810

TRANSMITTING TRIODE

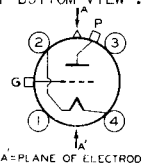
GENERAL DATA

Electrical:

Filament, Thoriated Tungsten:		
Voltage	10	ac or dc volts
Current	4.5	amp
Amplification Factor	36	
Direct Interelectrode Capacitances:		
Grid to Plate	4.8	μμf
Grid to Filament	8.7	μμf
Plate to Filament	12	μμf

Mechanical:

Mounting Position	Vertical, base down; or Horizontal, pins 1 & 2 in vertical plane
Overall Length	8-1/2" ± 1/4"
Seated Length	8-3/16" ± 1/4"
Maximum Radius	2-1/8" ± 1/8"
Bulb	T-20
Cap (top)	Skirted Medium
Cap (side)	Medium
Base	Medium Metal-Shell Jumbo 4-Pin, Bayonet
Basing Designation for BOTTOM VIEW	20_1



Pin 1 – No Connection
Pin 2 – Filament
Pin 3 – No Connection
Pin 4 – Filament
P – Plate (End Cap)
G – Grid (Side Cap)

AA'=PLANE OF ELECTRODES

AF POWER AMPLIFIER & MODULATOR – Class B

Maximum Ratings, *Absolute Values*:

	CCS●	ICAS●●	
DC PLATE VOLTAGE	2500 max.	2750 max.	volts
MAX.-SIGNAL DC PLATE CUR.*	250 max.	250 max.	ma.
MAX.-SIGNAL PLATE INPUT*	425 max.	510 max.	watts
PLATE DISSIPATION*	125 max.	175 max.	watts ←

Typical Operation:

Unless otherwise specified, values are for 2 tubes

DC Plate Voltage	2000	2250	volts
DC Grid Voltage#	-50	-60	volts
Peak AF Grid-to-Grid Voltage	345	380	volts
Zero-Signal DC Plate Current	60	70	ma.
Max.-Signal DC Plate Current	420	450	ma.
Effective Load Resistance (plate to plate)	11000	11600	ohms

* Averaged over any audio-frequency cycle of sine-wave form.
●, ●●, #: See next page.
← Indicates a change.

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Max.-Signal Driving Power (Approx.)	10	13	watts
Max.-Signal Power Output (Approx.)	590	725	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	2000 max.	2500 max.	volts
DC PLATE CURRENT	185 max.	185 max.	ma.
PLATE INPUT	185 max.	225 max.	watts
→ PLATE DISSIPATION	125 max.	175 max.	watts

Typical Operation:

DC Plate Voltage	1500	2000	2250	volts
DC Grid Voltage#	−50	−65	−70	volts
Peak RF Grid Voltage	110	100	100	volts
DC Plate Current	115	93	100	ma.
DC Grid Current (Approx.)□	2	2	2	ma.
Driving Power (Approx.)□▲	6	4	4	watts
Power Output (Approx.)	60	60	75	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	1600 max.	2000 max.	volts
DC GRID VOLTAGE	−500 max.	−500 max.	volts
DC PLATE CURRENT	210 max.	250 max.	ma.
→ DC GRID CURRENT	70 max.	75 max.	ma.
→ PLATE INPUT	335 max.	500 max.	watts
PLATE DISSIPATION	85 max.	125 max.	watts

→ **Typical Operation:**

DC Plate Voltage	1250	1600	2000	volts
DC Grid Voltage⊕	−200	−200	−350	volts
	4000	4000	5000	ohms
Peak RF Grid Voltage	370	370	550	volts
DC Plate Current	210	210	250	ma.
DC Grid Current (Approx.)□	50	50	70	ma.
Driving Power (Approx.)□	17	17	35	watts
Power Output (Approx.)	180	250	380	watts

For ac filament supply.

⊕ Obtained by grid resistor of value shown or by partial self-bias methods.

●, ●●, □, ▲: See next page.]

→ Indicates a change.

