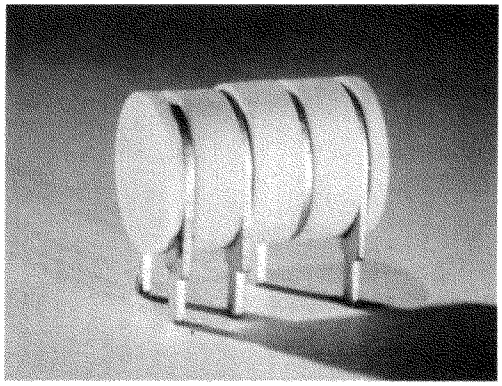
# METAL-CERAMIC TRIODE



## 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 ± 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.

## 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

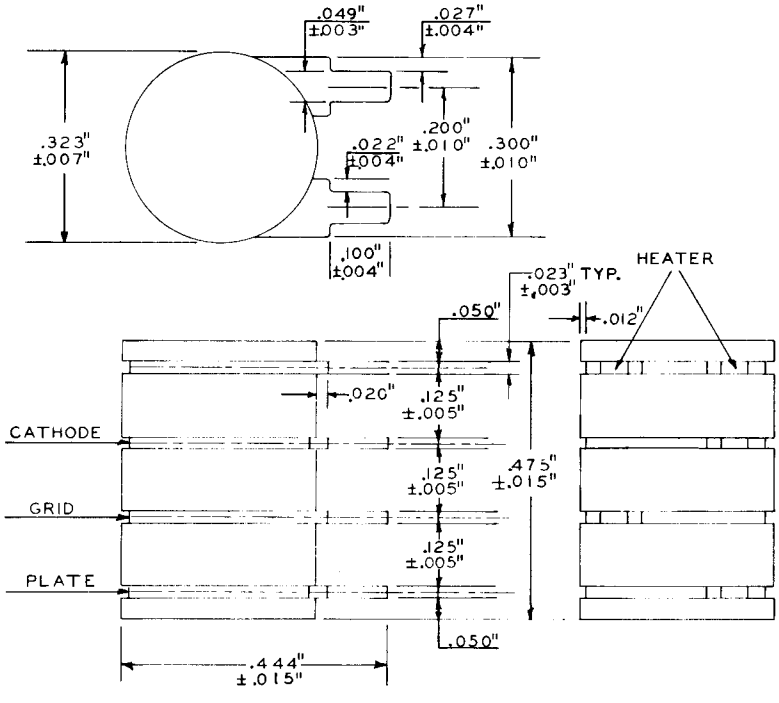
* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

† Heater current of a bogey tube at Ef = 6.3 volts.

‡ Without external shield.

