



FOR VHF CONVERTER APPLICATIONS

DESCRIPTION AND RATING

The 6CG8-A is a miniature tube containing a medium-mu triode and a sharp-cutoff pentode. It is designed primarily for use as a combined triode oscillator and pentode mixer in VHF television receivers.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Characteristics and Ratings

	Series Heater Operation	Parallel Heater Operation	
Heater Voltage, AC or DC.....	6.3	6.3 ± 0.6*	Volts
Heater Current.....	0.45 ± 0.03*	0.45†	Amperes
Heater Warm-up Time‡.....	11		Seconds

Direct Interelectrode Capacitances

	With Shield§	Without Shield	
Pentode Section			
Grid-Number 1 to Plate:			
(Pg1 to Pp), max.....	0.02	0.04	pf
Input: Pg1 to (h+k+Pg2+Pg3).....	4.8	4.6	pf
Output: Pp to (h+k+Pg2+Pg3).....	1.6	0.9	pf
Triode Section			
Grid to Plate: (Tg to Tp).....	1.5	1.5	pf
Input: Tg to (h+k+Pg3).....	2.4	2.0	pf
Output: Tp to (h+k+Pg3).....	1.0	0.5	pf
Pentode-Grid Number 1 to			
Triode Plate: (Pg1 to Tp), max.....	0.04	0.05	pf
Pentode Plate to Triode Plate:			
(Pp to Tp), max.....	0.008	0.05	pf
Heater to Cathode: (h to k).....	6.5#	6.5	pf

MECHANICAL

Mounting Position—Any

Envelope—T-6½, Glass

Base—E9-1, Small Button 9-Pin

Outline Drawing—EIA 6-2

Maximum Diameter..... 7⁄8 Inches

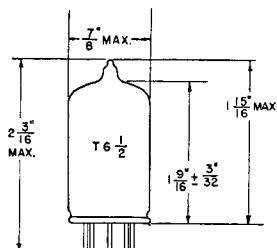
Maximum Over-all Length 2 3⁄16 Inches

Maximum Seated Height.. 1 1⁄16 Inches

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.

PHYSICAL DIMENSIONS

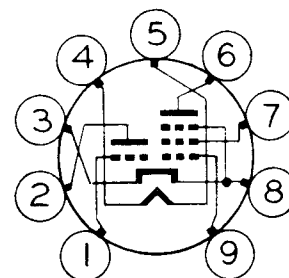


EIA 6-2

TERMINAL CONNECTIONS

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

BASING DIAGRAM



EIA 9GF

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

	Pentode Section	Triode Section
Plate Voltage.....	275	275 Volts
Screen Supply Voltage.....	275	 Volts
Screen Voltage—See Screen Rating Chart		
Positive DC Grid-Number 1 Voltage.....	0	0 Volts
Plate Dissipation.....	2.3	1.7 Watts
Screen Dissipation.....	0.45	 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

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 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.....		300000	6000	Ohms
Transconductance.....	5700	5500	6500	Micromhos
Plate Current.....		9.0	12	Milliamperes
Screen Current.....		2.2		Milliamperes
Grid-Number 1 Voltage, approximate				
Ib = 20 Microamperes.....		-6.5	-7	Volts

FOOTNOTES

* For series heater operation, the equipment designer should design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance. For parallel heater operation, 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.

