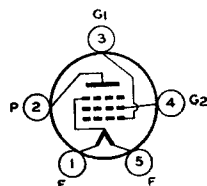


# RCA-47

## POWER-AMPLIFIER PENTODE

The 47 is a power-amplifier pentode for use in the audio output stage of a-c receivers. In comparison with three-electrode Class A power amplifiers of the same plate dissipation, the



47 is capable of greater output with the additional feature of higher amplification.

### CHARACTERISTICS

FILAMENT VOLTAGE (A. C. or D. C.)	2.5	Volts
FILAMENT CURRENT	1.75	Amperes
PLATE VOLTAGE	250 <i>max.</i>	Volts
SCREEN VOLTAGE	250 <i>max.</i>	Volts
GRID VOLTAGE*	-16.5	Volts
PLATE CURRENT	31	Milliamperes
SCREEN CURRENT	6	Milliamperes
PLATE RESISTANCE	60000	Ohms
AMPLIFICATION FACTOR	150	
TRANSCONDUCTANCE	2500	Micromhos
LOAD RESISTANCE	7000	Ohms
SELF-BIAS RESISTOR	450	Ohms
POWER OUTPUT (6% total harmonic distortion)	2.7	Watts
GRID-PLATE CAPACITANCE	1.2	$\mu\text{f}$
INPUT CAPACITANCE	8.6	$\mu\text{f}$
OUTPUT CAPACITANCE	13.0	$\mu\text{f}$
BULB		ST-16
BASE		Medium 5-Pin

\* If filament is operated on d-c, grid bias should be -15.3 volts.

### INSTALLATION AND APPLICATION

The base pins of the 47 fit the standard five-contact socket which should be installed preferably to hold the tube in a vertical position. If it is necessary to place the tube in a horizontal position, the socket should be mounted with its filament-pin openings one vertically above the other. Sufficient ventilation should be provided around the tube to prevent overheating.

For the power amplifier stage of radio receivers, the 47 is recommended either singly or in push-pull combination. More than one audio stage preceding the 47 is undesirable because of the possibility of microphonic disturbances resulting from the high level of amplification.

Any conventional type of input coupling may be used, provided the resistance added to the grid circuit by this device is not too high. Transformer or impedance-coupling devices are preferable. If resistance coupling is used, the d-c resistance in the grid circuit should not exceed 0.5 megohm with self-bias, or 50000 ohms with fixed bias.

The blue glow which frequently appears on the inner surface of the 47 bulb is due to fluorescence caused by stray electrons from the filament which strike the interior of the getter-coated bulb. This fluorescence is a natural effect and is in no manner an indication of the performance of the tube.

A family of plate characteristic curves is given at the bottom of page 138.



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