826

TRANSMITTING TRIODE

GENERAL DATA

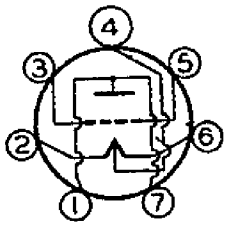
Electrical:

Filament, Thoriated Tungsten:†		
Voltage	7.5	ac or dc volts
Current	4	amp
Amplification Factor	31	
Direct Interelectrode Capacitances:		
Grid to Plate	3	μμf
Grid to Filament	3	μμf
Plate to Filament	1.1	μμf

Mechanical:

Mounting Position	Vertical Only, Base up or down
Overall Length	3-1/2" ± 3/16"
Seated Length	3-1/16" ± 3/16"
Maximum Diameter	See Outline Drawing
Bulb	T-16
Base	Medium Molded-Flare Septar 7-Pin
Basing Designation for BOTTOM VIEW	7BO

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●	NATURAL COOLING ICAS●●	
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●*	—	-160	volts
	—	4000	ohms
Peak RF Grid Voltage	—	320	volts
DC Plate Current	—	95	ma
DC Grid Current (Approx.)□	—	40	ma
Driving Power (Approx.)□	—	11.5	watts
Power Output (Approx.)	—	70	watts

†, ●, ●●, ●, *, □: See next page.

826

826

TRANSMITTING TRIODE

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

	CCS●	ICAS●●	
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⊕#	-100	-100	volts
	2800	2800	ohms
Peak RF Grid Voltage	198	210	volts
DC Plate Current	94	125	ma
DC Grid Current (Approx.)□	35	35	ma
Driving Power (Approx.)□	6.3	6.6	watts
Power Output (Approx.)	53	90	watts

RF POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Key-down conditions per tube without modulation□□

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

	CCS●	ICAS●●	
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#▲	—	-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●	ICAS●●	
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.

826

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.

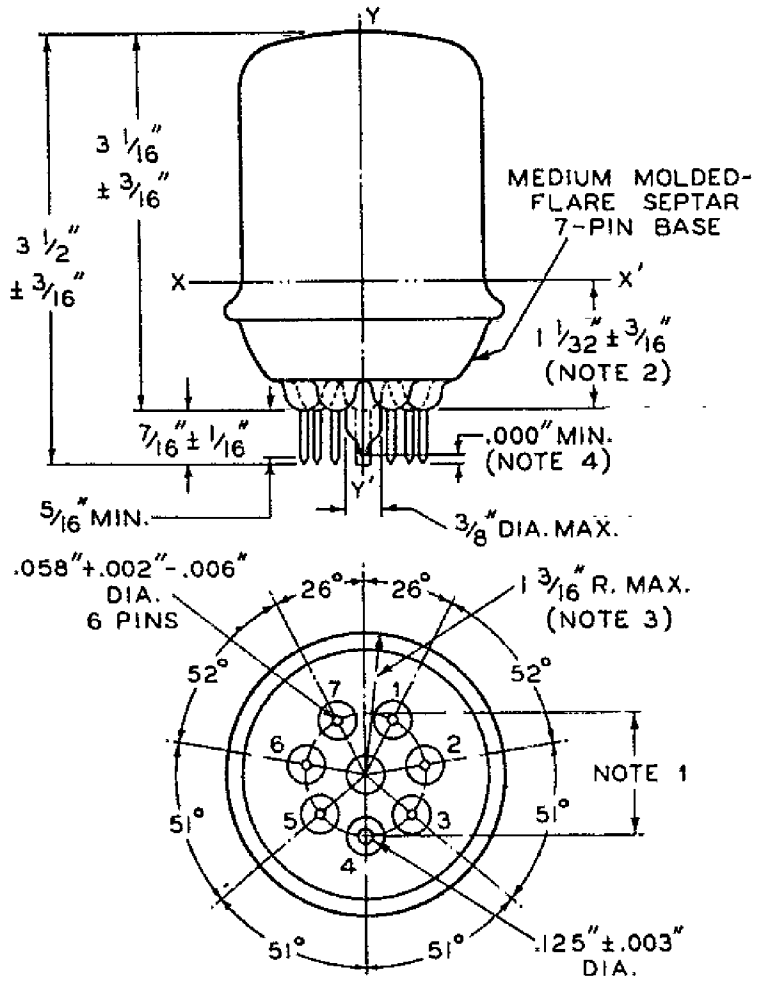
▲ Obtained from fixed supply, by grid resistor (2000, 2000, 3600) or by cathode resistor (425, 440, 780).

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.

826

826
TRANSMITTING TRIODE



92CM-6131R2

BOTTOM VIEW

THE REFERENCE AXIS YY' IS DEFINED AS THE AXIS OF THE BASE-PIN GAUGE DESCRIBED IN NOTE 1.

