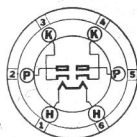


Sylvania

TYPE 25Z5

HIGH VACUUM RECTIFIER AND VOLTAGE DOUBLER



CHARACTERISTICS

Heater Voltage AC or DC	25.0 Volts
Heater Current	0.3 Ampere
Maximum Over-all Length	4 1/4"
Maximum Diameter	1 1/16"
Bulb	ST-12
Base—Small 6-Pin	6-E

Operating Conditions and Characteristics:

VOLTAGE DOUBLER

Heater Voltage	25.0 Volts
A-C Plate Voltage per Plate (RMS)	125 Volts Max.
Peak Plate Current per Plate	500 Ma. Max.
D-C Output Current	100 Ma. Max.

HALF-WAVE RECTIFIER

	Without Series Resistor	With Series Resistor†
Heater Voltage	25.0	25.0 Volts
A-C Plate Voltage per Plate (RMS)	125	250 Volts Max.
Peak Plate Current per Plate	500	500 Ma. Max.
D-C Output Current per Plate	85	85 Ma. Max.

NOTE: For rectifier curve data see page 154.

†Use of an a-c input voltage in excess of 125 volts requires 100 ohm resistors in series with each plate. A 100 ohm resistor common to both plates may be employed although poorer regulation is obtained.

CIRCUIT APPLICATION

Sylvania 25Z5 is a heater type, high vacuum rectifier especially suited for providing d-c power directly from ordinary a-c line supplies. The design makes it applicable in half-wave circuits or as a voltage doubling device and hence it is particularly adapted for service in transformerless receivers.

When used in a "universal" type receiver the heater is connected in series with the heaters of the other tubes in the set. Its 25 volt rating is an economical feature since it reduces the amount of heat to be dissipated in the fixed series resistor of the heater circuit.

Half-Wave Circuit Operation:

For this type of service it is necessary to connect the two plates together at the socket and, likewise, to tie the two cathodes so as to form a single element. A condenser-input filter is essential in order to obtain satisfactory d-c output voltages; the recommended capacitance is 16 mfd.

Operation of 25Z5 as a Voltage Doubler:

Transformerless receivers of the a-c operated type incorporate the voltage doubling feature of the 25Z5 rectifier. In this type of service the two diode units of the tube are arranged in series, one being reversed with respect to the other by means of suitable connections to two condensers connected in series across diode plate No. 1 and the cathode of diode No. 2. One side of the 110 volt a-c line is applied to diode plate No. 2 and cathode No. 1, while the other side of the line goes to the common tap of the condensers. This scheme provides full-wave rectification and permits the condenser which is across one diode to discharge through the load and conducting diode during the period that the other diode is rectifying. The voltage across the load is the sum of the d-c output of the conducting half and the condenser discharge voltage, furnishing approximately twice the d-c voltage which a half-wave circuit would supply. More economical filtering is possible due to the doubled frequency of the output resulting from the rectification of each half of the a-c supply. Unlike the ordinary full-wave circuit, however, only two a-c connections are necessary so that the tube may be operated without a transformer.

TYPES 25Z5, 25Z6, 25Z6G

$E_f = 25$ VOLTS
VOLTAGE DOUBLER
115 RMS VOLTS

