

RCA-852

R-F Power Amplifier, Oscillator

RCA-852 is a three-electrode transmitting tube of the thoriated-tungsten filament type for use as an r-f power amplifier or oscillator. Each electrode lead is brought out of the bulb through a separate seal. This construction insures good insulation and low interelectrode capacitances. The 852 can be operated at maximum ratings at frequencies as high as 30 megacycles.

CHARACTERISTICS

Filament Volts (a-c or d-c)	10.0	Grid-Plate Capacitance	2.6 μf
Filament Amperes	3.25	Grid-Filament Capacitance	1.9 μf
Amplification Factor	12	Plate-Filament Capacitance	1.0 μf

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

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	3000 max.	Volts
D-C PLATE CURRENT	85 max.	Milliamperes
PLATE INPUT	150 max.	Watts
PLATE DISSIPATION	100 max.	Watts

TYPICAL OPERATION:

D-C Plate Voltage	2000	3000	Volts
D-C Grid Voltage [§]	-155	-250	Volts
Peak R-F Grid Voltage	200	225	Volts
D-C Plate Current	60	43	Milliamperes
D-C Grid Current (Approx.)	1	0	Milliampere
Driving Power (Approx.) [†]	10	7	Watts
Power Output (Approx.)	30	40	Watts

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	2000 max.	Volts
D-C GRID VOLTAGE	-1000 max.	Volts
D-C PLATE CURRENT	85 max.	Milliamperes
D-C GRID CURRENT	40 max.	Milliamperes
PLATE INPUT	170 max.	Watts
PLATE DISSIPATION	67 max.	Watts

TYPICAL OPERATION:

D-C Plate Voltage	1500	2000	Volts
D-C Grid Voltage [§]	-400	-500	Volts
Peak R-F Grid Voltage	650	750	Volts
D-C Plate Current	70	67	Milliamperes
D-C Grid Current (Approx.)	30	30	Milliamperes
Grid Resistor	13400	16700	Ohms
Driving Power (Approx.)	20	23	Watts
Power Output (Approx.)	45	75	Watts

§, †: see next page.

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

Key-down conditions per tube without modulation††

D-C PLATE VOLTAGE	3000 max.	Volts
D-C GRID VOLTAGE	-1000 max.	Volts
D-C PLATE CURRENT	150 max.	Milliamperes
D-C GRID CURRENT	40 max.	Milliamperes
PLATE INPUT	300 max.	Watts
PLATE DISSIPATION	100 max.	Watts

TYPICAL OPERATION:

D-C Plate Voltage	2500	3000	Volts
D-C Grid Voltage§	-450	-600	Volts
Peak R-F Grid Voltage	700	850	Volts
D-C Plate Current	90	85	Milliamperes
D-C Grid Current (Approx.)	15	15	Milliamperes
Grid Resistor	30000	40000	Ohms
Driving Power (Approx.)	10	12	Watts
Power Output (Approx.)	135	165	Watts

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

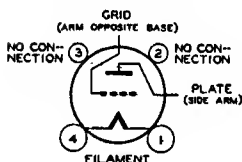
§ Grid voltages are given with respect to the mid-point of filament operated on a.c. If d.c. is used, each stated value of grid voltage should be decreased by 7 volts and the circuit returns made to the negative end of the filament.

†† 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 852 fit the standard 4-contact socket, such as the RCA type UR-542A. The socket should be mounted to hold the tube in a vertical position. In order to adequately handle the large circulating r-f current in the grid and plate circuits, both stranded leads from each arm terminal of the bulb should be used. For outline drawing, refer to RCA-860.

Top View of Socket Connections

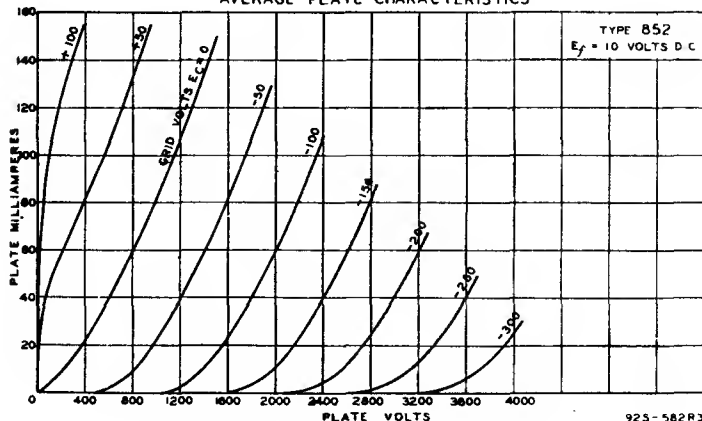


The plate of the 852 shows a dull red color at the maximum plate-dissipation rating for each class of service.

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

For additional information, refer to chapters on INSTALLATION and APPLICATION.

AVERAGE PLATE CHARACTERISTICS



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