6JC8
TRIODE-PENTODE

DESCRIPTION AND RATING

The 6JC8 is a miniature tube which contains a sharp-cutoff pentode and a medium-mu triode in one envelope. The tube is primarily intended for service as a combined triode oscillator and pentode mixer in VHF applications.

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

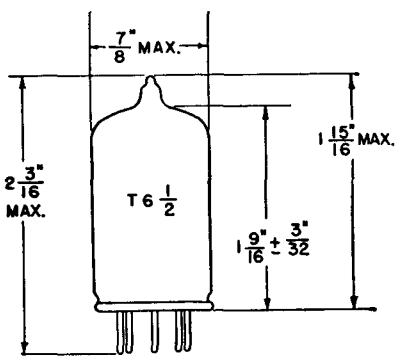
	With Shield§	Without Shield	
Pentode Section			
Grid-Number 1 to Plate: (Pg1 to Pp)	0.018	0.038	pf
Input: Pg1 to (h+k+Pg2+Pg3+i.s.)	5.0	4.8	pf
Output: Pp to (h+k+Pg2+Pg3+i.s.)	1.6	0.9	pf
Triode Section			
Grid to Plate: (Tg to Tp)	1.2	1.3	pf
Input: Tg to (h+k+Pg3+i.s.)	3.2	2.8	pf
Output: Tp to (h+k+Pg3+i.s.)	0.90	0.44	pf
Pentode Grid-Number 1 to Triode Plate, max. (Pg1 to Tp)	0.036	0.05	pf
Pentode Plate to Triode Plate, maximum (Pp to Tp)	0.012	0.075	pf
Heater to Cathode	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	$\frac{7}{8}$	Inches
Maximum Over-all Length	$2\frac{3}{16}$	Inches
Maximum Seated Height	$1\frac{15}{16}$	Inches

PHYSICAL DIMENSIONS

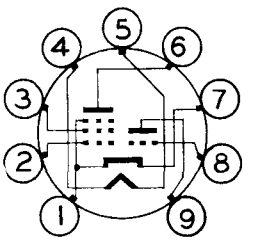


EIA 6-2

TERMINAL CONNECTIONS

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

BASING DIAGRAM



EIA 9PA

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
Grid-Number 1 Circuit Resistance			
With Fixed Bias	0.1	....	Megohms
With Cathode Bias	0.5	....	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.

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.

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

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

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

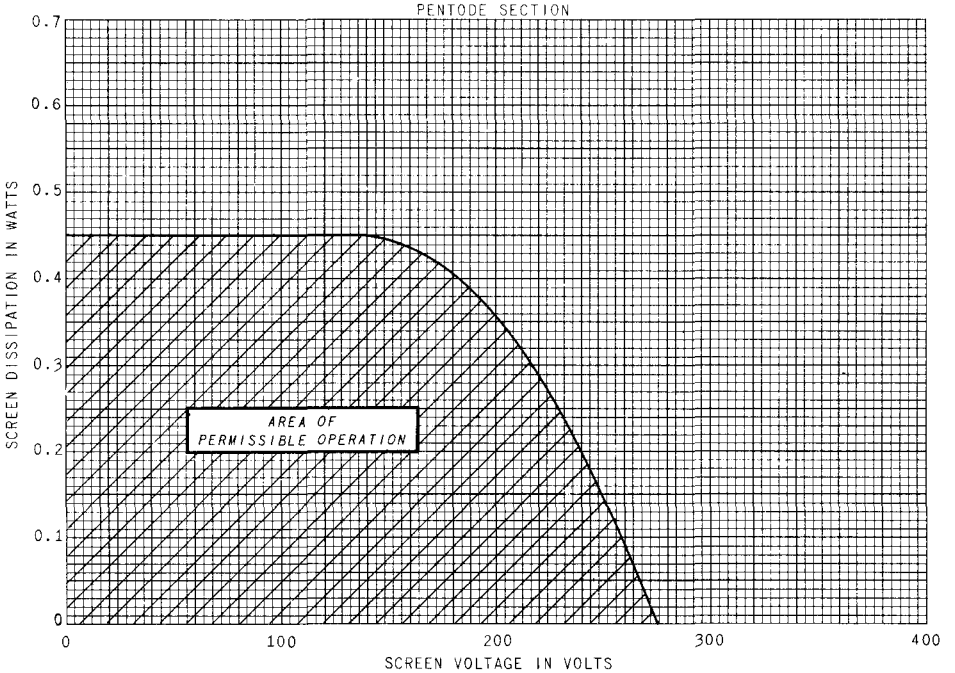
‡ The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

§ With external shield (EIA 315) connected to Pin 3 unless otherwise indicated.

