



809

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TRANSMITTING TRIODE

GENERAL DATA

Electrical:

Filament, Thoriated Tungsten:

Voltage. 6.3 ac or dc volts

Current. 2.5 amp

Amplification Factor . . . 50

Direct Interelectrode Capacitances:

Grid to Plate. 6.7 μf Grid to Filament 5.7 μf Plate to Filament. . . . 0.9 μf

Mechanical:

Mounting Position. . . . Vertical, base down; or Horizontal,
pins 1 & 4 in vertical planeOverall Length 6-13/32" $\pm$ 5/32"Seated Length. 5-25/32" $\pm$ 5/32"

Maximum Diameter 2-7/16"

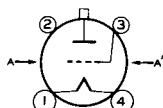
Bulb ST-19

Cap. Medium

Base Medium-Shell Small 4-Pin Micanol, Bayonet

Basing Designation for BOTTOM VIEW 3G

Pin 1—Filament

Pin 2—No
Connection

AA'=PLANE OF ELECTRODES

Pin 3—Grid

Pin 4—Filament

Cap—Plate

AF POWER AMPLIFIER & MODULATOR — Class B

Maximum Ratings, Absolute Values:

	CCS [•]	ICAS ^{••}	
DC PLATE VOLTAGE	750 max.	1000 max.	volts
MAX.—SIGNAL DC PLATE CUR.* .	125 max.	125 max.	ma. ←
MAX.—SIGNAL PLATE INPUT* . .	75 max.	100 max.	watts
PLATE DISSIPATION*	25 max.	30 max.	watts

Typical Operation:

Unless otherwise specified, values are for 2 tubes

DC Plate Voltage	750 . .	700	1000	volts
DC Grid Voltage*	-4.5 . .	0	-9	volts
Peak AF Grid-to-Grid Voltage	145 . .	160	155	volts
Zero-Signal DC Plate Current	40 . .	70	40	ma.
Max.—Signal DC Plate Current	200 . .	250	200	ma.
Effective Load Resistance (plate-to-plate) . .	8400 . .	6200	11600	ohms

*, •, ••, #: See next page.

← Indicates a change.

DEC. 20, 1946

TUBE DEPARTMENT

DATA 1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



TRANSMITTING TRIODE

Max.—Signal Driving Power (Approx.) . . .	2.5 . .	3.4 2.7 watts
Max.—Signal Power Output (Approx.) . . .	105 . .	120 145 watts

RF POWER AMPLIFIER — Class B Telephony

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

Maximum Ratings, Absolute Values:

	<u>CCS*</u>	<u>ICAS**</u>
DC PLATE VOLTAGE	750 max.	1000 max. volts
DC PLATE CURRENT	50 max.	60 max. ma.
PLATE INPUT.	37.5 max.	45 max. watts
PLATE DISSIPATION.	25 max.	30 max. watts

Typical Operation:

DC Plate Voltage	500 750	1000 . . volts
DC Grid Voltage#	-5 -10	-30 . . volts
Peak RF Grid Voltage	35 40	60 . . volts
DC Plate Current	50 50	45 . . ma.
DC Grid Current (Approx.) [□]	6 5	4 . . ma.
Driving Power (Approx.) ^{□▲}	1.4 1.4	1.5 . . watts
Power Output (Approx.)	7.5 12.5	15 . . watts

PLATE-MODULATED RF POWER AMPLIFIER — Class C Telephony

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

Maximum Ratings, Absolute Values:

	<u>CCS*</u>	<u>ICAS**</u>
DC PLATE VOLTAGE	600 max.	750 max. volts
DC GRID VOLTAGE.	-200 max.	-200 max. volts
DC PLATE CURRENT	83 max.	100 max. ma.
DC GRID CURRENT.	35 max.	35 max. ma.
PLATE INPUT.	50 max.	75 max. watts
PLATE DISSIPATION.	17.5 max.	25 max. watts

Typical Operation:

DC Plate Voltage	500 600	750 . . volts
DC Grid Voltage#	{ -60 -60 2000 2000	-60 . . volts 2000 . . ohms
Peak RF Grid Voltage	135 135	150 . . volts
DC Plate Current	83 83	100 . . ma.
DC Grid Current (Approx.) [□]	32 32	32 . . ma.
Driving Power (Approx.) [□]	3.2 3.2	4.3 . . watts
Power Output (Approx.)	30 38	55 . . watts

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

For ac filament supply.

□ obtained by grid resistor of value shown or by partial self-bias methods.

• • • • • See next page.



