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.

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**Diagram:**

![Diagram of RCA-6LC8 and 8LC8](image)

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**General Data**

**Electrical:**

- **Heater Characteristics and Ratings:**
  - **6LC8**
    - Voltage (A.C. or D.C.)...
    - Current...
    - Warm-up time (Avg.)...
    - Peak heater-cathode voltage (Each unit): Heater negative with respect to cathode...
    - Direct interelectrode capacitances:
      - Grid to plate...
      - Grid to cathode & pentode grid No. 3 & internal shield, and heater...
      - Plate to cathode & pentode grid No. 3 & internal shield, and heater...

- **8LC8**
  - Voltage (A.C. or D.C.)...
  - Current...
  - Warm-up time (Avg.)...
  - Peak heater-cathode voltage (Each unit): Heater negative with respect to cathode...
  - Direct interelectrode capacitances:
    - Grid to plate...
    - Grid to cathode & pentode grid No. 3 & internal shield, and heater...
    - Plate to cathode & pentode grid No. 3 & internal shield, and heater...

**Pin Assignments:**

- 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
Characteristics, Class A Amplifier:

<table>
<thead>
<tr>
<th></th>
<th>Triode</th>
<th>Pentode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Supply Voltage</td>
<td>200</td>
<td>150</td>
</tr>
<tr>
<td>Grid No. 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grid-No.2 Supply Voltage</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Grid-No.1 Voltage</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>Grid No.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Connected to negative end of cathode resistor

Cathode Resistor: 180 ohms
Amplification Factor: 70
Plate Resistance (Approx.): 17500 ohms
Transconductance: 4000 μhos
Transconductance, Grid No. 1 to Plate: 600 μhos
Plate Current: 4 ma
Grid-No.2 Current: 2.8 ma
Grid-No.1 Supply Voltage (Approx.) for plate μa = 10: -5 volts
20: -4 volts
Grid-No.3 Supply Voltage (Approx.) for plate μa = 20: -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" ± 3/32"*
- Diameter: 0.750" to 0.875"*
- Dimensional Outline: JEDEC No. 6-3
- Bulb: 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:

Maximum Ratings, Design-Maximum Values:
- DC Plate Voltage: 300 max. volts
- Peak Positive-Pulse Plate Voltage: 600 max. volts
- Grid-No.3 (Control-Grid) Voltage:
  - Negative-bias value: 100 max. volts
  - Positive-bias value: 0 max. volts

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 A

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

This curve also applies to types in which grids No.2 and No.4 are connected together within the tube.

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