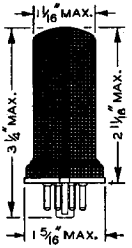
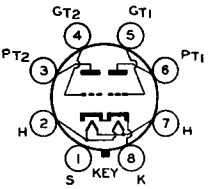


RCA-6N7

CLASS B TWIN TRIODE



The 6N7 is an All-Metal tube containing in one envelope two high-mu triodes designed for Class B operation. The triode units have separate external terminals for all electrodes except the cathodes and heaters. The 6N7 may also be used as a Class A_1 amplifier (with triode units connected in parallel) to drive a single 6N7 as a Class B amplier in the output stage.

CHARACTERISTICS

Heater Voltage (A. C. or D. C.)	6.3	Volts
Heater Current	0.8	Ampere
Base	Small Wafer Octal 8-Pin	

As Class B Power Amplifier

Plate Voltage		300 *max.*	Volts
Peak Plate Current (Per Plate)		125 *max.*	Milliamperes
Average Plate Dissipation		10 *max.*	Watts
Typical Operation			
Plate Voltage	250	300	Volts
Grid Voltage	0	0	Volts
Zero-Signal Plate Current (Per Plate)	14	17.5	Milliamperes
Effective Load Resistance (Plate-to-plate)	8000	10000	Ohms
Power Output (Approximate)*	8	10	Watts

As Driver—Class A_1 Amplifier

(Both grids connected together at socket: likewise both plates.)

Plate Voltage†	250	294	Volts
Grid Voltage	−5	−6	Volts
Amplification Factor	35	35	
Plate Resistance	11300	11000	Ohms
Transconductance	3100	3200	Micromhos
Plate Current	6	7	Milliamperes

* With average input of 350 milliwatts applied between grids.

† Maximum plate voltage = 300 volts.

INSTALLATION

Refer to INSTALLATION on the type 6A6.

APPLICATION

As a Class B power amplifier, the 6N7 is used in circuits similar in design to those utilizing individual tubes in the output stage. It requires no grid-bias, since the high-mu feature of the triode units reduces the steady plate current at zero bias to a relatively low value. Refer to page 20 for general Class B amplifier design considerations.

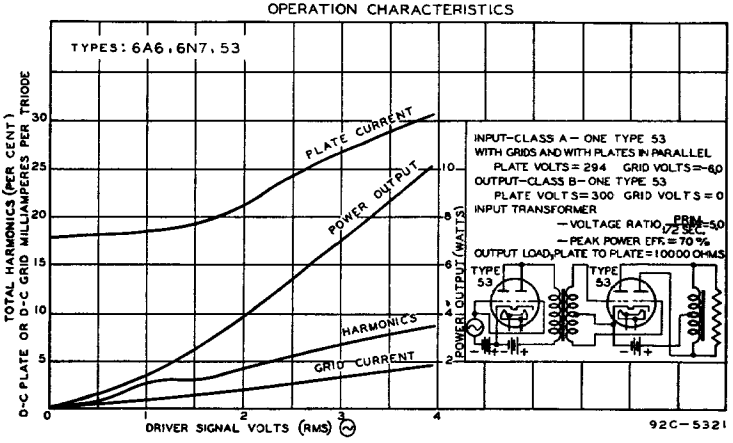
Two 6N7's can be operated in a Class B output stage with the two triode units of each 6N7 connected in parallel to give a power output of 20 watts, approximate, under conditions of 300 volts on the plates and of a 5000-ohm plate-to-plate load.

As a **Class A_1 amplifier triode**, the 6N7 may be employed in the driver stage of Class B amplifier circuits, and thus reduce the number of tube types necessary in a receiver. When operated in this way with a plate supply of 300 volts and corresponding grid-bias, the 6N7 is capable of supplying a power output upwards of 400 milliwatts. The load into which the driver works will depend largely on the design factors of the Class B amplifier. In general, however, the load will be between 20000 and 40000 ohms. The d-c resistance in the grid circuit of the 6N7, when operated as a Class A amplifier, may be as high as 0.5 megohm with self bias. With fixed bias, however, the resistance should not exceed 0.1 megohm. Typical operating values as a resistance-coupled amplifier are given in the Resistance-Coupled Amplifier Section.

Among other and less conventional applications of the 6N7 are its use as (1) biased detector and one-stage a-f amplifier, (2) two-stage a-f amplifier, (3) amplifier and phase-inverter to supply resistance-coupled, push-pull output tubes, (4) two-tube oscillator, and (5) oscillator and amplifier.

Additional curves are given under types 6A6 and 53.

OPERATION CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS
TRIODE SECTION