# TRIODE-PENTODE

## DESCRIPTION AND RATING

The 6HZ8 is a 9-pin, T-9 tube containing a high-mu triode and a sharp-cutoff pentode. The triode is intended for use as a voltage amplifier or sync separator, and the pentode is intended for video amplifier service.

## GENERAL

### ELECTRICAL

Cathode—Coated Unipotential

Heater Characteristics and Ratings

| | | |
|---|---|---|
| Heater Voltage, AC or DC* | 6.3 ± 0.6 | Volts |
| Heater Current† | 1.125 | Amperes |

Direct Interelectrode Capacitances‡

Pentode Section

| | | |
|---|---|---|
| Grid-Number 1 to Plate: (Pg1 to Pp), Max. | 0.1 | pf |
| Input: Pg1 to (h+k+Pg2+Pg3+i.s.) | 12 | pf |
| Output: Pp to (h+k+Pg2+Pg3+i.s.) | 5.0 | pf |

Triode Section

| | | |
|---|---|---|
| Grid to Plate: (Tg to Tp) | 5.0 | pf |
| Input: Tg to (h+Tk) | 3.8 | pf |
| Output: Tp to (h+Tk) | 0.4 | pf |
| Pentode Grid-Number 1 to Triode Plate: (Pg1 to Tp), Max. | 0.005 | pf |
| Triode Grid to Pentode Plate: (Tg to Pp), Max. | 0.04 | pf |
| Pentode Plate to Triode Plate: (Pp to Tp), Max. | 0.2 | pf |

### MECHANICAL

Operating Position—Any

Envelope—T-9, Glass

Base—E9-82, Small Button 9-Pin

Outline Drawing—EIA 9-77

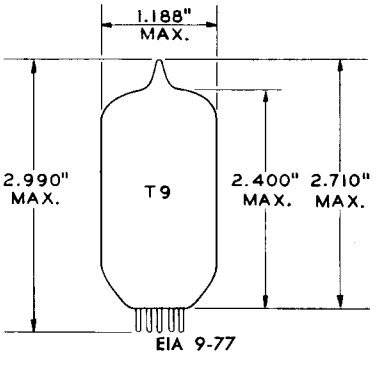
| | | |
|---|---|---|
| Maximum Diameter | 1.188 | Inches |
| Maximum Over-all Length | 2.990 | Inches |
| Maximum Seated Height | 2.710 | Inches |

## MAXIMUM RATINGS

### DESIGN-MAXIMUM VALUES

| | Pentode Section | Triode Section | |
|---|---|---|---|
| Plate Voltage | 330 | 300 | Volts |
| Screen Supply Voltage | 330 | ... | Volts |
| Screen Voltage—See Screen Rating Chart | | | |
| Positive DC Grid-Number 1 Voltage | 0 | 0 | Volts |
| Plate Dissipation | 8.0 | 1.0 | Watts |
| Screen Dissipation | 2.0 | ... | Watts |
| Heater—Cathode Voltage | | | |
| Heater Positive with Respect to Cathode | | | |
| DC Component | 100 | 100 | Volts |
| Total DC and Peak | 200 | 200 | Volts |
| Heater Negative with Respect to Cathode | | | |
| Total DC and Peak | 200 | 200 | Volts |
| Grid-Number 1 Circuit Resistance | | | |
| With Fixed Bias | 0.25 | 0.5 | Megohms |
| With Cathode Bias | 1.0 | 1.0 | Megohms |

### PHYSICAL DIMENSIONS

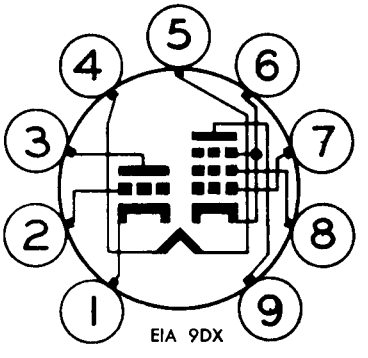



EIA 9-77

### TERMINAL CONNECTIONS

Pin 1—Triode Cathode
Pin 2—Triode Grid
Pin 3—Triode Plate
Pin 4—Heater
Pin 5—Heater
Pin 6—Pentode Cathode, Grid Number 3, and Internal Shield
Pin 7—Pentode Grid Number 1
Pin 8—Pentode Grid Number 2 (Screen)
Pin 9—Pentode Plate

