

**6KT8**

# Triode-Pentode

The 6KT8 is a general-purpose triode-pentode contained in a miniature envelope.

## GENERAL

### ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

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

Heater Current† . . . . . 0.6 Amperes

Direct Interelectrode Capacitances

| Pentode Section         | With Shield§ | Without Shield |
|-------------------------|--------------|----------------|
| Grid-Number 1 to Plate: |              |                |
| (Pg1 to Pp), maximum .  | 0.03         | 0.046 pf       |

|                                               |     |        |
|-----------------------------------------------|-----|--------|
| Input: Pg1 to (h + Pk + Pg2 + Pg3 + i.s.) . . | 7.5 | 7.5 pf |
|-----------------------------------------------|-----|--------|

|                                               |     |        |
|-----------------------------------------------|-----|--------|
| Output: Pp to (h + Pk + Pg2 + Pg3 + i.s.) . . | 2.8 | 2.2 pf |
|-----------------------------------------------|-----|--------|

#### Triode Section

|                           |     |        |
|---------------------------|-----|--------|
| Grid to Plate: (Tg to Tp) | 3.0 | 3.0 pf |
|---------------------------|-----|--------|

|                                             |     |        |
|---------------------------------------------|-----|--------|
| Input: Tg to (h + Tk + Pk + Pg3 + i.s.) . . | 3.2 | 3.2 pf |
|---------------------------------------------|-----|--------|

|                                              |     |        |
|----------------------------------------------|-----|--------|
| Output: Tp to (h + Tk + Pk + Pg3 + i.s.) . . | 2.4 | 1.6 pf |
|----------------------------------------------|-----|--------|

### Coupling

|                                                                     | With Shield§ | Without Shield |
|---------------------------------------------------------------------|--------------|----------------|
| Triode Grid to Pentode Plate: (Tg to Pp), maximum . . . . .         | 0.003        | 0.018 pf       |
| Pentode Grid-Number 1 to Triode Plate: (Pg1 to Tp), maximum . . . . | 0.002        | 0.006 pf       |

### MECHANICAL

Operating Position - Any

Envelope - T-6 1/2, Glass

Base - E9-1, Small Button 9-Pin

Outline Drawing - EIA 6-2

|                            |       |        |
|----------------------------|-------|--------|
| Maximum Diameter . . . . . | 0.875 | Inches |
|----------------------------|-------|--------|

|                            |       |        |
|----------------------------|-------|--------|
| Minimum Diameter . . . . . | 0.750 | Inches |
|----------------------------|-------|--------|

|                                 |       |        |
|---------------------------------|-------|--------|
| Maximum Over-all Length . . . . | 2.188 | Inches |
|---------------------------------|-------|--------|

|                                 |       |        |
|---------------------------------|-------|--------|
| Maximum Seated Height . . . . . | 1.938 | Inches |
|---------------------------------|-------|--------|

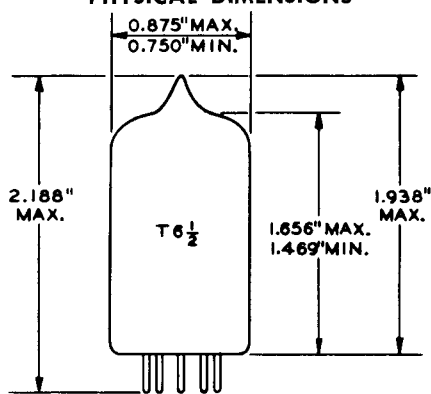
## MAXIMUM RATINGS

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.

### PHYSICAL DIMENSIONS

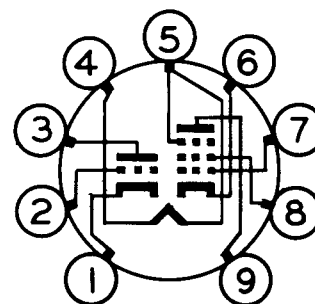


EIA 6-2

### TERMINAL CONNECTIONS

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

### BASING DIAGRAM



EIA 9QP

**MAXIMUM RATINGS (Cont'd)****DESIGN-MAXIMUM VALUES**

|                                            | <b>Pentode<br/>Section</b> | <b>Triode<br/>Section</b> |         |
|--------------------------------------------|----------------------------|---------------------------|---------|
| Plate Voltage . . . . .                    | 330                        | 330                       | Volts   |
| Screen Supply Voltage. . . . .             | 330                        | ---                       | Volts   |
| Screen Voltage - See Screen Rating Chart   |                            |                           |         |
| Positive DC Grid-Number 1 Voltage. . . . . | 0                          | 0                         | Volts   |
| Plate Dissipation . . . . .                | 2.5                        | 1.0                       | Watts   |
| Screen Dissipation. . . . .                | 0.55                       | ---                       | 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 |

