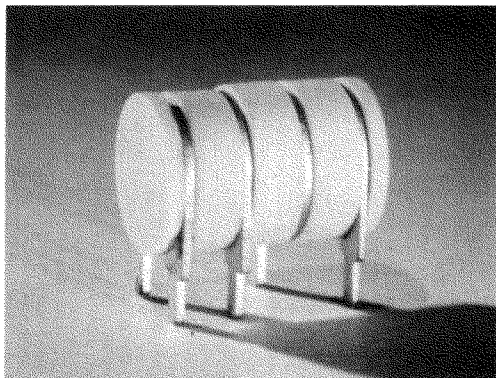




METAL-CERAMIC TRIODE



DESCRIPTION AND RATING

The 7720 is a high-mu triode of ceramic-and-metal planar construction primarily intended for use as an oscillator in the ultra-high-frequency range.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential	
Heater Characteristics and Ratings	
Heater Voltage, AC or DC*	6.3 $\pm$ 0.3 Volts
Heater Current†	0.24 Amperes
Direct Interelectrode Capacitances‡	
Grid to Plate: (g to p)	1.3 pf
Input: g to (h+k)	1.8 pf
Output: p to (h+k)	0.032 pf
Heater to Cathode: (h to k)	1.5 pf

MECHANICAL

Mounting Position—Any
See outline drawing on page 2 for dimensions and electrical connections.

MAXIMUM RATINGS

ABSOLUTE MAXIMUM VALUES

Plate Voltage	250	Volts
Positive DC Grid Voltage	0	Volts
Negative DC Grid Voltage	50	Volts
Peak Negative Grid Voltage	50	Volts
Plate Dissipation	1.0	Watt
DC Grid Current	2.2	Milliamperes
DC Cathode Current	11	Milliamperes
Peak Cathode Current	40	Milliamperes

Heater-Cathode Voltage

Heater Positive with Respect to
Cathode 50 Volts

Heater Negative with Respect to
Cathode 50 Volts

Grid-Circuit Resistance 10,000 Ohms

Bulb Temperature at Hottest Point** 250 C

Absolute-Maximum ratings are limiting values of operating and environmental conditions applicable to any electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making no allowance for equipment variations, environmental variations, and the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration and of

all other electron devices in the equipment.

The equipment manufacturer should design so that initially and throughout life no absolute-maximum value for the intended service is exceeded with any tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of the tube under consideration and of all other electron devices in the equipment.

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or

elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage.....	100	150	Volts
Grid Voltage.....	0	—	Volts
Cathode-Bias Resistor.....	—	82	Ohms
Amplification Factor.....	—	90	
Transconductance.....	11,500	10,500	Micromhos
Plate Current.....	9.0	7.5	Milliamperes

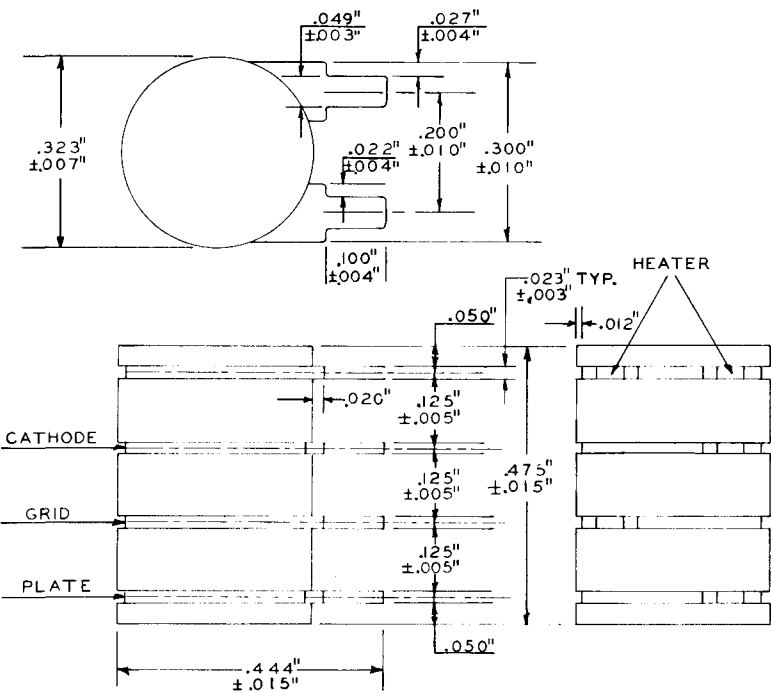
UHF OSCILLATOR SERVICE

Plate Voltage.....	150	Volts
Grid Resistor.....	7000	Ohms
Plate Current.....	4.0	Milliamperes
Frequency.....	450	Megacycles
Grid Current.....	0.5	Milliamperes
Power Output, approximate.....	100	Milliwatts