### BASING DIAGRAM




EIA 9DX

## MAXIMUM RATINGS (CONT'D)

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey 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 allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey 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 all other electron devices in the equipment.

## CHARACTERISTICS AND TYPICAL OPERATION

### CLASS $A_1$ AMPLIFIER

| | Pentode Section | | Triode Section | |
|---|---|---|---|---|
| Plate Voltage | 60 | 250 | 200 | Volts |
| Screen Voltage | 170 | 170 | .... | Volts |
| Grid-Number 1 Voltage | 0 | .... | −2.0 | Volts |
| Cathode-Bias Resistor | | 100 | .... | Ohms |
| Amplification Factor | | .... | 70 | |
| Plate Resistance, approximate | | 140000 | .... | Ohms |
| Transconductance | | 12600 | 4000 | Micromhos |
| Plate Current | 90 | 29 | 3.5 | Milliamperes |
| Screen Current | 22.5 | 6.0 | .... | Milliamperes |
| Grid-Number 1 Voltage, approximate Ib = 10 Microamperes | | −11.5 | −5 | Volts |

## NOTES

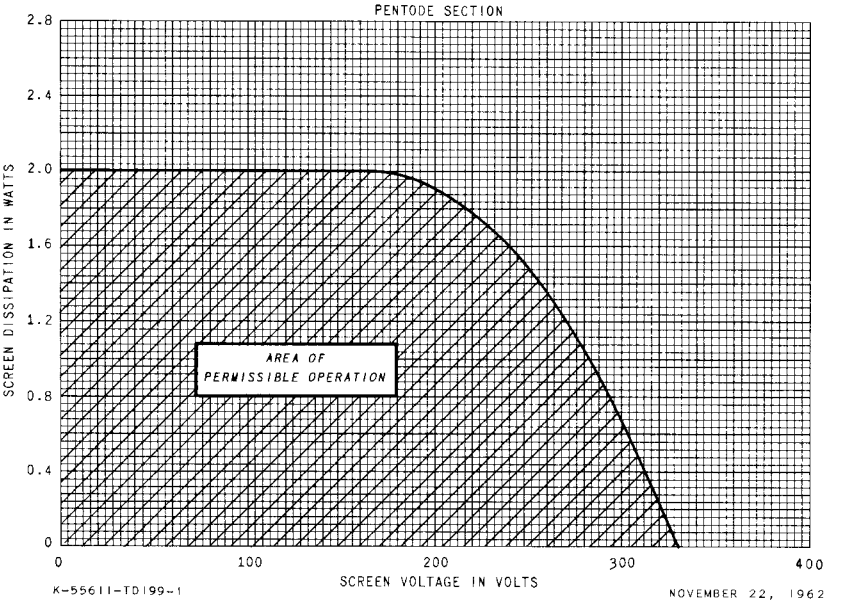
* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

