

TRIODE-PENTODE

FOR VHF CONVERTER APPLICATIONS

DESCRIPTION AND RATING

The 6EH8 is a miniature tube which contains a sharp-cutoff pentode and a triode in one envelope. It is intended primarily for use as a combined triode oscillator and pentode mixer in television receivers. The 6EH8 incorporates a controlled heater-warm-up characteristic.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC.....6.3 Volts

Heater Current.....0.45 $\pm$ 6% Amperes

Heater Warm-up Time*.....11 Seconds

Direct Interelectrode Capacitances

	With Shield†	Without Shield	
Pentode Section			
Grid-Number 1 to Plate, maximum.....	0.012	0.02	$\mu\mu\text{f}$
Input.....	4.8	4.8	$\mu\mu\text{f}$
Output.....	3.2	2.4	$\mu\mu\text{f}$

Triode Section

Grid to Plate.....	1.8	1.8	$\mu\mu\text{f}$
Input.....	2.8	2.8	$\mu\mu\text{f}$
Output.....	2.2	1.7	$\mu\mu\text{f}$
Heater to Cathode.....	8.5‡	8.5	$\mu\mu\text{f}$

MECHANICAL

Mounting Position—Any

Envelope—T-6½, Glass

Base—E9-1, Small Button 9-Pin

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

	Pentode Section	Triode Section	
Plate Voltage.....	300	300	Volts
Screen Supply Voltage.....	300	....	Volts
Screen Voltage—See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage.....	0	0	Volts
Plate Dissipation.....	2.8	2.5	Watts
Screen Dissipation.....	0.5	....	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

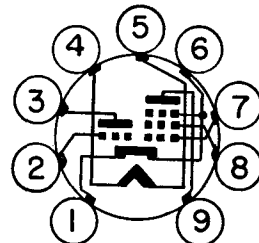
Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in tube characteristics.

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, and environmental conditions.

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.