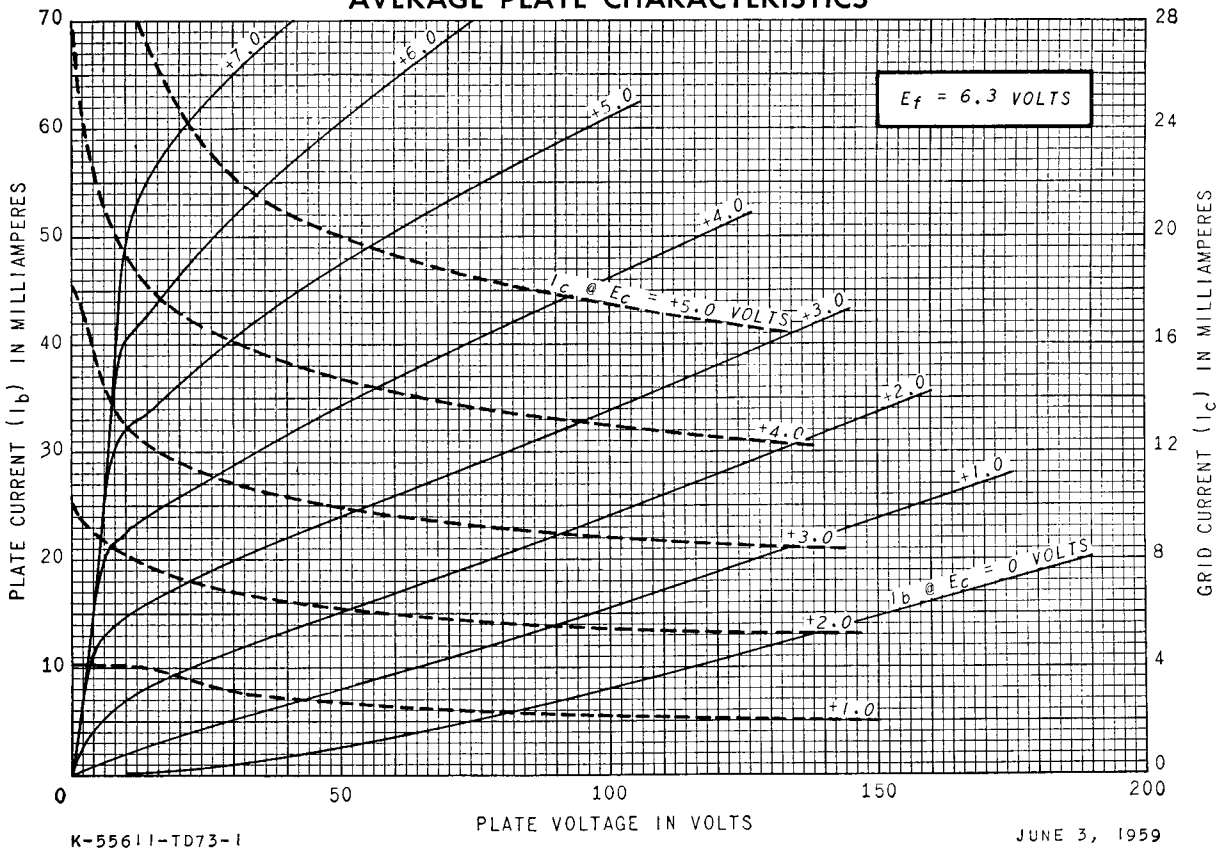
**For applications where long life is a primary consideration, it is recommended that the envelope temperature be maintained below 175 C.

## OUTLINE DRAWING




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

## AVERAGE PLATE CHARACTERISTICS

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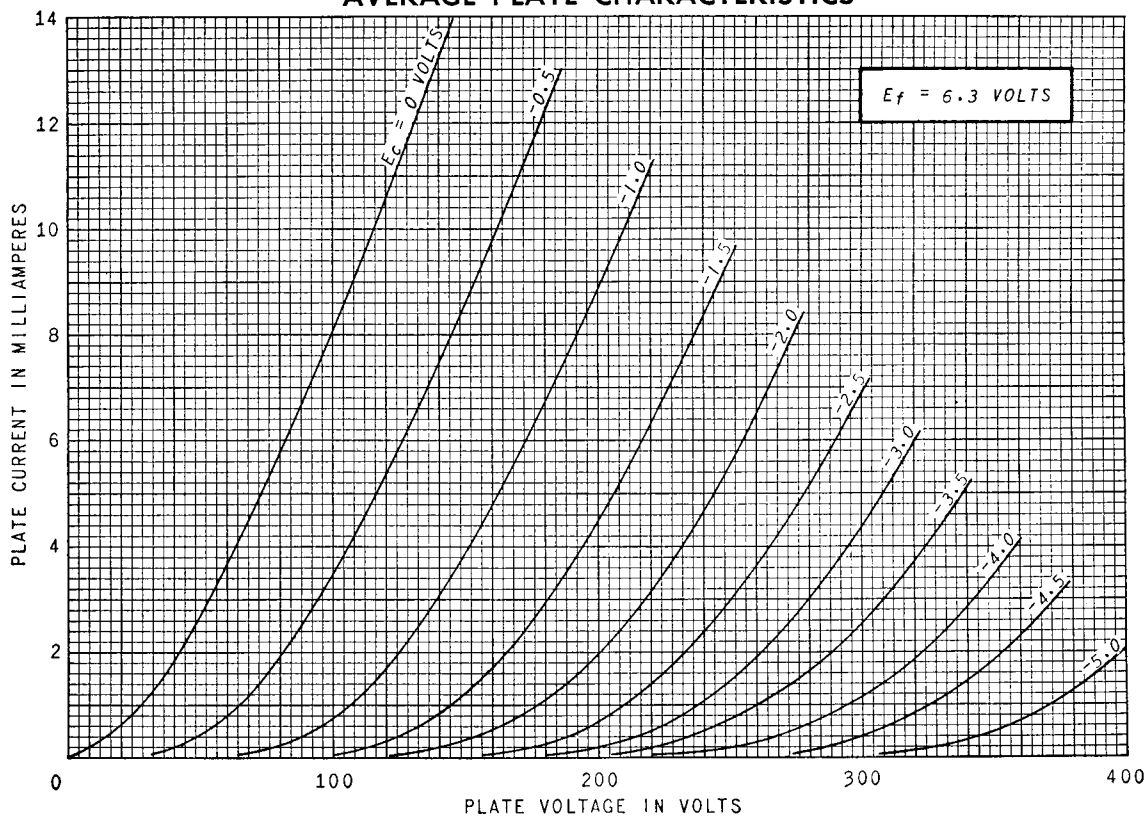
## AVERAGE PLATE CHARACTERISTICS