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

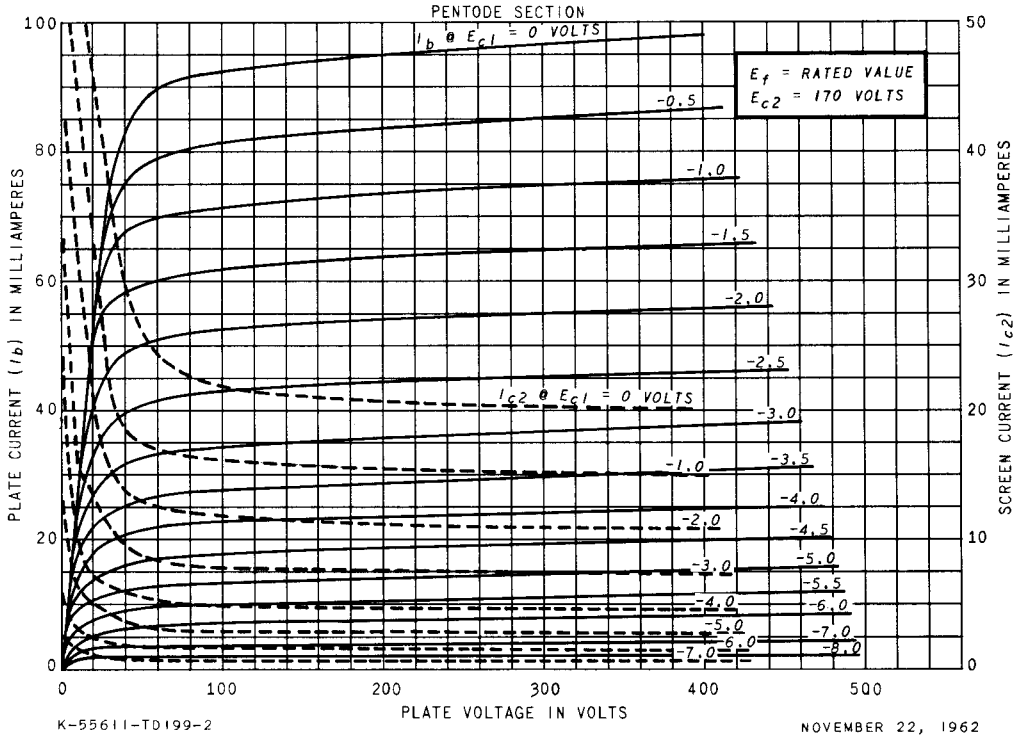
‡ Without external shield.