¶ With external shield (EIA 315) connected to Pin 6.

SCREEN RATING CHART

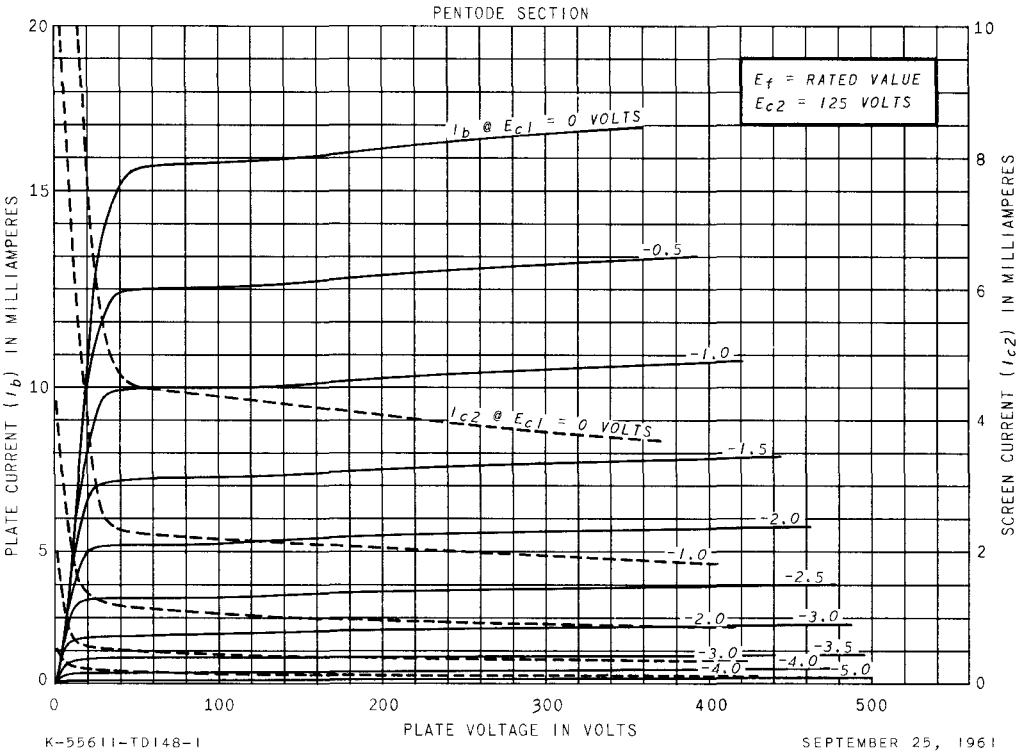
PENTODE SECTION



K-55611-TD148-8 SEPTEMBER 25, 1961

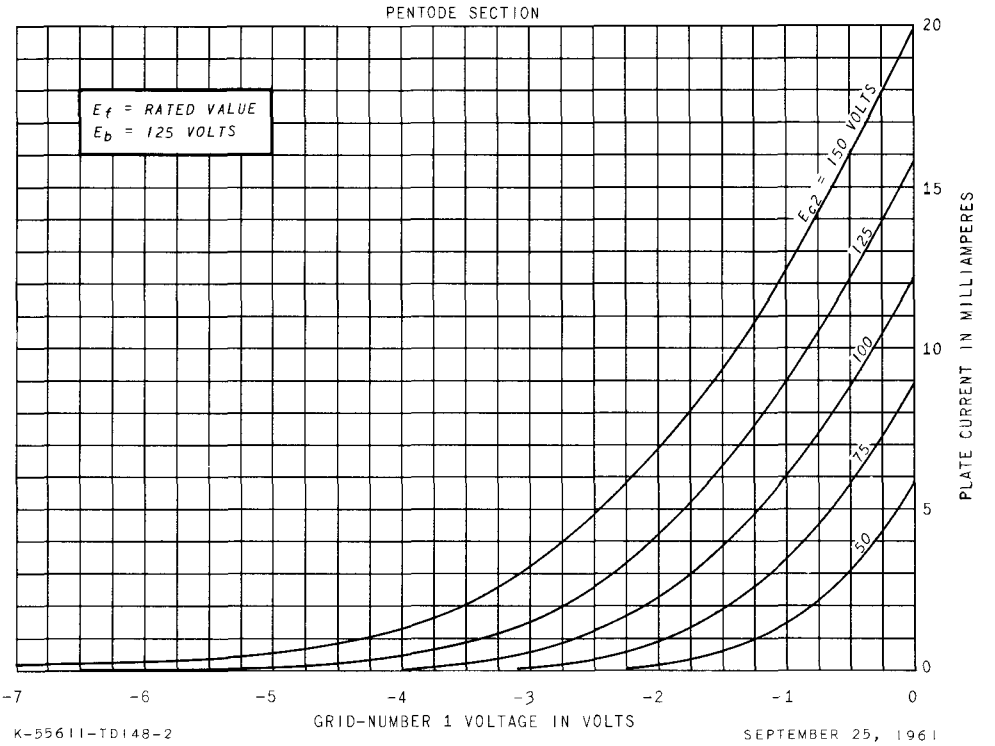
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