FOOTNOTES

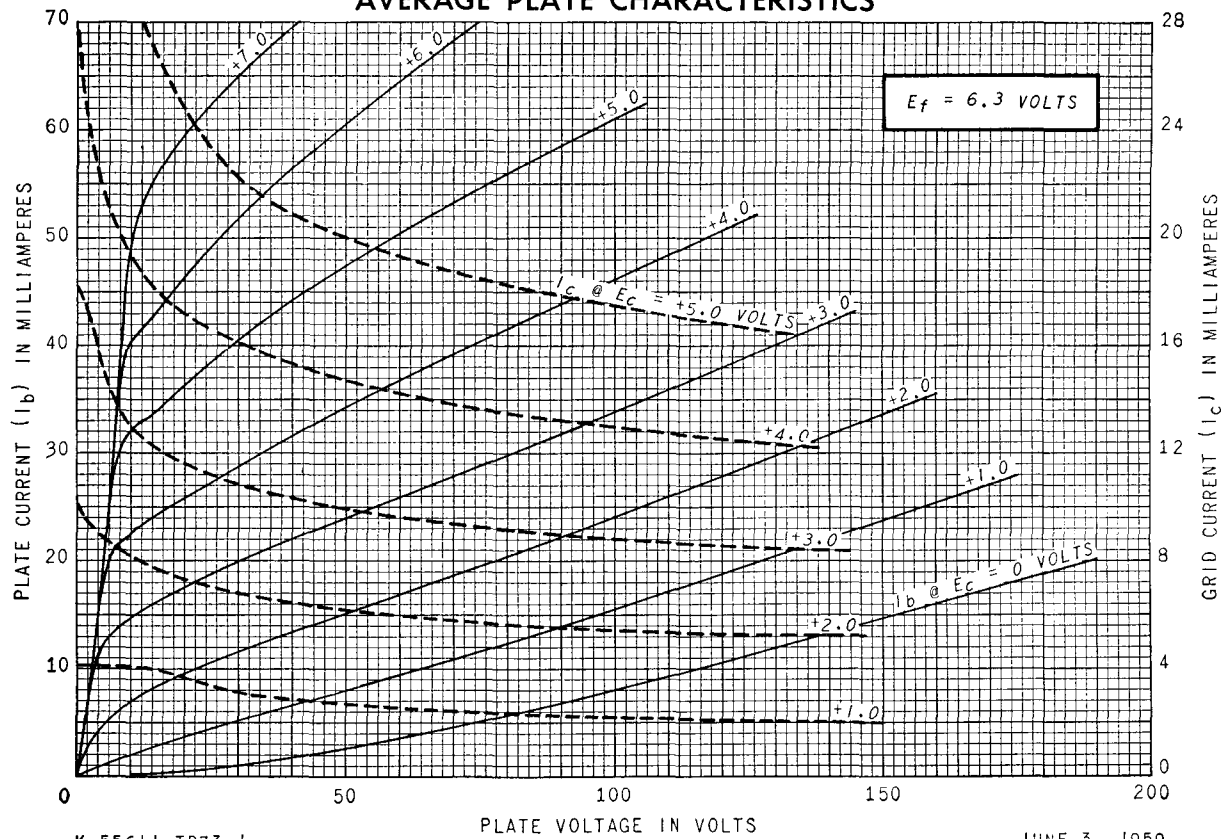
- * The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.
- † Heater current of a bogey tube at Ef = 6.3 volts.
- ‡ Without external shield.
- **For applications where long life is a primary consideration, it is recommended that the envelope temperature be maintained below 175 C.

