

RCA-860

Screen-Grid R-F Power Amplifier

Illustrated on page 115

RCA-860 is a screen-grid transmitting tube of the thoriated-tungsten filament type for use as a radio-frequency power amplifier. The plate, grid, and screen leads are brought out of the bulb through separate seals. This design insures good insulation and low interelectrode capacitances. Neutralization to prevent feedback is generally unnecessary when the tube is used in adequately shielded circuits. The 860 may be operated at maximum input at frequencies as high as 30 megacycles. RCA-860 has a ceramic base.

CHARACTERISTICS

Filament Volts (a-c or d-c)	10.0	Grid-Plate Capacitance (With	
Filament Amperes	3.25	external shielding)	0.08 max. μf
Amplification Factor (Approx.)	200	Input Capacitance	7.75 μf
Transconductance (For plate current		Output Capacitance	7.5 μf
of 50 ma.) Micromhos	1100		

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 SCREEN VOLTAGE	500 max. Volts
D-C PLATE CURRENT	85 max. Milliamperes
PLATE INPUT	150 max. Watts
SCREEN INPUT	10 max. Watts
PLATE DISSIPATION	100 max. Watts

TYPICAL OPERATION:

D-C Plate Voltage	2000	3000	Volts
D-C Screen Voltage	300	300	Volts
D-C Grid Voltage [§]	-50	-50	Volts
D-C Plate Current	60	43	Milliamperes
Screen Resistor	Not recommended		
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 SCREEN VOLTAGE	500 max. Volts
D-C GRID VOLTAGE	-800 max. Volts
D-C PLATE CURRENT	85 max. Milliamperes
D-C GRID CURRENT	40 max. Milliamperes
PLATE INPUT	170 max. Watts
SCREEN INPUT	6.7 max. Watts
PLATE DISSIPATION	67 max. Watts

§: see next page.

TYPICAL OPERATION:

D-C Plate Voltage	1500	1800	2000	Volts
D-C Screen Voltage	300	300	220	Volts
D-C Grid Voltage§	-225	-225	-200	Volts
Peak R-F Grid Voltage	—	—	500	Volts
D-C Plate Current	70	67	85	Milliamperes
D-C Screen Current	—	—	25	Milliamperes
D-C Grid Current (Approx.)	30	30	38	Milliamperes
Screen Resistor	60000	85000	100000	Ohms
Grid Resistor	7500	7500	5260	Ohms
Driving Power (Approx.)	15	15	17	Watts
Power Output (Approx.)	45	60	105	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 SCREEN VOLTAGE	500 max.	Volts
D-C GRID VOLTAGE	-800 max.	Volts
D-C PLATE CURRENT	150 max.	Milliamperes
D-C GRID CURRENT	40 max.	Milliamperes
PLATE INPUT	300 max.	Watts
SCREEN INPUT	10 max.	Watts
PLATE DISSIPATION	100 max.	Watts

TYPICAL OPERATION:

D-C Plate Voltage	1500	2000	2500	3000	Volts
D-C Screen Voltage	300	300	300	300	Volts
D-C Grid Voltage§	-150	-150	-150	-150	Volts
D-C Plate Current	90	90	90	85	Milliamperes
D-C Grid Current (Approx.)	15	15	15	15	Milliamperes
Screen Resistor	Not recommended				
Grid Resistor	10000	10000	10000	10000	Ohms
Driving Power (Approx.)	7	7	7	7	Watts
Power Output (Approx.)	60	100	135	165	Watts

§ 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

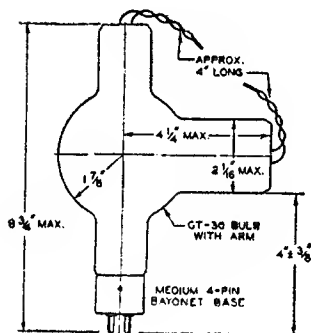
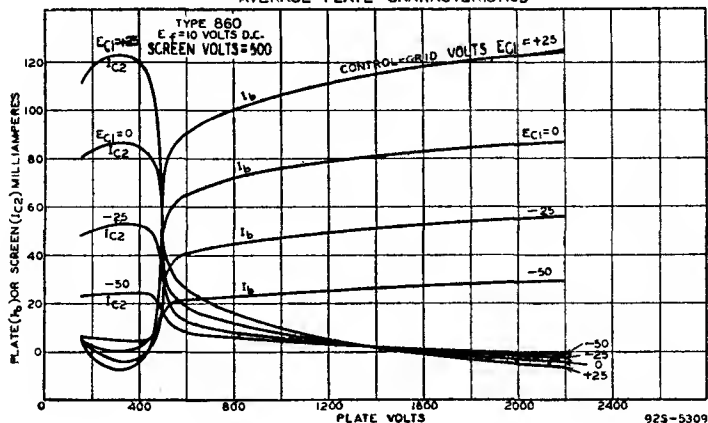
For installation, refer to type 852.

The plate of the 860 shows a dull red color at the maximum plate-dissipation rating for each class of service. The screen should never be allowed to show more than a barely perceptible red color.

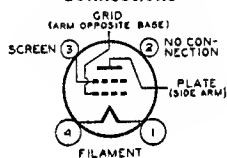
For high-frequency operation above 13 megacycles, see page 144.

For additional information, see chapters on INSTALLATION and APPLICATION.

AVERAGE PLATE CHARACTERISTICS



Top View of Socket Connections



AVERAGE PLATE CHARACTERISTICS

