Triode-Pentode

6JV8

The 6JV8 is a general-purpose, multi-unit tube of the 9-pin miniature type containing a high-mu triode and a sharp-cutoff pentode.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

	Series Circuit*	Parallel Circuit‡	
Heater Voltage, AC or DC	6.3	6.3±0.6§	Volts
Heater Current	0.6±0.04§	0.6¶	Amperes
Heater Warm-up Time, Average#	11	---	Seconds

Direct Interelectrode Capacitances△

Pentode Section

Grid-Number 1 to Plate: (Pg1 to Pp), maximum	0.08	pf
Input: Pg1 to (h + Pk + Pg2 + Pg3 + i.s.)	8.0	pf
Output: Pp to (h + Pk + Pg2 + Pg3 + i.s.)	3.2	pf

Triode Section

Grid to Plate: (Tg to Tp)	2.2	pf
Input: Tg to (h + Tk)	3.0	pf
Output: Tp to (h + Tk)	2.0	pf

Coupling

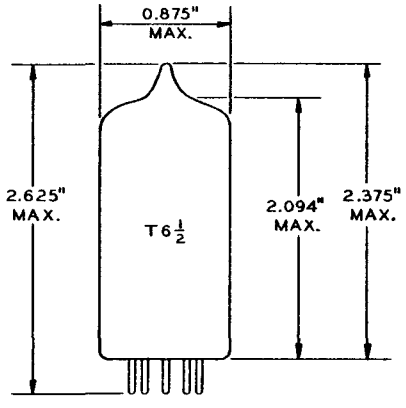
Pentode Grid-Number 1 to Triode Plate: (Pg1 to Tp), maximum	0.012	pf
Pentode Plate to Triode Plate: (Pp to Tp), maximum	0.24	pf

MECHANICAL

Operating Position - Any
Envelope - T-6 1/2, Glass
Base - E9-1, Small Button 9-Pin
Outline Drawing - EIA 6-3

Maximum Diameter	0.875	Inches
Maximum Over-all Length	2.625	Inches
Maximum Seated Height	2.375	Inches

PHYSICAL DIMENSIONS

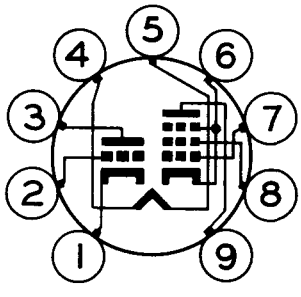


EIA 6-3

TERMINAL CONNECTIONS

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

BASING DIAGRAM



EIA 9DX

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MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

	Pentode Section	Triode Section	
Plate Voltage	330	330	Volts
Screen Voltage	330	---	Volts
Positive DC Grid-Number 1 Voltage	0	0	Volts
Negative DC Grid-Number 1 Voltage	50	50	Volts
Plate Dissipation	4.0	1.1	Watts
Screen Dissipation	1.7	---	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 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

Plate Voltage	40	60	125	200	Volts
Screen Voltage	125	200	125	200	Volts
Grid-Number 1 Voltage	0	0	-1.0	-2.9	Volts
Plate Resistance, approximate	---	---	100000	150000	Ohms
Transconductance	---	---	11500	10700	Micromhos
Plate Current	28**	51**	22	22	Milliamperes
Screen Current	9.0**	14**	4.0	4.0	Milliamperes
Grid-Number 1 Voltage, approximate					
Ib = 20 Microamperes	---	---	-5.5	-9	Volts

Triode Section

Plate Voltage	200	Volts
Grid Voltage	-2.0	Volts
Amplification Factor	70	
Plate Resistance, approximate	17500	Ohms
Transconductance	4000	Micromhos
Plate Current	4.0	Milliamperes
Grid Voltage, approximate		
Ib = 20 Microamperes	-5	Volts

NOTES

* Operated with the heater in series with the heaters of other tubes having the same bogey heater current.

‡ Operated with the heater in parallel with the heaters of other tubes having the same bogey heater voltage.

§ 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; 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.

