.^b At heater volts = 6.3.^c At heater amperes = 0.450.^d The dc component must not exceed 100 volts.^e Without external shield.^f With no external connection to triode plate and triode grid.^g As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.^h This rating is applicable when the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

Grid-No. 2 (Screen-Grid)

Supply Voltage	300 max.	volts
Grid-No. 2 Voltage.	See GRID-No. 2-INPUT RATING CHART	
Grid-No. 1 (Control-Grid) Voltage:		
Negative-bias value.	50 max.	volts
Positive-bias value.	0 max.	volts
Grid-No. 2 Input:		
For grid-No. 2 voltages up to 150 volts.	1.1 max.	watts
For grid-No. 2 voltages between 150 and 300 volts.	See GRID-No. 2-INPUT RATING CHART	
Plate Dissipation.	2 max.	watts

Maximum Circuit Values:

Grid-No. 1-Circuit Resistance:

For fixed-bias operation	0.5 max.	megohm
For cathode-bias operation	1 max.	megohm

AMPLIFIER—Class A₁

Triode Unit

Maximum Ratings, Design-Maximum Values:

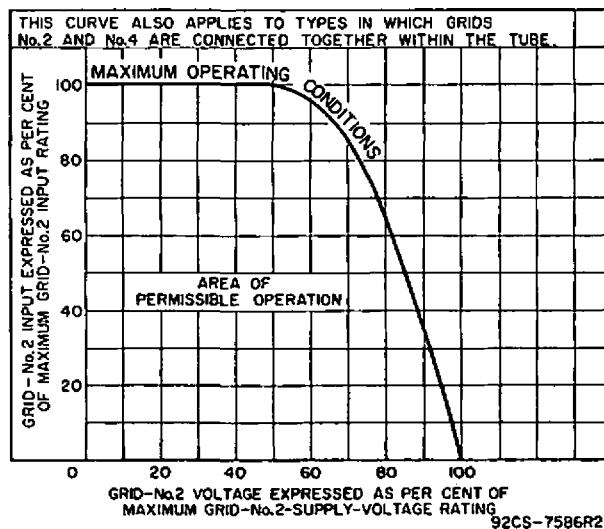
Plate Voltage.	300 max.	volts
Grid Voltage:		
Negative-bias value.	50 max.	volts
Positive-bias value.	0 max.	volts
Plate Dissipation.	1.1 max.	watts

Maximum Circuit Values:

Grid-Circuit Resistance:

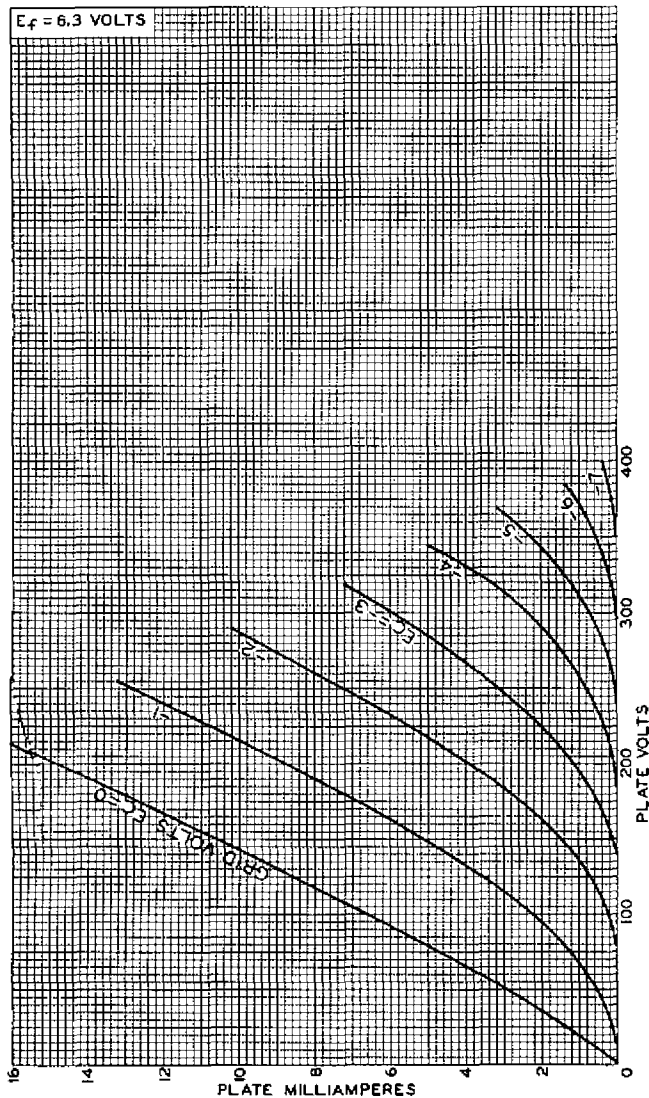
For fixed-bias operation	0.25 max.	megohm
For cathode-bias operation	1 max.	megohm