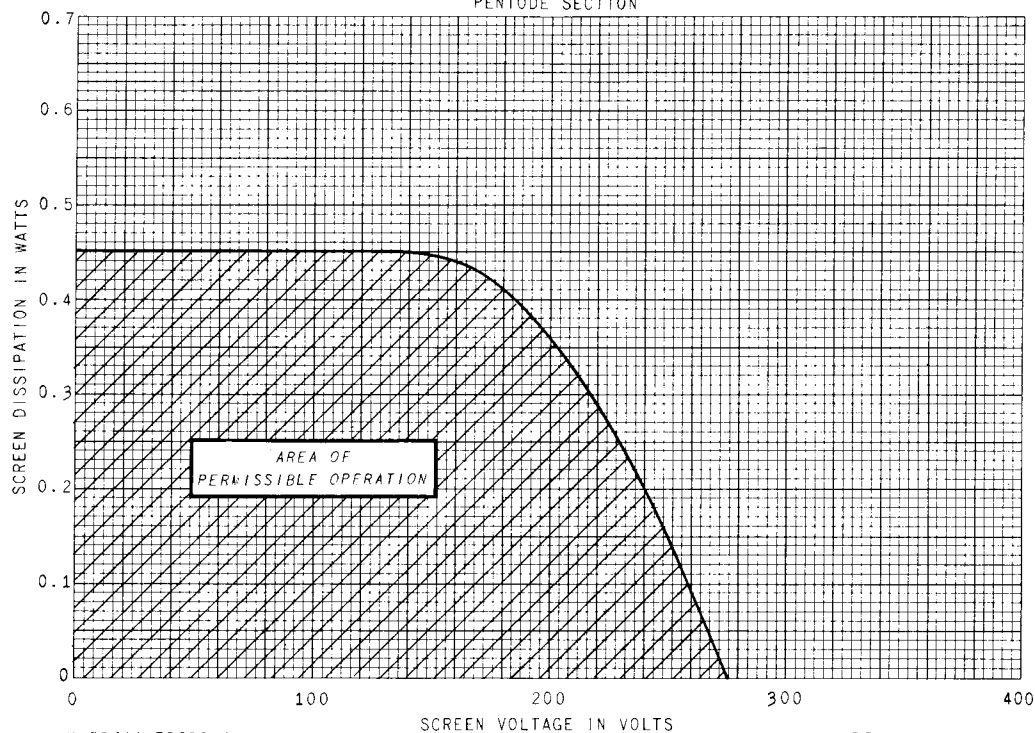
‡ The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

§ With external shield (EIA 315) connected to cathode unless otherwise indicated.

With external shield (EIA 315) connected to ground.

