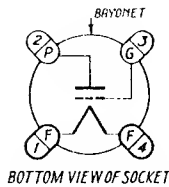


### TRIODE POWER AMPLIFIER OSCILLATOR

The RK-10 is a triode type power amplifier tube having a thoriated tungsten filament and an isolantite base. It is designed for use as an amplifier, oscillator or frequency multiplier.



#### FILAMENT RATING

|                  |      |       |
|------------------|------|-------|
| Filament Voltage | 7.5  | volts |
| Filament Current | 1.25 | amp   |

#### DIRECT INTERELECTRODE CAPACITANCES

|               |   |               |
|---------------|---|---------------|
| Grid to Plate | 8 | $\mu\text{f}$ |
| Input         | 3 | $\mu\text{f}$ |
| Output        | 4 | $\mu\text{f}$ |

#### A-F POWER AMPLIFIER—CLASS A

##### MAXIMUM RATINGS

|                   |     |       |
|-------------------|-----|-------|
| D-C Plate Voltage | 425 | volts |
| Plate Dissipation | 12  | watts |

##### TYPICAL OPERATION

|                      |           |           |           |                  |
|----------------------|-----------|-----------|-----------|------------------|
| D-C Plate Voltage    | 250       | 350       | 425       | volts            |
| D-C Grid Voltage     | -23 $\pm$ | -32 $\pm$ | -40 $\pm$ | volts            |
| D-C Plate Current    | 10        | 16        | 18        | ma               |
| Amplification Factor | 8         | 8         | 8         |                  |
| Plate Resistance     | 6000      | 5150      | 5000      | ohms             |
| Transconductance     | 1330      | 1550      | 1600      | $\mu\text{mhos}$ |
| Load Resistance      | 13000     | 11000     | 10200     | ohms             |
| Power Output         | 0.4       | 0.9       | 1.6       | watts            |

#### R-F POWER AMPLIFIER OR OSCILLATOR—CLASS C

##### MAXIMUM RATINGS

|                              |     |       |
|------------------------------|-----|-------|
| D-C Plate Voltage—Telegraphy | 450 | volts |
| D-C Plate Voltage—Telephony  | 450 | volts |
| With Grid Modulation         | 350 | volts |
| With Plate Modulation        | 350 | volts |
| D-C Plate Current            | 65  | ma    |
| D-C Grid Current             | 15  | ma    |
| R-F Grid Current             | 5   | amp   |
| Plate Dissipation            | 15  | watts |

†Grid Voltage measured from mid-point of a-c operated filament.

#### TYPICAL OPERATION

|                        | Telephony<br>Grid<br>Modulation | Telephony<br>Plate<br>Modulation | Telegraphy |       |
|------------------------|---------------------------------|----------------------------------|------------|-------|
| D-C Plate Voltage      | 450                             | 350                              | 450        | volts |
| D-C Grid Voltage       | -170                            | -100                             | -100       | volts |
| D-C Plate Current      | 40                              | 50                               | 65         | ma    |
| D-C Grid Current       | 1                               | 12                               | 15         | ma    |
| Peak R-F Input Voltage | 240                             | 200                              | 235        | volts |
| R-F Driving Power      | 2.4 <sup>*</sup>                | 2.2                              | 3.2        | watts |
| Carrier Power Output   | 6                               | 12                               | 19         | watts |
| Peak A-F Voltage—Plate | —                               | 350 <sup>*</sup>                 | —          | volts |
| Peak A-F Voltage—Grid  | 70 <sup>*</sup>                 | —                                | —          | volts |
| A-F Modulating Power   | 0.7 <sup>*</sup>                | 9                                | —          | watts |
| Peak Power Output      | 24 <sup>*</sup>                 | 48 <sup>*</sup>                  | —          | watts |

#### R-F POWER AMPLIFIER—CLASS B—TELEPHONY

##### MAXIMUM RATINGS

|                             |     |       |
|-----------------------------|-----|-------|
| D-C Plate Voltage           | 450 | volts |
| D-C Plate Current (Carrier) | 40  | ma    |
| Plate Dissipation (Carrier) | 12  | watts |

##### TYPICAL OPERATION

|                        |                  |       |
|------------------------|------------------|-------|
| D-C Plate Voltage      | 450              | volts |
| D-C Grid Voltage       | -60              | volts |
| D-C Plate Current      | 40               | ma    |
| D-C Grid Current       | 1.5              | ma    |
| Peak R-F Input Voltage | 200 <sup>*</sup> | volts |
| R-F Driving Power      | 4.1 <sup>*</sup> | watts |
| Carrier Power Output   | 6                | watts |
| Peak Power Output      | 24 <sup>*</sup>  | watts |

\*At the peak of the a-f cycle with 100% modulation.

#### OPERATING NOTES

##### FREQUENCY RANGE

The RK-10 may be operated at the maximum ratings at frequencies up to 60 megacycles. Above 60 megacycles the reduced efficiency realized requires that the plate voltage be lowered to prevent the plate dissipation from exceeding the maximum rated value.

##### BIAS

At least 40 volts of fixed bias should be used with 450 volts on the plate to protect the tube in case of failure of the bias or excitation. Additional bias may be obtained by the use of a grid or cathode resistor.

##### PLATE TEMPERATURE

The plate of the RK-10 will not show color when operated at the maximum rated plate dissipation. Dissipations above the rated value should be avoided.