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TRANSMITTING TRIODE

RF POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Key-down conditions per tube without modulation^{□□}

Maximum Ratings, Absolute Values:

	CCS [●]	ICAS ^{●●}	
DC PLATE VOLTAGE.	750 max.	1000 max.	volts
DC GRID VOLTAGE	-200 max.	-200 max.	volts
DC PLATE CURRENT.	100 max.	100 max.	ma.
DC GRID CURRENT	35 max.	35 max.	ma.
PLATE INPUT	75 max.	100 max.	watts
PLATE DISSIPATION	25 max.	30 max.	watts

Typical Operation:

DC Plate Voltage.	500	750	1000	..	volts
DC Grid Voltage ^{▲▲}	-50	-60	-75	..	volts
	2500	3000	3000	..	ohms
	420	500	600	..	ohms
Peak RF Grid Voltage. . .	135	140	160	..	volts
DC Plate Current.	100	100	100	..	ma.
DC Grid Current (Approx.) [□]	20	20	25	..	ma.
Driving Power (Approx.) [□]	2.5	2.5	3.8	..	watts
Power Output (Approx.). .	35	55	75	..	watts

● Continuous Commercial Service.

●● Intermittent Commercial and Amateur Service.

□ Subject to wide variations as explained on sheet TUBE RATINGS in General Section.

▲ At crest of audio-frequency cycle of sine-wave form.

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

▲▲ Obtained from fixed supply, by grid resistor (2500, 3000, 3000) or by cathode resistor (420, 500, 600).

NOTE: When the 809 is used in the final amplifier or a preceding stage of a transmitter designed for break-in operation and oscillator keying, a small amount of fixed-bias must be used to maintain the plate current at a safe value. With a plate voltage of 1000 volts, a fixed bias of at least -10 volts should be used.

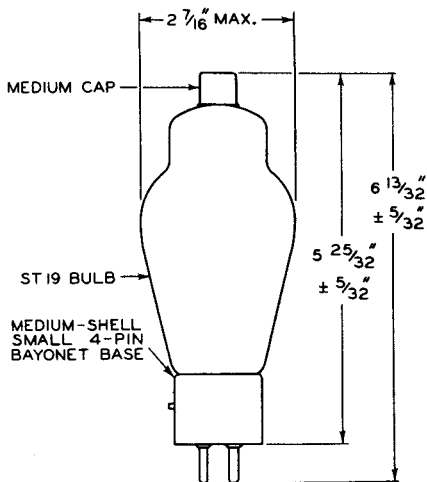
Data on operating frequencies for the 809 are given
on the sheet TRANS. TUBE RATINGS vs FREQUENCY

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TRANSMITTING TRIODE



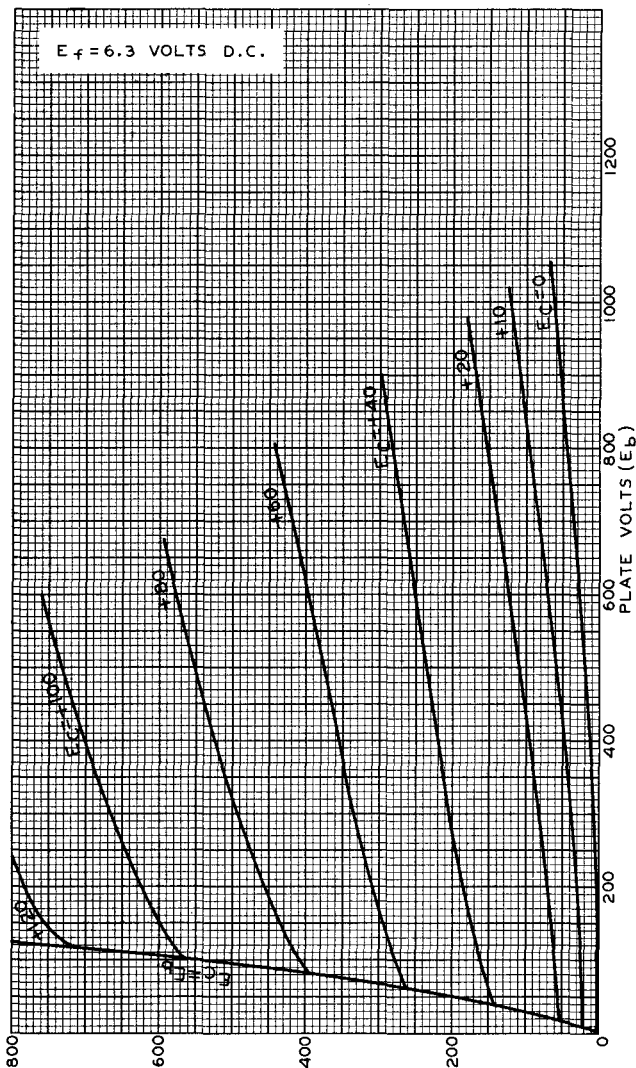
92CM-4835R1



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AVERAGE PLATE CHARACTERISTICS



OCT. 11, 1937

PLATE MILLIAMPERES
TUBE DEPARTMENT

92CM-4836

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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