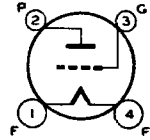


RCA-45

POWER AMPLIFIER

The 45 is a power amplifier triode of the filament type capable of supplying large undistorted output in a-c operated receivers.



CHARACTERISTICS

| | | |
|-----------------------------------|-----|------------------|
| FILAMENT VOLTAGE (A. C. or D. C.) | 2.5 | Volts |
| FILAMENT CURRENT | 1.5 | Amperes |
| GRID-PLATE CAPACITANCE | 7 | $\mu\mu\text{f}$ |
| GRID-FILAMENT CAPACITANCE | 4 | $\mu\mu\text{f}$ |
| PLATE-FILAMENT CAPACITANCE | 3 | $\mu\mu\text{f}$ |
| BULB | | ST-14 |
| BASE | | Medium 4-Pin |

As Single-Tube Class A₁ Amplifier

| | | | | |
|--------------------------|-------|------|----------|--------------|
| FILAMENT VOLTAGE (A. C.) | | 2.5 | Volts | |
| PLATE VOLTAGE | 180 | 250 | 275 max. | Volts |
| GRID VOLTAGE* | -31.5 | -50 | -56 | Volts |
| PLATE CURRENT | 31 | 34 | 36 | Milliamperes |
| PLATE RESISTANCE | 1650 | 1610 | 1700 | Ohms |
| AMPLIFICATION FACTOR | 3.5 | 3.5 | 3.5 | |
| TRANSCONDUCTANCE | 2125 | 2175 | 2050 | Micromhos |
| LOAD RESISTANCE | 2700 | 3900 | 4600 | Ohms |
| SELF-BIAS RESISTOR | 1020 | 1470 | 1550 | Ohms |
| UNDISTORTED POWER OUTPUT | 0.825 | 1.6 | 2.0 | Watts |

* Grid volts measured from mid point of a-c operated filament. Self-bias is advisable in all cases, required if grid d-c resistance (max. value of 1.0 megohm) is used in grid circuit.

As Push-Pull Class AB₂ Amplifier (Two Tubes)

Values are for two tubes.

| | Fixed Bias | Self-Bias | |
|----------------------------------|------------|-----------|--------------|
| FILAMENT VOLTAGE (A. C.) | 2.5 | 2.5 | Volts |
| PLATE VOLTAGE (Maximum) | 275 | 275 | Volts |
| GRID VOLTAGE | -68 | — | Volts |
| SELF-BIAS RESISTOR | — | 775 | Ohms |
| ZERO-SIGNAL PLATE CURRENT | 28 | 72 | Milliamperes |
| MAXIMUM-SIGNAL PLATE CURRENT | 138 | 90 | Milliamperes |
| LOAD RESISTANCE (Plate-to-plate) | 3200 | 5060 | Ohms |
| TOTAL HARMONIC DISTORTION | 5 | 5 | Per cent |
| POWER OUTPUT | 18 | 12 | Watts |

INSTALLATION AND APPLICATION

For installation refer to INSTALLATION on type 2A3.

As a power amplifier (Class A₁), the 45 may be used either singly or in push-pull. Typical operating conditions are given under CHARACTERISTICS.

In a push-pull Class AB₂ stage, the 45 is operated under conditions such that a small amount of grid current flows during the most positive swing of the input signal and the second harmonic distortion is cancelled by virtue of the push-pull circuit. A driver stage, consisting of one 56 operated at 250 volts on the plate, will drive two 45's in push-pull (fixed-bias or self-bias) to the stated output values. A step-down interstage transformer of suitable design is required.

A family of plate characteristic curves is given on page 143.



| page | 45 sheet | date |
|-------------|---------------------------|-------------|
| 1 | 131 | 1937 |
| 2 | FP | 1999.10.10 |