NOTE 1: ANGULAR VARIATIONS BETWEEN PINS AND VARIATION IN PIN-CIRCLE DIAMETER ARE HELD TO TOLERANCES SUCH THAT PINS WILL ENTER TO A DISTANCE OF 0.375" A FLAT-PLATE BASE-PIN GAUGE HAVING SIX HOLES 0.0800" ± 0.0005" AND ONE HOLE 0.1450" ± 0.0005" ARRANGED ON A 1.0000" ± 0.0005" CIRCLE AT SPECIFIED ANGLES WITH TOLERANCE OF ±5' FOR EACH ANGLE. GAUGE IS ALSO PROVIDED WITH A HOLE 0.500" ± 0.010" CONCENTRIC WITH PIN CIRCLE WHOSE CENTER IS ON THE AXIS YY'.

NOTE 2: A FLAT-PLATE FLANGE GAUGE WITH HOLE 2.063" - 0.000" + 0.003" IS LOWERED OVER TUBE SEATED IN BASE-PIN GAUGE SO THAT THE HOLE AXIS IS COINCIDENT WITH AXIS YY' WITHIN 0.150", AND SO THAT THE BOTTOM SURFACE OF THE

(continued on next page)

RCA

826

TRANSMITTING TRIODE

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" ± 0.010" WILL NOT PASS THE FLANGE WHEN TRIED AT ANY ANGLE.

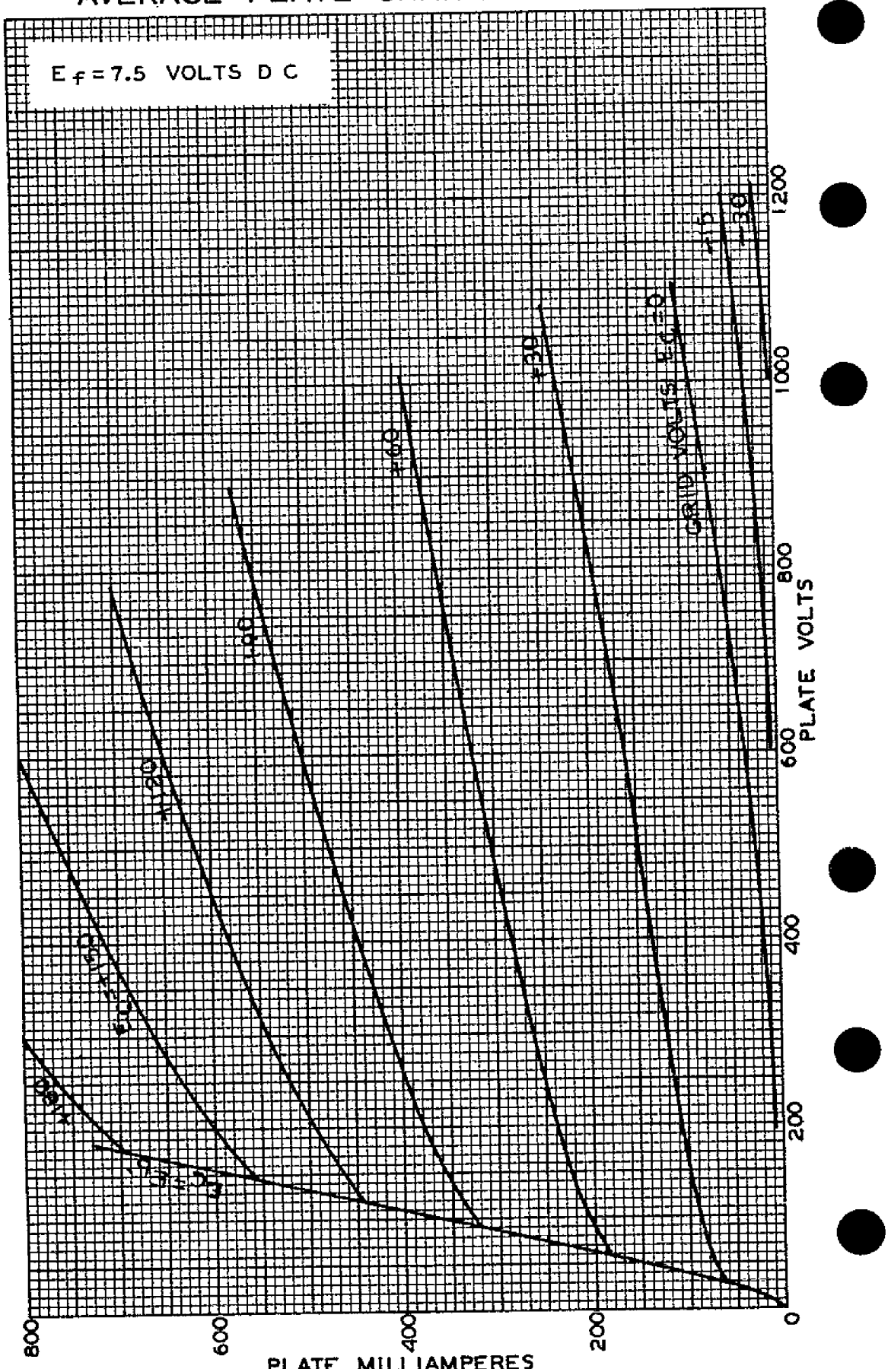
NOTE 4: EXHAUST TIP WILL NOT EXTEND BEYOND THE PLANE WHICH PASSES THROUGH THE ENDS OF THE THREE LONGEST PINS.

826

RCA

826

AVERAGE PLATE CHARACTERISTICS



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826

TYPICAL CHARACTERISTICS