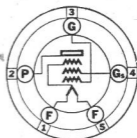


Sylvania

TYPE 47

POWER AMPLIFIER

PENTODE



CHARACTERISTICS

Filament Voltage AC	2.5 Volts
Filament Current	1.75 Amperes

Direct Interelectrode Capacitances:

Grid to Plate	1.2 $\mu\mu\text{f}$
Input	8.6 $\mu\mu\text{f}$
Output	13.0 $\mu\mu\text{f}$
Maximum Over-all Length	5 $\frac{3}{8}$ "
Maximum Diameter	2 $\frac{1}{8}$ "
Bulb	ST-16
Base—Medium 5-Pin	5-B

Operating Conditions and Characteristics:

Filament Voltage	2.5 Volts
Plate Voltage	250 Volts Max.
Grid Voltage	-16.5 Volts
Screen Voltage	250 Volts Max.
Plate Current	31.0 Ma.
Screen Current	6.0 Ma.
Plate Resistance	60000 Ohms
Mutual Conductance	2500 μmhos
Load Resistance	7000 Ohms
Power Output	2.7 Watts

CIRCUIT APPLICATION

Sylvania 47 is a five element tube containing three grids, a plate and a filament or cathode. This tube differs from a tetrode in that an extra "suppressor" grid is inserted between the screen and plate. This grid is connected to the center of the filament. Because of its potential it prevents slow speed electrons from leaving the plate and reaching the screen, thus reducing secondary emission, while it has no great effect on electrons flowing at higher speeds to the plate from the cathode. In the absence of this grid, secondary emission effects limit the power output of a tetrode very greatly while the removal of this limitation in the pentode greatly extends the operating range.

The 47 delivers large power output with relatively low input voltages, which means that the output from the detector is usually sufficient to excite the input to the 47 to produce maximum undistorted power output.

The 47 should be operated as a self-biased amplifier if resistance coupling is employed. For a single tube the bias resistor should be about 450 ohms. This resistor must be by-passed with a large condenser to prevent degeneration occurring at low audio frequencies. If two 47's are used in push-pull the value of bias resistor required will be reduced to half or 225 ohms. With this connection no by-pass condenser will be required.