K-55611-TD73-2

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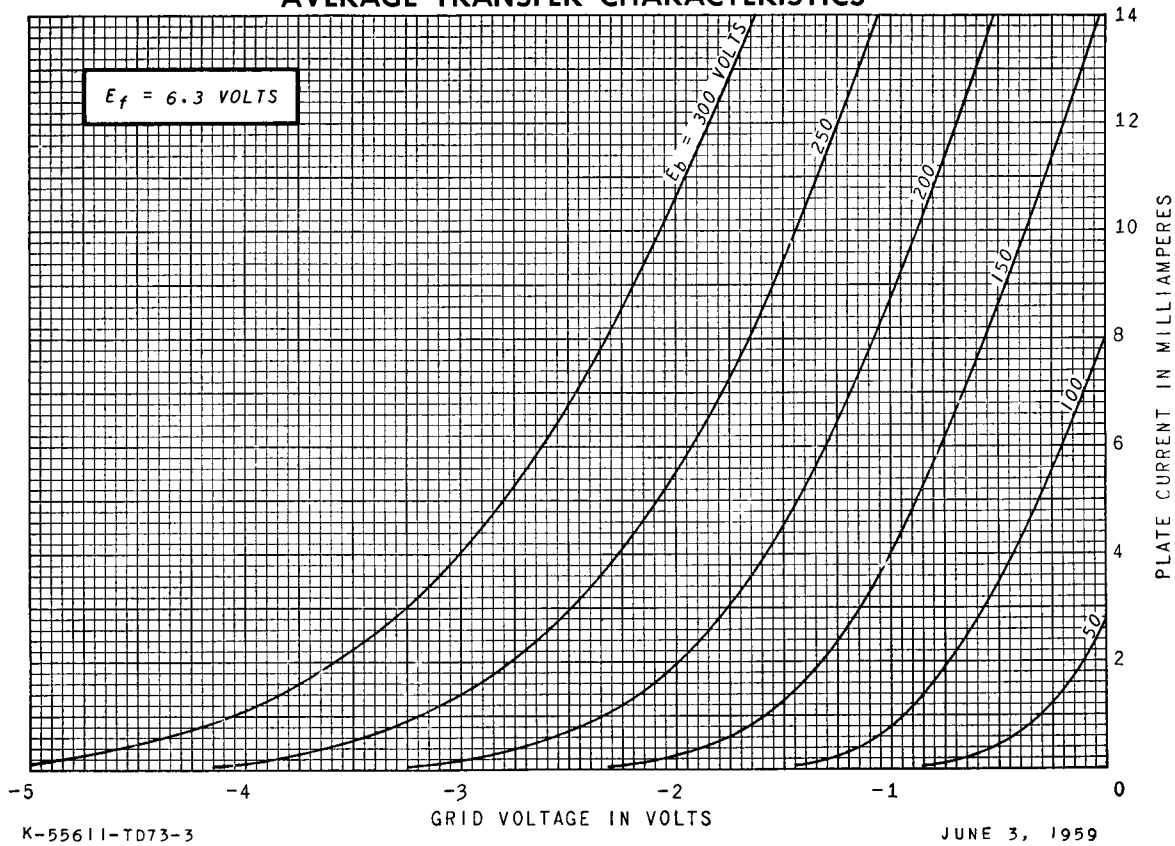
## AVERAGE TRANSFER CHARACTERISTICS




