# 5825

# HALF-WAVE VACUUM RECTIFIER

## GENERAL DATA

**Electrical:**

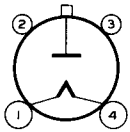
| | | |
|---|---|---|
| Filament, Thoriated Tungsten: | | |
| Voltage | 1.6 | ac volts |
| Current | 1.25 | amp |
| Direct Interelectrode Capacitance:[o] | | |
| Plate to Filament | 2.2 | μμf |
| Tube Voltage Drop at maximum peak plate current | 1750 | volts |

[o] 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 | ST-16 |
| Cap | 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 | μμf |
| 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 |

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CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

| | Note | Min. | Max. | |
|---|---|---|---|---|
| Filament Current . . . . . | 1 | 1.15 | 1.35 | amp |
| Plate–Filament Capacitance | – | 2.14 | 2.26 | μμf |

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.

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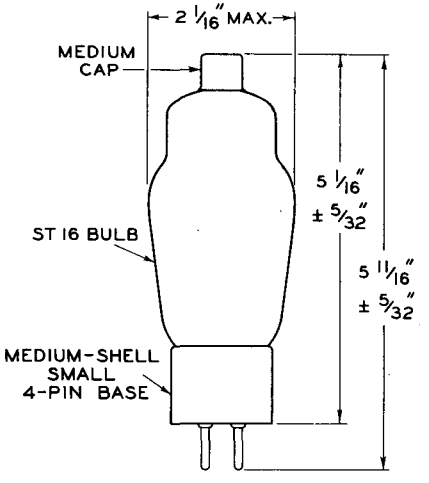


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