**CHARACTERISTICS AND TYPICAL OPERATION****AVERAGE CHARACTERISTICS**

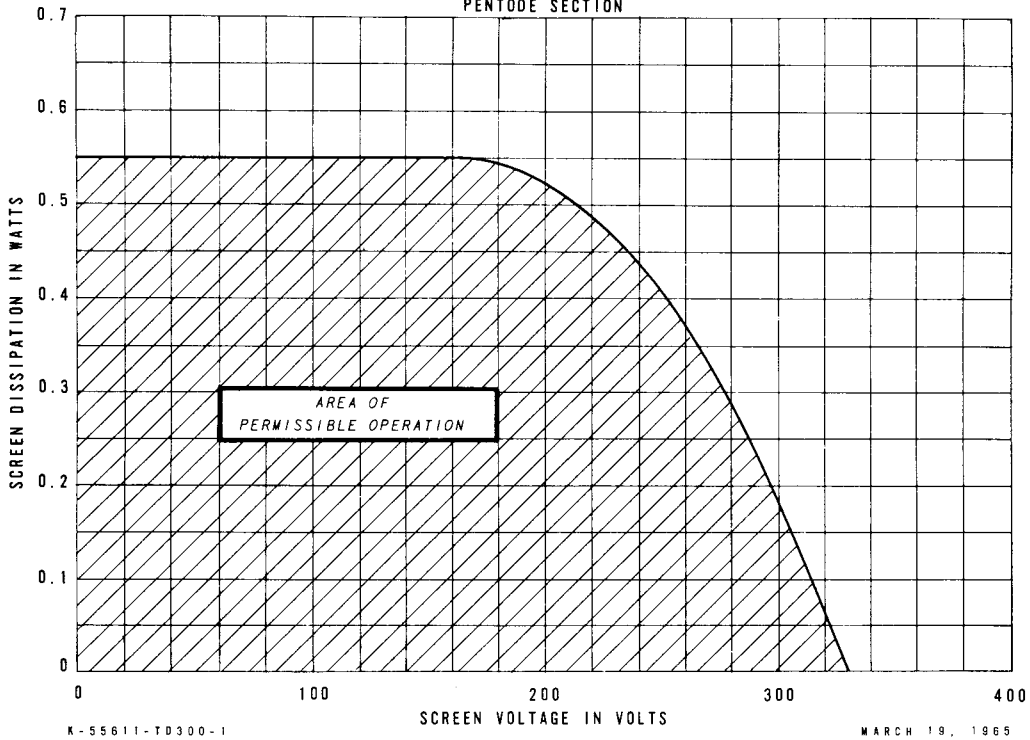
|                                         | <b>Pentode<br/>Section</b> | <b>Triode<br/>Section</b> |              |
|-----------------------------------------|----------------------------|---------------------------|--------------|
| Plate Voltage . . . . .                 | 125                        | 250                       | Volts        |
| Screen Voltage . . . . .                | 125                        | ---                       | Volts        |
| Grid-Number 1 Voltage. . . . .          | -1.0                       | -2.0                      | Volts        |
| Amplification Factor . . . . .          | ---                        | 100                       |              |
| Plate Resistance, approximate . . . . . | 150000                     | 31500                     | Ohms         |
| Transconductance . . . . .              | 10000                      | 3200                      | Micromhos    |
| Plate Current . . . . .                 | 12                         | 1.8                       | Milliamperes |
| Screen Current . . . . .                | 4.5                        | ---                       | Milliamperes |
| Grid-Number 1 Voltage, approximate      |                            |                           |              |
| Ib = 20 Microamperes . . . . .          | -7                         | -3.5                      | 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.
- § With external shield (EIA 315) connected to pins 4 and 5.

