



Sylvania

TYPE 6B5

DIRECT COUPLED POWER AMPLIFIER

CHARACTERISTICS

Heater Voltage AC or DC	6.3 Volts
Heater Current	0.8 Ampere
Maximum Over-all Length	4 $\frac{1}{8}$ "
Maximum Diameter	1 $\frac{1}{8}$ "
Bulb	ST-14
Base—Medium 6-Pin	6-D

Operating Conditions and Characteristics:

CLASS A AMPLIFIER

Heater Voltage	6.3 Volts
Plate Voltage (Output)	300 Volts
Plate Voltage (Input)	300 Volts
Grid Voltage (Input)	0 Volts
Plate Current (Output)	42 Ma.
Plate Current (Input)	8 Ma.
Plate Resistance	24,000 Ohms
Mutual Conductance†	2400 μ mhos
Amplification Factor	58
Load Resistance	7000 Ohms
Power Output*	4.0 Watts
Power Output**	6.5 Watts

†Input grid—output plate transconductance.

*15 volts (r-m-s) signal; total distortion 5%.

**Input grid begins to draw grid current; total distortion 10%.

CIRCUIT APPLICATION

Sylvania 6B5 is a heater type output tube comprising two triode units mounted in an ST-14 bulb. The smaller or input section acts as a driver tube for the larger output unit and is directly coupled to it. The input cathode and output grid are connected internally.

Type 6B5 may be employed in the output stage of a-c operated receivers to deliver large amounts of power with low percentage distortion. Two tubes may be used in a push-pull circuit if additional power is desired.

In general, the circuits designed for the Type 6B5 will be somewhat simplified since the number of component parts required will be less than with other power amplifier tubes. The tube operates without bias so that there is no need for a cathode resistor and its associated by-pass condenser. The output cathode is connected directly to B⁻. Nevertheless, the input grid does not draw any current since a grid bias is automatically developed within the tube. The tube may therefore be fed by resistance coupling.

The optimum load resistance for single tube operation is 7000 ohms. When two Type 6B5 tubes are operated in push-pull the plate to plate load resistance should be 10,000 ohms.

The characteristics are shown for 300 volt operation. However, it is permissible to operate Type 6B5 with zero bias and plate voltages up to 325 volts.