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

![Diagram of Full-Wave Rectifier]

- Pin 1 - Filament
- Pin 2 - Plate of Unit No. 2
- Pin 3 - Plate of Unit No. 1
- Pin 4 - Filament

**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*... 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

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*When a filter-input capacitor larger than 40 μf 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.