



## COMPACTRON TWIN-TRIODE PENTODE

## DESCRIPTION AND RATING

The 6BH11 is in a compactron containing two medium-mu triodes and a sharp-cutoff pentode. The pentode is intended primarily for service as a horizontal-deflection oscillator and the triodes for general-purpose applications.

## GENERAL

## ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC\* . . . 6.3±0.6 Volts

Heater Current† . . . . . 0.8 Amperes

Direct Interelectrode Capacitances‡

## Triode (Section 1)

Grid to Plate: (T1g to T1p) . . . 1.7 pf

Input: T1g to (T1k + Pk +

Pg3 + i.s.) . . . . . 3.2 pf

Output: T1p to (T1k + Pk +

Pg3 + i.s.) . . . . . 1.4 pf

## Triode (Section 2)

Grid to Plate: (T2g to T2p) . . . 1.8 pf

Input: T2g to (T2k + Pk +

Pg3 + i.s.) . . . . . 3.0 pf

Output: T2p to (T2k + Pk +

Pg3 + i.s.) . . . . . 0.6 pf

## Pentode Section

Grid-Number 1 to Plate:

(Pg2 to Pp) . . . . . 0.11 pf

Input: Pp1 to (Pk + Pg2 +

Pg3 + i.s.) . . . . . 5.5 pf

Output: Pp to (Pk + Pg2 +

Pg3 + i.s.) . . . . . 2.2 pf

## MECHANICAL

Operating Position - Any

Envelope - T-9, Glass

Base - E12-70, Button 12-Pin

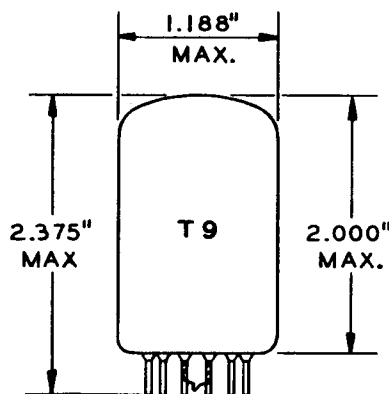
Outline Drawing - EIA 9-58

Maximum Diameter . . . . . 1.188 Inches

Maximum Over-all Length . . . . 2.375 Inches

Maximum Seated Height. . . . . 2.000 Inches

## PHYSICAL DIMENSIONS

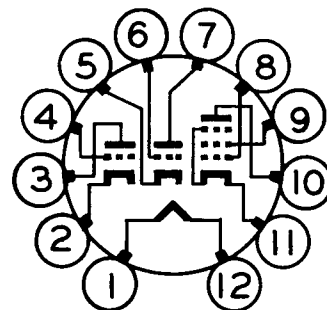


EIA 9-58

## TERMINAL CONNECTIONS

- Pin 1 - Heater
- Pin 2 - Triode Cathode (Section 2)
- Pin 3 - Triode Plate (Section 2)
- Pin 4 - Triode Grid (Section 2)
- Pin 5 - Triode Cathode (Section 1)
- Pin 6 - Triode Grid (Section 1)
- Pin 7 - Triode Plate (Section 1)
- Pin 8 - Pentode Grid Number 1
- Pin 9 - Pentode Grid Number 2 (Screen)
- Pin 10 - Pentode Plate
- Pin 11 - Pentode Cathode, Grid Number 3, and Internal Shield
- Pin 12 - Heater

## BASING DIAGRAM



EIA 12FP

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.

