809

TRANSMITTING TRIODE

GENERAL DATA

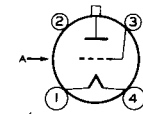
Electrical:

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	μμf
Grid to Filament	5.7	μμf
Plate to Filament	0.9	μμf

Mechanical:

Mounting Position	Vertical, base down; or Horizontal, pins 1 & 4 in vertical plane
Overall Length	6-13/32" ± 5/32"
Seated Length	5-25/32" ± 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.

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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*:

	CCS●	*ICAS*●●	
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*:

	CCS●	*ICAS*●●	
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	−60	. .	volts
	2000	2000	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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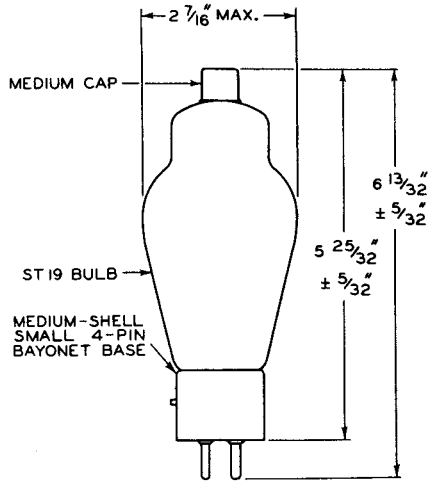
TRANSMITTING TRIODE



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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

RCA

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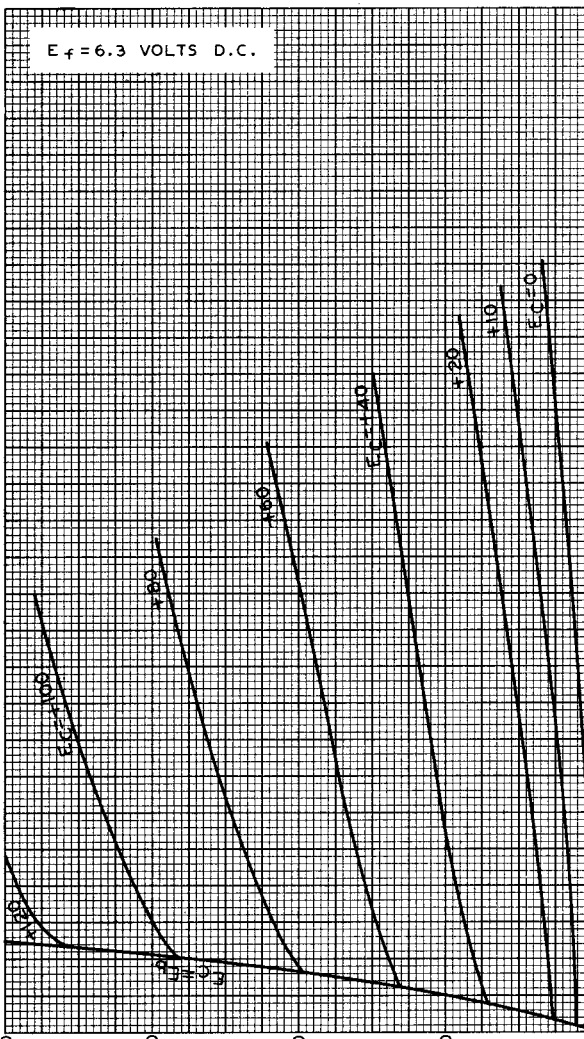
AVERAGE PLATE CHARACTERISTICS



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