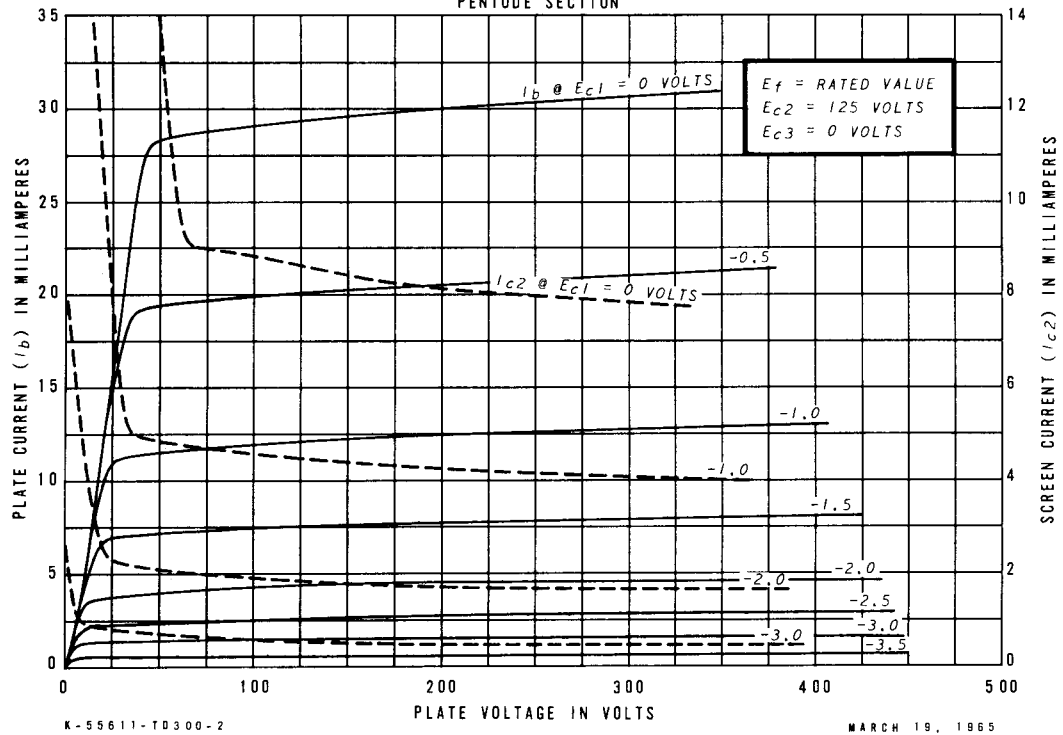
# SCREEN RATING CHART

PENTODE SECTION

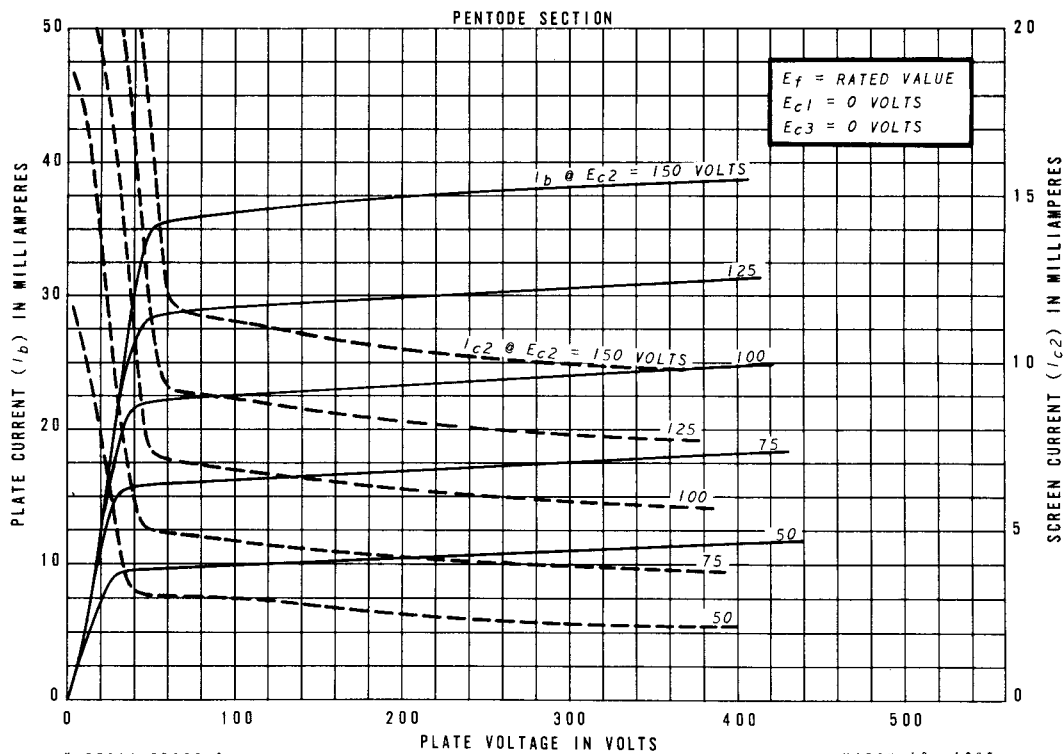