## MAXIMUM RATINGS

### DESIGN-MAXIMUM VALUES

|                                              | Pentode<br>Section<br>Horizontal<br>Oscillator<br>Service† | Each<br>Triode<br>Section |              |
|----------------------------------------------|------------------------------------------------------------|---------------------------|--------------|
| DC Plate Voltage . . . . .                   | 350                                                        | 330                       | Volts        |
| Screen Supply Voltage . . . . .              | 330                                                        | ---                       | Volts        |
| Screen Voltage - See Screen Rating Chart     |                                                            |                           |              |
| Positive DC Grid-Number 1 Voltage . . . . .  | 0                                                          | 0                         | Volts        |
| Peak Negative Grid-Number 1 Voltage. . . . . | 175                                                        | ---                       | Volts        |
| Plate Dissipation. . . . .                   | 2.5                                                        | 2.5                       | Watts        |
| Screen Dissipation . . . . .                 | 0.55                                                       | ---                       | Watts        |
| DC Cathode Current . . . . .                 | 20                                                         | ---                       | Milliamperes |
| Peak Cathode Current. . . . .                | 300                                                        | ---                       | Milliamperes |
| 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 . . . . .                    | 2.2                                                        | 2.2                       | Megohms      |
| With Cathode Bias. . . . .                   | 2.2                                                        | 2.2                       | Megohms      |

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

### AVERAGE CHARACTERISTICS

|                                        | Pentode<br>Section | Each<br>Triode<br>Section |              |
|----------------------------------------|--------------------|---------------------------|--------------|
| Plate Voltage . . . . .                | 125                | 125                       | Volts        |
| Screen Voltage. . . . .                | 125                | ---                       | Volts        |
| Grid-Number 1 Voltage . . . . .        | -1.0               | -1.0                      | Volts        |
| Amplification Factor. . . . .          | ---                | 46                        |              |
| Plate Resistance, approximate. . . . . | 20000              | 5400                      | Ohms         |
| Transconductance . . . . .             | 7500               | 8500                      | Micromhos    |
| Plate Current . . . . .                | 12                 | 13.5                      | Milliamperes |
| Screen Current. . . . .                | 4.0                | ---                       | Milliamperes |
| Grid-Number 1 Voltage, approximate     |                    |                           |              |
| Ib = 10 Microamperes. . . . .          | -8                 | -8                        | 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.

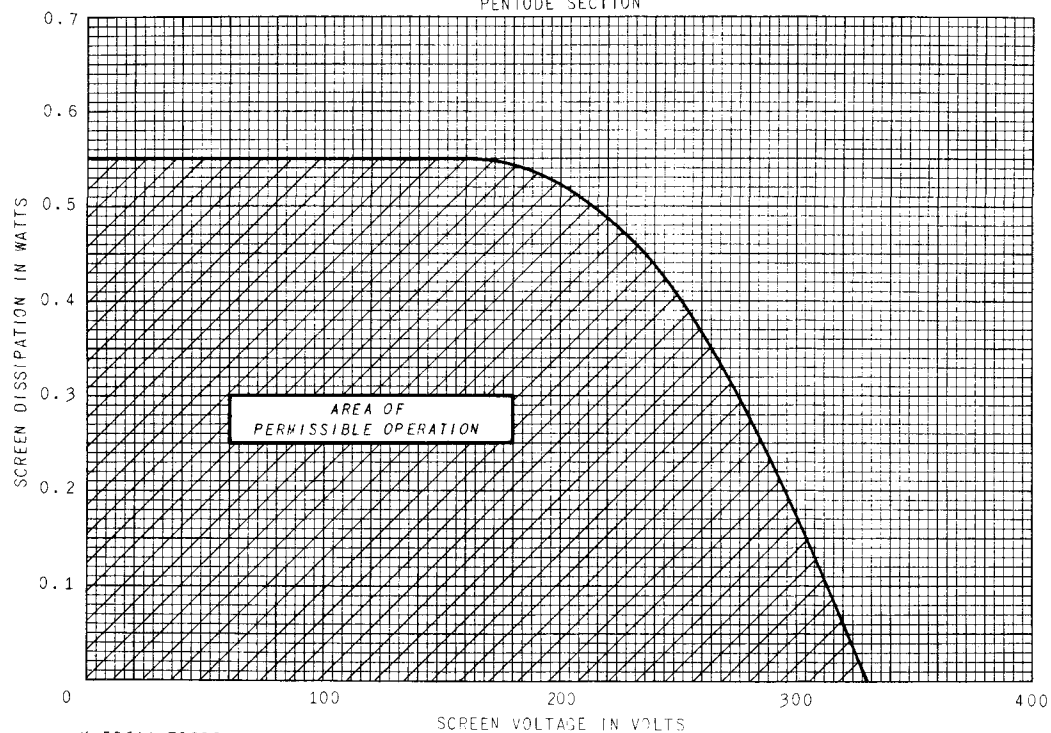
† Heater current of a bogey tube at Ef = 6.3 volts.