BASING DIAGRAM

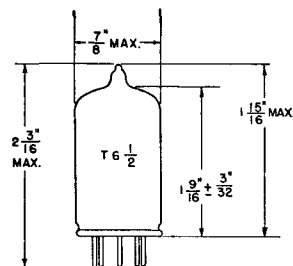


EIA 9JG

TERMINAL CONNECTIONS

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

PHYSICAL DIMENSIONS



EIA 6-2

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER

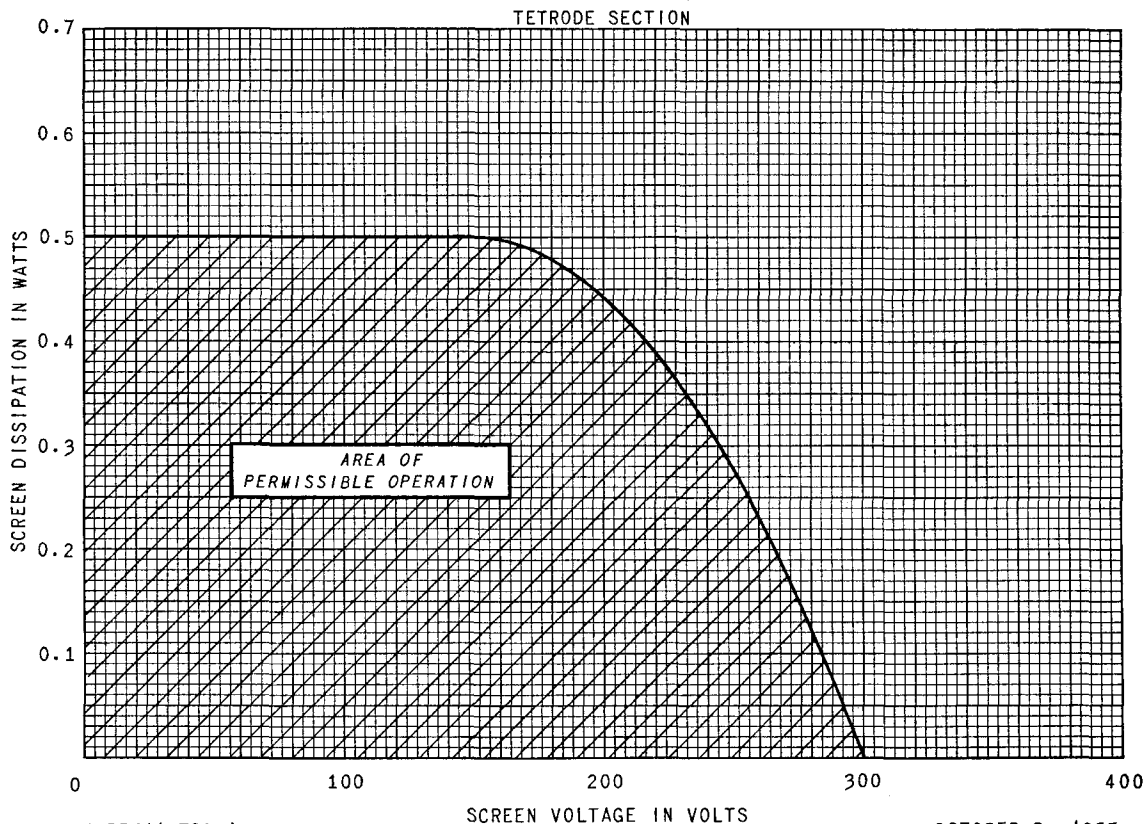
	Pentode Section		Triode Section	
Plate Voltage	100	125	125	Volts
Screen Voltage	70	125	....	Volts
Grid-Number 1 Voltage	0	-1.0	-1.0	Volts
Amplification Factor . . . . .	....	....	40	
Plate Resistance, approximate . . . . .	....	0.17	....	Megohms
Transconductance	6500	6000	7500	Micromhos
Plate Current . . . . .	....	12	13.5	Milliamperes
Screen Current . . . . .	....	4.0	....	Milliamperes
Grid-Number 1 Voltage, approximate I _b = 20 Microamperes . . . . .	....	-10	-9	Volts

* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

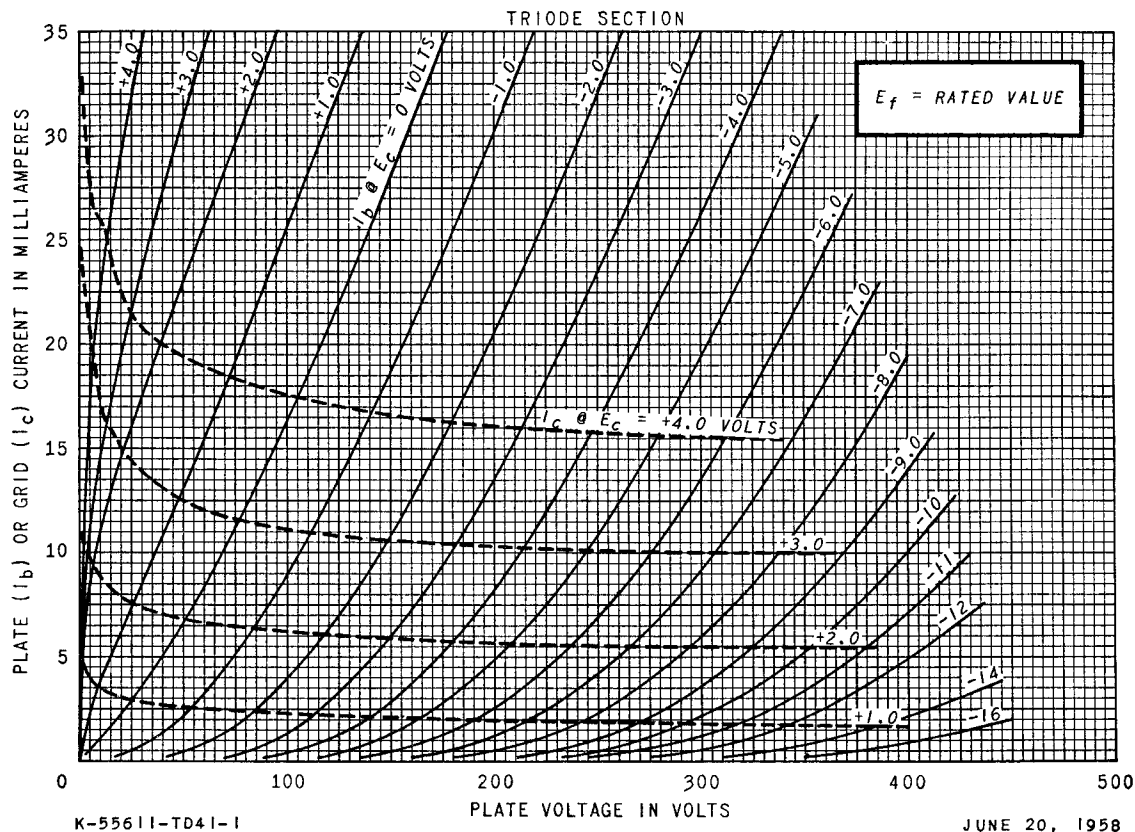
† With external shield (EIA 315) connected to cathode unless otherwise noted.

