



810

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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	$\mu\mu\text{f}$
Grid to Filament	8.7	$\mu\mu\text{f}$
Plate to Filament	12	$\mu\mu\text{f}$

Mechanical:

Mounting Position Vertical, base down; or Horizontal, pins 1 & 2 in vertical plane

Overall Length 8-1/2" \pm 1/4"

Seated Length 8-3/16" \pm 1/4"

Maximum Radius 2-1/8" \pm 1/8"

Bulb T-20

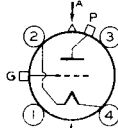
Cap (top) Skirted Medium

Cap (side) Medium

Base Medium Metal-Shell Jumbo 4-Pin, Bayonet

Basing Designation for BOTTOM VIEW 20₁

- 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.



TRANSMITTING TRIODE

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 $\square\square$

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

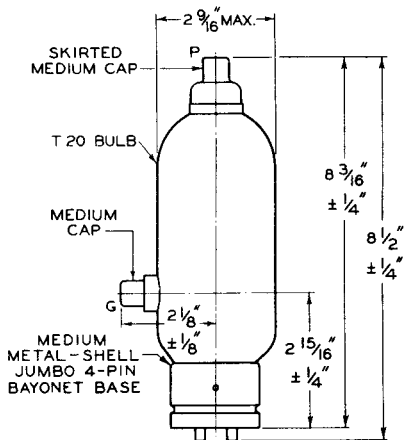
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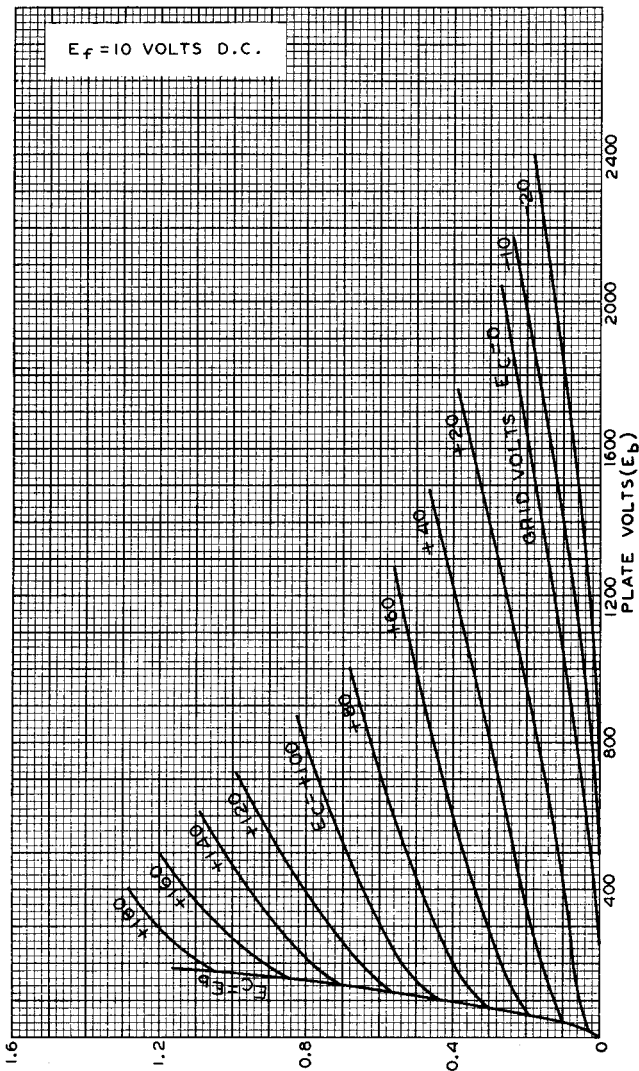
92CM-4965RI



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AVERAGE PLATE CHARACTERISTICS



OCT. 13, 1938

PLATE AMPERES
RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

92C-4981



TYPICAL CHARACTERISTICS

