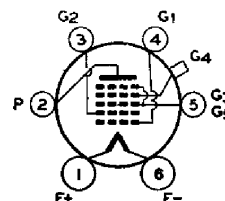


RCA-1C6

PENTAGRID CONVERTER



The 1C6 is a multi-electrode type of vacuum tube designed to perform simultaneously the function of a mixer tube and of an oscillator tube in superheterodyne circuits. Through its use, the independent control of each function is made possible within a single tube. The 1C6 is designed especially for use in battery-operated receivers. In such service, this tube replaces the two tubes required in conventional circuits and gives improved performance. It is especially useful in multi-range receivers which are often designed to cover frequencies as high as 20 megacycles. For general discussion of pentagrid types, see FREQUENCY CONVERSION, page 31.

CHARACTERISTICS

FILAMENT VOLTAGE (D. C.).....	2.0	Volts
FILAMENT CURRENT	0.120	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).....	0.3	$\mu\mu\text{f}$
Grid No. 4 to Grid No. 1 (With shield-can).....	0.15	$\mu\mu\text{f}$
Grid No. 1 to Grid No. 2.....	1.5	$\mu\mu\text{f}$
Grid No. 4 to All Other Electrodes (R-F Input)...	10	$\mu\mu\text{f}$
Grid No. 2 to All Other Electrodes (Osc. Output)...	6	$\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes (Osc. Input)...	6	$\mu\mu\text{f}$
Plate to All Other Electrodes (Mixer Output).....	10	$\mu\mu\text{f}$
BULB	ST-12	
CAP	Small Metal	
BASE	Small 6-Pin	

Converter Service

PLATE VOLTAGE	180 max.	Volts
SCREEN VOLTAGE (Grids No. 3 and 5).....	67.5 max.	Volts
ANODE-GRID VOLTAGE (Grid No. 2).....	135 max.	Volts
ANODE-GRID VOLTAGE SUPPLY*.....	180 max.	Volts
CONTROL-GRID VOLTAGE (Grid No. 4).....	-3 min.	Volts
TOTAL CATHODE CURRENT.....	9 max.	Milliamperes

TYPICAL OPERATION

Plate Voltage	135	180	Volts
Screen Voltage	67.5	67.5	Volts
Anode-Grid Voltage Supply.....	135*	180*	Volts
Control-Grid Voltage	-3	-3	Volts
Oscillator Grid-Resistor (Grid No. 1).....	50000	50000	Ohms
Plate Current	1.3	1.5	Milliamperes
Screen Current (Approximate)	2	2	Milliamperes
Anode-Grid Current	2.6	3.3	Milliamperes
Oscillator-Grid Current	0.2	0.2	Milliamperes
Total Cathode Current (Approx.).....	6.5	7	Milliamperes
Plate Resistance	0.55	0.75	Megohm
Conversion Conductance	300	325	Micromhos
Conversion Conductance (At -14 volts on Grid No. 4).....	4	4	Micromhos

The transconductance of the oscillator portion (not oscillating) of the 1C6 is 1000 micromhos under the following conditions: Plate voltage, 135 to 180 volts; screen voltage, 67.5 volts; anode-grid voltage (no voltage-dropping resistor), 135 volts; and zero oscillator grid volts. Under these same conditions, the anode-grid current is 4.9 milliamperes.

* Applied through 20000-ohm dropping resistor, by-passed by 0.1 μf condenser.