‡ With external shield (EIA 315) connected to ground.

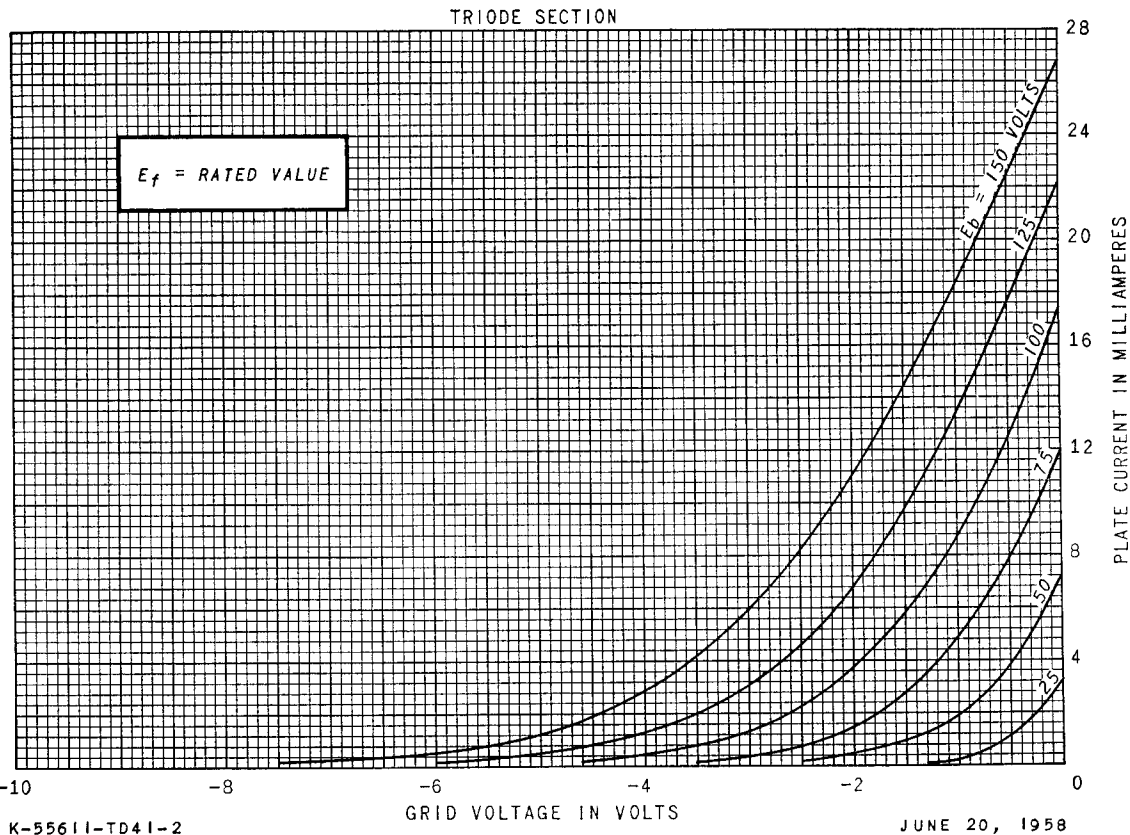
SCREEN RATING CHART



