

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 isolantite base. It is designed for use as a power amplifier, oscillator or frequency multiplier.

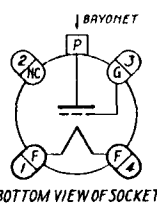
AMPLIFICATION FACTOR 20

FILAMENT RATING

Filament Voltage	7.5	volts
Filament Current	3.75	amp

DIRECT INTERELECTRODE CAPACITANCES

Grid to Plate	6	μmf
Input	6	μmf
Output	2.5	μmf



BOTTOM VIEW OF SOCKET

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

D-C Plate Voltage	1500	volts
D-C Plate Current	150	ma
D-C Grid Current	40	ma
Plate Dissipation	60	watts

TYPICAL OPERATION

D-C Plate Voltage	1250	1500	volts
D-C Grid Voltage	-200	-250	volts
D-C Plate Current	150	150	ma
D-C Grid Current	38	31	ma
Peak R-F Input Voltage	320	365	volts
R-F Driving Power	11	10	watts
Power Output	135	170	watts

R-F POWER AMPLIFIER—CLASS B—TELEPHONY

D-C Plate Voltage	1500	volts
D-C Plate Current (Carrier)	60	ma
Plate Dissipation (Carrier)	60	watts

TYPICAL OPERATION

D-C Plate Voltage	1500	volts
D-C Grid Voltage	-75	volts
D-C Plate Current	60	ma
Peak R-F Input Voltage	170*	volts
R-F Driving Power	3.5 *	watts
Carrier Power Output	30	watts
Peak Power Output	120*	watts

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

R-F POWER AMPLIFIER—CLASS C—TELEPHONY

MAXIMUM RATINGS

	Grid Modulation	Plate Modulation	
D-C Plate Voltage	1500	1250	volts
D-C Plate Current (Carrier)	60	105	ma
D-C Grid Current (Carrier)	5	40	ma
Plate Dissipation (Carrier)	60	40	watts

TYPICAL OPERATION

	Grid Modulation	Plate Modulation	
D-C Plate Voltage	1500	1000 1250	volts
D-C Grid Voltage	-130	-150 -200	volts
D-C Plate Current	60	115 105	ma
D-C Grid Current	0.4	30 17	ma
Peak R-F Input Voltage	140	245 290	volts
R-F Driving Power	2.3*	6.6 4.5	watts
Carrier Power Output	32	83 96	watts
Peak A-F Modulating Voltage	65 *	1000*1250*	volts
A-F Modulating Power	1.05*	58 67	watts
Peak Power Output	128*	332* 384*	watts

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

OPERATING NOTES

FREQUENCY RANGE

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 1500 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.