SCREEN RATING CHART

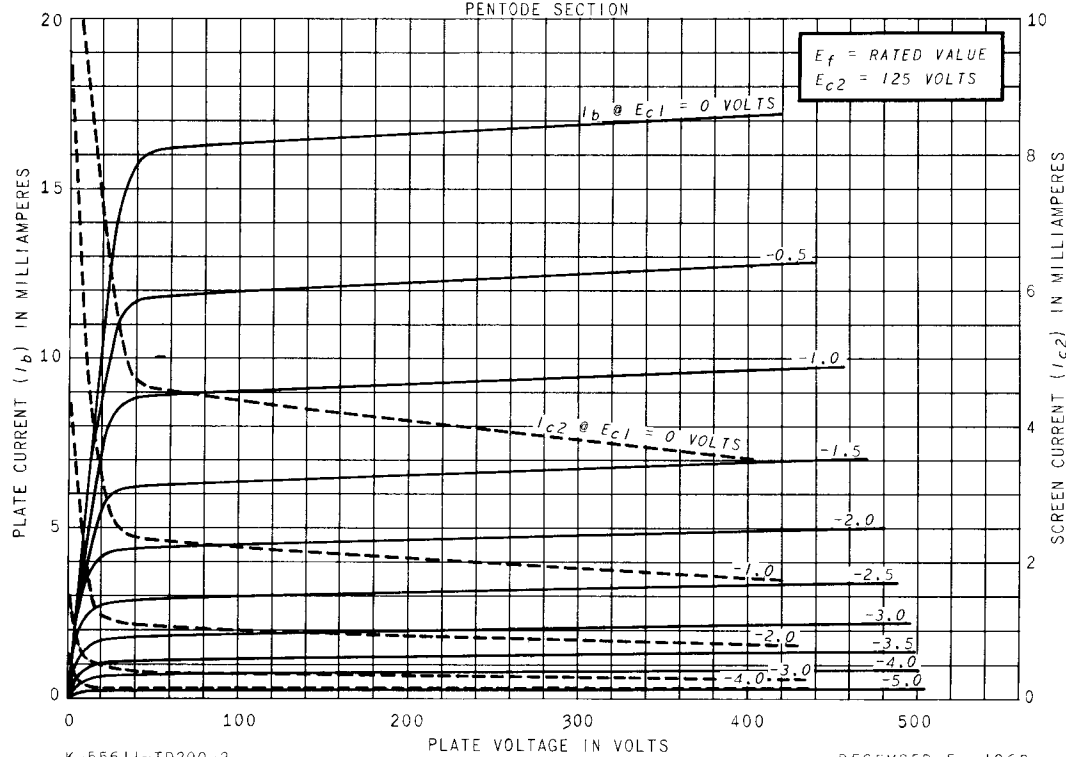
PENTODE SECTION



DECEMBER 5, 1962

AVERAGE PLATE CHARACTERISTICS

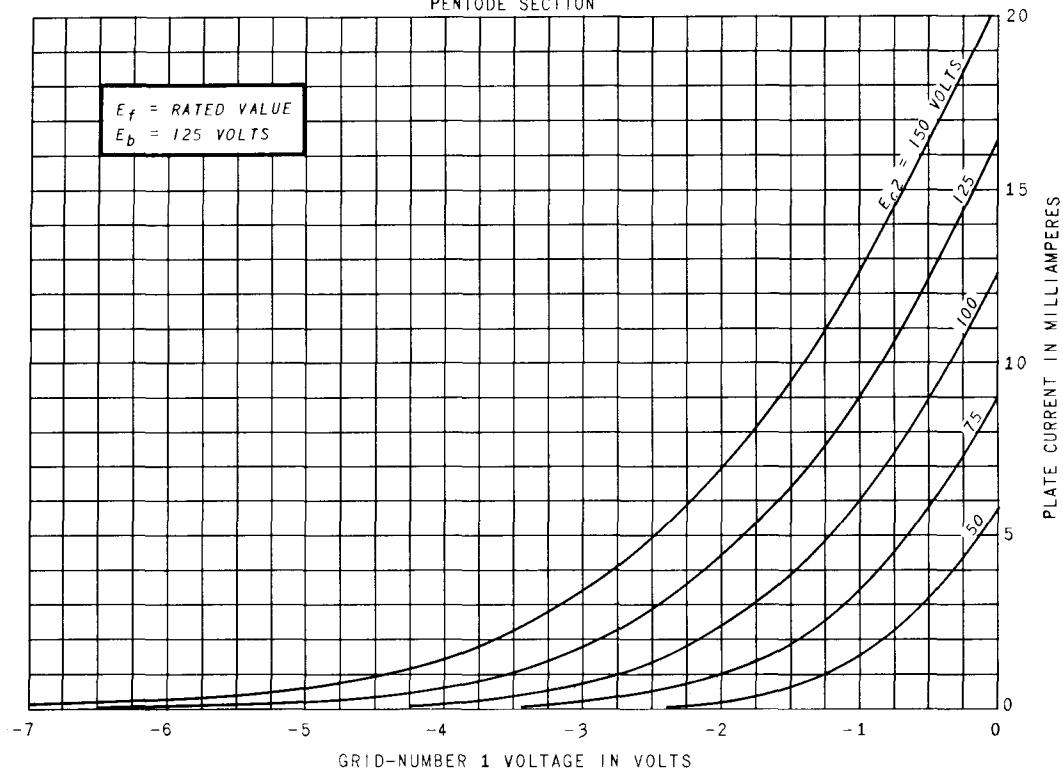
PENTODE SECTION



