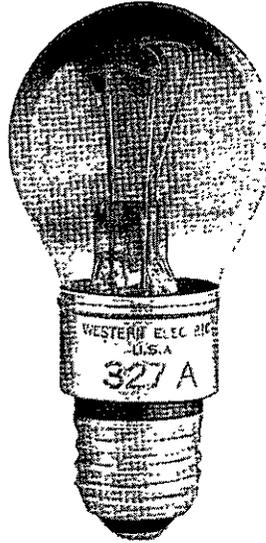


## *Western Electric*

### 327A Vacuum Tube



**Classification—Half-wave, tungsten filament, argon filled rectifier.**

The 327A vacuum tube is designed to supply direct current from an alternating-current supply in power systems for battery charging and for other purposes.

**Dimensions—**The dimensions and outline diagram are given in Figure 1. The overall dimensions are:

Maximum length . . . . .	$4\frac{7}{16}$ "
Maximum diameter . . . . .	$2\frac{1}{4}$ "

**Mounting—**This tube employs a 3 connection, skirted medium screw base. Overall dimensions are shown in Figure 1.

The tube may be mounted either in a vertical or a horizontal position. There should be a free circulation of air around the tube. No object should touch the glass bulb.

**Filament Rating**

Filament voltage . . . . .	2.0 volts
Nominal filament current . . . . .	12 amperes

The filament of this tube is designed to operate on a voltage basis from an alternating-current supply. The voltage should be maintained to within 10% of its rated value (2.0 volts). Operation of the filament outside of these limits may cause the tube to become inoperative. Filament and plate voltage may be applied to the tube simultaneously.

### Characteristic and Operating Conditions

Approximate anode-cathode potential drop . . . . .	8 volts
Ignition voltage at 60 cycles . . . . .	7-16 volts, r-m-s
Maximum peak plate current . . . . .	6.0 amperes
Maximum average plate current . . . . .	2.0 amperes
Maximum peak inverse potential . . . . .	275 volts

The anode-cathode potential drop is substantially independent of the plate current. The exact value may vary from tube to tube and during the life of a given tube over the range from 5 to 10 volts.

The ignition voltage is the voltage required to start conduction within the tube. In a-c. circuits this is a function of frequency, increasing as the frequency increases. The values are given for 60 cycles since this frequency will be most generally encountered in circuit design.

The maximum permissible peak plate current (6 amperes) is a limitation on the instantaneous value that the tube can carry safely in the direction in which it is designed to conduct and should not be exceeded. The maximum average load current (2 amperes) is the maximum direct output current which may be obtained from a half-wave circuit using one tube. A full-wave circuit using two tubes will supply a maximum of 4 amperes.

The maximum permissible peak inverse potential (275 volts) is a limitation on the instantaneous value that the tube can stand safely. If it is exceeded, an arc-back may result which may injure the tube. All circuits should be adequately fused to prevent injury to the equipment in event of arc-back due to line surges. The maximum output voltage obtainable in either the half-wave or full-wave circuit is approximately 75 volts.

327A vacuum tubes may be operated in parallel if some provision is made to insure a proper division of the load current. Current dividing reactors or ballasting resistors in series with each anode, may be used for this purpose. The size of the reactors or resistors depends upon the circuit design.

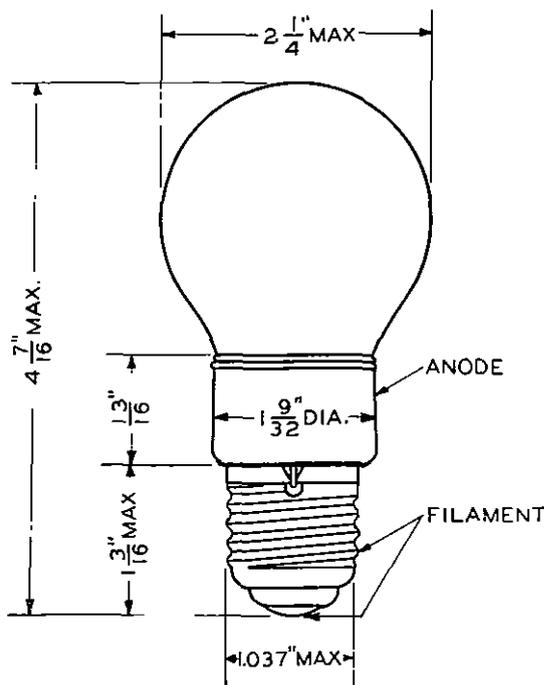


FIG. 1

A development of Bell Telephone Laboratories, Incorporated,  
the research laboratories of the American Telephone and Tele-  
graph Company and the Western Electric Company

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