

PHILCO

SPECIAL PURPOSE TUBE

DATA SHEET

TENTATIVE

6931

CORONA

DISCHARGE

REGULATOR TUBE

DESCRIPTION

The 6931 is a gas filled, corona discharge, voltage regulator tube designed for operation as a shunt regulator or voltage reference tube. The tube provides a regulated output of 3,000 volts over a range of 50 to 500 microamperes with exceptional stability of the output voltage throughout its operating life.

The 6931 finds application where a stable 3,000 volt potential difference is desired. An outstanding example is its use as a high voltage regulator in the high voltage supply of an Ionitron.*

MECHANICAL DATA

Mounting Position Any
 Maximum Overall Length $4\frac{1}{4}$ inches
 Maximum Seated Height $3\frac{5}{8}$ inches
 Envelope T9
 Base 4 Pin Short Intermediate Shell Octal Basing
 1—No Connection
 2—Cathode
 4—Cathode
 7—Anode

ELECTRICAL DATA

Nominal Voltage at
 275 μ a 3,000 $\pm$ 150 volts
 Voltage Regulation per
 100 μ a 0.7 percent
 Operating Range 50-500 μ a

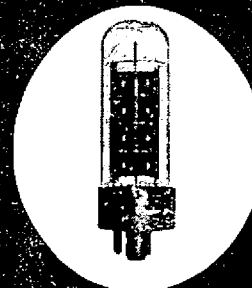
DESIGN CONSIDERATIONS

It is important that the tube current be maintained within the operating range. At low currents the corona discharge may not be self sustaining, while at high currents relaxation oscillations may occur. The rate of voltage rise in the corona voltage region should be limited to 4 or 5 volts per millisecond or the tube may go into relaxation oscillations.

Although the 6931 is constructed for arc-free operation, provision must be made for a suitable environment to prevent arcing induced by strong magnetic or electric fields.

The performance of corona regulators is affected by temperature. The regulated voltage increases as the temperature increases. Typically, the output voltage of the 6931 will increase about 40 volts for an increase in temperature from 25° C to 70° C. Generally the tube will operate satisfactorily in the temperature range 0 to 140° C.

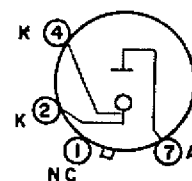
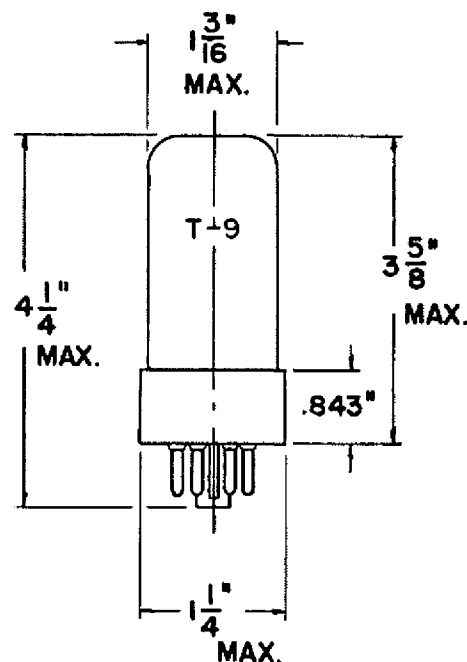
* Registered Trade Mark



GENERAL DESCRIPTION

3 KV corona discharge regulator tube

DIMENSIONAL OUTLINE AND MECHANICAL SPECIFICATIONS



BASING DIAGRAM
 Bottom View of Base

