



Sylvania  
**TYPE 6A6**  
**CLASS B**  
**AMPLIFIER**

**CHARACTERISTICS**

Heater Voltage AC or DC . . . . .	6.3 Volts
Heater Current . . . . .	0.8 Ampere
Maximum Over-all Length . . . . .	4 1/4"
Maximum Diameter . . . . .	1 1/8"
Bulb . . . . .	ST-14
Base—Medium 7-Pin . . . . .	7-B

**Operating Conditions and Characteristics:**

**CLASS B POWER AMPLIFIER**

Heater Voltage . . . . .	6.3 Volts	
Plate Voltage . . . . .	300 Volts	
Dynamic Peak Plate Current (per plate) . . . . .	125 Ma.	
Average Plate Dissipation . . . . .	10 Watts	
<b>Typical Operation:</b>		
Plate Voltage . . . . .	250	300 Volts
Grid Voltage . . . . .	0	0 Volts
Static Plate Current (per plate) . . . . .	14	17.5 Ma.
Load Resistance (Plate-to-Plate) . . . . .	8000	10000 Ohms
Power Output* . . . . .	8	10 Watts

**CLASS A DRIVER**

(Both grids and both plates connected together at the socket)

Heater Voltage . . . . .	6.3	6.3 Volts
Plate Voltage . . . . .	250	294 Volts
Grid Voltage . . . . .	-5	-6 Volts
Plate Current . . . . .	6	7 Ma.
Plate Resistance . . . . .	11300	11000 Ohms
Mutual Conductance . . . . .	3100	3200 $\mu$ hos
Amplification Factor . . . . .	35	35

\*With average input of 350 milliwatts applied between grids.

**CIRCUIT APPLICATION**

Sylvania 6A6 is a complete Class B output tube of the heater cathode type comprised of two triode units in a single bulb. Except for the heater rating, which is 0.8 ampere at 6.3 volts, the characteristics are the same as those for Type 53.

The 6A6 is used primarily as a Class B output tube for a-c operated receivers. Power output up to 10 watts may be obtained when the plate voltage is 300 volts. No grid bias is required.

The no signal plate current of Type 6A6 is considerably higher than that for Type 79. This characteristic should be given consideration in the application of the former to automobile receivers.

By connecting the triode elements in parallel, Type 6A6 may be employed as a Class A tube, supplying sufficient power to drive another 6A6 in a Class B output stage to give high output with relatively low percentage distortion. The plate load for the driver tube should be two to four times the plate resistance, the value depending upon the design of the Class B stage. If self-bias is employed, the maximum d-c resistance in the grid circuit may be 0.5 megohm. When fixed bias is employed, this value should be limited to 0.1 megohm.

There are other special applications for which the 6A6 may be desirable. When used as a cascade amplifier each section of the tube is operated as a separate triode. Due to the high values of amplification factor and plate resistance the sections are well suited to resistance coupling. An over-all voltage gain of about 700 is obtainable. However, with such high gain considerable care is necessary in the choice of circuit constants in order to reduce hum and noise. A grid bias of -3 volts and a plate load of 0.25 megohm are recommended for a 250 volt supply condition.

Type 6A6 may also be employed as a combination voltage amplifier and phase inverter—a system for obtaining push-pull resistance coupling to a pair of output tubes (e.g. two Type 42's) providing a gain comparable to a good triode transformer combination. This will provide a saving in space requirements and a reduction in cost.