

# RCA-809

## R-F Power Amplifier, Oscillator, Class B Modulator

Illustrated on page 70

RCA-809 is a three-electrode, high- $\mu$ , transmitting tube of the thoriated-tungsten filament type for use as a radio-frequency amplifier, oscillator, or class B modulator. Because of its high perveance, the 809 can be operated at high plate efficiency with low driving power. The plate connection is brought out through a separate seal at the top of the bulb to provide good insulation. The internal structure of the 809 permits operation at maximum ratings at frequencies as high as 60 megacycles. The maximum plate dissipation is 25 watts for class C telegraph and class B services. RCA-809 has a ceramic base.

### TENTATIVE CHARACTERISTICS AND RATINGS

Filament Volts (a-c or d-c).....	6.3	Grid-Plate Capacitance .....	6.7 $\mu\mu\text{f}$
Filament Amperes .....	2.5	Grid-Filament Capacitance .....	5.7 $\mu\mu\text{f}$
Amplification Factor .....	50	Plate-Filament Capacitance .....	0.9 $\mu\mu\text{f}$

### MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

#### As A-F Power Amplifier and Modulator—Class B

D-C PLATE VOLTAGE .....	750 max.	Volts
MAX.-SIGNAL D-C PLATE CURRENT* .....	100 max.	Milliamperes
MAX.-SIGNAL PLATE INPUT* .....	75 max.	Watts
PLATE DISSIPATION* .....	25 max.	Watts

#### TYPICAL OPERATION:

Unless otherwise specified, values are for 2 tubes

D-C Plate Voltage .....	500	750	Volts
D-C Grid Voltage† .....	0	-5	Volts
Peak A-F Grid-to-Grid Voltage .....	135	140	Volts
Zero-Sig. D-C Plate Current .....	40	35	Milliamperes
Max.-Sig. D-C Plate Current .....	200	200	Milliamperes
Load Resistance (Per tube) .....	1300	2100	Ohms
Effective Load Res. (Plate-to-plate) .....	5200	8400	Ohms
Max.-Sig. Driving Power (Approx.) .....	2.4	2.4	Watts
Max.-Sig. Power Output (Approx.) .....	60	100	Watts

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

Carrier conditions per tube for use with a max. modulation factor of 1.0

D-C PLATE VOLTAGE .....	750 max.	Volts
D-C PLATE CURRENT .....	50 max.	Milliamperes
PLATE INPUT .....	37.5 max.	Watts
PLATE DISSIPATION .....	25 max.	Watts

