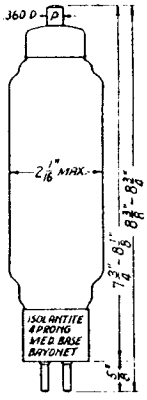
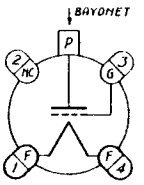


TRIODE POWER AMPLIFIER OSCILLATOR



BOTTOM VIEW OF SOCKE

The RK-31 is a high-mu triode power amplifier tube having a thoriated tungsten filament, a molybdenum plate and an isolantite base. It is designed for use as a power amplifier, oscillator or frequency multiplier.

FILAMENT RATING

Filament Voltage	7.5	volts
Filament Current	3.0	amp

DIRECT INTERELECTRODE CAPACITANCES

Grid to Plate	10	μμf
Input	7	μμf
Output	2	μμf

A-F POWER AMPLIFIER—CLASS B—TWO TUBES

MAXIMUM RATINGS

D-C Plate Voltage	1250	volts
D-C Plate Current (per tube)	115	ma
Plate Dissipation (per tube) (Averaged over 1 cycle)	40	watts

TYPICAL OPERATION

D-C Plate Voltage	1000	1250	volts
D-C Grid Voltage	0	0	volts
D-C Plate Current (no signal)	25	35	ma
D-C Plate Current (max. signal)	230	220	ma
D-C Grid Current (max. signal)	65	76	ma
Peak A-F Input Voltage (grid to grid)	141	141	volts
A-F Driving Power	3.7	4.4	watts
Load Resistance (plate to plate)	11000	18000	ohms
Power Output	160	190	watts

R-F POWER AMPLIFIER—CLASS C—TELEGRAPHY

MAXIMUM RATINGS

D-C Plate Voltage	1250	volts
D-C Plate Current	100	ma
D-C Grid Current	35	ma
R-F Grid Current	5	amp
Plate Dissipation	40	watts

TYPICAL OPERATION

D-C Plate Voltage	1250	volts
D-C Grid Voltage	−80	volts
D-C Plate Current	100	ma
D-C Grid Current	30	ma
Peak R-F Input Voltage	145	volts
R-F Driving Power	3.9	watts
Power Output	90	watts

R-F POWER AMPLIFIER—CLASS C—PLATE MODULATION

MAXIMUM RATINGS

D-C Plate Voltage	1000	volts
D-C Plate Current	100	ma
D-C Grid Current	35	ma
Plate Dissipation	30	watts