§ Without external shield.

¶ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

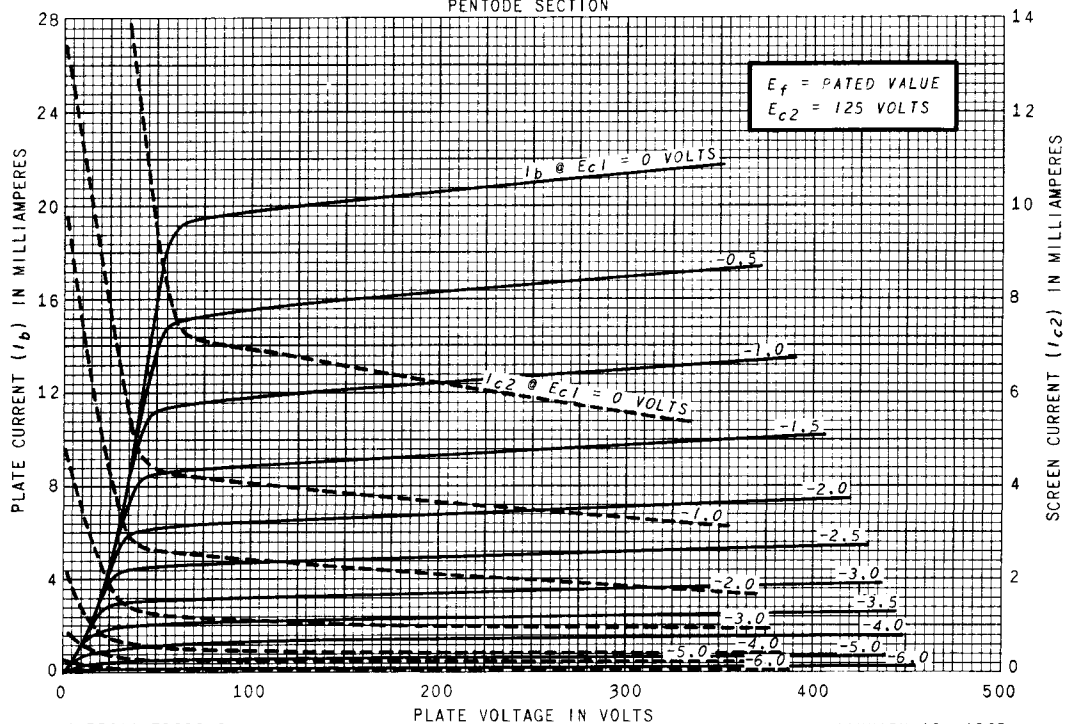
## SCREEN RATING CHART

PENTODE SECTION