AVERAGE PLATE CHARACTERISTICS

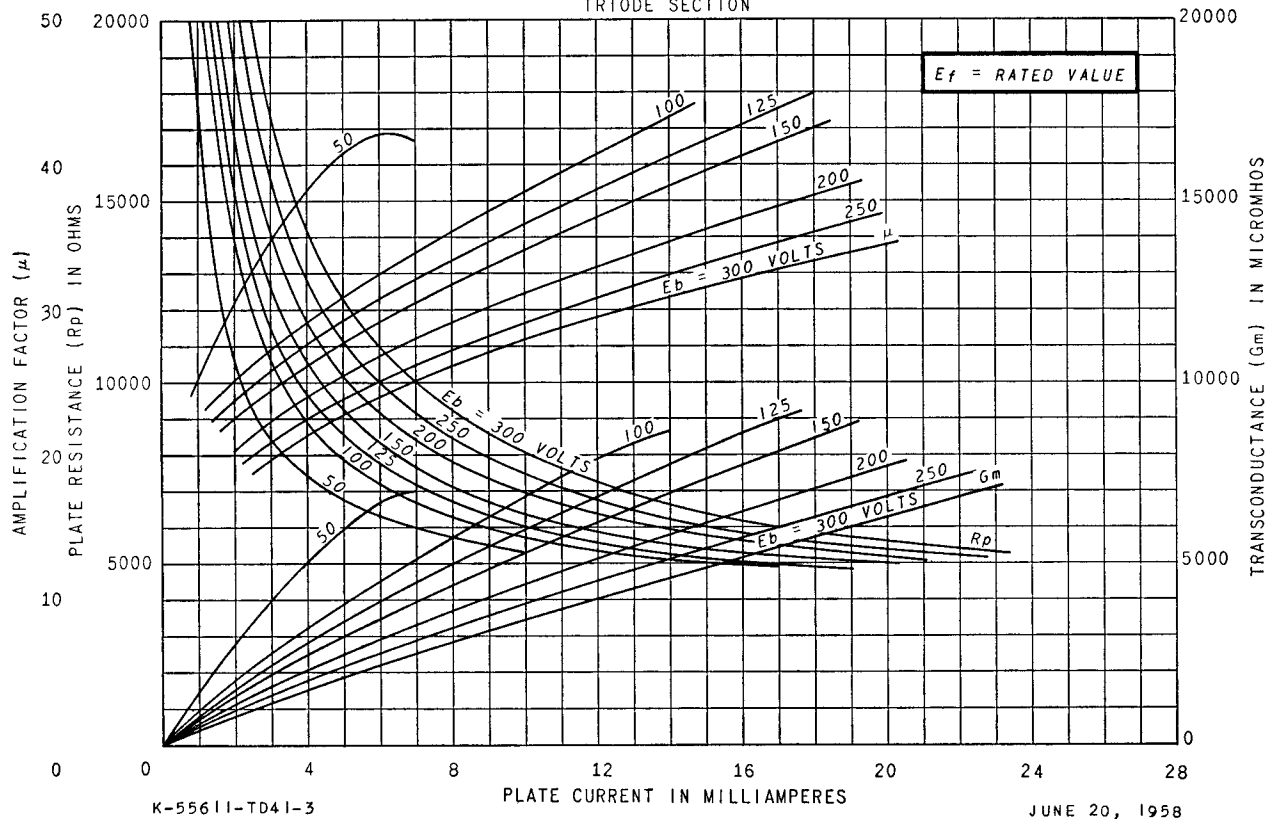


AVERAGE TRANSFER CHARACTERISTICS



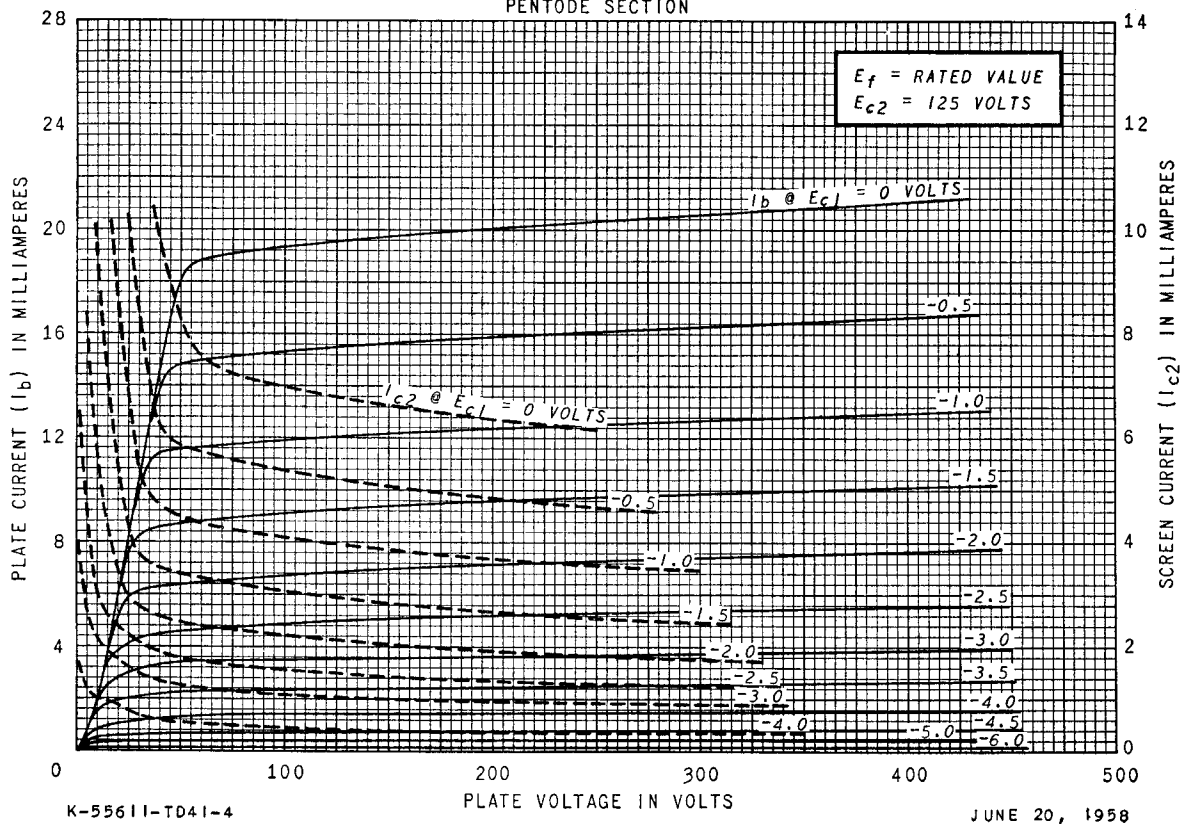