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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	2000 max.	2500 max.	volts
DC GRID VOLTAGE	−500 max.	−500 max.	volts
DC PLATE CURRENT	250 max.	300 max.	ma.
DC GRID CURRENT	70 max.	75 max.	ma.
PLATE INPUT	500 max.	750 max.	watts
PLATE DISSIPATION	125 max.	175 max.	watts

Typical Operation:

DC Plate Voltage	1500	2000	2500	volts
DC Grid Voltage▲▲	−120	−160	−180	volts
	3000	4000	3000	ohms
	415	550	500	ohms
Peak RF Grid Voltage	280	330	350	volts
DC Plate Current	250	250	300	ma.
DC Grid Current (Approx.)□	40	40	60	ma.
Driving Power (Approx.)□	10	12	19	watts
Power Output (Approx.)	275	375	575	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 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.

▲▲ Obtained from fixed supply, by grid resistor (3000, 4000, 3000), or by cathode resistor (415, 550, 500).

NOTE: When the 810 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 2500 volts, a fixed bias of at least −40 volts should be used.

Data on operating frequencies for the 810 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY

← Indicates a change.

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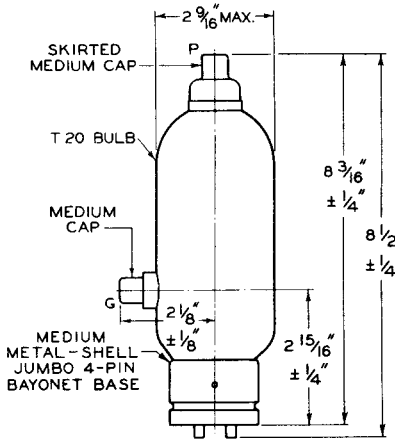
TRANSMITTING TRIODE



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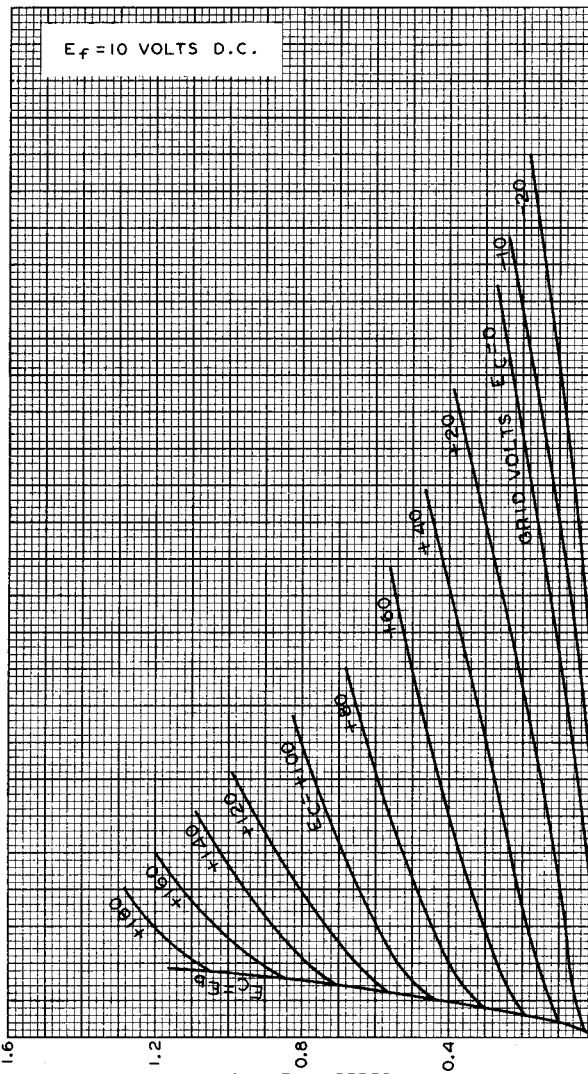
AVERAGE PLATE CHARACTERISTICS



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RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

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TYPICAL CHARACTERISTICS