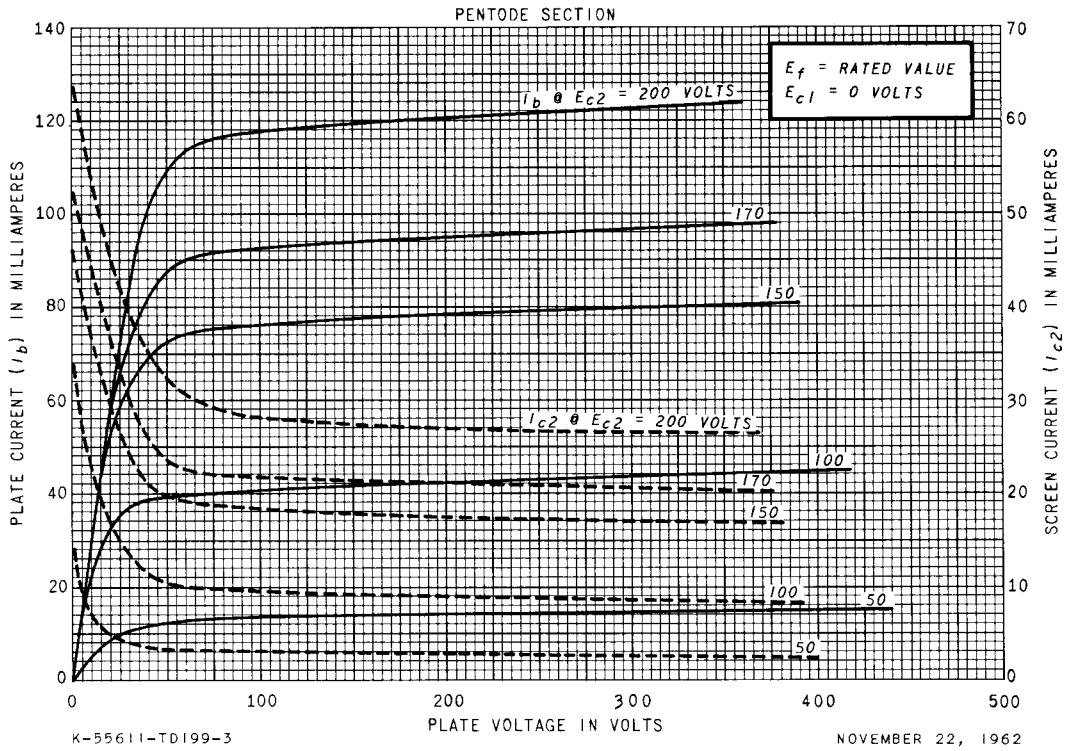
### SCREEN RATING CHART



## AVERAGE PLATE CHARACTERISTICS

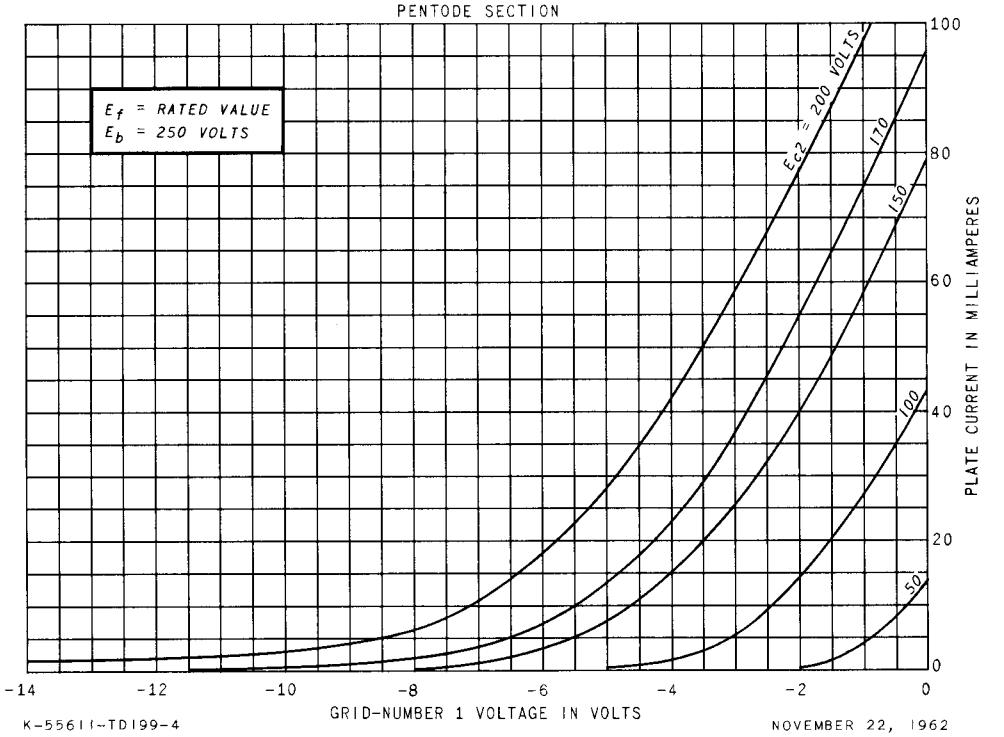



## AVERAGE PLATE CHARACTERISTICS



## AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION

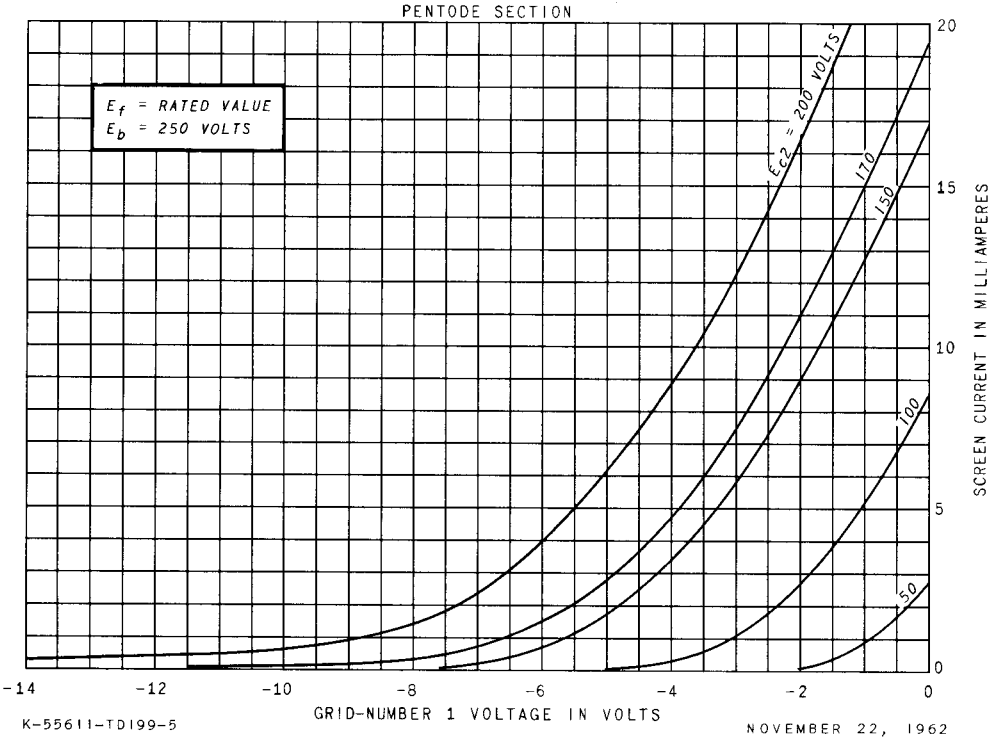



K-55611-TD199-4

NOVEMBER 22, 1962

## AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION

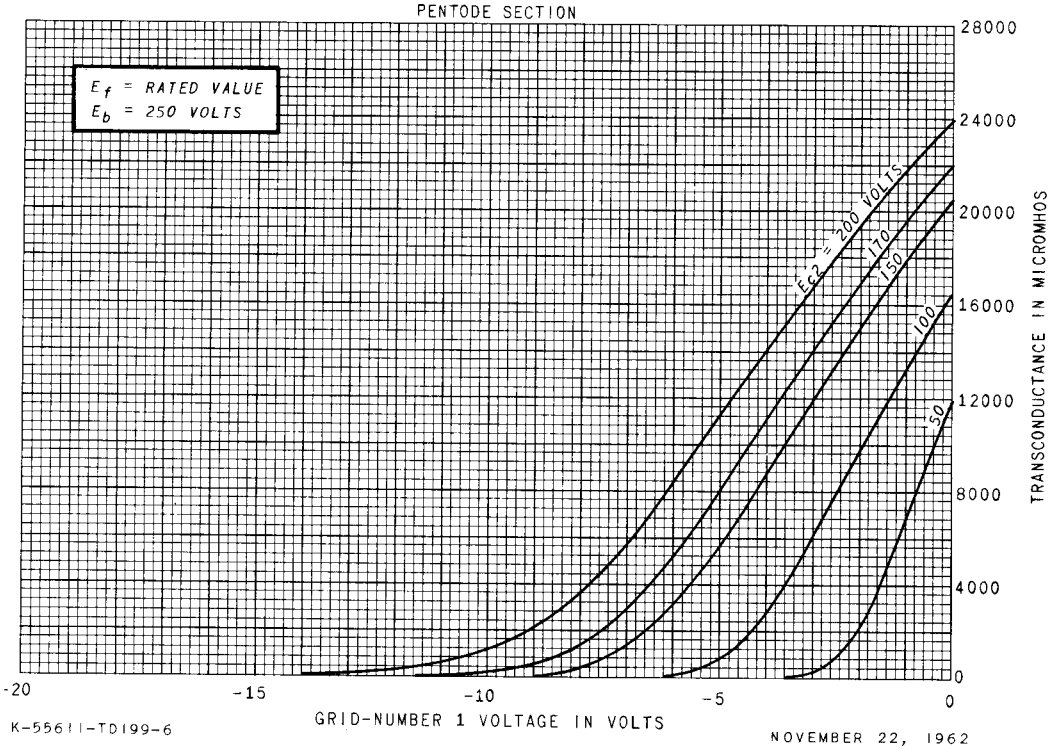



K-55611-TD199-5

NOVEMBER 22, 1962

## AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION

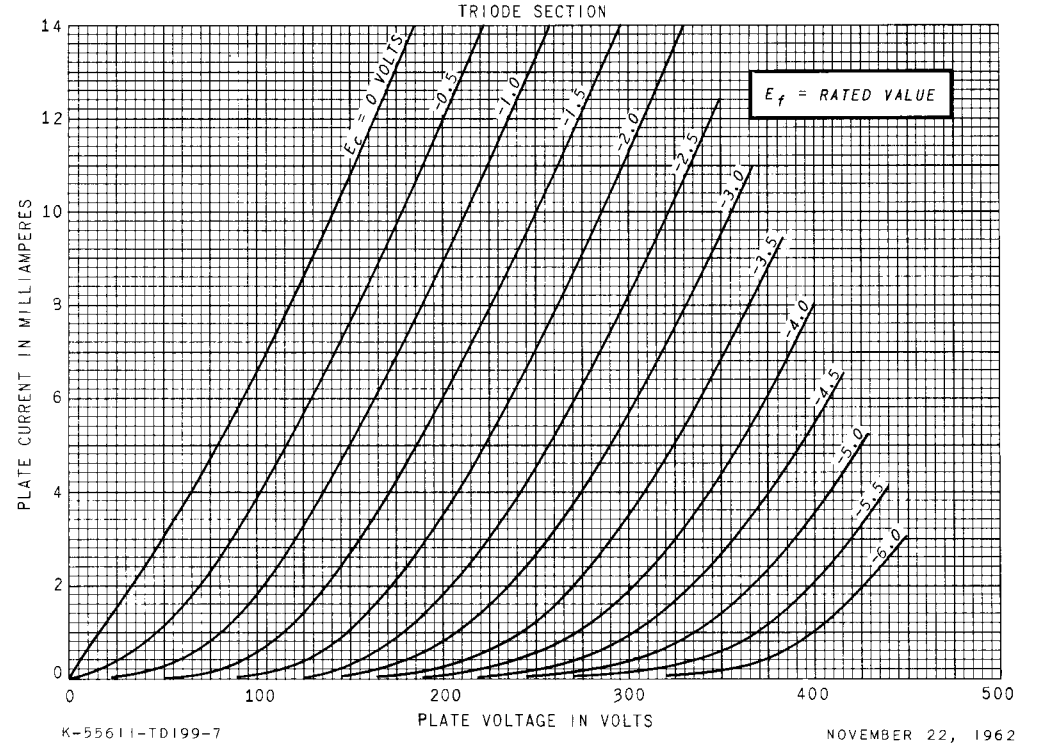



K-5561I-TD199-6

NOVEMBER 22, 1962

## AVERAGE PLATE CHARACTERISTICS

TRIODE SECTION




K-5561I-TD199-7

NOVEMBER 22, 1962

