



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 planeOverall 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

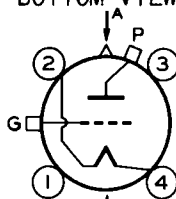
Pin 2—Filament

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:**

	<u>CCS[•]</u>	<u>ICAS^{••}</u>	
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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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

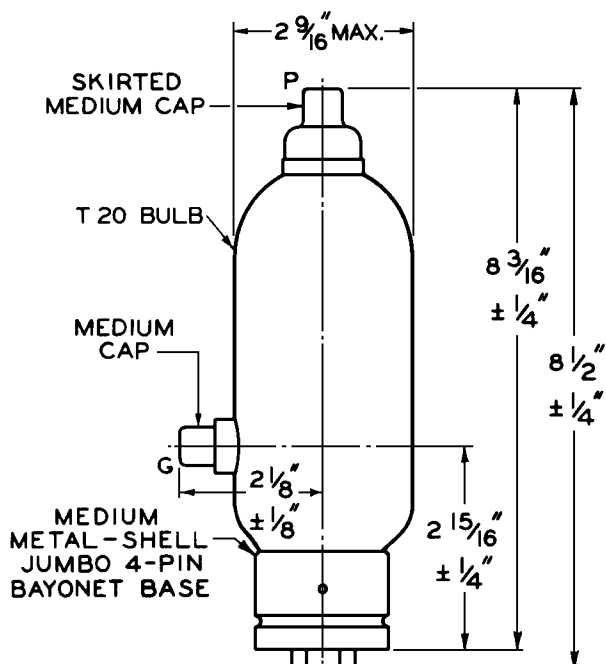
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92CM-4965R1

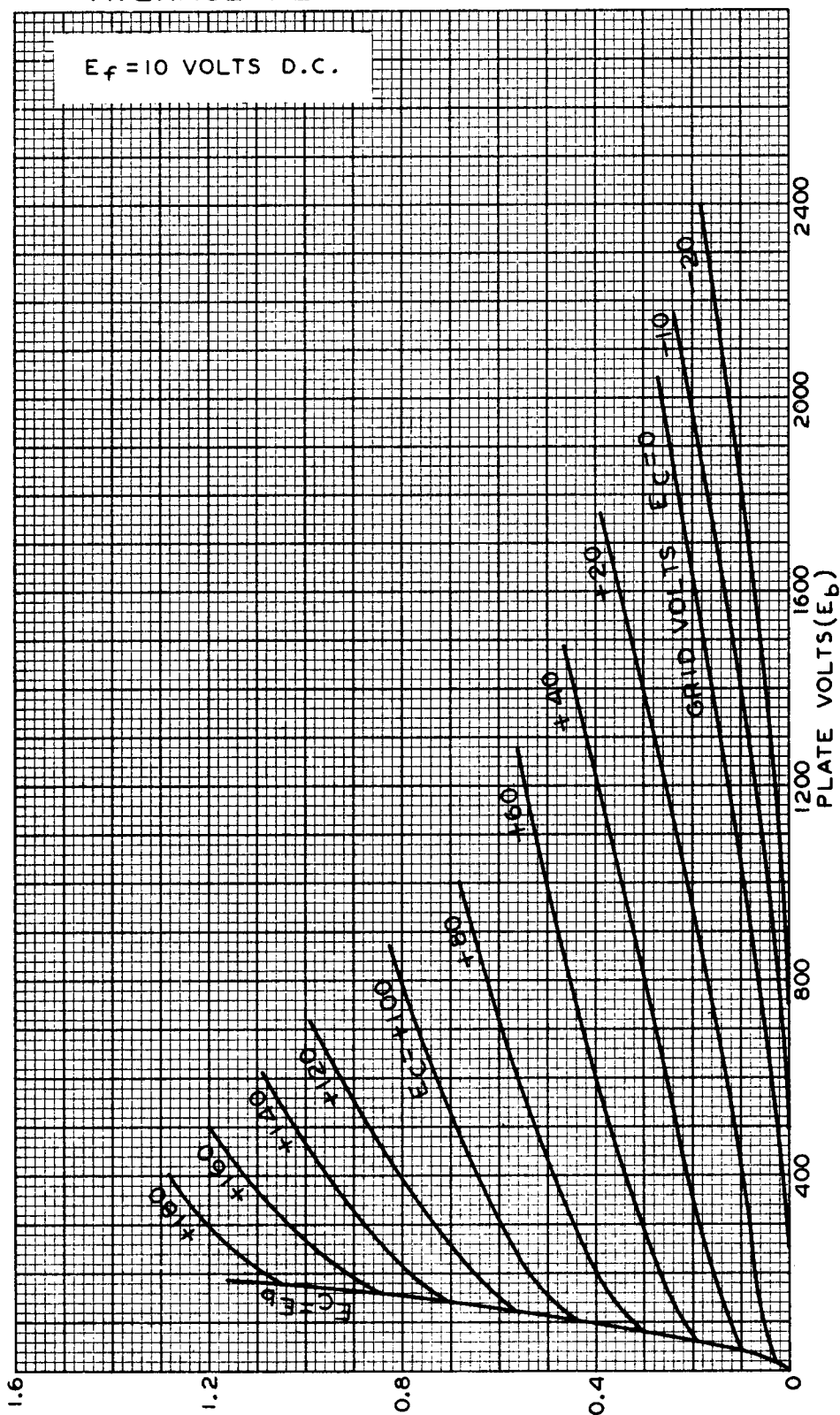


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AVERAGE PLATE CHARACTERISTICS

$E_f = 10$ VOLTS D.C.



OCT. 13, 1938

PLATE AMPERES
RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

92C-4981

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TYPICAL CHARACTERISTICS