## AVERAGE PLATE CHARACTERISTICS

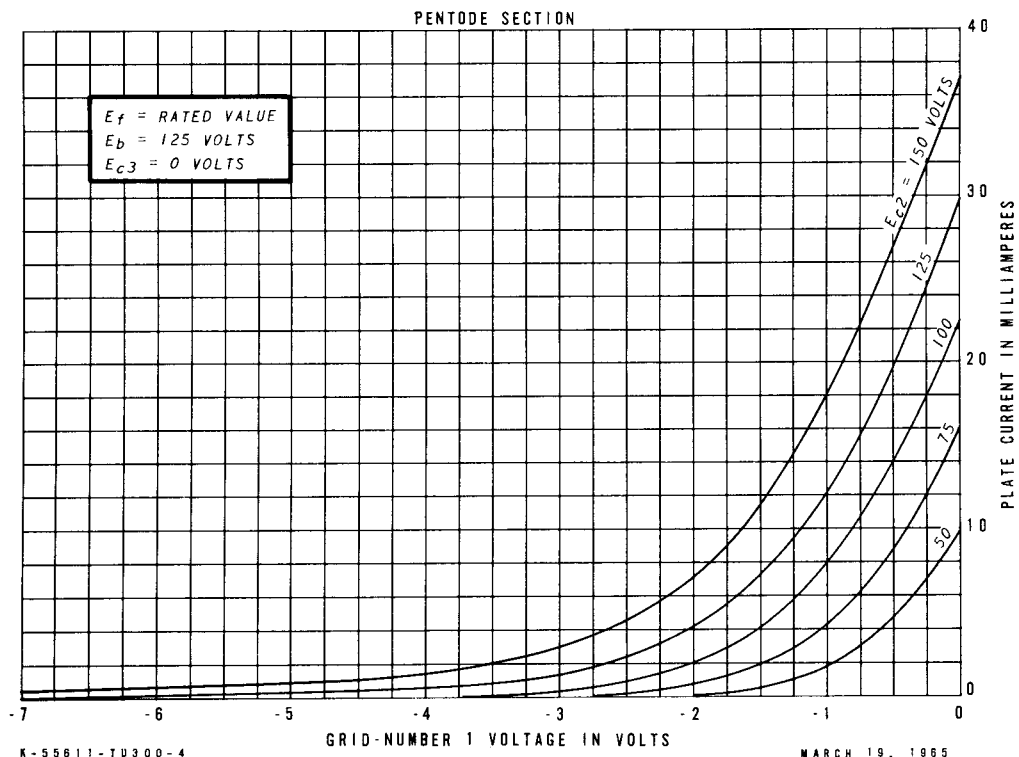
PENTODE SECTION



## AVERAGE PLATE CHARACTERISTICS

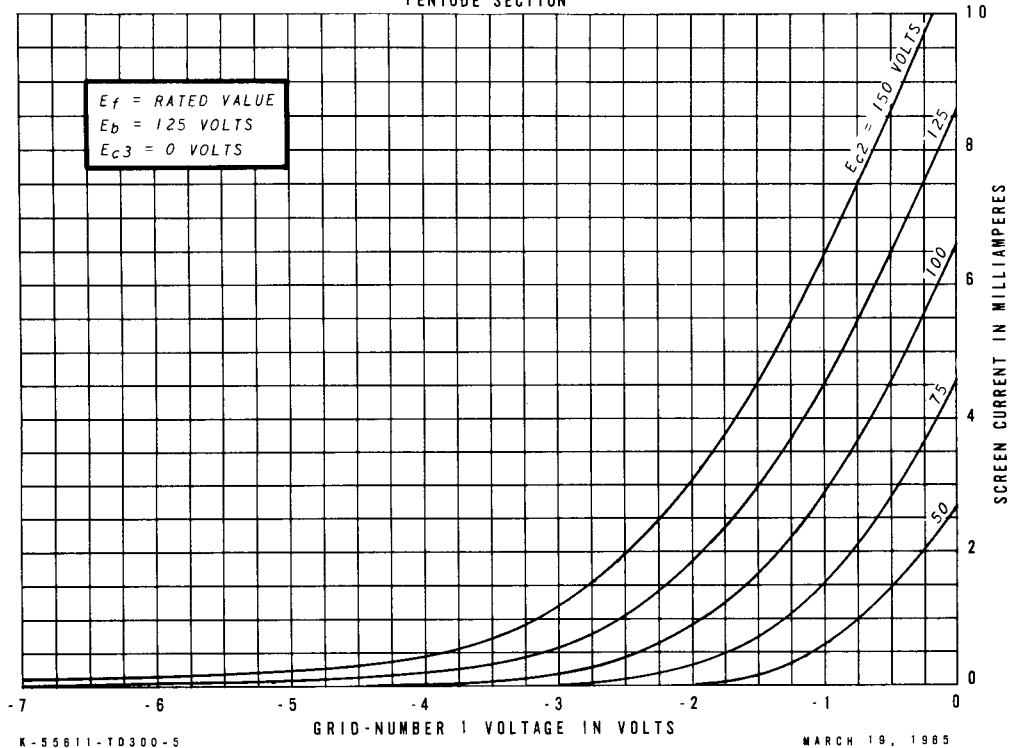