#### TYPICAL OPERATION:

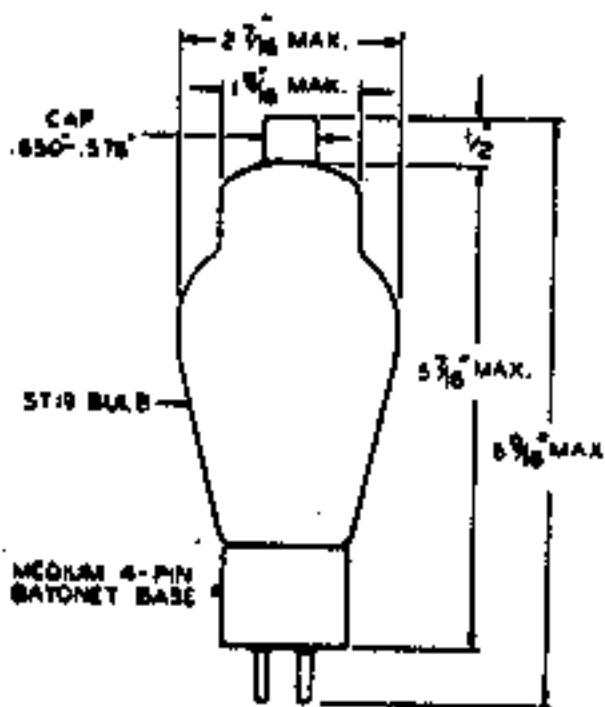
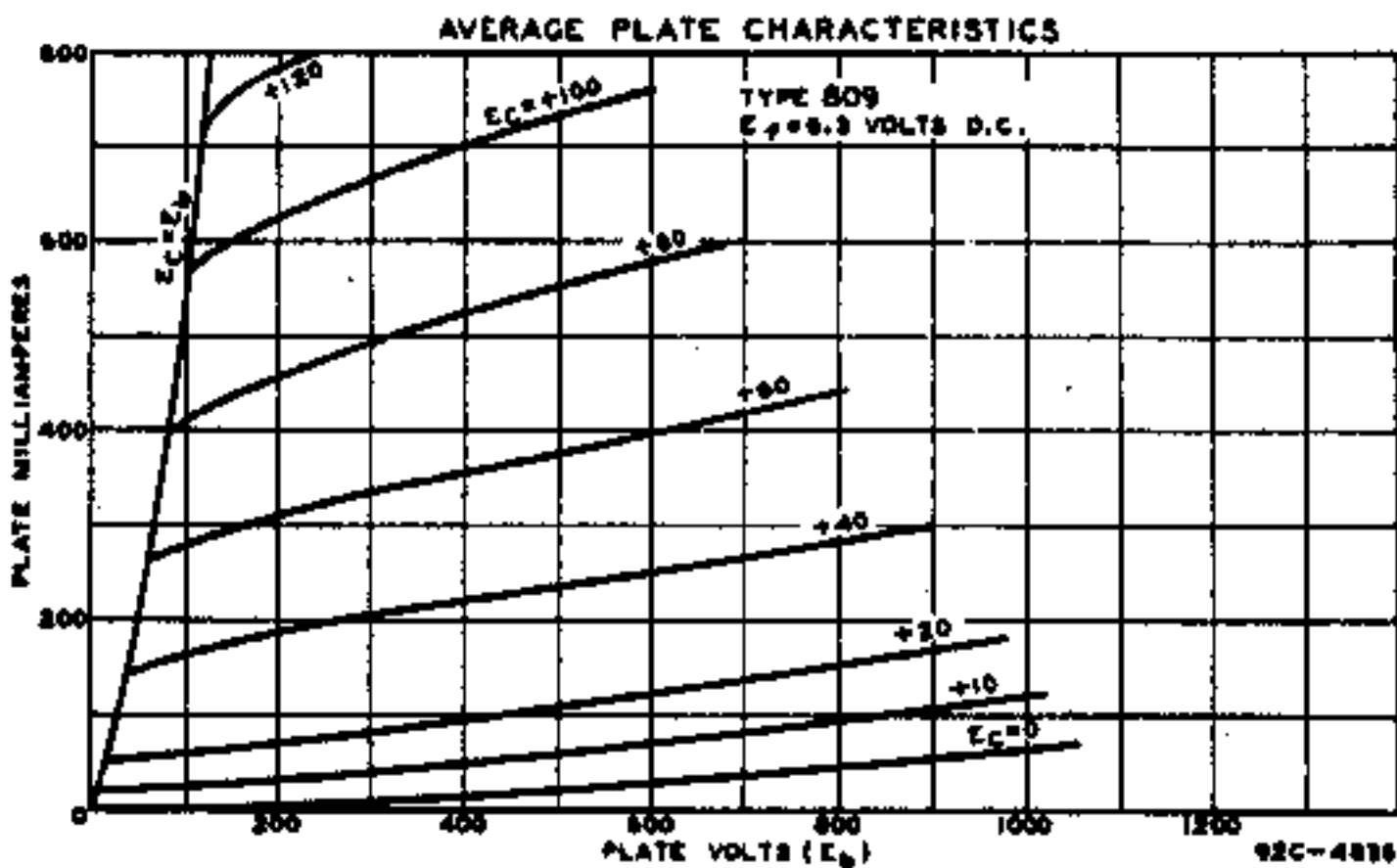
D-C Plate Voltage .....	500	750	Volts
D-C Grid Voltage† .....	-5	-10	Volts
Peak R-F Grid Voltage .....	35	40	Volts
D-C Plate Current .....	50	50	Milliamperes
D-C Grid Current (Approx.) .....	6	5	Milliamperes
Driving Power (Approx.)† .....	1.4	1.5	Watts
Power Output (Approx.) .....	7.5	12.5	Watts

\* , §, †: see next page.

The grid-leak method of supplying bias is particularly suited for use with the 809 in class C telegraph service. If the grid excitation is accidentally removed, the high plate resistance of the tube serves to protect the tube from overheating due to accidental overloads.

For high-frequency operation above 60 megacycles, see page 144.

For additional information, see chapters on **INSTALLATION** and **APPLICATION**.



**Top View of Socket Connections**

