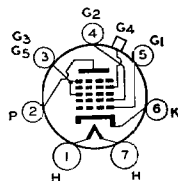


RCA-6A7

PENTAGRID CONVERTER



The 6A7 is a multi-electrode type of vacuum tube designed to perform simultaneously the functions of a mixer tube and of an oscillator tube in superheterodyne circuits.

For discussion of pentagrid types, see **FREQUENCY CONVERSION**, page 31.

CHARACTERISTICS

HEATER VOLTAGE (A. C. or D. C.).....	6.3	Volts
HEATER CURRENT	0.3	Ampere
DIRECT INTERELECTRODE CAPACITANCES (Approx.):		
Grid No. 4 to Plate (With shield-can).....	0.3	$\mu\mu\text{f}$
Grid No. 4 to Grid No. 2 (With shield-can).....	0.15	$\mu\mu\text{f}$
Grid No. 4 to Grid No. 1 (With shield-can).....	0.15	$\mu\mu\text{f}$
Grid No. 1 to Grid No. 2.....	1.0	$\mu\mu\text{f}$
Grid No. 4 to All Other Electrodes (R-F Input)...	8.5	$\mu\mu\text{f}$
Grid No. 2 to All Other Electrodes (Osc. Output)..	5.5	$\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes (Osc. Input)..	7.0	$\mu\mu\text{f}$
Plate to All Other Electrodes (Mixer Output).....	9.0	$\mu\mu\text{f}$
BULB		ST-12
CAP		Small Metal
BASE		Small 7-Pin

As Frequency Converter

PLATE VOLTAGE	250 max.	Volts
SCREEN VOLTAGE (Grids No. 3 and 5).....	100 max.	Volts
ANODE-GRID VOLTAGE (Grid No. 2).....	200 max.	Volts
ANODE-GRID VOLTAGE SUPPLY (Grid No. 2)*.....	250 max.	Volts
CONTROL-GRID VOLTAGE (Grid No. 4).....	-3 min.	Volts
TOTAL CATHODE CURRENT.....	14 max.	Milliamperes

TYPICAL OPERATION

Plate Voltage	100	250	Volts
Screen Voltage	50	100	Volts
Anode-Grid Voltage	100	200	Volts
Control-Grid Voltage (Minimum).....	-1.5	-3	Volts
Oscillator-Grid Resistor (Grid No. 1).....	10000	50000	Ohms
Plate Current	1.3	3.5	Milliamperes
Screen Current	2.5	2.2	Milliamperes
Anode-Grid Current	3.3	4.0	Milliamperes
Oscillator-Grid Current	1.2	0.7	Milliamperes
Total Cathode Current	8.3	10.4	Milliamperes
Cathode Resistor	150	300	Ohms
Plate Resistance	0.6	0.36	Megohm
Conversion Conductance	350	520	Micromhos
Control-Grid Voltage, Approximate (Conversion Conductance—2 μmhos)....	-20	-45	Volts

* Voltages in excess of 200 volts require use of 20000-ohm voltage-dropping resistor by-passed by 0.1 μf condenser.

INSTALLATION AND APPLICATION

The base pins of the 6A7 fit the seven-contact (0.75-inch pin-circle diameter) socket which may be installed to hold the tube in any position. For heater and cathode operation, refer to type 6A8. Complete shielding of the 6A7 is generally necessary to prevent intercoupling between its circuit and the circuits of other stages. Refer to APPLICATION of types 6A8 and 2A7. A typical circuit is shown under type 2A7.