GRID-No. 2-INPUT RATING CHART

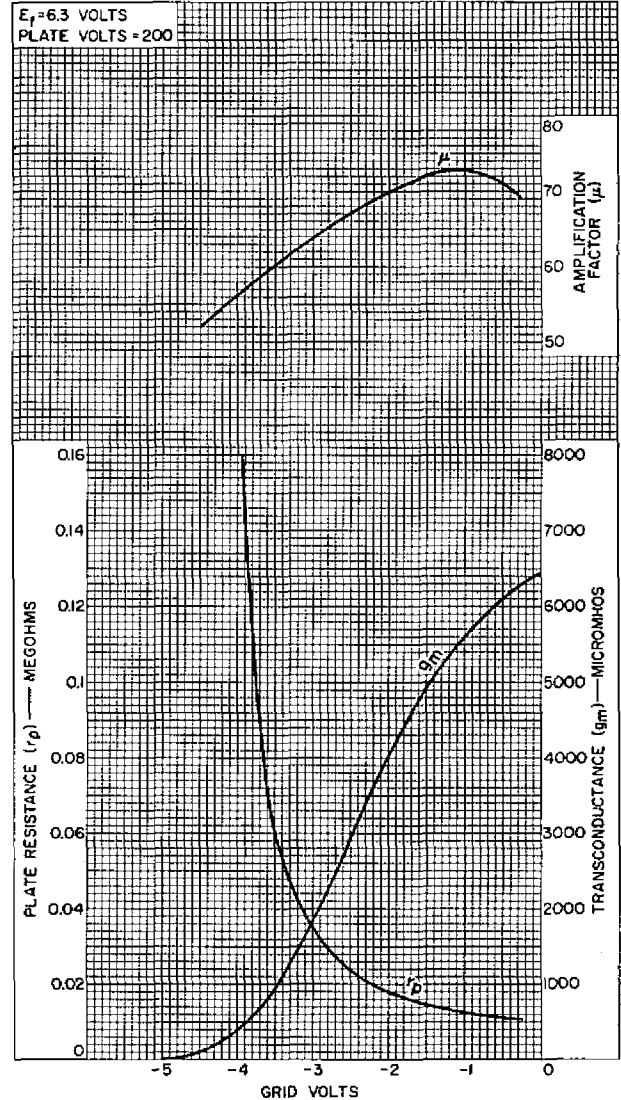


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AVERAGE PLATE CHARACTERISTICS Triode Unit

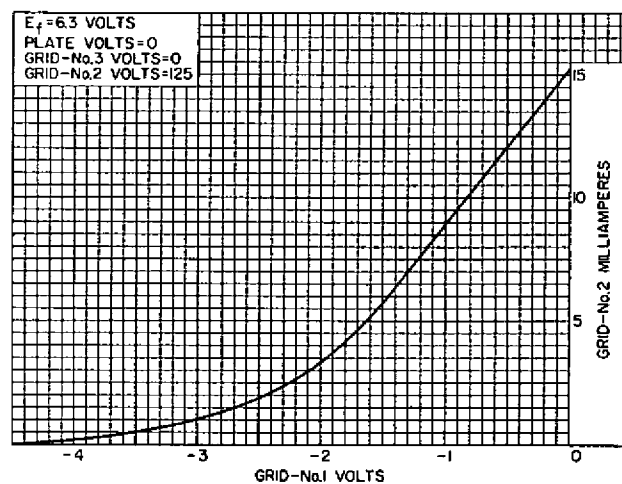
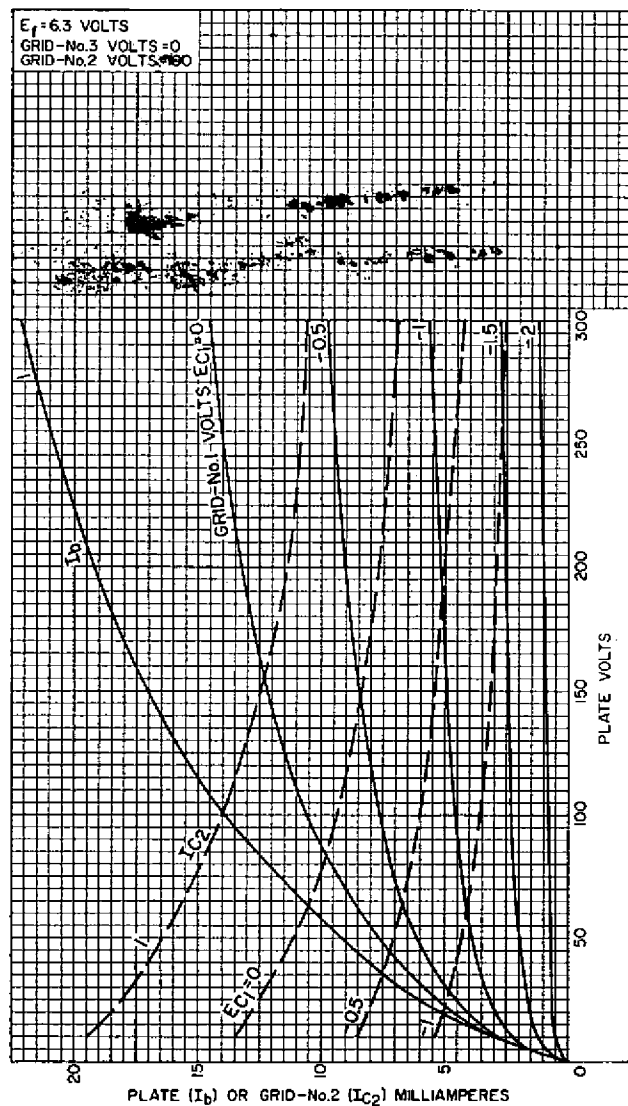


AVERAGE CHARACTERISTICS Triode Unit



For Type 6LC8, and for Type 8LC8 ($E_f = 8.4$ V).

AVERAGE CHARACTERISTICS Pentode Unit



For Type 6LC8, and for Type 8LC8 ($E_f = 8.4$ V).