



RCA Radiotron

RCA-234

SUPER-CONTROL R-F AMPLIFIER PENTODE

The '34 is a super-control pentode recommended for use primarily as a radio-frequency amplifier and intermediate-frequency amplifier in battery-operated receivers employing the '30, '31, '32, and/or '33 where economy of filament current drain is important.

The '34 is very effective in reducing cross-modulation and modulation-distortion over the usual range of signal voltages without the use of antenna potentiometers or auxiliary volume control switches. (See Super-Control amplifier page 15.) This super-control characteristic makes the tube uniquely adaptable to the r-f and i-f stages of receivers employing automatic volume control.

The use of a **suppressor** is an important feature of the '34. In comparison with the usual type of screen grid tube operated under similar conditions, the '34 has a much higher plate resistance and a considerably increased range of voltage swing. Furthermore, a high value of mutual conductance is maintained.

The suppressor is connected inside the tube to the filament. During operation of the tube, the suppressor eliminates the secondary emission effects which limit the voltage swing permissible in the usual screen grid tube at low plate voltage, that is, at a plate voltage approximately equal to the screen voltage. The suppressor in the '34, therefore, makes possible efficient operation of this tube at a relatively low plate voltage. This may be greater than, equal to, or slightly less than the recommended screen voltage.

CHARACTERISTICS

FILAMENT VOLTAGE (D. C.)	2.0	Volts
FILAMENT CURRENT	0.060	Ampere
PLATE VOLTAGE	67.5** 135	180 <i>max.</i> Volts
SCREEN VOLTAGE (Max.*)	67.5 67.5	67.5 Volts
GRID VOLTAGE, Variable (Minimum)	-3 -3	-3 Volts
PLATE CURRENT	2.7 2.8	2.8 Milliamperes
SCREEN CURRENT	1.1 1.0	1.0 Milliamperes
PLATE RESISTANCE	400000 600000 1000000	Ohms
AMPLIFICATION FACTOR	224 360	620
MUTUAL CONDUCTANCE	560 600	620 Micromhos
MUTUAL CONDUCTANCE, at -22.5 volts bias	15 15	15 Micromhos
EFFECTIVE GRID-PLATE CAPACITANCE		0.020 <i>maximum</i> μ f.
INPUT CAPACITANCE		6.4 μ f.
OUTPUT CAPACITANCE		12.8 μ f.
OVERALL LENGTH		4 ²⁵ / ₃₂ " to 5 ¹ / ₃₂ "
MAXIMUM DIAMETER		1 ¹³ / ₁₆ "
BULB (See page 42, Fig. 11)		S-14
CAP		Small Metal
BASE		Medium 4-Pin

* Under conditions of maximum plate current.

** Recommended values for use in portable receivers.

INSTALLATION

The base pins of the '34 fit the standard four-contact socket. Although this tube is quite free from microphonic disturbances, cushioning of its socket may sometimes be desirable. For socket connections, see page 39, Fig. 4.

For filament operation, refer to INSTALLATION for type '32.