AVERAGE CHARACTERISTICS

TRIODE SECTION



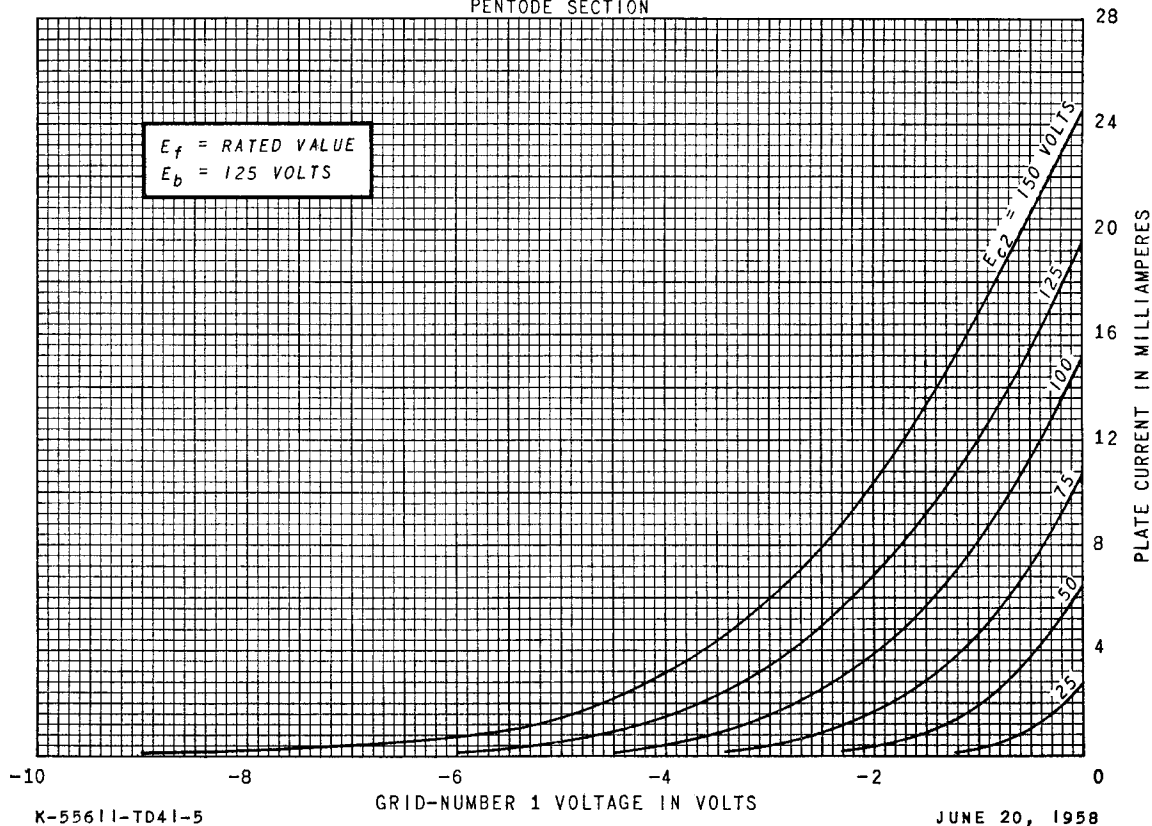
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



