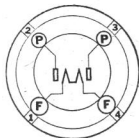


Sylvania

TYPES 82, 83

FULL-WAVE MERCURY-VAPOR RECTIFIERS



CHARACTERISTICS

Type	82	83
Filament Voltage AC	2.5	5.0 Volts
Filament Current	3.0	3.0 Amperes
Maximum Over-all Length	4 1/8"	5 3/8"
Maximum Diameter	1 1/8"	2 1/8"
Bulb	ST-14	ST-16
Base—Medium 4-Pin	4-C	4-C

Operating Conditions and Characteristics:

Type	82	83
Filament Voltage	2.5	5.0 Volts
A-C Voltage per Plate (RMS)	500	500 Volts Max.
D-C Output Current	125	250 Ma. Max.
Peak Inverse Voltage	1400	1400 Volts Max.
Peak Plate Current	400	800 Ma. Max.
Tube Voltage Drop	15	15 Volts Approx.

CIRCUIT APPLICATION

Sylvania Types 82 and 83 are full-wave rectifiers designed for the same general class of service as the 80, but having certain advantages and also some limitations which must be taken into consideration in the design of circuits utilizing the tubes. They are not intended to replace the 80 in existing types of sets, and are not recommended for such service.

In the high vacuum type of rectifier the voltage drop across the tube depends upon the current flow, gradually increasing with increased load. This results in poor regulation and also in a dissipation of considerable energy in the tube. The introduction of mercury vapor in the 82 and 83 greatly modifies the operating characteristics. The ionized mercury vapor neutralizes the space charge so that the voltage drop remains practically constant regardless of changes in load current, thus greatly improving the regulation of the tube, and reducing the amount of energy dissipated on the plate. The voltage drop is approximately 15 volts. This characteristic is of particular importance when circuit requirements are such as to cause a considerable variation in the amount of current taken from the rectifier tube. This condition occurs when a Class B amplifier is being operated in an a-c receiver, and the 82 and 83 are particularly suitable as a power source for such amplifiers because of the improved characteristics obtained with this design.

The same rugged type of filament is used in the 82 and 83 as is used in the 80, and the heating time is approximately the same. In operation the tube glows with a bluish white color in the space inside of the plates, the glow being caused by the mercury vapor.

The filament is intended for a-c operation from the secondary winding of the power transformer. It is important to keep the filament voltage close to the rated value as a low filament temperature is as detrimental with this design as is the case with voltages above normal.

If the full advantage is to be taken of the good regulation afforded by the 82 and 83 tubes, it is necessary that the resistance of the transformer winding and that of the choke be kept as low as possible. If this cannot be done, reasonably good regulation may be obtained by employing a bleeder across the filter circuit.