K-55611-TD148-1 SEPTEMBER 25, 1961

AVERAGE TRANSFER CHARACTERISTICS



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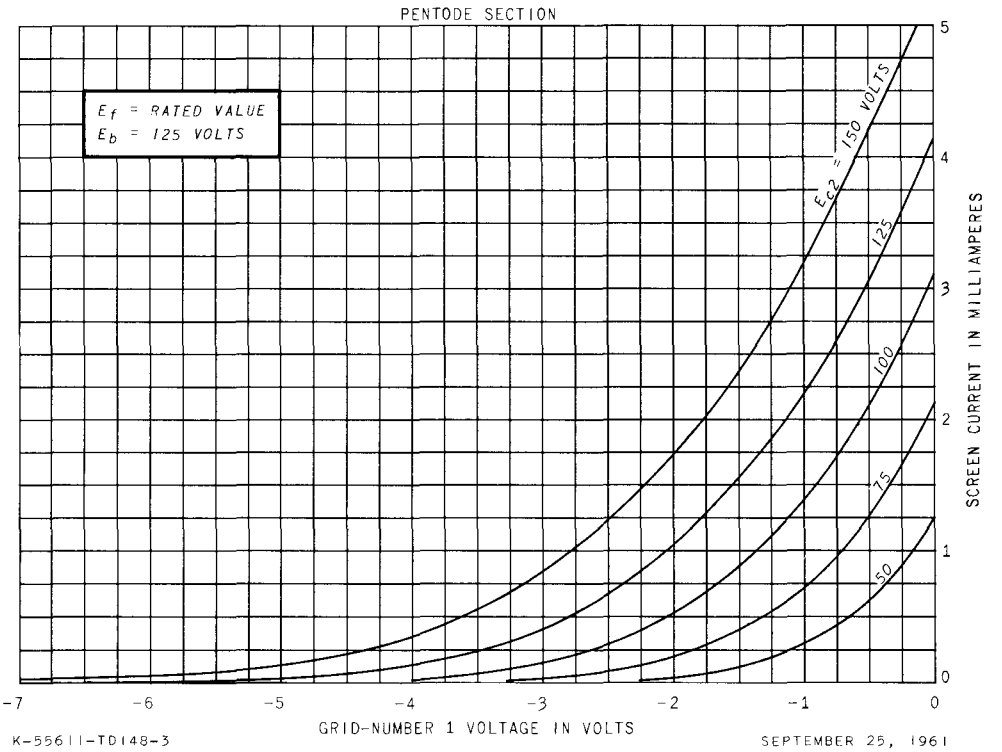
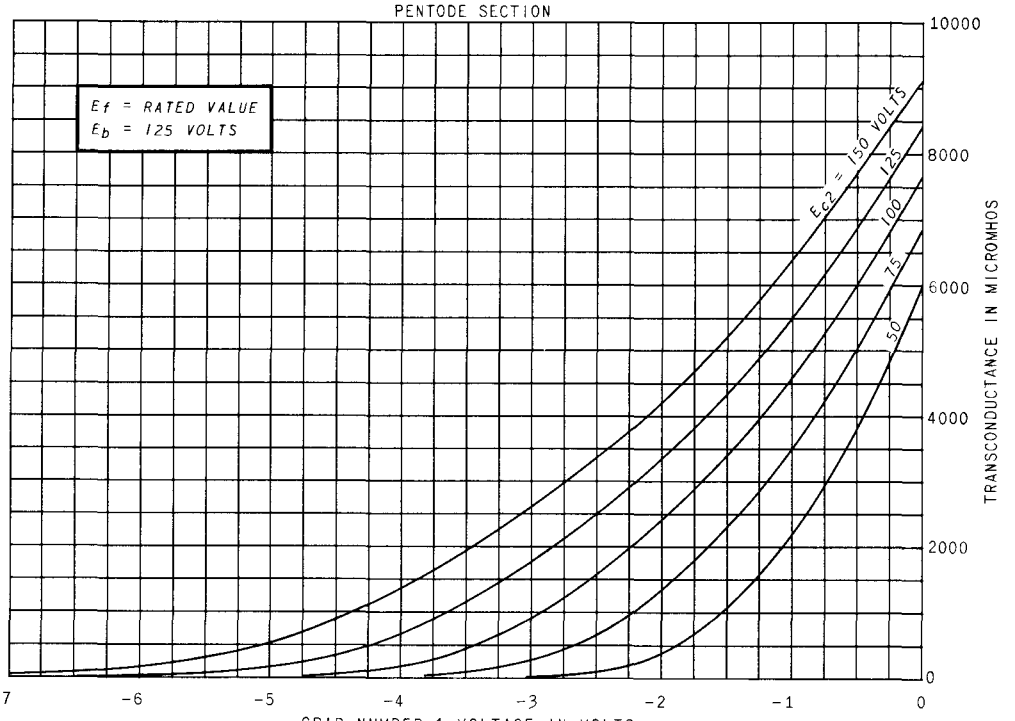


AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



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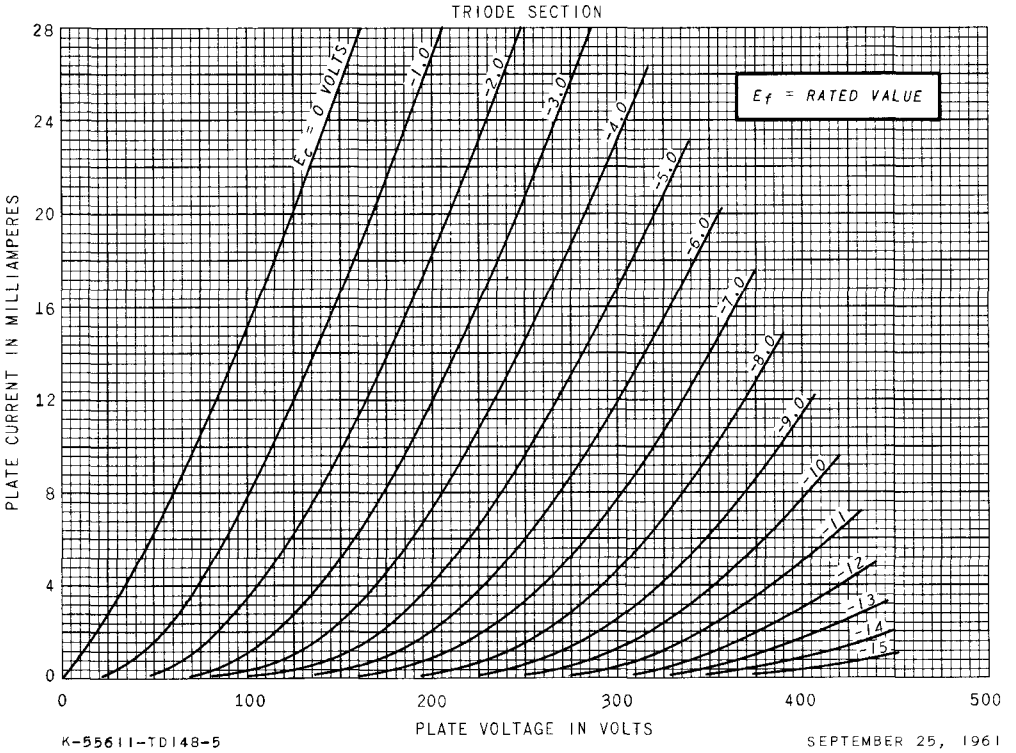
SEPTEMBER 25, 1961

