



Sylvania

TYPE 33

POWER AMPLIFIER

PENTODE

CHARACTERISTICS

| | |
|-------------------------------|--------------|
| Filament Voltage DC | 2.0 Volts |
| Filament Current | 0.260 Ampere |

Direct Interelectrode Capacitances:

| | |
|-----------------------------------|-----------------------|
| Grid to Plate | 1.0 $\mu\mu\text{f}$ |
| Input | 8.0 $\mu\mu\text{f}$ |
| Output | 12.0 $\mu\mu\text{f}$ |
| Maximum Over-all Length | 4 $\frac{1}{8}$ " |
| Maximum Diameter | 1 $\frac{1}{8}$ " |
| Bulb | ST-14 |
| Base—Medium 5-Pin | 5-K |

Operating Conditions and Characteristics:

| | | |
|--------------------------------|-------|-----------------------|
| Filament Voltage | 2.0 | 2.0 Volts |
| Plate Voltage | 135 | 180 Volts Max. |
| Grid Voltage | -13.5 | -18 Volts |
| Screen Voltage | 135 | 180 Volts Max. |
| Plate Current | 14.5 | 22.0 Ma. |
| Screen Current | 3.0 | 5.0 Ma. |
| Plate Resistance | 50000 | 55000 Ohms |
| Mutual Conductance | 1450 | 1700 μmhos |
| Amplification Factor | 70 | 90 |
| Load Resistance | 7000 | 6000 Ohms |
| Power Output | 0.7 | 1.4 Watts |

CIRCUIT APPLICATION

Sylvania 33 is a 2 volt power pentode developed to afford considerable improvement in battery receiver performance. The introduction of this type made it possible to secure results somewhat comparable with the new automobile series of tubes or with the standard a-c tubes like Types 38 and 47.

The 33 possesses the same advantages as the other pentodes mentioned above. Due to its high amplification factor it is possible to eliminate the first audio stage and operate directly into the pentode, thus saving the filament and plate current drains of this tube. Type 33 may be employed either singly or in push-pull combination. When the tube is operated with self-bias, the biasing resistor should be about 770 ohms for single tube operation, and 385 ohms for the push-pull arrangement.

When resistance coupling is used, the maximum value of the grid leak is 1 megohm if self-bias is employed; with fixed bias, the value should not exceed 0.5 megohm.

The suppressor grid is connected internally to one side of the filament, the connection being made to the filament prong nearest the screen grid terminal.