RCA-46

DUAL-GRID POWER AMPLIFIER

The 46 is a double-grid power-amplifier tube recommended especially for service in Class B amplifier circuits of suitable design.

CHARACTERISTICS

FILAMENT VOLTAGE (A.C. or D.C.) ............... 2.5 Volts
FILAMENT CURRENT ................................ 1.75 Amperes
BULB ............................................... S-17
BASE ............................................... Medium 5-Pin

As Class B Amplifier
(Grid No. 1 and No. 2 connected together at socket)

PLATE VOLTAGE ......................................... 400 max. Volts
PEAK PLATE CURRENT ................................ 200 max. Milliamperes
AVERAGE PLATE DISSIPATION ......................... 10 max. Watts

TYPICAL OPERATION (2 tubes)

Values are for two tubes.

| Plate Voltage | 300 | 400 |
| Grid Voltage  | 0   | 0   |
| Zero-Signal Plate Current | 8 | 12 |
| Effective Load Resistance (Plate-to-plate) | 5200 | 7800 |
| Power Output (Approximate) | 16* | 20† |

* With average power input of 950 milliwatts applied between grids.
† With average power input of 650 milliwatts applied between grids.

As Class A1 Amplifier
(Grid No. 2 connected to plate at socket)

| PLATE VOLTAGE | 250 max. Volts |
| GRID VOLTAGE  | 33 Volts |
| PLATE CURRENT | 22 Milliamperes |
| PLATE RESISTANCE | 2380 Ohms |
| AMPLIFICATION FACTOR | 5.6 |
| TRANSCONDUCTANCE | 2350 Micromhos |
| LOAD RESISTANCE (For max. undistorted power)†† | 6400 Ohms |
| UNDISTORTED POWER OUTPUT †† | 1.25 Watts |

†† Approximately twice this value is recommended for load of this tube as driver for Class B stage.

INSTALLATION

The base pins of the 46 fit the standard five-contact socket which may be installed to hold the tube either in a vertical or in a horizontal position. For horizontal operation, the socket should be positioned with the filament-pin openings one vertically above the other. Sufficient ventilation should be provided around the tube to prevent overheating.

The filament is designed to operate at 2.5 volts. The transformer winding supplying the filament circuit should operate the filament at this recommended value for full-load operating conditions at average line voltage. The filament winding should, insofar as possible, be isolated from the input circuit of the driver stage in order to avoid the possibility of hum caused by electrostatic induction from this wiring.

The grid- and the plate-return lead for the Class B stage should be connected to the mid-tap of the filament winding or to the center-tap of a 20-ohm resistor across the winding. The grid- and plate-return for the driver stage should be made
to a variable center-tapped resistor across the filament supply for minimum hum
adjustment. The use of a push-pull driver stage with either equi-potential or
filament-type tubes will reduce hum resulting from the filament supply, but is
required only in special applications.

APPLICATION

In Class B audio power-amplifier service, the 46 is recommended because the
two grids in the tube are connected together and, thus, the signal voltage is applied
to both simultaneously. Consideration of general Class B amplifier design features
is given on page 20.

For Class A1 operation of the 46, the grid adjacent to the plate is connected
to the plate. The intended application of the 46 as a Class A amplifier is for driving
two 46's in a Class B amplifier circuit. The tube has been constructed for this dual
service in order to reduce the number of tube types necessary in a receiver. The
tabulated values for Class A operation of this type, as given under CHARACTER-
ISTICs, are for its operation as a power output tube.