OUTLINE DRAWING

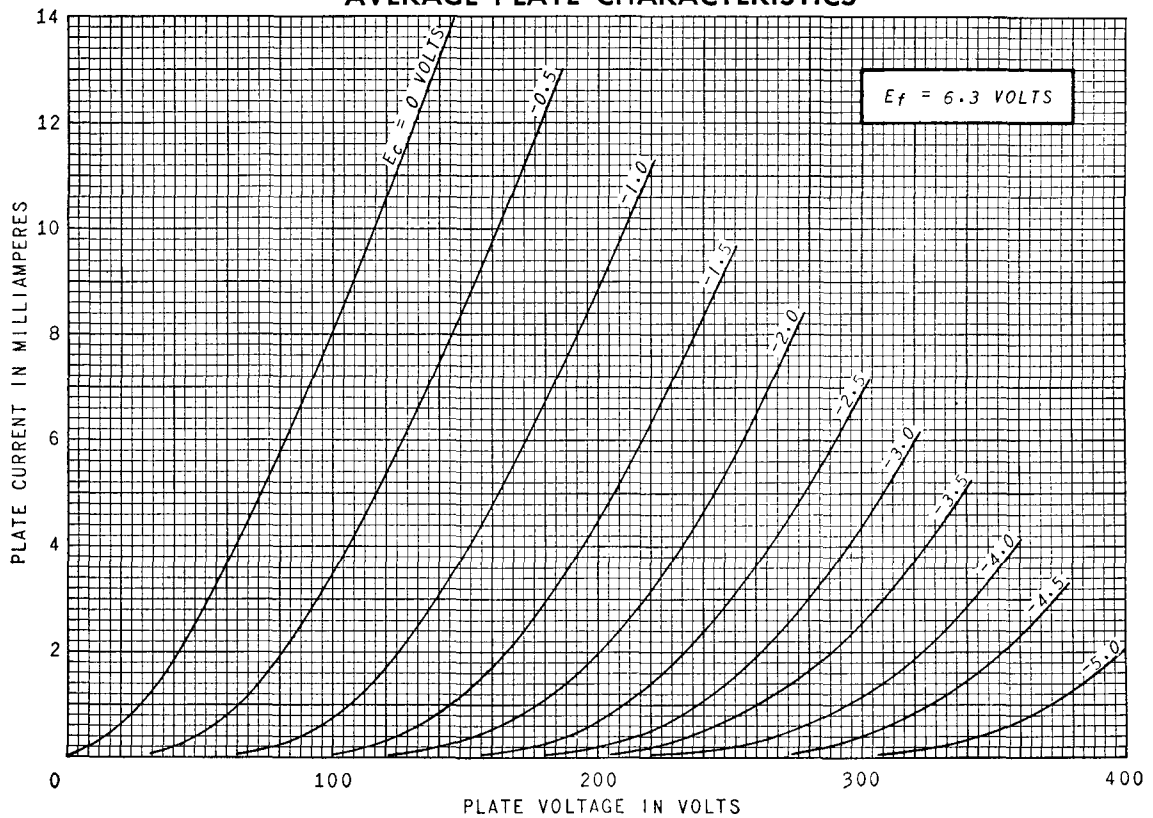


NOTE: Maximum eccentricity of insulators 0.010 in. from center line.

AVERAGE PLATE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS



The graph shows the average transfer characteristics of a 6X4 tube. The x-axis represents the grid voltage in volts, ranging from 0 to -5. The y-axis represents the plate current in milliamperes, ranging from 0 to 14. A series of curves are plotted for different plate-cathode voltages (E_b): 50, 100, 150, 200, 250, and 300 volts. A box in the upper left corner specifies $E_f = 6.3$ volts. The curves show that plate current increases with both more negative grid voltage and higher plate-cathode voltage.

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The graph illustrates the operating characteristics of a 6X4 vacuum tube. The Y-axis represents the Grid Voltage in Volts, ranging from -7 to +7. The X-axis represents the Plate Voltage in Volts, ranging from 0 to 250. The curves show the relationship between these voltages and the resulting currents. A box in the upper right corner indicates $E_f = 6.3 \text{ VOLTS}$.

The curves are labeled with values for I_g (Grid Current) and I_b (Plate Current):

- $I_g = 20 \text{ MILLIAMPERES}$
- $I_g = 15$
- $I_g = 10$
- $I_b = 40 \text{ MILLIAMPERES}$
- $I_b = 35$
- $I_b = 30$
- $I_b = 25$
- $I_b = 20$
- $I_b = 15$
- $I_b = 10$
- $I_b = 5.0$
- $I_b = 3.0$
- $I_b = 1.0$
- $I_b = 0$

K-55611-TD73-4

RECEIVING TUBE DEPARTMENT

JUNE 3, 1959

GENERAL  ELECTRIC
Owensboro, Kentucky