

Sylvania

TYPE 32 SCREEN GRID RF AMPLIFIER



CHARACTERISTICS

Filament Voltage DC	2.0 Volts
Filament Current	0.06 Ampere

Direct Interelectrode Capacitances:

Grid to Plate (with tube shield)	0.015 $\mu\mu\text{f}$
Input	6.0 $\mu\mu\text{f}$
Output	12.0 $\mu\mu\text{f}$
Maximum Over-all Length	5 $\frac{3}{8}$ "
Maximum Diameter	1 $\frac{1}{16}$ "
Bulb	ST-14
Cap	Small Metal
Base—Medium 4-Pin	4-K

Operating Conditions and Characteristics:

Filament Voltage	2.0	2.0 Volts
Plate Voltage	135	180 Volts
Grid Voltage	-3	-3 Volts
Screen Voltage	67.5	67.5 Volts
Plate Current	1.7	1.7 Ma.
Screen Current	0.4	0.4 Ma.
Plate Resistance	0.95	1.2 Megohms
Mutual Conductance	640	650 μmhos
Amplification Factor	610	780

CIRCUIT APPLICATION

Sylvania 32 is a screen grid tube suitable for use as a radio frequency amplifier, detector, and audio frequency amplifier. Its chief use will be found as a radio frequency amplifier and detector.

The filament employed in the 32 is of the oxide coated type, and is similar to that of the filament in the 30 tube. This filament is very rugged considering its size. Special precautions are taken in coating the filament and extensive life tests indicate that Type 32 tubes have unusually long life. Special precautions have been taken to make this tube non-microphonic.

Radio Frequency Amplifier:

The 32 tube under normal operating conditions requires three volts for control grid bias. This may be obtained by batteries, or by means of a self-bias arrangement. The latter is preferable if possible, since the bias will adjust itself automatically and permit the tubes to be operated under constant conditions, as the batteries will gradually run down.

Type 32 is a high impedance tube and must be worked into a high impedance if reasonable amplification is expected. Transformer or impedance coupling is generally used with this tube.

It is, of course, necessary to use ample shielding to reduce electrostatic and magnetic couplings to a minimum. The input and output circuits of each tube should be isolated as much as possible. Considerably more amplification is possible with this tube than with the 22.

Detector:

The 32 tube may be used as a resistance coupled detector to feed the first audio amplifier. The plate load should range from 150,000 to 300,000 ohms. The screen grid may be fed through a series resistor since the screen grid current is reduced to a very small value. This resistor should be of such value as to insure that the screen grid voltage is less than half of the plate voltage.

Audio Frequency Amplifier:

Type 32 is suitable for use in a resistance coupled amplifier. The plate resistor should not be higher than 250,000 ohms. It will be necessary to make certain that the screen grid voltage at the tube is not more than half of the plate voltage or the tube will not operate properly.