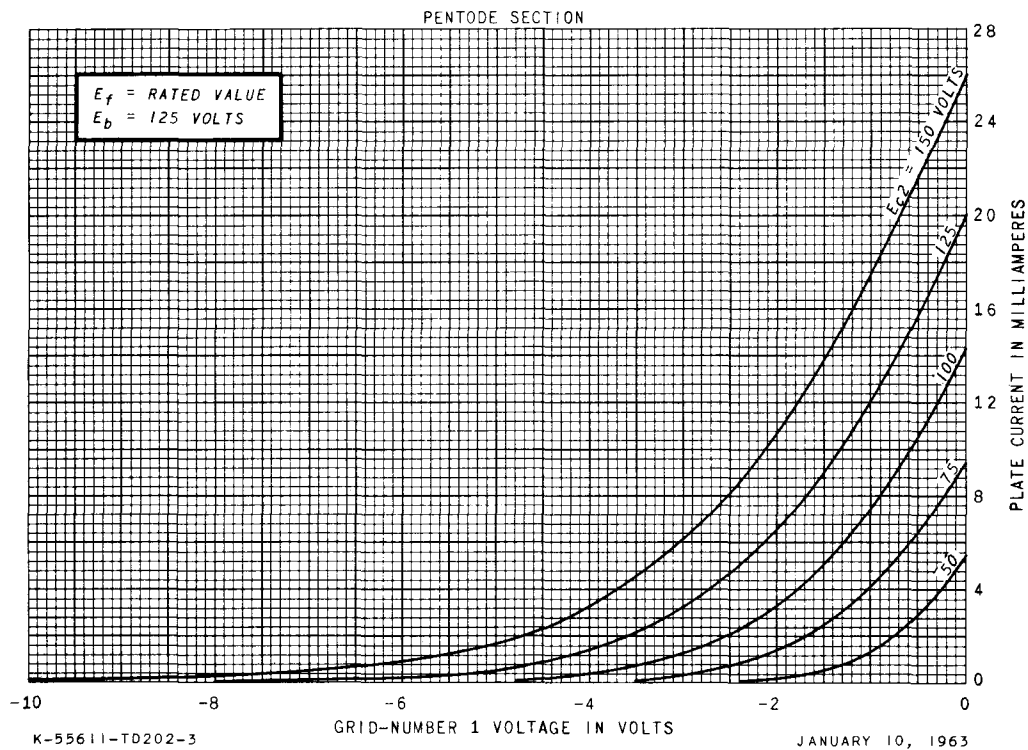


## AVERAGE PLATE CHARACTERISTICS

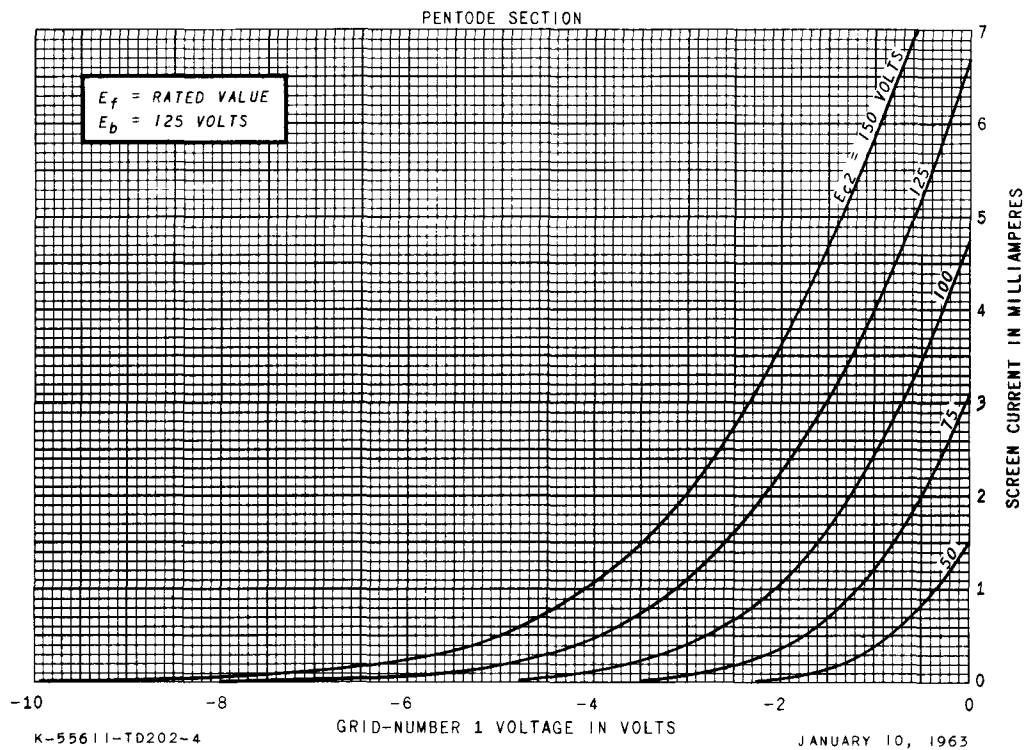
PENTODE SECTION



## AVERAGE TRANSFER CHARACTERISTICS

