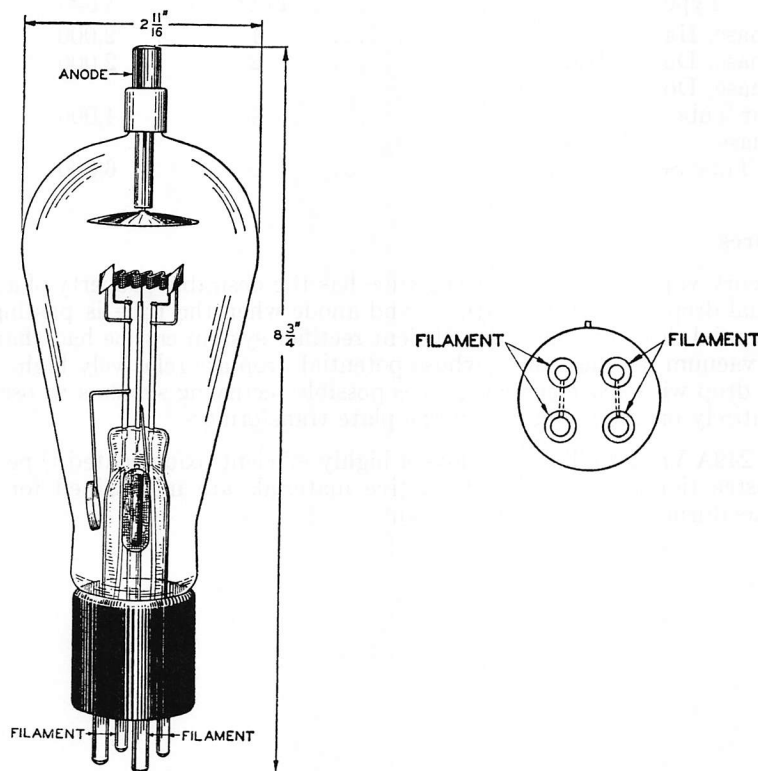


249A Vacuum Tube



Classification

The No. 249A Vacuum Tube is a half-wave, thermionic, mercury-vapor rectifier for use in rectifying circuits designed to supply direct current from an alternating current supply.

Base and Socket

The No. 249A Vacuum Tube employs a standard four-prong thrust-type base suitable for use in the Western Electric No. 130B or similar type socket. It is to be noted from the arrangement of electrode terminals shown above that the filament terminals are tied together in parallel. The corresponding socket terminals should also be connected to insure the best contact connections for the filament current. The anode terminal is located at the top of the bulb and is arranged for a special quick release connector. The tube can be mounted only in a vertical position with the base end down.

Rating and Characteristic Data

Filament Voltage	2.5 Volts, AC
Nominal Filament Current	7.0 Amperes
Approximate Anode-Cathode Potential Drop when Conducting .	15 Volts
Maximum Peak Plate Current.....	1.1 Amperes
Maximum Peak Inverse Potential.....	6,500 Volts
Safe Operating Ambient Temperature	0 to 50 Degrees C

The anode-cathode potential is substantially independent of the plate current. The exact value varies from tube to tube and during the life of a given tube. Within the specified ambient temperature range and plate current range, it will vary from 5 to 25 volts.

Typical Rectifying Circuits

For specific circuits the following ratings apply:

Type of Circuit	Number Tubes	Load Potential Volts	Load Current Amperes
Single-Phase, Half-Wave.....	1	2,000	0.4
Single-Phase, Double Half-Wave.....	2	2,000	0.8
Single-Phase, Double Half-Wave (Four Tube Series Circuit).....	4	4,000	0.8
Three-Phase (Six Tube Series "Y" Circuit).....	6	6,000	1.0

General Features

The mercury vapor type of rectifying tube has the desirable property of a low and almost constant potential drop between the cathode and anode when the tube is passing current. Due to their low potential drop a much more efficient rectifier system can be had than is possible by the use of high vacuum rectifier tubes, whose potential drop are relatively high. The constancy of the potential drop with space current makes possible rectifying systems whose regulation depends almost entirely on the regulation of the plate transformers.

The No. 249A Vacuum Tube employs a highly efficient oxide-coated type of cathode. Its mechanical construction is such that the active materials are maintained for long operating periods as well as during shelf life and shipment.