



Sylvania TYPE 31 POWER OUTPUT TUBE

CHARACTERISTICS

Filament Voltage DC	2.0 Volts	
Filament Current	0.130 Ampere	

Direct Interelectrode Capacitances:

Grid to Plate	5.7 μf	
Input	3.5 μf	
Output	2.7 μf	
Maximum Over-all Length	4 $\frac{1}{4}$ "	
Maximum Diameter	1 $\frac{1}{8}$ "	
Bulb	ST-12	
Base—Small 4-Pin	4-D	

Operating Conditions and Characteristics:

Filament Voltage	2.0	2.0 Volts
Plate Voltage	135	180 Volts Max.
Grid Voltage	-22.5	-30 Volts
Plate Current	8.0	12.3 Ma.
Plate Resistance	4100	3600 Ohms
Mutual Conductance	925	1050 μmhos
Amplification Factor	3.8	3.8
Load Resistance	7000	5700 Ohms
Power Output	185	375 Mw.

CIRCUIT APPLICATION

Sylvania 31 is a power output tube designed for use in portable receivers or wherever economy of operation is essential.

The filament is of the oxide coated type and is assembled in the shape of a V. The filament requires two volts and draws 130 milliamperes. The filament should be operated between 1.9 and 2.1 volts and the latter figure should not be exceeded.

The maximum plate voltage for this tube is 180 volts. It is recommended that this voltage be employed whenever possible. If a lower voltage is used, the output will be somewhat decreased. The proper grid bias for 135 volts is -22.5 volts. It is important that the grid bias be kept at this value otherwise the plate current will rise to a high value which will impair the performance of the tube. The grid return should be made to the negative side of the filament.

If the correct bias is used, it is not necessary to employ a speaker filter or transformer as with other power tubes, since the plate current is relatively small.

The 31 is interchangeable with the 20 if the filament voltage is reduced to two volts. The undistorted power output of the 31 is approximately one and one-half times that of the 20.