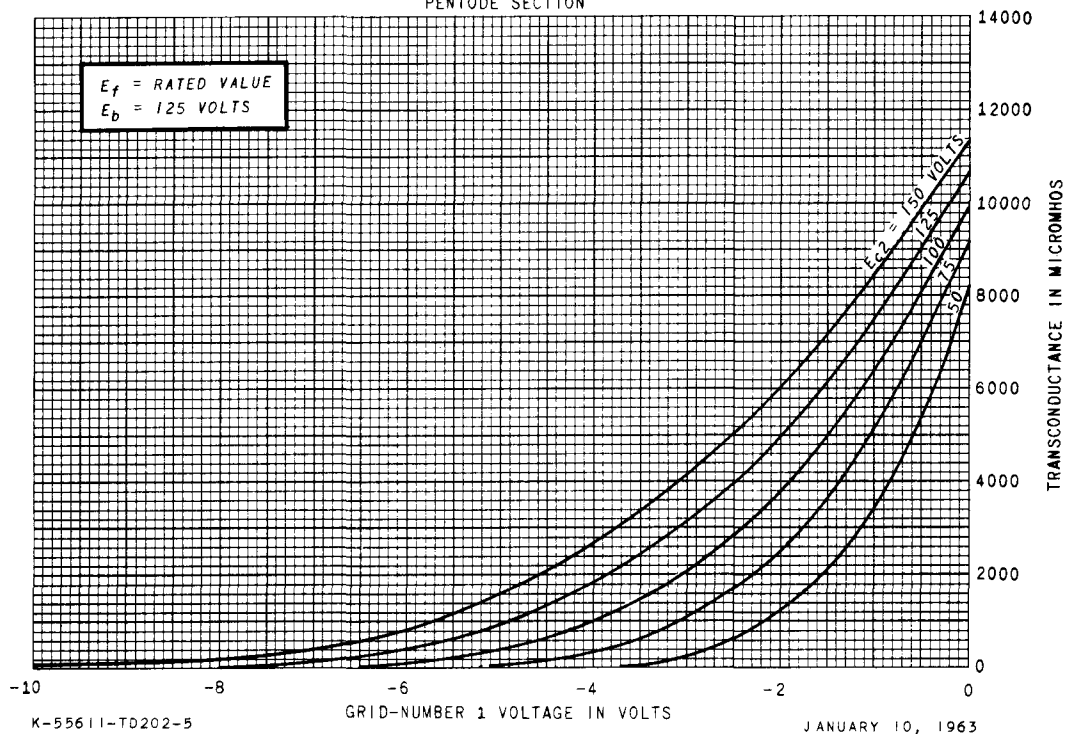


## AVERAGE TRANSFER CHARACTERISTICS



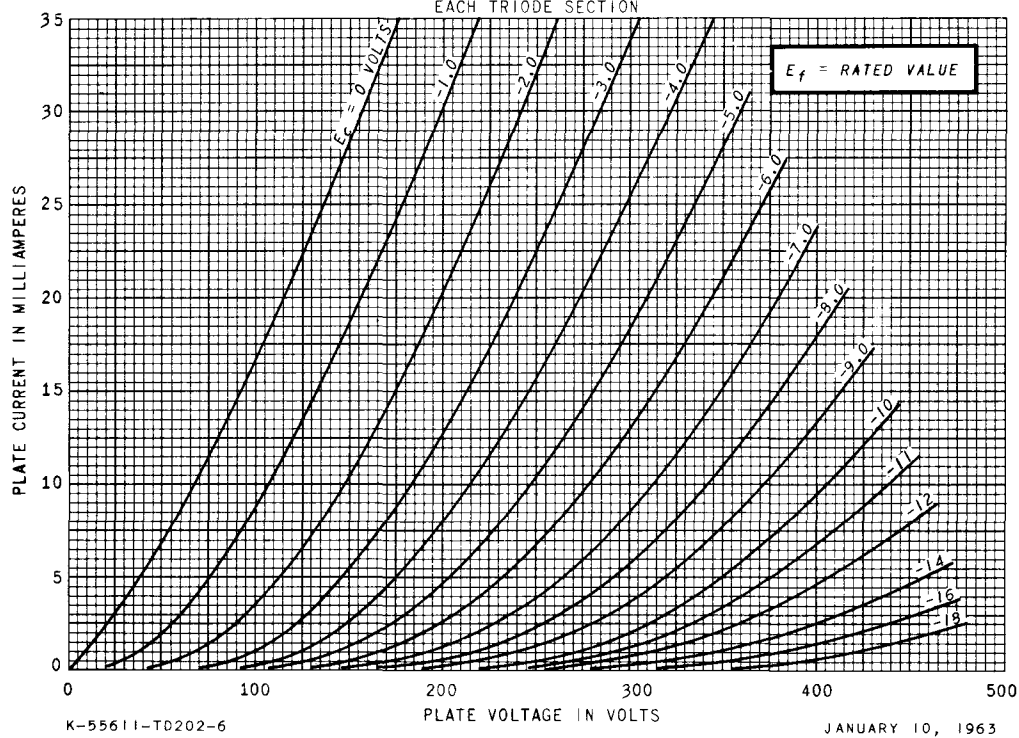
## AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



