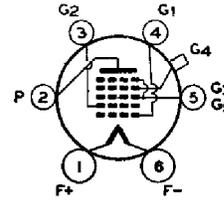


RCA-1C6

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

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.