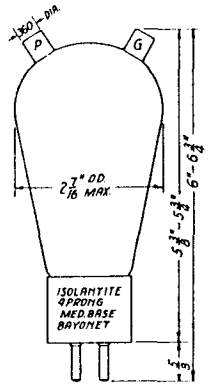
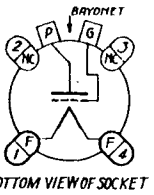


TRIODE POWER AMPLIFIER OSCILLATOR



BOTTOM VIEW OF SOCKET

The RK-30 is a triode type 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.

AMPLIFICATION FACTOR 15

FILAMENT RATING

Filament Voltage	7.5	volts
Filament Current	3.25	amp

DIRECT INTERELECTRODE CAPACITANCES

Grid to Plate	2.5	μμf
Input	2.75	μμf
Output	2.75	μμf

R-F POWER AMPLIFIER OR OSCILLATOR—CLASS C

MAXIMUM RATINGS

D-C Plate Voltage—Telegraphy	1250	volts
D-C Plate Voltage—Telephony		
With Grid Modulation	1250	volts
With Plate Modulation	1000	volts
D-C Plate Current	80	ma
D-C Grid Current	25	ma
Plate Dissipation—Telegraphy	35	watts
Plate Dissipation—Telephony		
With Grid Modulation (Carrier)	35	watts
With Plate Modulation (Carrier)	23	watts

TYPICAL OPERATION

	Telephony Grid Modulation	Telephony Plate Modulation	Telegraphy	
D-C Plate Voltage	1250	1000	1250	volts
D-C Grid Voltage	−140	−200	−180	volts
D-C Plate Current	40	80	90	ma
D-C Grid Current	1.5	15	18	ma
Peak R-F Input Voltage	170	320	320	volts
R-F Driving Power	1.5*	4.5	5.2	watts
Carrier Power Output	18	60	85	watts
Peak A-F Modulating Voltage	60 *	1000*	—	volts
A-F Modulating Power	0.5*	40	—	watts
Peak Power Output	72 *	240 *	—	watts

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

R-F POWER AMPLIFIER—CLASS B—TELEPHONY

MAXIMUM RATINGS

D-C Plate Voltage	1250	volts
D-C Plate Current (Carrier)	55	ma
Plate Dissipation (Carrier)	35	watts

TYPICAL OPERATION

D-C Plate Voltage	1250	volts
D-C Grid Voltage	−70	volts
D-C Plate Current	40	ma
D-C Grid Current	1.3	ma
Peak R-F Input Voltage	200*	volts
R-F Driving Power	2.5 *	watts
Carrier Power Output	18	watts
Peak Power Output	72 *	watts

A-F POWER AMPLIFIER—CLASS B—TWO TUBES

MAXIMUM RATINGS

D-C Plate Voltage	1250	volts
D-C Plate Current (per tube)	80	ma
Plate Dissipation (per tube) (Averaged over 1 cycle)	35	atts

TYPICAL OPERATION

D-C Plate Voltage	1250	volts
D-C Grid Voltage	−70	volts
D-C Plate Current (no signal)	30	ma
D-C Plate Current (max. signal)	130	ma
D-C Grid Current (max. signal)	26	ma
Peak A-F Input Voltage (grid to grid)	300	volts
A-F Driving Power	3.4	watts
Load Resistance (plate to plate)	21000	ohms
Power Output	106	watts

