### HALF-WAVE VACUUM RECTIFIER

#### GENERAL DATA

<table>
<thead>
<tr>
<th></th>
<th>Without</th>
<th>With No. 40 Panel</th>
<th>With No. 47 Lamp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heater, for Uripotential Cathode:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage (AC or DC):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entire Heater (pins 1 &amp; 8)</td>
<td>35</td>
<td>32</td>
<td>volts</td>
</tr>
<tr>
<td>Panel-Lamp Section (pins 1 &amp; 4)</td>
<td>7.5</td>
<td>5.5</td>
<td>volts</td>
</tr>
<tr>
<td>Current</td>
<td>between pins 1 &amp; 8</td>
<td>0.15</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>between pins 4 &amp; 8</td>
<td>-</td>
<td>0.15</td>
</tr>
</tbody>
</table>

*Under typical operating conditions shown below.*

#### Mechanical:

- Mounting Position: Any
- Maximum Overall Length: 3-5/32" "
- Maximum Seated Length: 2-5/8" "
- Maximum Diameter: 1-3/16" "
- Bulb: T-9
- Base: Lock-in 8-Pin
- Basing Designation for BOTTOM VIEW: 5AL

#### HALF-WAVE RECTIFIER

<table>
<thead>
<tr>
<th>Pin 1 – Heater</th>
<th>Pin 2 – Plate</th>
<th>Pin 3 – No Connection</th>
<th>Pin 4 – Heater Tap</th>
<th>Pin 5 – No Connection</th>
<th>Pin 6 – No Connection</th>
<th>Pin 7 – Cathode</th>
<th>Pin 8 – Heater</th>
<th>Plug – Base Shell</th>
<th>Panel-Lamp Heater</th>
<th>Section is between pins 1 &amp; 4</th>
</tr>
</thead>
</table>

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

- **PEAK INVERSE PLATE VOLTAGE**: 700 max. volts
- **PEAK PLATE CURRENT**: 600 max. ma
- **DC OUTPUT CURRENT:**
  - With Panel Lamp & No Shunting Resistor: 60 max. ma
  - With Panel Lamp & Shunting Resistor: 90 max. ma
  - Without Panel Lamp: 100 max. ma
- **PANEL-LAMP-SECTION VOLTAGE (RMS):**
  - When panel lamp fails: 15 max. volts
- **PEAK HEATER-CATHODE VOLTAGE:**
  - Heater negative with respect to cathode: 300 max. volts
  - Heater positive with respect to cathode: 300 max. volts

#### Typical Operation With No. 40 or No. 47 Panel Lamp in Circuit Below with Capacitor-Input Filter:

- **AC Plate-Supply Volt. (RMS)**: 117 117 117 117 235 volts
- **Filter-Input Capacitor**: 40 40 40 40 40 μf
- **Min. Total Effective Plate-Supply Impedance**: 15 15 15 15 100 ohms
- **Panel-Lamp Shunting Res.**: - 300 150 100 - ohms
- **DC Output Current**: 60 70 80 90 60 ma

DEC. 30, 1947

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
HALF-WAVE VACUUM RECTIFIER

Typical Operation Without Panel Lamp in Conventional Half-Wave Circuit with Capacitor-Input Filter:

- AC Plate-Supply Voltage (RMS): 117–235 volts
- Filter-Input Capacitor: 40 µf
- Min. Total Effective Plate-Supply Imped.: 15–100 ohms
- DC Output Current: 100 ma
- DC Output Voltage at Input to Filter (Approx.):
  - At half-load current (50 ma.): 140 volts
  - At full-load current (100 ma.): 120 volts
- Voltage Regulation (Approx.):
  - Half-load to full-load current: 20–45 volts

Maximum Circuit Values:

Panel-Lamp Shunting Resistor:

- For dc output current of
  - 70 ma.: 800 max. ohms
  - 80 ma.: 400 max. ohms
  - 90 ma.: 250 max. ohms

* Required when dc output current is greater than 60 ma.

DROP ACROSS R AND ALL HEATERS (WITH PANEL LAMP) SHOULD EQUAL 117 VOLTS AT 0.15 AMPERE. Rₜ = SHUNTING RESISTOR REQUIRED WHEN DC OUTPUT CURRENT EXCEEDS 60 MILLIAMPERES

92CS-6626

Many of the devices and arrangements shown or described herein use inventions of patents owned by RCA or others. Information contained herein is furnished without assuming any responsibility for its use.

DEC. 30, 1947

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY