



826

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## TRANSMITTING TRIODE

## GENERAL DATA

**Electrical:**

Filament, Thoriated Tungsten:†

Voltage. . . . . 7.5 . . . . . ac or dc volts  
Current. . . . . 4 . . . . . amp

Amplification Factor . . . . . 31

Direct Interelectrode Capacitances:

Grid to Plate. . . . . 3 . . . . .  $\mu\mu\text{f}$  ←  
Grid to Filament . . . . . 3 . . . . .  $\mu\mu\text{f}$  ←  
Plate to Filament. . . . . 1.1 . . . . .  $\mu\mu\text{f}$  ←**Mechanical:**

Mounting Position. . . . . Vertical Only, Base up or down

Overall Length . . . . . 3-1/2"  $\pm$  3/16"Seated Length. . . . . 3-1/16"  $\pm$  3/16"

Maximum Diameter . . . . . See Outline Drawing

Bulb . . . . . T-16

Base . . . . . Medium Molded-Flare Septar 7-Pin

Basing Designation for BOTTOM VIEW . . . . . 7B0

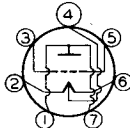
Pin 1 - Plate

Pin 2 - Filament

Pin 3 - Grid

Pin 4 - Filament

Center-Tap



Pin 5 - Grid

Pin 6 - Filament

Pin 7 - Plate

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:**

## NATURAL COOLING

CCS<sup>•</sup>ICAS<sup>••</sup>

DC PLATE VOLTAGE . . . . .	800 max.	1000 max.	volts
DC GRID VOLTAGE. . . . .	-600 max.	-600 max.	volts
DC PLATE CURRENT . . . . .	95 max.	125 max.	ma
DC GRID CURRENT. . . . .	40 max.	40 max.	ma
PLATE INPUT. . . . .	60 max.	95 max.	watts
PLATE DISSIPATION. . . . .	30 max.	45 max.	watts

**Typical Operation with Natural Cooling:**

DC Plate Voltage . . . . .	- . . .	1000 . .	volts
DC Grid Voltage <sup>••</sup> . . . . .	{ - . . .	-160 . .	volts
	{ - . . .	4000 . .	ohms
Peak RF Grid Voltage . . . . .	- . . .	320 . .	volts
DC Plate Current . . . . .	- . . .	95 . .	ma
DC Grid Current (Approx.) <sup>•</sup> . . . . .	- . . .	40 . .	ma
Driving Power (Approx.) <sup>•</sup> . . . . .	- . . .	11.5 . .	watts
Power Output (Approx.) . . . . .	- . . .	70 . .	watts

†, •, ••, •••, #, □: See next page.

← indicates a change.

AUGUST 15, 1947

TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

DATA 1



## TRANSMITTING TRIODE

→ **Maximum Ratings, Absolute Values:** FORCED-AIR COOLING

	CCS <sup>•</sup>	ICAS <sup>••</sup>	
DC PLATE VOLTAGE . . . . .	800 max.	1000 max.	volts
DC GRID VOLTAGE. . . . .	-600 max.	-600 max.	volts
DC PLATE CURRENT . . . . .	95 max.	125 max.	ma
DC GRID CURRENT. . . . .	40 max.	40 max.	ma
PLATE INPUT. . . . .	75 max.	125 max.	watts
PLATE DISSIPATION. . . . .	40 max.	60 max.	watts

→ **Typical Operation with Forced-Air Cooling:**

DC Plate Voltage . . . . .	800 . .	1000 . .	volts
DC Grid Voltage <sup>•</sup> # . . . . .	{ -100 . .	-100 . .	volts
	{ 2800 . .	2800 . .	ohms
Peak RF Grid Voltage . . . . .	198 . .	210 . .	volts
DC Plate Current . . . . .	94 . .	125 . .	ma
DC Grid Current (Approx.) <sup>□</sup> . . . . .	35 . .	35 . .	ma
Driving Power (Approx.) <sup>□</sup> . . . . .	6.3 . .	6.6 . .	watts
Power Output (Approx.) . . . . .	53 . .	90 . .	watts

## RF POWER AMPLIFIER &amp; OSCILLATOR - Class C Telegraphy

Key-down conditions per tube without modulation<sup>□□</sup>

→ **Maximum Ratings, Absolute Values:** NATURAL COOLING

	CCS <sup>•</sup>	ICAS <sup>••</sup>	
DC PLATE VOLTAGE . . . . .	1000 max.	1000 max.	volts
DC GRID VOLTAGE. . . . .	-600 max.	-600 max.	volts
DC PLATE CURRENT . . . . .	125 max.	140 max.	ma
DC GRID CURRENT. . . . .	40 max.	40 max.	ma
PLATE INPUT. . . . .	95 max.	130 max.	watts
PLATE DISSIPATION. . . . .	45 max.	55 max.	watts

→ **Typical Operation with Natural Cooling:**

DC Plate Voltage . . . . .	- . .	1000 . .	volts
DC Grid Voltage <sup>#</sup> ▲ . . . . .	{ - . .	-70 . .	volts
	{ - . .	2000 . .	ohms
	{ - . .	425 . .	ohms
Peak RF Grid Voltage . . . . .	- . .	183 . .	volts
DC Plate Current . . . . .	- . .	130 . .	ma
DC Grid Current (Approx.) . . . . .	- . .	35 . .	ma
Driving Power (Approx.) . . . . .	- . .	5.8 . .	watts
Power Output (Approx.) . . . . .	- . .	90 . .	watts

→ **Maximum Ratings, Absolute Values:** FORCED-AIR COOLING

	CCS <sup>•</sup>	ICAS <sup>••</sup>	
DC PLATE VOLTAGE . . . . .	1000 max.	1250 max.	volts
DC GRID VOLTAGE. . . . .	-600 max.	-600 max.	volts
DC PLATE CURRENT . . . . .	125 max.	140 max.	ma
DC GRID CURRENT. . . . .	40 max.	40 max.	ma
PLATE INPUT. . . . .	125 max.	175 max.	watts
PLATE DISSIPATION. . . . .	60 max.	75 max.	watts

†, •, ••, •, #, □, □□, ▲: See next page.

→ Indicates a change.



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## TRANSMITTING TRIODE

## Typical Operation with Forced-Air Cooling:

DC Plate Voltage . . . . .	1000 . . . . .	1250 . . . . .	volts
DC Grid Voltage#▲ . . . . .	-70 . . . . .	-125 . . . . .	volts
	2000 . . . . .	3600 . . . . .	ohms
	440 . . . . .	780 . . . . .	ohms
Peak RF Grid Voltage . . . . .	183 . . . . .	245 . . . . .	volts
DC Plate Current . . . . .	125 . . . . .	125 . . . . .	ma
DC Grid Current (Approx.) . . . . .	35 . . . . .	35 . . . . .	ma
Driving Power (Approx.) . . . . .	5.8 . . . . .	7.7 . . . . .	watts
Power Output (Approx.) . . . . .	86 . . . . .	120 . . . . .	watts

† The filament is center-tapped and the center lead is brought out of the tube. With this design, it is possible to minimize the effect of filament-lead inductance by connecting all three filament leads in parallel through rf by-pass capacitors. The center lead of this parallel connection should not be returned directly to the center-tap of the filament-transformer winding or to ground, although it may be by-passed to either of these points if desired. RF by-passing of the grid- and plate-return circuits should be made to the center lead of the filament.

● Continuous Commercial Service.

●● Intermittent Commercial and Amateur Service.

● Obtained by grid resistor of value shown. Fixed supply not recommended for linear modulation.

# Grid voltages are given with respect to the mid-point of filament operated on ac. If dc is used, each stated value of grid voltage should be decreased by one-half the filament voltage and the circuit returns made to the negative end of the filament.

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

□□ 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 (2000, 2000, 3600) or by cathode resistor (425, 440, 780).

NOTE: When the 826 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 plate voltage of 1250 volts, a fixed bias of at least -22.5 volts should be used.

Data on operating frequencies for the 826 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY. Adequate shielding must be provided at the higher frequencies. At the very-high frequencies, push-pull operation is recommended and it is desirable to use each tube with its two grid terminals connected together as well as its two plate terminals connected together, in order to reduce the respective lead inductances.

← Indicates a change.





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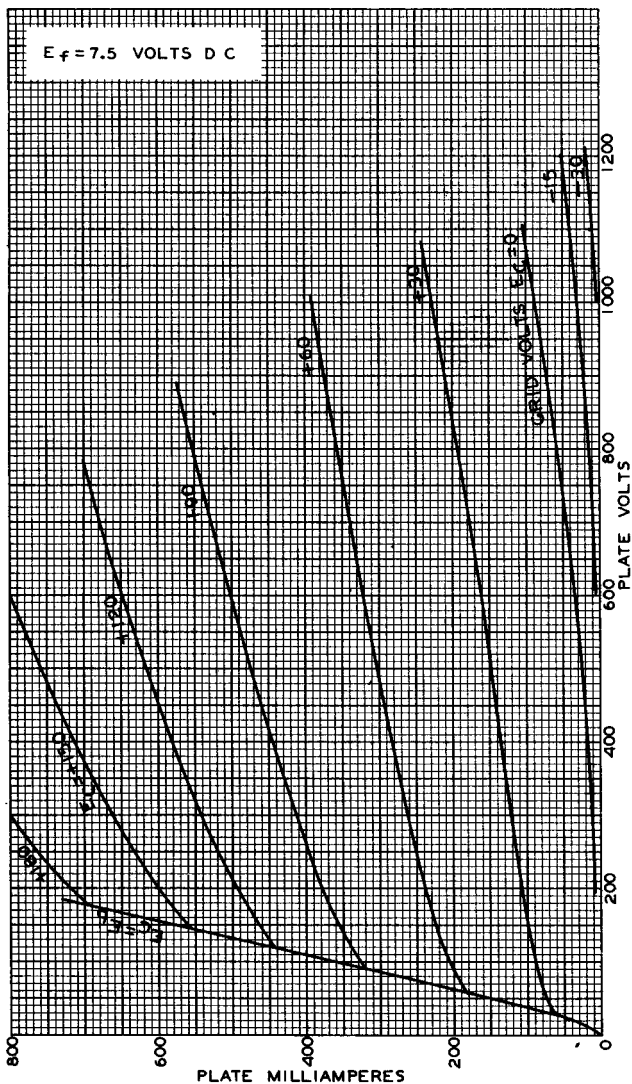
FLANGE GAUGE IS PARALLEL TO THE TOP SURFACE OF THE BASE-PIN GAUGE, AND UNTIL THE FLANGE GAUGE RESTS ON THE TUBE-FLANGE SEAL AT POSITION XX'. THE PERPENDICULAR DISTANCE BETWEEN THE TWO GAUGES WILL BE AS SHOWN.

**NOTE 3:** MINIMUM DIAMETER OF TUBE-SEAL FLANGE WILL BE SUCH THAT A RING GAUGE HAVING I. D. OF  $2.125'' - 0.000'' + 0.003''$  AND THICKNESS OF  $0.125'' \pm 0.010''$  WILL NOT PASS THE FLANGE WHEN TRIED AT ANY ANGLE.

**NOTE 4:** EXHAUST TIP WILL NOT EXTEND BEYOND THE PLANE WHICH PASSES THROUGH THE ENDS OF THE THREE LONGEST PINS.



## AVERAGE PLATE CHARACTERISTICS



SEPT. 9, 1940

TUBE DEPARTMENT

92CM - 6210

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY