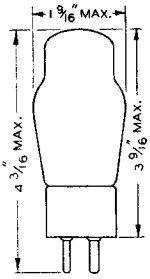
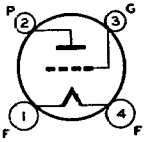


RCA-30

DETECTOR, AMPLIFIER



The 30 is a detector and amplifier tube of the three-electrode type for battery-operated radio receivers where economy of filament-current drain is important.

CHARACTERISTICS

Filament Voltage (D. C.)	2.0	Volts
Filament Current	0.060	Ampere
Grid-Plate Capacitance	6.0	$\mu\mu$f
Grid-Filament Capacitance	3.0	$\mu\mu$f
Plate-Filament Capacitance	2.1	$\mu\mu$f
Bulb		ST-12
Base		Small 4-Pin

As Class A_1 Amplifier

Plate Voltage	90	135	180 *max.*	Volts
Grid Voltage	−4.5	−9	−13.5	Volts
Plate Current	2.5	3.0	3.1	Milliamperes
Plate Resistance	11000	10300	10300	Ohms
Amplification Factor	9.3	9.3	9.3	
Transconductance	850	900	900	Micromhos

As Class B Amplifier

Plate Voltage	180 *max.*	Volts
Maximum-Signal Plate Current	50 *max.*	Milliamperes
Zero-Signal Plate Current (Per tube)	1.5 *max.*	Milliamperes

Typical Operation (2 tubes)

Values are for two tubes.

Plate Voltage	157.5	Volts
Grid Voltage	−15	Volts
Zero-Signal Plate Current (Per tube)	1.0	Milliampere
Effective Load Resistance (Plate-to-plate)	8000	Ohms
Maximum-Signal Driving Power	260	Milliwatts
Power Output, Approximate*	2.1	Watts

* With one type 30 as driver operated under the following conditions: Plate voltage, 157.5 volts, negative grid bias voltage, 11.3 volts; plate load of approximately 18000 ohms; and input transformer ratio (primary to one-half secondary), 1.165: Total distortion is 6 to 7%.

INSTALLATION AND APPLICATION

The base pins of the 30 fit the standard four-contact socket which should be installed to hold the tube in a vertical position. Cushioning of the socket in the detector stage may be desirable if microphonic disturbances are encountered. For filament operation, refer to INSTALLATION on type 1A6.

As a detector, the 30 may be operated either with grid leak and condenser or with grid-bias. The plate voltage for the former method should not be more than 45 volts. A grid leak of from 1 to 5 megohms used with a grid condenser of 0.00025 μf is satisfactory. The grid return should be connected to the positive filament socket terminal. For grid-bias detection, plate voltages up to the maximum value of 180 volts may be used. The corresponding grid-bias should be adjusted so that the plate current is about 0.2 milliampere when no signal is being received.

In resistance-coupled service, the maximum d-c resistance in the grid circuit should not exceed 2 megohms.

A family of plate characteristic curves is given on page 102.

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