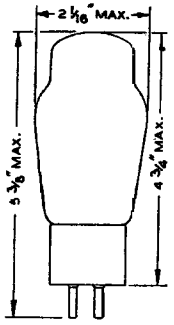
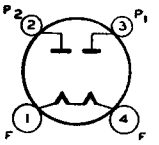


RCA-83

FULL-WAVE MERCURY-VAPOR RECTIFIER



The 83 is a heavy-duty, full-wave, mercury-vapor rectifier tube of the hot-cathode type. It is intended for use in suitable rectifying devices designed to supply d-c power of uniform voltage to receivers. The excellent voltage regulation characteristic of the 83 is due to its low and practically constant tube voltage drop (only about 15 volts) for any current drain up to the full emission of its filaments. For mercury-vapor rectifier considerations, refer to page 8 and to type 82.

CHARACTERISTICS

FILAMENT VOLTAGE (A. C.)	5.0	Volts
FILAMENT CURRENT	3.0	Amperes
A-C PLATE VOLTAGE PER PLATE (RMS)	500 *max.*	Volts
PEAK INVERSE VOLTAGE	1400 *max.*	Volts
D-C OUTPUT CURRENT (Continuous)	250 *max.*	Milliamperes
PEAK PLATE CURRENT	800 *max.*	Milliamperes
TUBE VOLTAGE DROP (Approximate)	15	Volts
BULB		ST-16
BASE		Medium 4-Pin

INSTALLATION

Installation of the 83 is similar to that of the type 82.

APPLICATION

As a **full-wave rectifier,** the 83 is intended for supplying large amounts of d-c power to receivers whose requirements are in excess of the rating of the 82. The 83 is recommended for heavy-drain receivers in which the direct-current requirements cause considerable variation in the load impressed on the rectifier tube.

As a **half-wave rectifier,** the 83 may be operated with plates connected in parallel. For example, two 83's so arranged in a full-wave circuit can supply twice the output current of a single tube. When the 83's plates are operated in parallel, a resistor of not less than 50 ohms should be connected in series with each plate in order that each plate will carry its proper share of the total load. If the load is less than 75% of the total maximum current rating of the tube(s), the series plate resistors should be increased to 100 ohms each.

Filter circuits (page 37) of either the condenser-input or the choke-input type may be employed, provided the maximum voltages and currents tabulated under CHARACTERISTICS are not exceeded. The choke-input type of circuit is to be preferred from the standpoint of obtaining the maximum continuous d-c output current from the 83 under the most favorable conditions.

Under operating conditions, the 83 has a bluish-white glow filling the space within the plates and extending to some degree into the surrounding space outside the plates. This glow, caused by the mercury-vapor, is an inherent operating characteristic of the tube.