



Sylvania
TYPE 1B4
SCREEN GRID
RF AMPLIFIER

CHARACTERISTICS

Filament Voltage DC	2.0 Volts
Filament Current	0.060 Ampere

Direct Interelectrode Capacitances:

Grid to Plate (with tube shield)	0.010 $\mu\mu\text{f}$ Max.
Input	4.6 $\mu\mu\text{f}$
Output	11.0 $\mu\mu\text{f}$
Maximum Over-all Length	4 $\frac{11}{32}$ "
Maximum Diameter	1 $\frac{3}{8}$ "
Bulb	ST-12
Cap	Small Metal
Base—Small 4-Pin	4-K

Operating Conditions and Characteristics:

Filament Voltage	2.0	2.0 Volts
Plate Voltage	135	180 Volts
Screen Voltage	67.5	67.5 Volts
Grid Voltage	-3	-3 Volts
Plate Current	1.7	1.7 Ma.
Screen Current	0.4	0.4 Ma.
Plate Resistance	0.65	1.0 Megohm
Mutual Conductance	625	650 μmhos
Amplification Factor	400	650
Grid Voltage for Plate Current Cut-off	-6	-6 Volts

CIRCUIT APPLICATION

Sylvania 1B4 is an improved sharp cut-off r-f amplifier having electrical characteristics very similar to Type 32. This screen grid tube may be employed as an r-f amplifier, detector, or a-f amplifier.

The physical design of this tube permits the use of an ST-12 bulb instead of the larger ST-14 size employed for Type 32. The over-all dimensions are the same as those for Type 1A4.

Type 1B4 is a high impedance tube and must be worked into a high impedance if reasonable r-f amplification is to be attained. Transformer or impedance coupling is generally employed.

It is necessary to use ample shielding so as to reduce electrostatic and magnetic coupling to a minimum. The input and output circuits of each tube should be isolated as much as possible.

Type 1B4 may be used as a resistance coupled detector to feed the first audio amplifier. The plate load should be 150,000 to 300,000 ohms. The screen grid may be fed through a series resistor but its value should be such that the screen voltage is less than half of the plate voltage. A more desirable tube for use as the second detector and first audio amplifier is the Sylvania 1B5/25S.