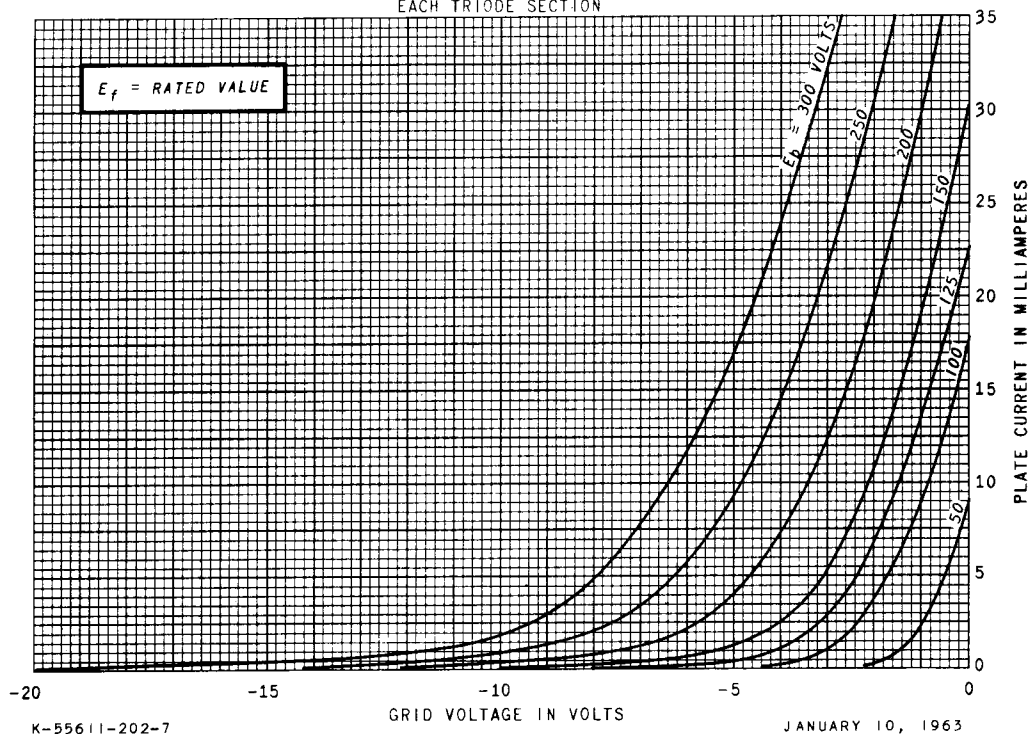
## AVERAGE PLATE CHARACTERISTICS

EACH TRIODE SECTION



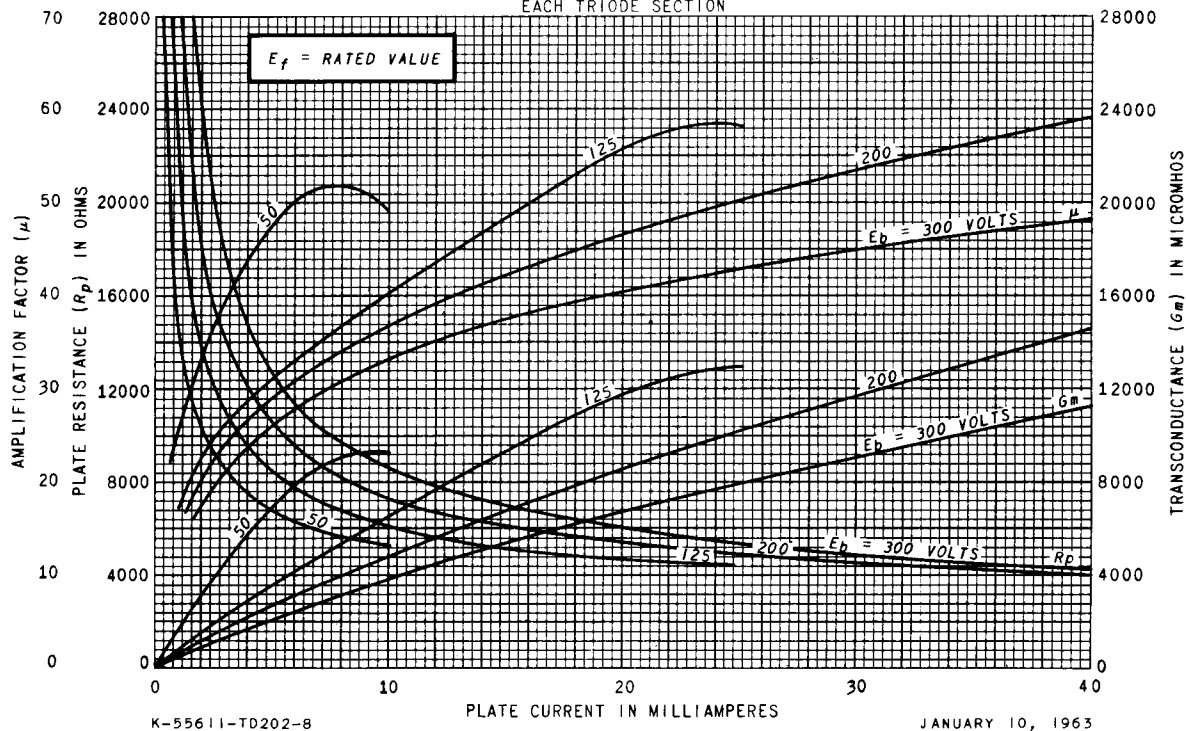
# AVERAGE TRANSFER CHARACTERISTICS

EACH TRIODE SECTION



# AVERAGE CHARACTERISTICS

EACH TRIODE SECTION



TUBE DEPARTMENT

GENERAL  ELECTRIC

Owensboro, Kentucky