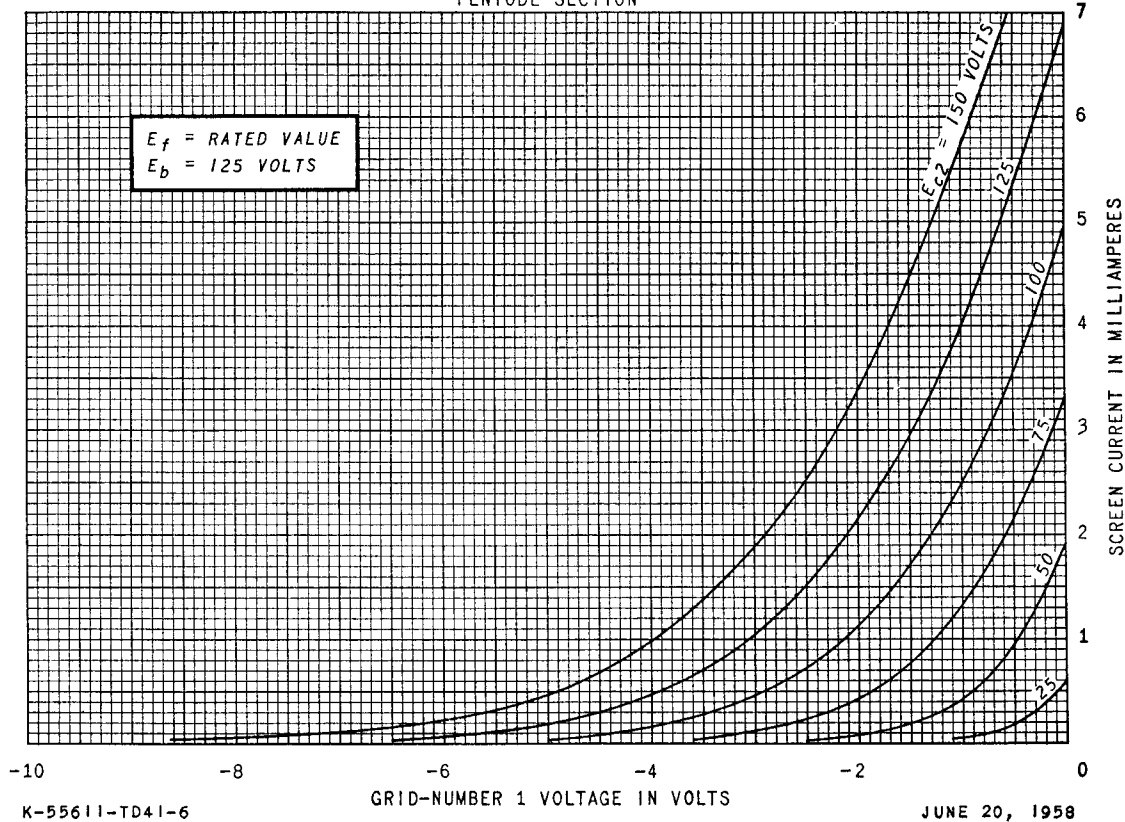
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