AVERAGE PLATE CHARACTERISTICS

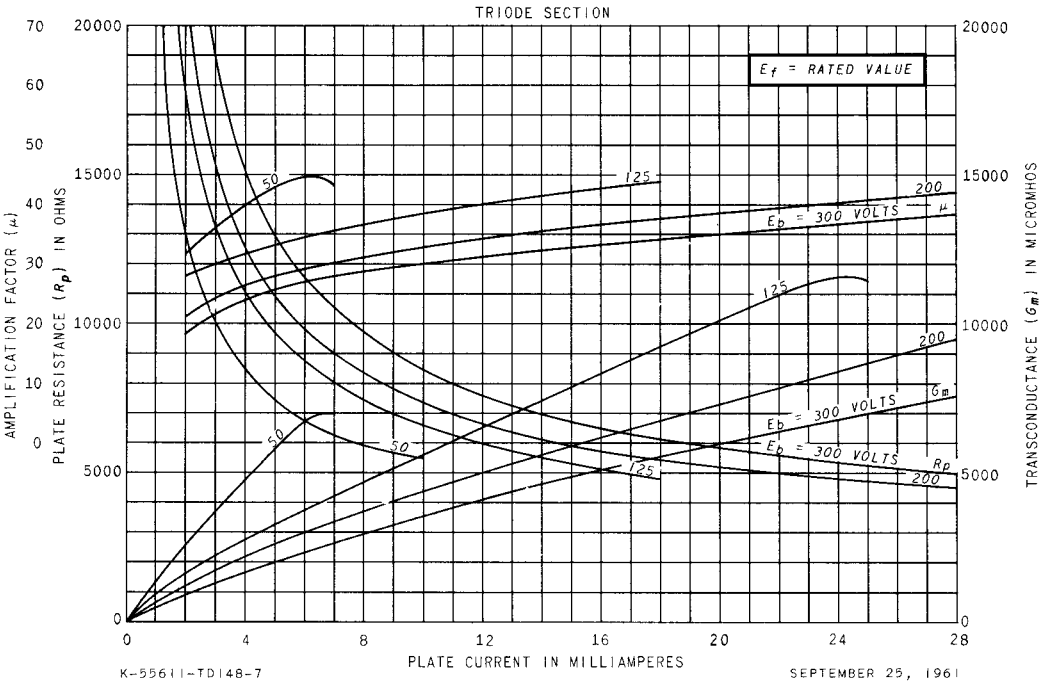
TRIODE SECTION



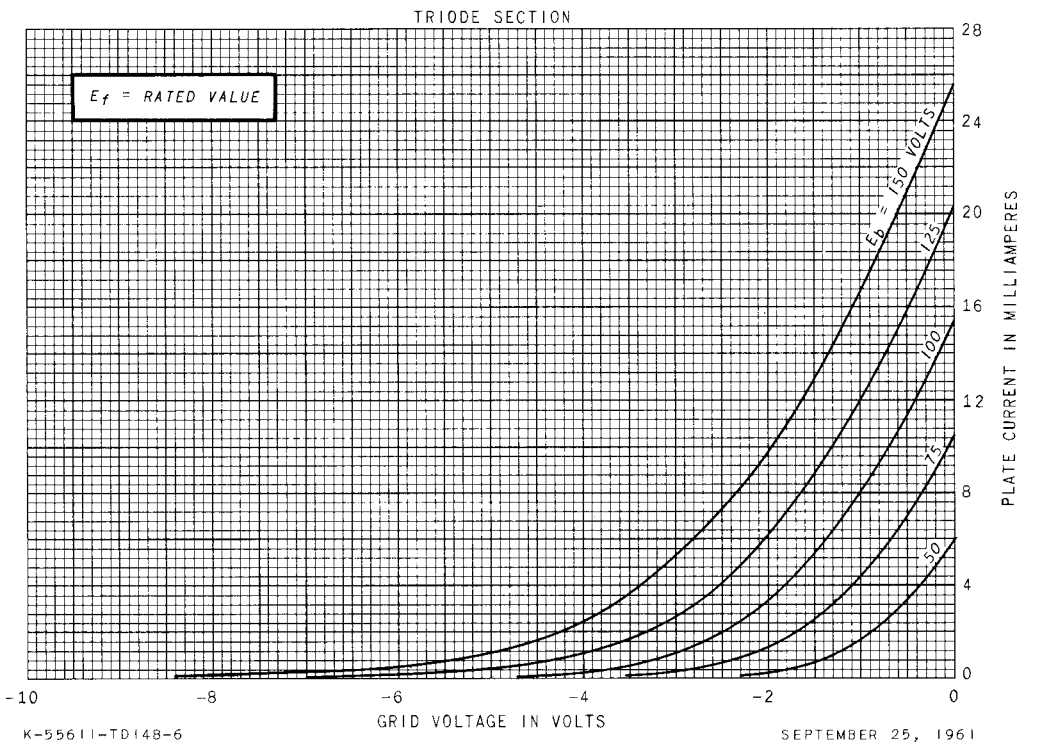
K-55611-TD148-5

SEPTEMBER 25, 1961

AVERAGE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



RECEIVING TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky