

February 2, 1939



2V3-G

corrected copy
RCA Release # 157B

High-Voltage Half-Wave Rectifier

RCA-2V3-G is a tungsten-filament type of high-vacuum, half-wave rectifier for use in suitable rectifying devices to supply the high d-c voltages required by Kinescopes and cathode-ray tubes.

TENTATIVE RATINGS

FILAMENT VOLTAGE (A.C.)	2.5	Volts
FILAMENT CURRENT	5	Amperes
PEAK INVERSE VOLTAGE	16500 max.	Volts
PEAK PLATE CURRENT	12 max.	Milliamperes
AVERAGE PLATE CURRENT	2 max.	Milliamperes
BULB	ST-12	
CAP	Skirted Miniature - Style A	
BASE	Small Shell Octal 6-Pin	

INSTALLATION

The base of the 2V3-G fits the standard octal socket. The socket should be mounted to hold the tube in a vertical position with the base either up or down. Only a socket capable of carrying 5 amperes should be used. The plate connection is made to the cap at the top of the bulb.

The bulb becomes hot during operation of the tube. Sufficient ventilation should be provided to prevent overheating.

The filament of the 2V3-G is of the tungsten type and is designed for operation at 2.5 volts. The transformer supplying the filament voltage should be designed to give rated filament voltage under average line-voltage conditions. Experience indicates that a good average line voltage for design purposes is 117 volts. The design of the 2V3-G filament will permit the use of line voltages up to 125 volts without seriously affecting tube life. Also, a drop of line voltage to 105 volts can be tolerated without serious effect to tube performance and tube life (see voltage-regulation curve). However, when the line voltage drops below 105 volts, the tube dissipation increases and tube life and performance are seriously affected. If greater voltage variations are encountered than those discussed above, it is recommended that some method be provided for automatically reducing the variation in filament voltage. The filament transformer must have sufficient insulation to withstand the maximum peak inverse voltage encountered in the installation.

Caution should be observed when the filament voltage is measured because the filament circuit is at high d-c potential.

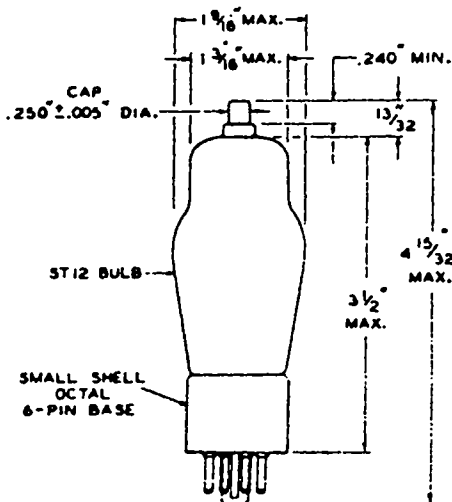
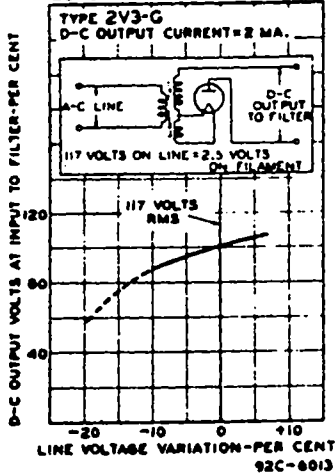
APPLICATION

As a rectifier for supplying the high-voltage d-c requirements of Kinescopes and Cathode-ray tubes, RCA-2V3-G may be operated in conventional rectifier circuits under conditions not to exceed those given under RATINGS. In single-phase circuits, full-wave rectification is accomplished by using two 2V3-G's.

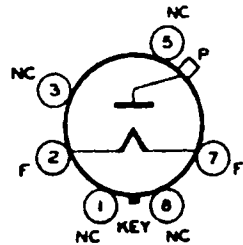
In voltage doubler service, two 2V3-G's may be connected to deliver approximately twice the voltage obtainable from the half-wave or the full-wave method for the same a-c input voltage. In this service a separate filament-supply winding suitably insulated is required for each tube.

Filter requirements, due to small d-c output current, are usually met by the use of a small condenser of approximately 0.1 μ f shunted across the bleeder circuit. The shunt condenser should have a rating sufficient to withstand the instantaneous peak value of the a-c input voltage. If this filtering is inadequate for a particular application, a two-section filter is recommended.

TYPICAL REGULATION CHARACTERISTIC



Bottom View of Socket Connections



92C-6005 R1