## AVERAGE TRANSFER CHARACTERISTICS



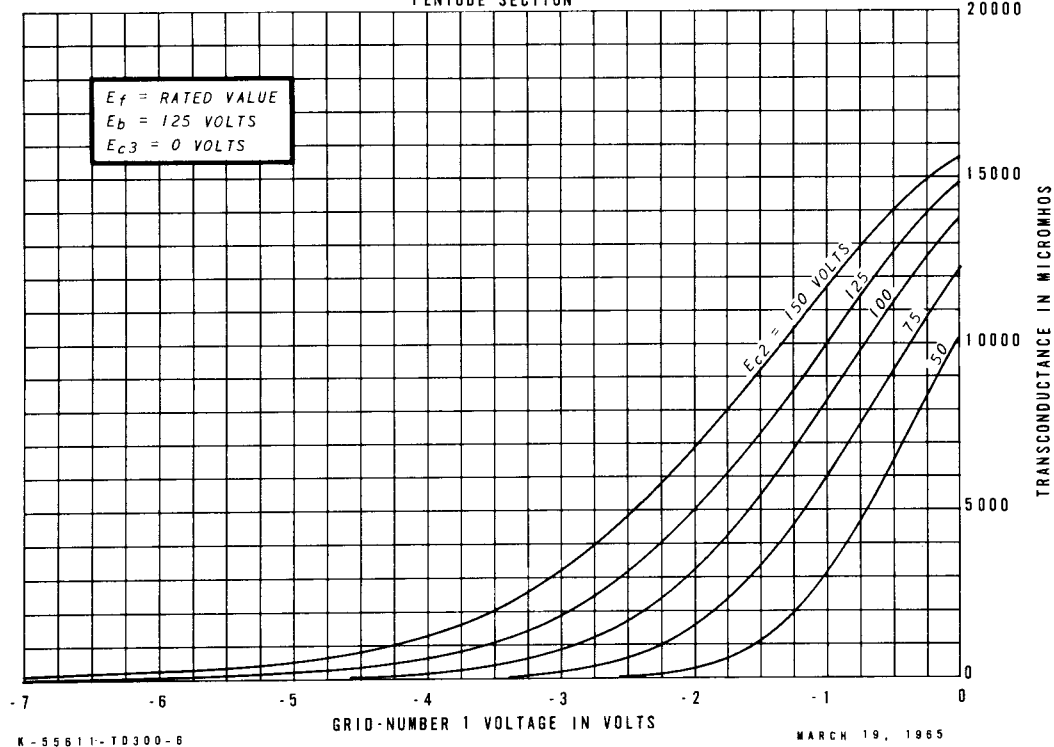
# AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION

