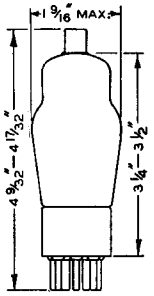
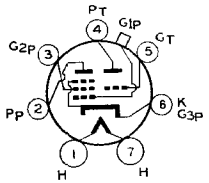


RCA-6F7

TRIODE-PENTODE



The 6F7 is a heater type of tube combining in one bulb a triode and an r-f pentode of the remote cut-off type. Since these two units are independent of each other except for the common cathode, the 6F7 may be adapted to circuit design in several ways.

CHARACTERISTICS

Heater Voltage (A. C. or D. C.)	6.3	Volts
Heater Current	0.3	Ampere
Direct Interelectrode Capacitances		
Triode Unit—Grid to Plate	2.0	μμf
Grid to Cathode	2.5	μμf
Plate to Cathode	3.0	μμf
Pentode Unit—Grid to Plate (With shield-can)	0.008 *max.*	μμf
Input	3.2	μμf
Output	12.5	μμf
Bulb		ST-12
Cap		Small Metal
Base		Small 7-Pin

As Amplifier

	Triode Unit	*Pentode Unit*		
Plate Voltage	100 *max.*	100	250 *max.*	Volts
Screen Voltage (Grid No. 2)	—	100	100 *max.*	Volts
Grid Voltage (Grid No. 1)	−3 *min.*	−3 *min.*	−3 *min.*	Volts
Plate Current	3.5	6.3	6.5	Milliamperes
Screen Current	—	1.6	1.5	Milliamperes
Amplification Factor	8	300	900	
Plate Resistance	16000	290000	850000	Ohms
Transconductance	500	1050	1100	Micromhos
Transconductance (At −35 volts bias)	—	9	10	Micromhos

As Frequency Converter

Typical Operation	*Triode Unit*	*Pentode Unit*	
Plate Voltage (Maximum)	100°	250	Volts
Screen Voltage	—	100	Volts
Grid Voltage	†	−10*	Volts
Oscillator Peak Voltage Input	—	7	Volts
D-C Grid Current	0.15	0	Milliampere
D-C Plate Current	2.4††	2.8	Milliamperes
Screen Current	—	0.6	Milliampere
Plate Resistance	—	2.0	Megohms
Conversion Transconductance	—	300	Micromhos

* May be obtained from 250-volt source through 60000-ohm dropping resistor.

° Obtained by means of 1700-ohm self-biasing (cathode) resistor.

† Obtained by 100000-ohm grid-leak resistor returned directly to cathode.

†† Oscillator conditions should be adjusted so that plate current does not exceed maximum of 4 milliamperes.

INSTALLATION

Refer to INSTALLATION on type 6A8.

APPLICATION

Being of the multi-unit type, the 6F7 is suitable for diversified applications. The triode unit and the pentode unit can be utilized independently of each other for performing any of the functions expected of single-unit types with similar characteristics. Circuit design for the 6F7, therefore, will follow conventional practice.

As a **frequency converter,** the 6F7 is used by employing the triode unit as oscillator and the pentode unit as mixer (first detector). The circuit should be adjusted so that the grid-bias voltage is approximately 3 volts greater than the peak oscillator voltage. *In operation, the plate current of the oscillator should not exceed 4 milliamperes.*