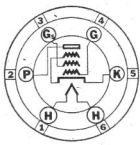

Sylvania

TYPE 43

POWER AMPLIFIER PENTODE

CHARACTERISTICS

Heater Voltage AC or DC	25.0 Volts
Heater Current	0.30 Ampere
Maximum Over-all Length	$4\frac{11}{16}$"
Maximum Diameter	$1\frac{13}{16}$"
Bulb	ST-14
Base—Medium 6-Pin	6-B

Operating Conditions and Characteristics:

Heater Voltage	25.0	25.0	25.0	Volts
Plate Voltage	95	135	180	Volts
Grid Voltage	−15.0	−20	−20	Volts
Screen Voltage	95	135	135	Volts
Plate Current	20.0	37	38	Ma.
Screen Current	4.0	8	7.5	Ma.
Plate Resistance†	45000	35000	40000	Ohms
Mutual Conductance	2000	2450	2500	μmhos
Amplification Factor†	90	85	100	
Load Resistance	4500	4000	5000	Ohms
Power Output	0.9	2.0	2.75	Watts
Total Harmonic Distortion	11	9	10	Per Cent

† Approximate Values.

CIRCUIT APPLICATION

Sylvania 43 is a cathode type power output pentode equipped with a 25 volt heater. This tube will permit the d-c line operated receiver to deliver acceptable power output without requiring additional tubes in the output stage, as has heretofore been necessary.

The 43 is made with a heater requiring 0.3 ampere, which means that it may be used in series with the rest of the 0.3 ampere tubes. The increased voltage drop across the heater of this tube eliminates the necessity of employing large series resistors to reduce the line voltage. The reduction of this series resistor permits the tubes to heat up more rapidly.

The use of the 43 as an output tube will reduce the hum and line interference noise usually present in a d-c line operated receiver employing filament type pentodes. The tubes may be operated singly or in push-pull Class A, in which case no power is required from the driver stage and any tube which will deliver sufficient voltage to the grids may be used as the intermediate audio amplifier. As with other push-pull combinations, the load resistance per tube may be reduced, reducing the third harmonic, while the second will cancel due to the push-pull circuit.

For self-biased operation the bias resistor should be 625 ohms under 95 volt operation, and 450 ohms for both the 135 volt and 180 volt conditions. Adequate filtering is essential to prevent degenerative effects at low audio frequencies.

When two 43's are used in push-pull the self-biasing resistor will be half the value given above. It may still be necessary to shunt this resistor with a filter network.

In cases where resistance coupling is employed for Type 43, the grid resistor value should not exceed 250,000 ohms.

Since the 43 will be used in a series filament circuit with other tubes, a high positive voltage will be impressed between the heater and cathode. This voltage may cause leakage currents which may prove harmful in some applications and care should be taken in laying out the circuit to prevent difficulties arising from this leakage current.