DECEMBER 5, 1962

AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION

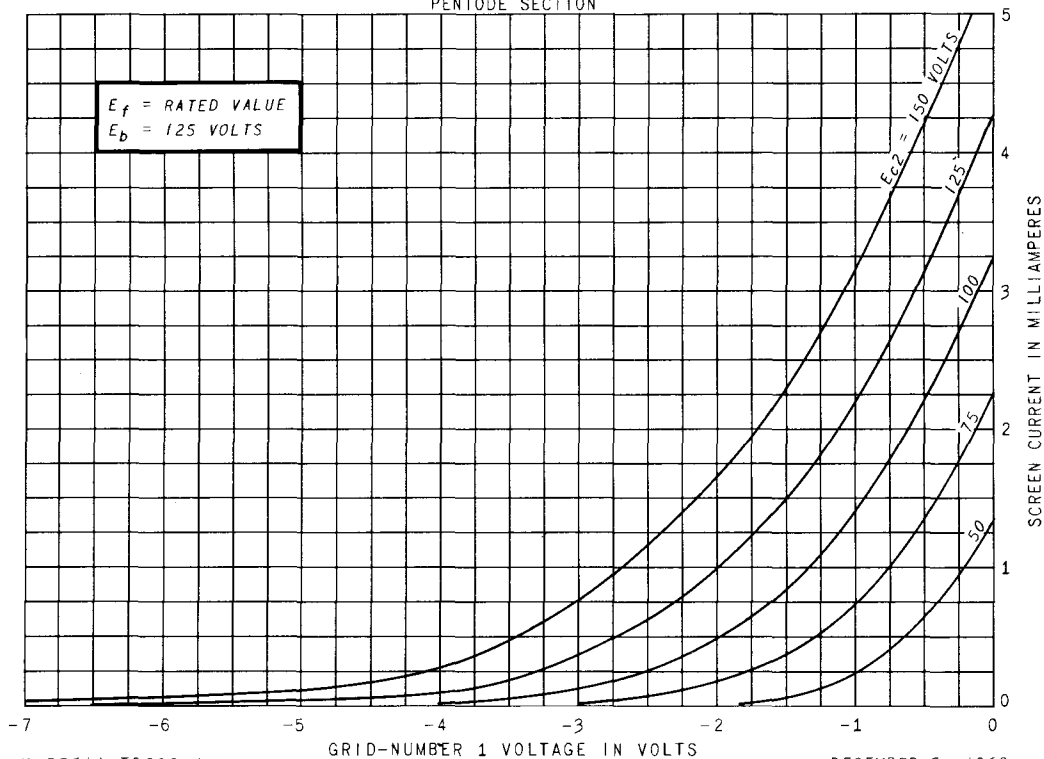


K-55611-TD200-3

DECEMBER 5, 1962

AVERAGE TRANSFER CHARACTERISTICS

