PRELIMINARY
TECHNICAL INFORMATION
ON THE
RCA Cunningham Radiotron®
RCA-25L6
A NEW BEAM POWER AMPLIFIER
for A.C.-D.C. Receivers

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RCA RADIOTRON DIVISION
RCA Manufacturing Company, Inc.
Harrison, N.J.
BEAM POWER AMPLIFIER
(TENTATIVE DATA)

The RCA-25L6 is a power-amplifier tube of the all-metal type for use in the output stage of "transformerless" (a.c.—d.c.) radio receivers, especially those designed to have ample reserve of power-delivering ability. This new tube provides high power output at the relatively low plate and screen voltages available for transformerless receivers. The high power output is obtained with high power sensitivity and high efficiency.

These distinctive features have been made possible by the application of directed-electron-beam principles in the design of the 25L6. The design is similar to that of the RCA-6L6 with the difference that the 25L6 is intended especially for operation in a.c.—d.c. receivers.

| Single-Tube Class A1 Amplifier |

Subscript 1 indicates that grid current does not flow during any part of input cycle.

Operating Conditions and Characteristics:

<table>
<thead>
<tr>
<th>Heater Voltage</th>
<th>25.0 Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Current</td>
<td>0.3 Ampere</td>
</tr>
<tr>
<td>Maximum Overall Length</td>
<td>3-1/4&quot;</td>
</tr>
<tr>
<td>Maximum Diameter</td>
<td>1-5/16&quot;</td>
</tr>
<tr>
<td>Base</td>
<td>Small Octal 7-Pin</td>
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</tbody>
</table>

| Plate Voltage | 110 max. | 110 max. | 110 max. | 110 max. Volts |
| Screen Voltage | 110 max. | 110 max. | 110 max. | 110 max. Volts |
| Grid Voltage | -7.5 | -7.5 | -8 | -8 Volts |
| Zero-Signal Plate Cur. | 49 | 49 | 45 | 45 Milliamperes |
| Max.—Signal Plate Cur. | 55 | 51 | 52 | 48 Milliamperes |
| Zero-Signal Screen Cur. | 4 | 4 | 3.5 | 3.5 Milliamperes |
| Max.—Signal Screen Cur. | 8 | 10.3 | 8 | 10.5 Milliamperes |
| Signal Input Voltage | 5.3 | 5.3 | 5.65 | 5.65 Volts (RMS) |
| Plate Resist. (Approx.) | 10000 | 10000 | 10000 | 10000 Ohms |
| Transconductance | 8200 | 8200 | 8000 | 8000 Micromhos |
| Load Resistance | 1500 | 2000 | 1500 | 2000 Ohms |
| Distortion: | | | | |
| Total Harmonic | 11 | 10 | 13 | 11.5 Per Cent |
| Second Harmonic | 10 | 3.5 | 12 | 4.5 Per Cent |
| Third Harmonic | 4 | 8.5 | 4.5 | 9.5 Per Cent |
| Power Output | 2.1 | 2.2 | 2.2 | 2.2 Watts |
RCA-25L6

AVERAGE PLATE CHARACTERISTICS
(TENTATIVE)

$E_f = 25 \text{ VOLTS}$  $\text{SCREEN VOLTS} = 110$

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PLATE MILLIAMPERES

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OCT. 28, 1936

RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

92C-4684
MECHANICAL DATA

Coated unipotential cathode
Outline drawing. 8-6
Base
Maximum diameter
Maximum overall length
Maximum seated height
Pin connections:
Pin 1 - Shell
Pin 2 - Heater
Pin 3 - Plate
Pin 4 - Grid #2
Pin 5 - Grid #1
Pin 7 - Heater
Pin 8 - Cathode,
Beam plates
Mounting position. any

ELECTRICAL DATA

Ratings

Heater voltage 25.0 volts
Maximum plate voltage 200 volts
Maximum grid #2 voltage 117 volts
Maximum plate dissipation 10 watts
Maximum grid #2 dissipation 1.25 watts
Maximum grid #1 circuit resistance:
Self-bias 0.5 megohm
Fixed-bias 0.1 megohm
Maximum heater-cathode voltage 90 volts

Typical Operating Conditions and Characteristics, Class A1 Amplifier

Heater voltage 25.0 25.0 volts
Heater current 300 300 ma
Plate voltage 110 200 volts
Grid #2 voltage 110 110 volts
Grid #1 voltage 7.5 -8 volts
Peak A-F signal voltage 7.5 8 volts
Transconductance 9000 9500 μhos
Plate resistance (approx.) 13,000 30,000 ohms
Zero-signal plate current 49 50 ma
Maximum-signal plate current 50 55 ma
Zero-signal grid #2 current (nominal) 4 2 ma
Maximum-signal grid #2 current (nominal) 11 7 ma
Load resistance 2000 3000 ohms
Total harmonic distortion 10 10 %
Power output 2.1 4.3 watts

Refer to "Interpretation of Receiving Tube Ratings"