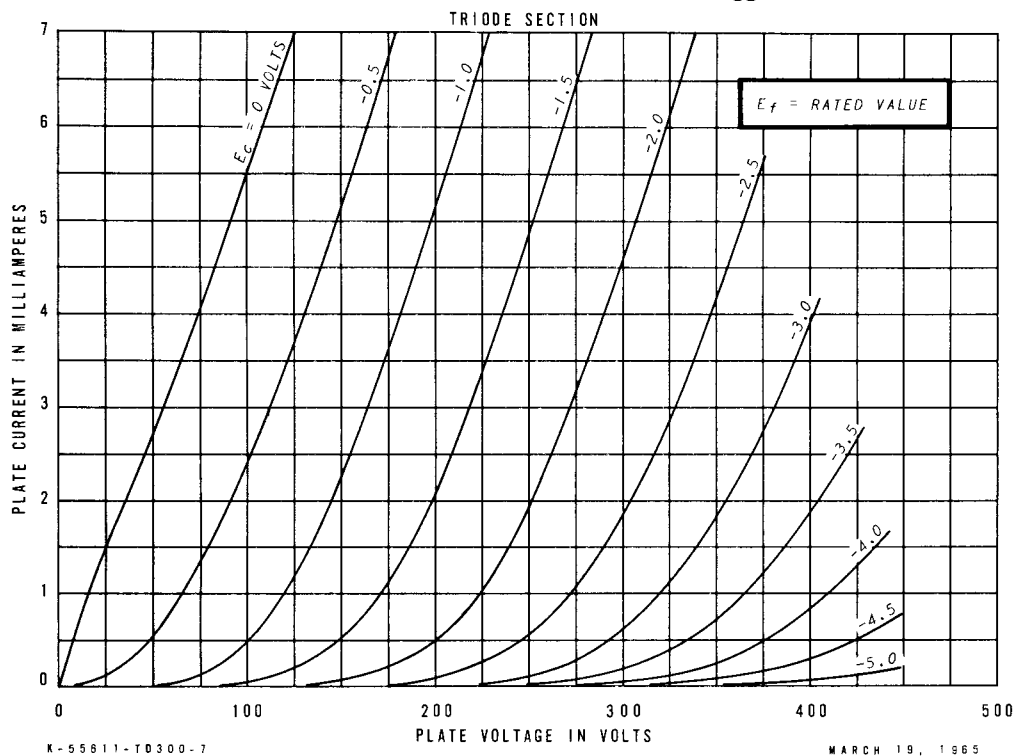


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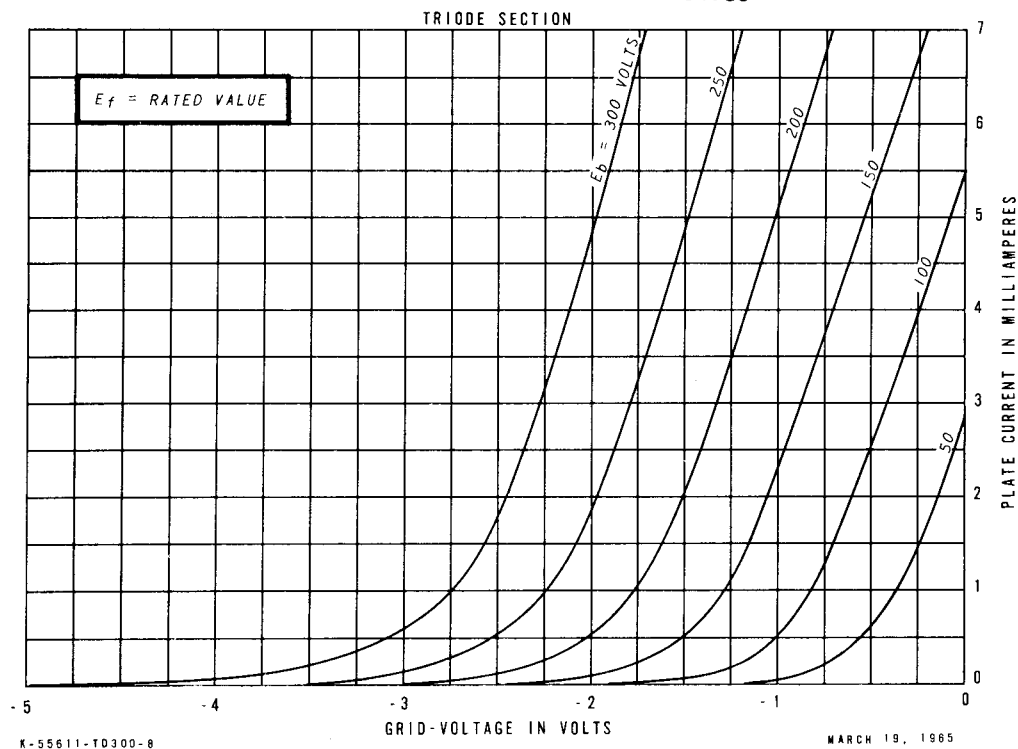
PENTODE SECTION



## AVERAGE PLATE CHARACTERISTICS



## AVERAGE TRANSFER CHARACTERISTICS



# AVERAGE CHARACTERISTICS