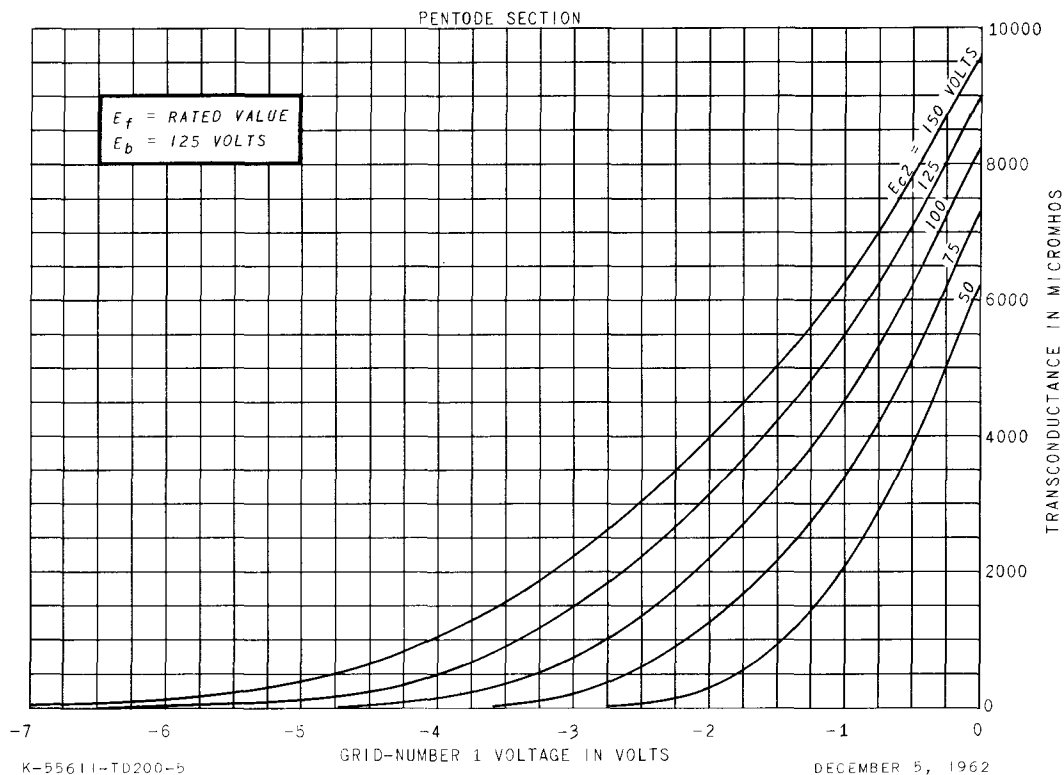
PENTODE SECTION



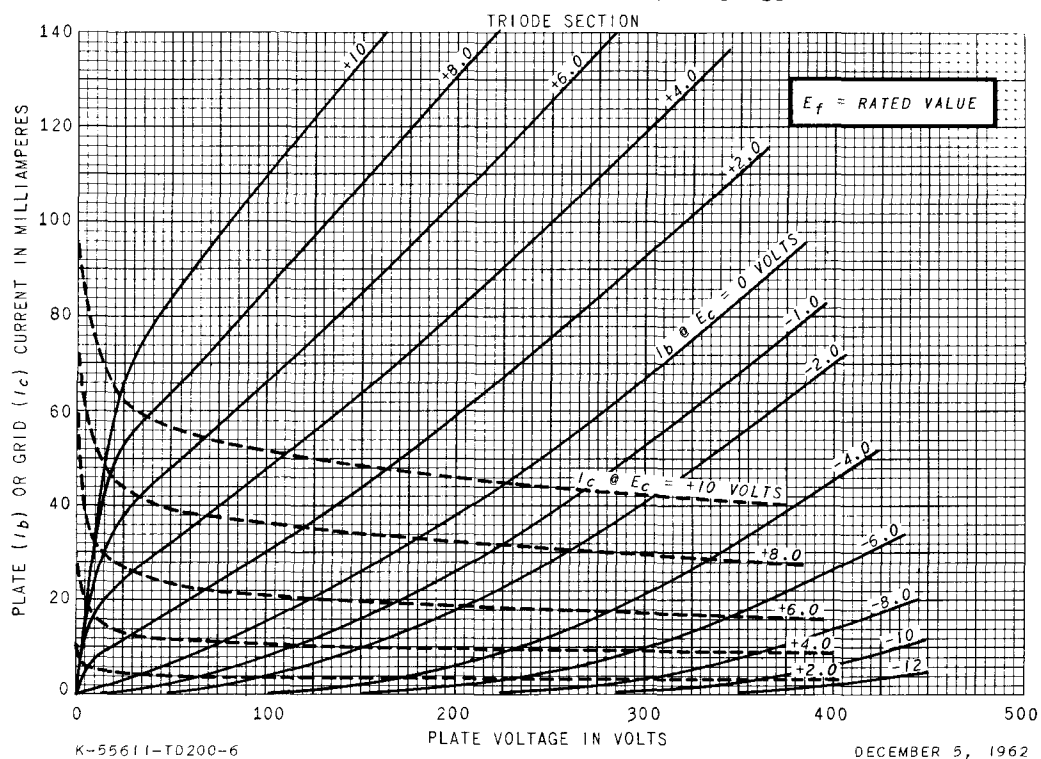
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DECEMBER 5, 1962

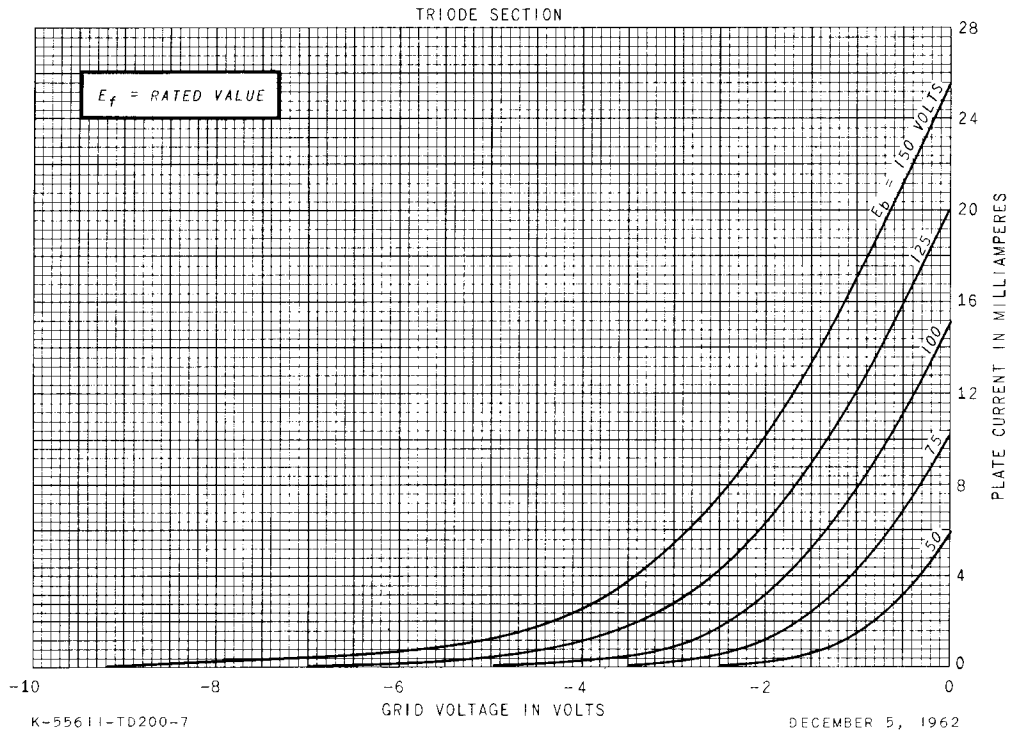
AVERAGE TRANSFER CHARACTERISTICS



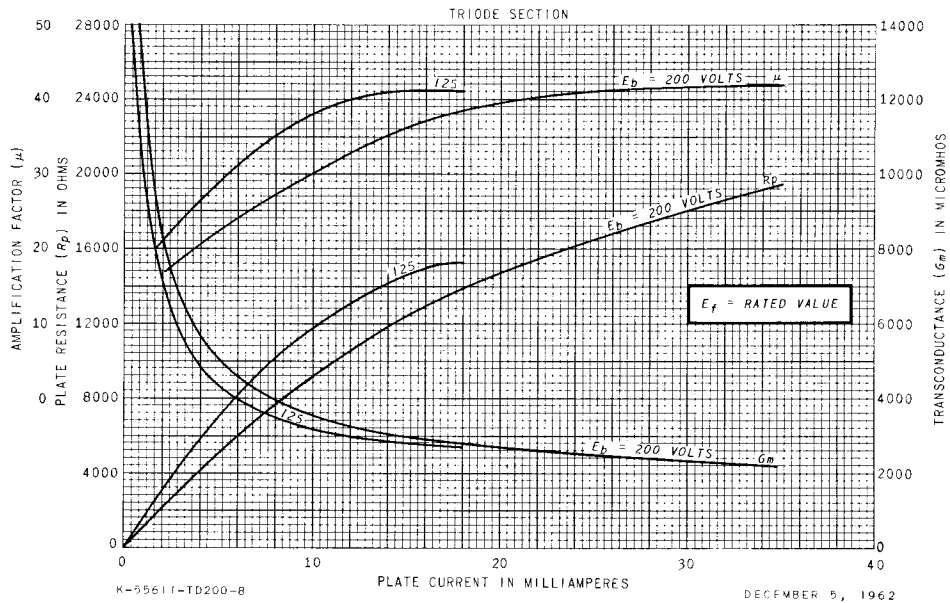
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS



RECEIVING TUBE DEPARTMENT

GENERAL  ELECTRIC

Owensboro, Kentucky