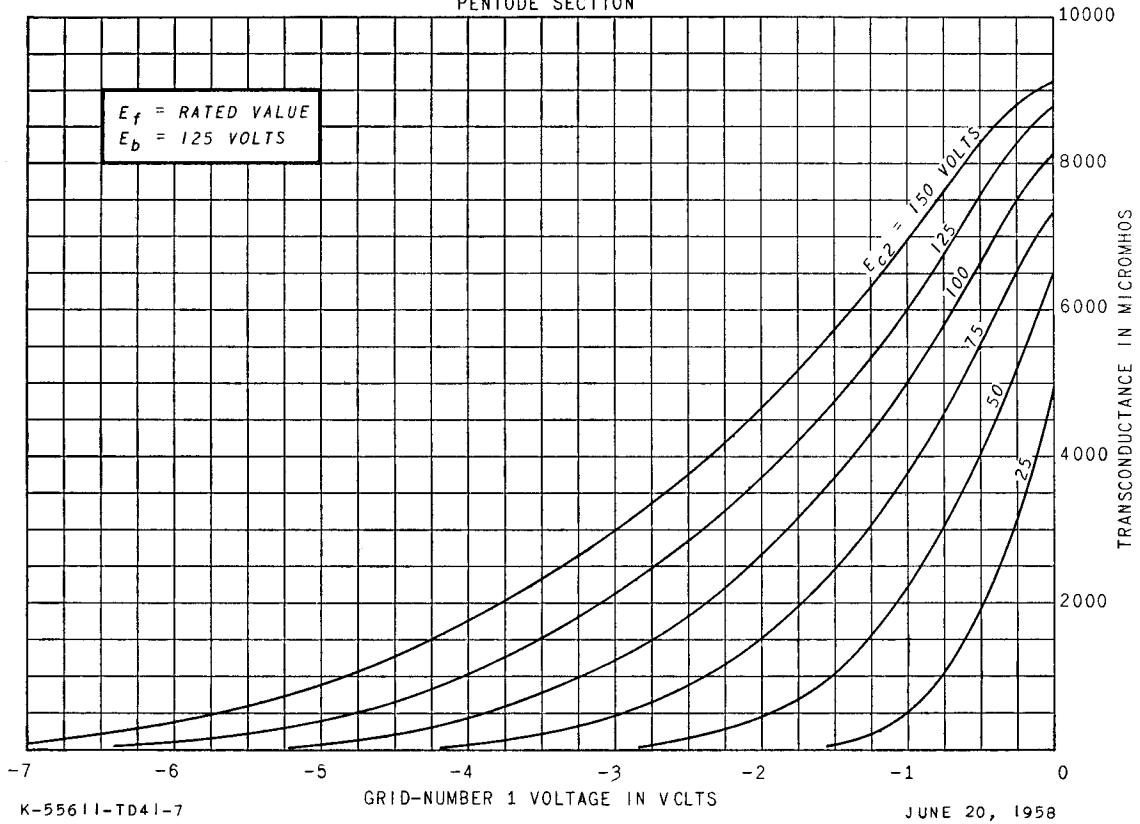
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



ELECTRONIC COMPONENTS DIVISION

GENERAL  **ELECTRIC**

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