K-5561I-TD73-3

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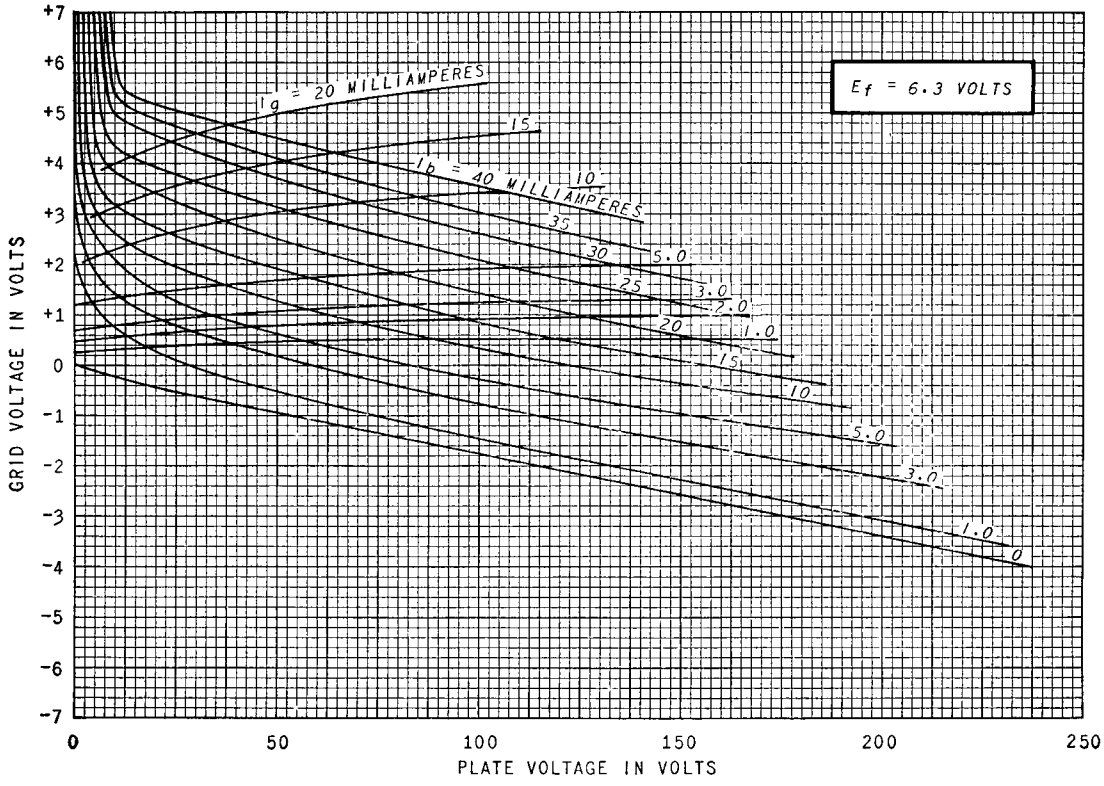
## AVERAGE CONSTANT-CURRENT CHARACTERISTICS




K-5561I-TD73-4

**RECEIVING TUBE DEPARTMENT**

JUNE 3, 1959

**GENERAL ELECTRIC**

**Owensboro, Kentucky**