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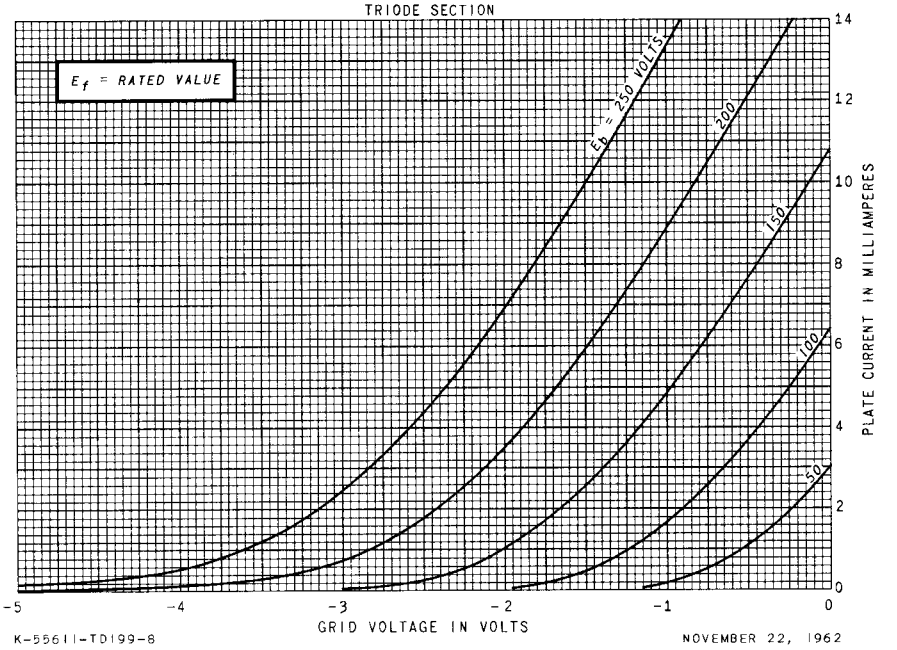
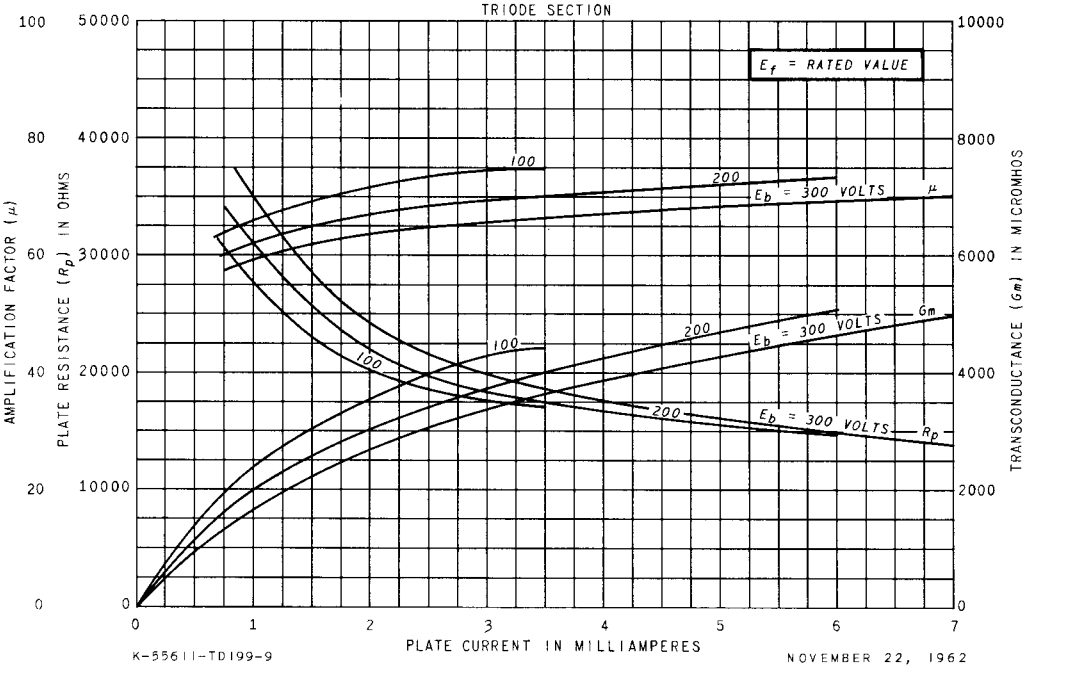



## AVERAGE CHARACTERISTICS




**RECEIVING TUBE DEPARTMENT**

**GENERAL ELECTRIC**

**Owensboro, Kentucky**