### Triode Power Amplifier Oscillator

The RK-51 is a triode type power amplifier tube having a thoriated tungsten filament, a carbon plate, a hard glass bulb and an isolating base. It is designed for use as a power amplifier, oscillator or frequency multiplier.

**AMPLIFICATION FACTOR** 20

**FILAMENT RATING**
- Filament Voltage: 7.5 volts
- Filament Current: 3.75 ma

**DIRECT INTERELECTRODE CAPACITANCES**
- Grid to Plate: 6 µf
- Grid to Input: 6 µf
- Grid to Output: 2.5 µf

### R-F Power Amplifier or Oscillator—Class C—Telegraphy

**Maximum Ratings**
- D-C Plate Voltage: 1500 volts
- D-C Plate Current (Carrier): 50 ma
- D-C Grid Voltage: 60 ma
- Plate Dissipation: 60 watts

**Typical Operation**
- D-C Plate Voltage: 1250 volts
- D-C Grid Voltage: 200 volts
- D-C Plate Current: 150 ma
- D-C Grid Current: 38 ma
- Peak R-F Input Voltage: 320 volts
- R-F Driving Power: 11 watts
- Power Output: 135 watts

### R-F Power Amplifier—Class B—Telephony

**Maximum Ratings**
- D-C Plate Voltage: 1500 volts
- D-C Plate Current (Carrier): 60 watts
- Plate Dissipation: 60 watts

**Typical Operation**
- D-C Plate Voltage: 1500 volts
- D-C Grid Voltage: 200 volts
- D-C Plate Current: 150 ma
- D-C Grid Current: 38 ma
- Peak R-F Input Voltage: 65 volts
- R-F Driving Power: 35 watts
- Carrier Power Output: 30 watts
- Peak Power Output: 120 watts

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

### Operating Notes

The construction of the RK-51 allows operation 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**

A fixed bias voltage of at least 60 volts should be used with a plate voltage of 1200 volts to protect the tube in case of failure of the bias or excitation. The fixed bias may be reduced with lower plate voltage.

**Plate Temperature**

The plate of the RK-51 will not show color when operated at the maximum rated plate dissipation. Dissipations above the rated value should be avoided.