**5V4-GA**

**FULL-WAVE VACUUM RECTIFIER**

*For use in full-wave power supplies having high dc requirements*

### GENERAL DATA

**Electrical:**
- Heater, for Unipotential Cathode:
  - Voltage: 5 ac or dc volts
  - Current: 2 amp

**Mechanical:**
- Operating Position: Any
- Maximum Overall Length: 3-7/8" 3-5/16"
- Maximum Seated Length: 1-9/16"
- Maximum Diameter: T12
- Base: Medium-Shell Octal 5-Pin (JETEC No. B5-15), or Short Medium-Shell Octal 5-Pin with External Barriers, Style B, Arrangement 1 (JETEC No. B5-121)

Basing Designation for BOTTOM VIEW: 5L

- Pin 1 - No Connection
- Pin 2 - Heater
- Pin 4 - Plate of Unit No. 2
- Pin 6 - Plate of Unit No. 1
- Pin 8 - Heater, Cathode

### FULL-WAVE RECTIFIER

**Maximum Ratings, Design-Center Values:**
- PEAK INVERSE PLATE VOLTAGE: 1400 max. volts
- AC PLATE-SUPPLY VOLTAGE PER PLATE (RMS):
  - With capacitor-input filter: 375 max. volts
  - With choke-input filter: 500 max. volts
- PEAK PLATE CURRENT PER PLATE: 525 max. ma
- DC OUTPUT CURRENT: 175 max. ma

**HOT-SWITCHING TRANSIENT PLATE CURRENT PER PLATE:**

Even occasional hot-switching with capacitor-input circuits permits the flow of plate current having magnitudes which can adversely affect the life and reliability of tubes. If capacitor-input circuits are to be used, protect the circuits against the possibility of hot-switching and do not exceed a maximum peak current value per plate of 3.5 amperes during the initial cycles of the hot-switching transient. If hot-switching is required in operation, the use of choke-input circuits is recommended. Such circuits limit the hot-switching current to a value no higher than that of the peak plate current.
# Typical Operation:

**With capacitor input to filter**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Plate-to-Plate Supply Voltage (RMS)</td>
<td>750</td>
</tr>
<tr>
<td>Filter-Input Capacitor*</td>
<td>10 μf</td>
</tr>
<tr>
<td>Total Effective Plate-Supply Impedance</td>
<td></td>
</tr>
<tr>
<td>Per Plate</td>
<td>100 ohms</td>
</tr>
<tr>
<td>DC Output Voltage at Input to Filter (Approx.) for dc output current of 175 ma</td>
<td>410 volts</td>
</tr>
</tbody>
</table>

**With choke input to filter**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Plate-to-Plate Supply Voltage (RMS)</td>
<td>1000</td>
</tr>
<tr>
<td>Filter-Input Choke</td>
<td>4 henries</td>
</tr>
<tr>
<td>DC Output Voltage at Input to Filter (Approx.) for dc output current of 175 ma</td>
<td>410 volts</td>
</tr>
</tbody>
</table>

*Higher values of capacitance than indicated may be used, but the effective plate-supply impedance should be increased to prevent exceeding the maximum rating for peak plate current.
FULL-WAVE VACUUM RECTIFIER

T12 BULB

MEDIUM-SHELL OCTAL 5-PIN BASE
JETEC NBS-15

OR

SHORT MEDIUM-SHELL OCTAL 5-PIN BASE
WITH EXTERNAL BARRIERS,
STYLE B, ARRANGEMENT 1
JETEC NBS-121

92CS-9549RI

AVERAGE PLATE CHARACTERISTIC
EACH UNIT

E_F = 5 VOLTS

PLATE MILLIAMPERES

DC PLATE VOLTS

92CS-6110RI
5V4-GA

OPERATION CHARACTERISTICS
FULL-WAVE RECTIFIER CIRCUIT

E_r = 5 VOLTS
SUPPLY FREQUENCY = 60 CPS

--- CHOKE (L) INPUT TO FILTER:
L = 4 HENRIES (MINIMUM)

--- CAPACITOR (C) INPUT TO FILTER:
TOTAL EFFECTIVE PLATE-SUPPLY
IMPEDANCE PER PLATE = 100 OHMS