HALF-WAVE VACUUM RECTIFIER

GENERAL DATA

Electrical:
Filament, Thoriated Tungsten:
  Voltage : 1.6 ac volts
  Current : 1.25 amp
  Direct Interelectrode Capacitance:
    Plate to Filament : 2.2 μuf
  Tube Voltage Drop at maximum peak plate current : 1750 volts
  ° with no external shield.

Mechanical:
Mounting Position : Any
Overall Length : 5-11/16" ± 5/32"
Seated Length : 5-1/6" ± 5/32"
Maximum Diameter : 2-1/16"
Bulb Cap : ST-16 Medium
Base : Medium-Shell Small 4-Pin
  Basing Designation for BOTTOM VIEW : 4P

Pin 1 - Filament
Pin 2 - No Connection
Pin 3 - No Connection
Pin 4 - Filament, Internal Shield
Cap - Plate

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Maximum Ratings, Absolute Values:
  For supply frequencies up to 250 kc

  PEAK INVERSE PLATE VOLTAGE : 60000 max. volts
  PEAK PLATE CURRENT : 40 max. ma
  AVERAGE PLATE CURRENT : 2 max. ma
  HOT-SWITCHING TRANSIENT CURRENT for duration of 0.1 sec. max. : 100 max. ma
  PLATE DISSIPATION : 3.5 max. watts
  BULB TEMPERATURE : 80 max. °C

Typical Operation at 70 kc in Half-Wave Circuit with Capacitor-Input to Filter:

  AC Plate-Supply Voltage (RMS) : 21200 volts
  Filter-Input Capacitor : 350 μuf
  Effective Plate-Supply Impedance : 120000 ohms
  DC Output Current : 2 ma
  DC Output Voltage at Input to Filter (Approx.):
    At half-load current (1 ma) : 28000 volts
    At full-load current (2 ma) : 26700 volts
  Voltage Regulation (Approx.):
    Half-load to full-load current : 1300 volts

SEPT. 15, 1949

TENTATIVE DATA

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
# 5825 HALF-WAVE VACUUM RECTIFIER

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<td>1.15</td>
<td>1.35</td>
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<td>Plate-Filament Capacitance</td>
<td>-</td>
<td>2.14</td>
<td>2.26</td>
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Note: With 1.6 volts dc on filament.

## OPERATING NOTES

When the filament is supplied from an rf power source which is at a high dc potential above ground, adjustment of the filament voltage by direct measurement is usually impractical. However, a simple method utilizing visual comparison of filament temperatures can be used for adjustment of filament power. The color temperature of the filament operating from an rf power source may be checked visually by observing in a darkened room the reflection of the incandescent filament upon the surface of the internal shield. A visual comparison of this color temperature with that obtained when the filament of another 5825 is operated from a dc or low-frequency ac supply of 1.6 volts, provides a convenient means for adjusting the amount of rf excitation to produce 1.6 volts (rms) at the filament terminals.

The filament must never under any condition of operation be allowed to reach a temperature higher than that caused by operating the filament on dc or low-frequency ac at a voltage of 1.68 volts. Operation at higher temperatures will cause impaired performance of the tube. During circuit adjustment, however, it is permissible to allow the filament voltage to rise to 2 volts for the brief interval required to make the adjustment.

Soft x-rays are produced when the 5825 is operated at a plate voltage above approximately 20000 volts. These rays can constitute a health hazard unless the tube is adequately shielded. Relatively simple shielding should prove adequate, but the need for this precaution should be considered in equipment design.
HALF-WAVE VACUUM RECTIFIER

AVERAGE PLATE CHARACTERISTIC

TYPE 5825
$E_f = 1.6$ VOLTS DC

PLATE MILLIAMPERES

0 400 800 1200 1600 2000 2400 2800
DC PLATE VOLTS

92CM-7177T

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CE-7177T