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

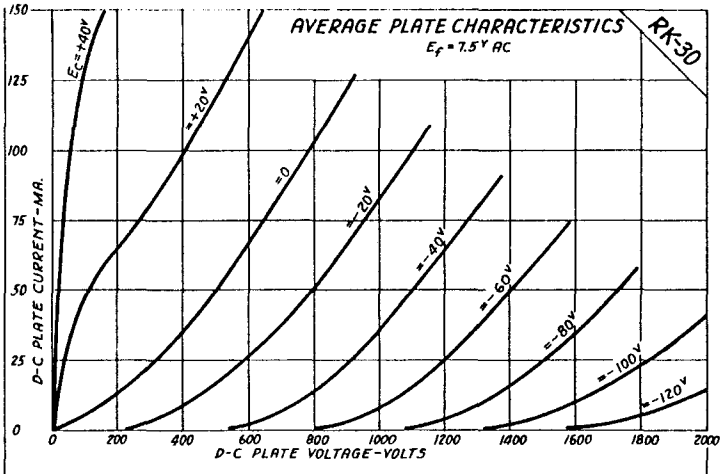
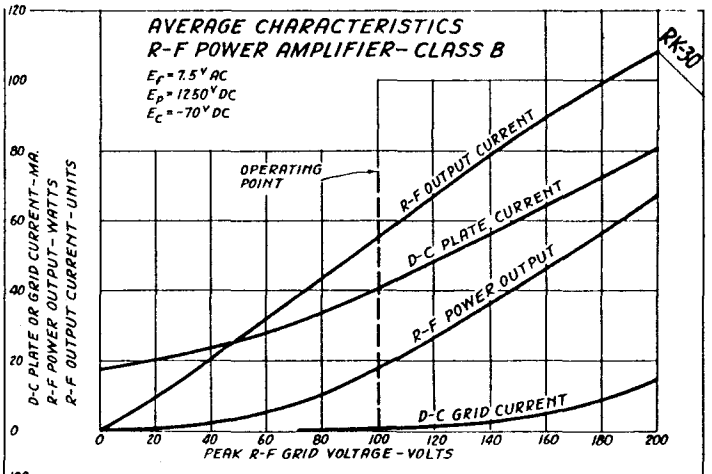
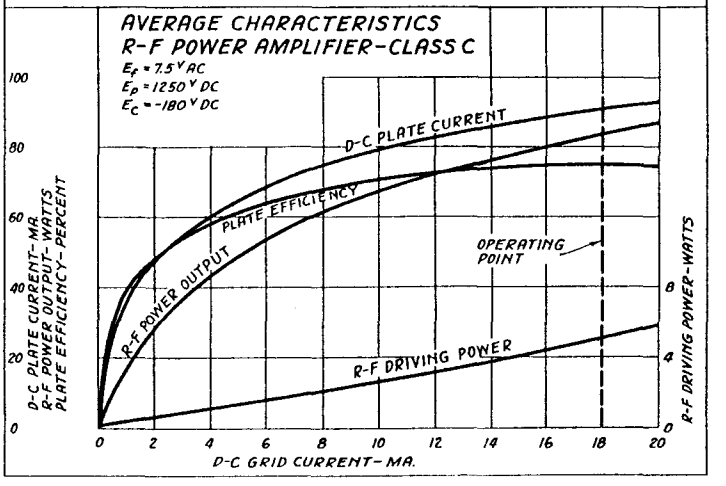
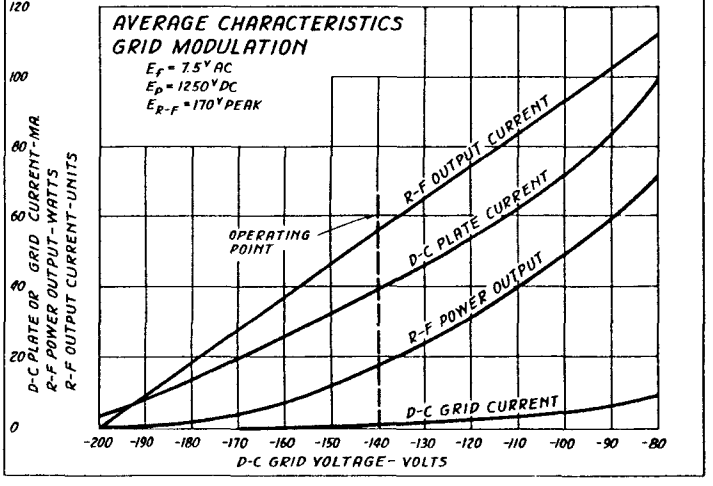
OPERATING NOTES

FREQUENCY RANGE

The RK-30 may be operated at the maximum ratings at frequencies up to 60 megacycles. At frequencies between 60 megacycles and 120 megacycles the maximum d-c plate voltage should not exceed 1000 volts. Above 120 megacycles the maximum d-c plate voltage should not exceed 750 volts.

BIAS

At least 55 volts of fixed bias should be used with 1250 volts on the plate to protect the tube in case of failure of the bias or excitation. The fixed bias may be reduced with lower plate voltages.

PLATE TEMPERATURE

The plate of the RK-30 will show a dull, cherry red color (See Plate Temperature Color Scale) when operated at the maximum rated plate dissipation. Dissipations above the rated value should be avoided.