

# Full-Wave Mercury-Vapor Rectifier

For DC Power Supplies Having Large Current Requirements

## GENERAL DATA

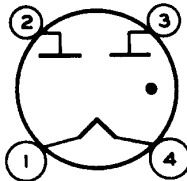
**Electrical:**

Filament, Coated:  
 Voltage (AC or DC) . . . . . 5.0 volts  
 Current . . . . . 3.000 amp

**Mechanical:**

Operating Position . . . . . Vertical, base down  
 Maximum Overall Length . . . . . 5-3/8"  
 Maximum Seated Length . . . . . 4-3/4"  
 Maximum Diameter . . . . . 2-1/16"  
 Bulb . . . . . ST-16  
 Base . . . . . Medium 4-Pin  
 Basing Designation for BOTTOM VIEW . . . . . 4C

Pin 1 - Filament  
 Pin 2 - Plate of  
           Unit No.2



Pin 3 - Plate of  
           Unit No.1  
 Pin 4 - Filament

### FULL-WAVE RECTIFIER

**Maximum and Minimum Ratings:**

PEAK INVERSE VOLTAGE . . . . . 1550 max. volts  
 PEAK PLATE CURRENT PER PLATE . . . . . 1 max. amp  
 CONDENSED MERCURY TEMPERATURE RANGE . . . . . 20 - 60 °C

*With Capacitor-Input Filter*

AC PLATE VOLTAGE PER PLATE (RMS) . . . . . 450 max. volts  
 TOTAL EFFECTIVE PLATE-SUPPLY IMPEDANCE  
 PER PLATE<sup>a</sup> . . . . . 50 min. ohms  
 DC OUTPUT CURRENT . . . . . 225 max. ma

*With Choke-Input Filter*

AC PLATE VOLTAGE PER PLATE (RMS) . . . . . 550 max. volts  
 INPUT-CHOKE INDUCTANCE . . . . . 3 min. henries  
 DC OUTPUT CURRENT . . . . . 225 max. ma

**Characteristics:**

Tube Voltage Drop (Approx.) . . . . . 15 volts

<sup>a</sup> When a filter-input capacitor larger than 40  $\mu$ f is used, it may be necessary to use more plate-supply impedance than the minimum value shown to limit the peak plate current to the rated value.



## HALF-WAVE RECTIFIER

As a half-wave rectifier, the 83 is operated with plates connected in parallel. Two 83's so connected in a full-wave circuit can supply twice the output current of a single tube. Both plates within the same tube should be connected to the same terminal of the plate transformer. To equalize the current distribution between plates, a resistor of not less than 50 ohms should be connected in series with each plate.