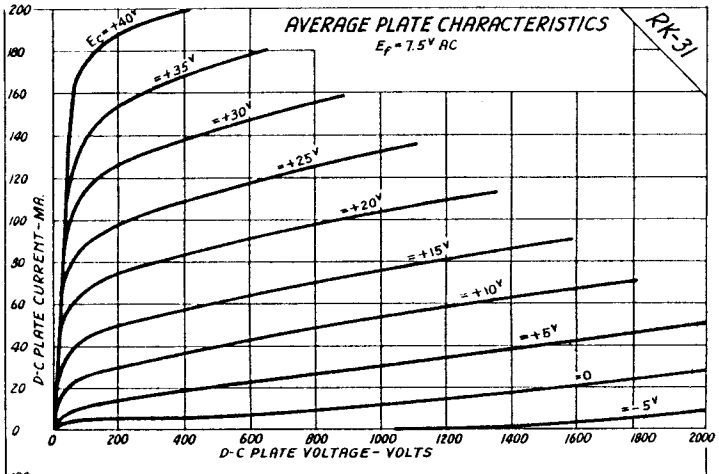
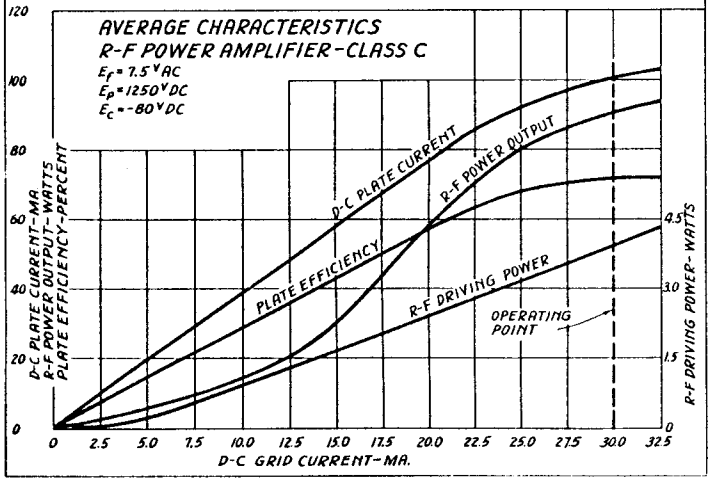
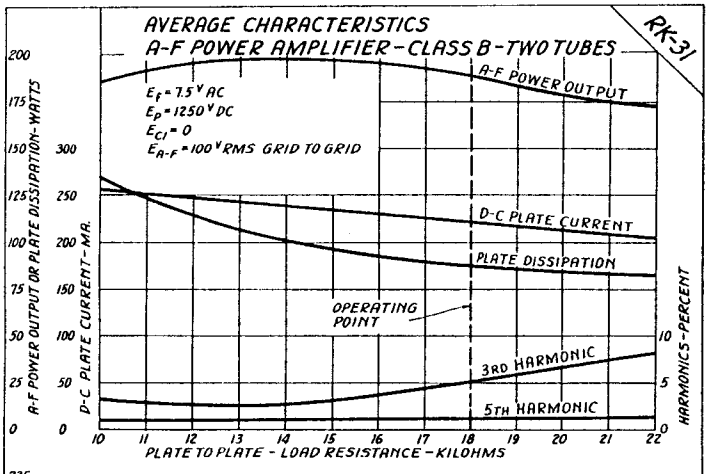
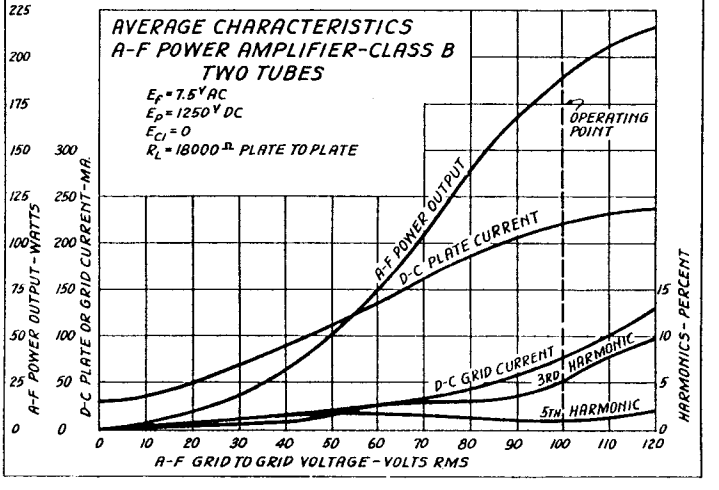
TYPICAL OPERATION

D-C Plate Voltage	1000	volts
D-C Grid Voltage	−80	volts
D-C Plate Current	100	ma
D-C Grid Current	28	ma
Peak R-F Input Voltage	140	volts
R-F Driving Power	3.5	watts
Carrier Power Output	70	watts
A-F Modulating Power	50	watts
Peak Power Output	280	watts

OPERATING NOTES

FREQUENCY RANGE

The RK-31 may be operated at the maximum ratings at frequencies up to 30 megacycles. Above 30 megacycles the reduced efficiency realized requires that the plate voltage be lowered to prevent the plate dissipation from exceeding the maximum rated value.

PLATE TEMPERATURE

The plate of the RK-31 will show a light cherry red color (See Plate Temperature Color Scale) when operated at the maximum rated plate dissipation. Dissipations above the rated value should be avoided.