

RCA-808

R-F Power Amplifier, Oscillator, Class B Modulator

RCA-808 is a three-electrode high- μ , transmitting tube of the thoriated-tungsten filament type for use as a radio-frequency amplifier, oscillator and class B audio-frequency amplifier. The plate connection is brought out through a separate seal at the top of the bulb; the grid connection is brought out through a separate seal in the lower part of the bulb near the filament base. This design insures good insulation and low inter-electrode capacitances. In r-f service, the 808 may be operated at maximum ratings at frequencies as high as 30 megacycles. The maximum plate dissipation is 50 watts for class C telegraph and class B services.

CHARACTERISTICS

Filament Volts (a-c or d-c).....	7.5	Grid-Plate Capacitance	2.8 μf
Filament Amperes	4	Grid-Filament Capacitance	5.3 μf
Amplification Factor	47	Plate-Filament Capacitance	0.15 μf

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

As A-F Power Amplifier and Modulator—Class B

D-C PLATE VOLTAGE	1500 max.	Volts
MAX.-SIGNAL D-C PLATE CURRENT*	150 max.	Milliamperes
MAX.-SIGNAL PLATE INPUT*	150 max.	Watts
PLATE DISSIPATION*	50 max.	Watts

TYPICAL OPERATION:

Unless otherwise specified, values are for 2 tubes

D-C Plate Voltage	1250	1500	Volts
D-C Grid Voltage [§]	-15	-25	Volts
Peak A-F Grid-to-Grid Voltage	240	220	Volts
Zero-Sig. D-C Plate Current	40	30	Milliamperes
Max.-Sig. D-C Plate Current	230	190	Milliamperes
Load Resistance (Per tube)	3175	4575	Ohms
Effective Load Res. (Plate-to-plate)	12700	18300	Ohms
Max.-Sig. Driving Power (Approx.)	7.8	4.8	Watts
Max.-Sig. Power Output (Approx.)	190	185	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	1500 max.	Volts
D-C PLATE CURRENT	75 max.	Milliamperes
PLATE INPUT	75 max.	Watts
PLATE DISSIPATION	50 max.	Watts

TYPICAL OPERATION:

D-C Plate Voltage	1250	1500	Volts
D-C Grid Voltage [§]	-30	-35	Volts
Peak R-F Grid Voltage	65	60	Volts
D-C Plate Current	55	45	Milliamperes
D-C Grid Current (Approx.)	1	1	Milliamperes
Driving Power (Approx.) [†]	3	2	Watts
Power Output (Approx.)	22	22	Watts

*. §. †: see next page.

As Plate-Modulated R-F Power Amplifier—Class C Telephony

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

D-C PLATE VOLTAGE	1250	max.	Volts
D-C GRID VOLTAGE	-400	max.	Volts
D-C PLATE CURRENT	125	max.	Milliamperes
D-C GRID CURRENT	35	max.	Milliamperes
PLATE INPUT	135	max.	Watts
PLATE DISSIPATION	35	max.	Watts

TYPICAL OPERATION:

D-C Plate Voltage	1000	1250	Volts
D-C Grid Voltage [§]	-210	-225	Volts
Peak R-F Grid Voltage	360	360	Volts
D-C Plate Current	120	100	Milliamperes
D-C Grid Current (Approx.)	35	32	Milliamperes
Grid Resistor	6000	7000	Ohms
Driving Power (Approx.)	11.5	10.5	Watts
Power Output (Approx.)	85	105	Watts

As R-F Power Amplifier and Oscillator—Class C Telegraphy

Key-down conditions per tube without modulation††

D-C PLATE VOLTAGE	1500	max.	Volts
D-C GRID VOLTAGE	-400	max.	Volts
D-C PLATE CURRENT	150	max.	Milliamperes
D-C GRID CURRENT	35	max.	Milliamperes
PLATE INPUT	200	max.	Watts
PLATE DISSIPATION	50	max.	Watts

TYPICAL OPERATION:

D-C Plate Voltage	1250	1500	Volts
D-C Grid Voltage [§]	-150	-200	Volts
Peak R-F Grid Voltage	300	350	Volts
D-C Plate Current	135	125	Milliamperes
D-C Grid Current (Approx.)	30	30	Milliamperes
Grid Resistor	5000	6670	Ohms
Driving Power (Approx.)	8	9.5	Watts
Power Output (Approx.)	120	140	Watts

* Averaged over any audio-frequency cycle of sine-wave form.

§ Grid voltages are given with respect to the mid-point of filament operated on a.c. If d.c. is used, each stated value of grid voltage should be decreased by 5 volts and the circuit returns made to the negative end of the filament.

† At crest of audio-frequency cycle with modulation factor of 1.0.

†† Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

INSTALLATION AND APPLICATION

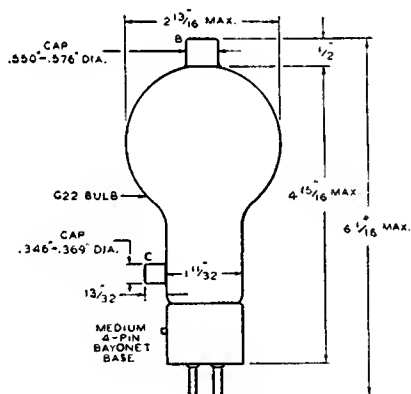
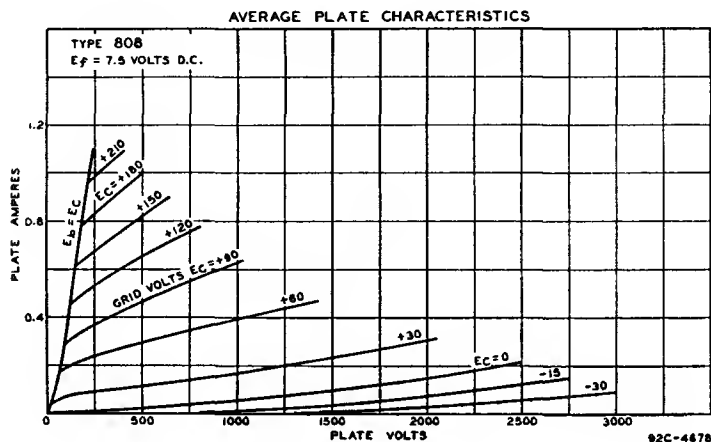
The base pins of the RCA-808 fit the standard 4-contact socket, such as the RCA type UR-542A. The socket should be installed so that the tube will operate in a vertical position with the base down.

The plate of the 808 shows an orange-red color at the maximum plate dissipation rating for each class of service.

The grid-leak form of bias is particularly useful in class C Telegraph Service when the 808 is operated at a plate voltage of 1000 volts or less. If the grid excitation is accidentally removed, the high plate resistance of the tube serves to protect it from overheating due to accidental overloads.

For high-frequency operation above 30 megacycles, see page 144.

For additional information, see chapters on INSTALLATION and APPLICATION.



Top View of Socket Connections

