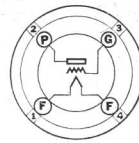
Sylvania

# TYPE 45

## POWER AMPLIFIER




### CHARACTERISTICS

| | |
|---|---|
| Filament Voltage AC or DC | 2.5 Volts |
| Filament Current | 1.5 Amperes |

### Direct Interelectrode Capacitances:

| | |
|---|---|
| Grid to Plate | 6.5 $\mu\mu$f |
| Input | 3.6 $\mu\mu$f |
| Output | 3.0 $\mu\mu$f |

| | |
|---|---|
| Maximum Over-all Length | $4\frac{11}{16}$" |
| Maximum Diameter | $1\frac{13}{16}$" |
| Bulb | ST-14 |
| Base—Medium 4-Pin | 4-D |

### Operating Conditions and Characteristics:

| | | | | |
|---|---|---|---|---|
| Filament Voltage | 2.5 | 2.5 | 2.5 | Volts |
| Plate Voltage | 180 | 250 | 275 | Volts Max. |
| Grid Voltage | −31.5 | −50 | −56 | Volts |
| Plate Current | 31 | 34 | 36 | Ma. |
| Plate Resistance | 1650 | 1610 | 1700 | Ohms |
| Mutual Conductance | 2125 | 2175 | 2050 | $\mu$mhos |
| Amplification Factor | 3.5 | 3.5 | 3.5 | |
| Load Resistance | 2700 | 3900 | 4600 | Ohms |
| Power Output | 0.83 | 1.6 | 2.0 | Watts |

### CIRCUIT APPLICATION

Sylvania 45 is a power output triode designed to supply large undistorted power output. A relatively high input signal is required. The 45 is provided with a 2.5 volt filament and the filament may be operated in parallel with the other tubes in an a-c receiver. All connections in the filament circuit should be capable of carrying the rated filament current without excessive voltage drop.

To prevent distortion and overloading, negative grid bias as shown under characteristics should always be used with the 45. This bias is best obtained by means of the voltage drop through a resistor in the plate return lead. The proper value of this resistor is 1550 ohms when 275 volts are used on the plate, 1470 ohms when 250 volts are used on the plate, or 1300 ohms when 180 volts are used. This method of obtaining grid bias is known as self-bias and must be used in resistance coupled circuits. In a circuit of this kind if the tube has abnormally high plate current, the grid bias will be increased, decreasing the plate current so that almost normal plate current will be taken by the tube.

If increased power output is desired, two 45's may be employed in either parallel or push-pull. The parallel connection permits increased power output without any increase in the signal applied to the power stage, while the push-pull connection for maximum power output requires that the input signal to the power stage be doubled. In either case the proper output transformer for the load must be used to obtain optimum results.