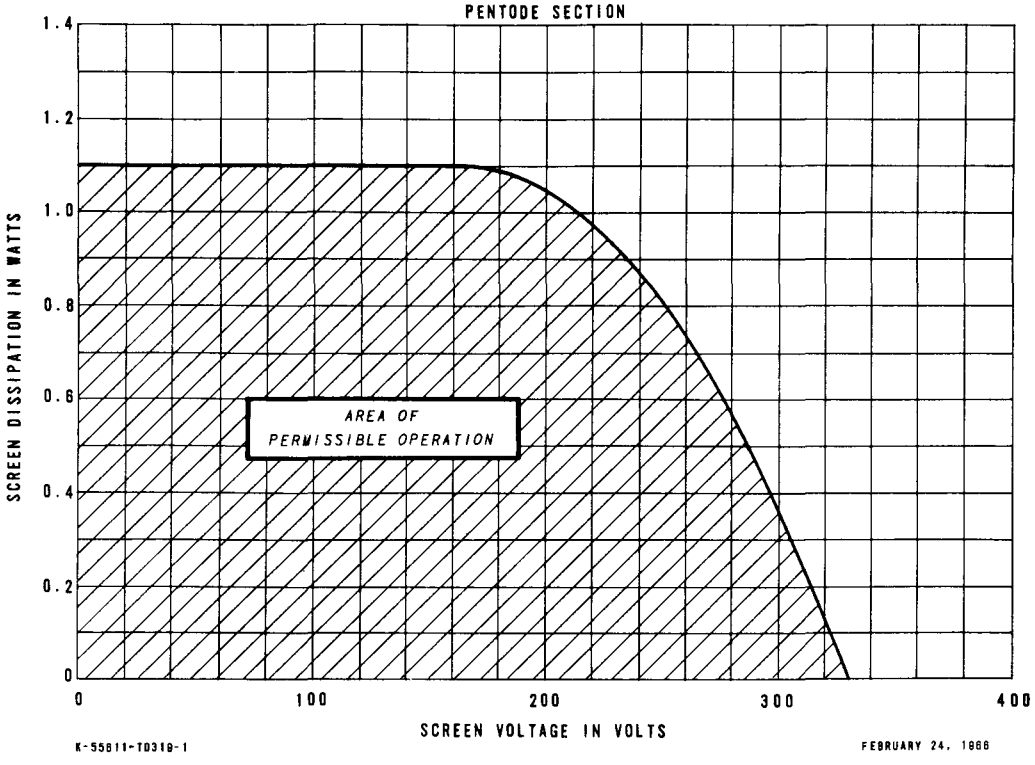
¶ Heater current of a bogey tube at Ef = 6.3 volts.

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

Δ Without external shield.

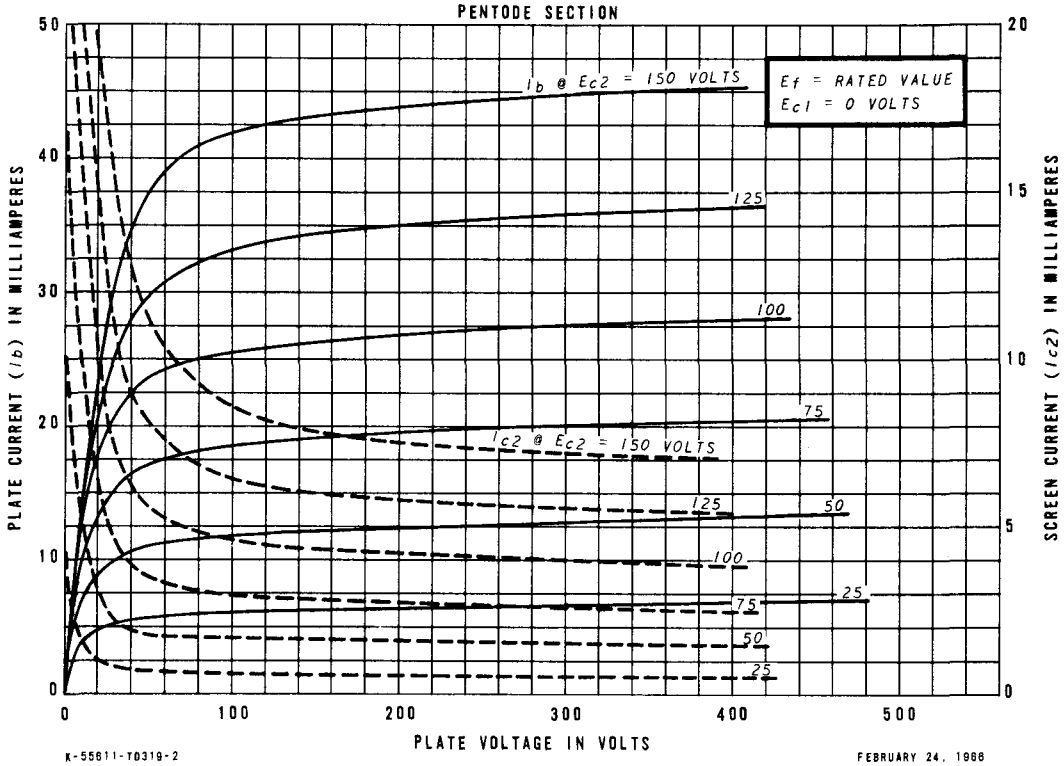
** This value can be measured by a method involving a recurrent waveform such that the plate and screen dissipation will be kept within ratings in order to prevent damage to the tube.

SCREEN RATING CHART



AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION

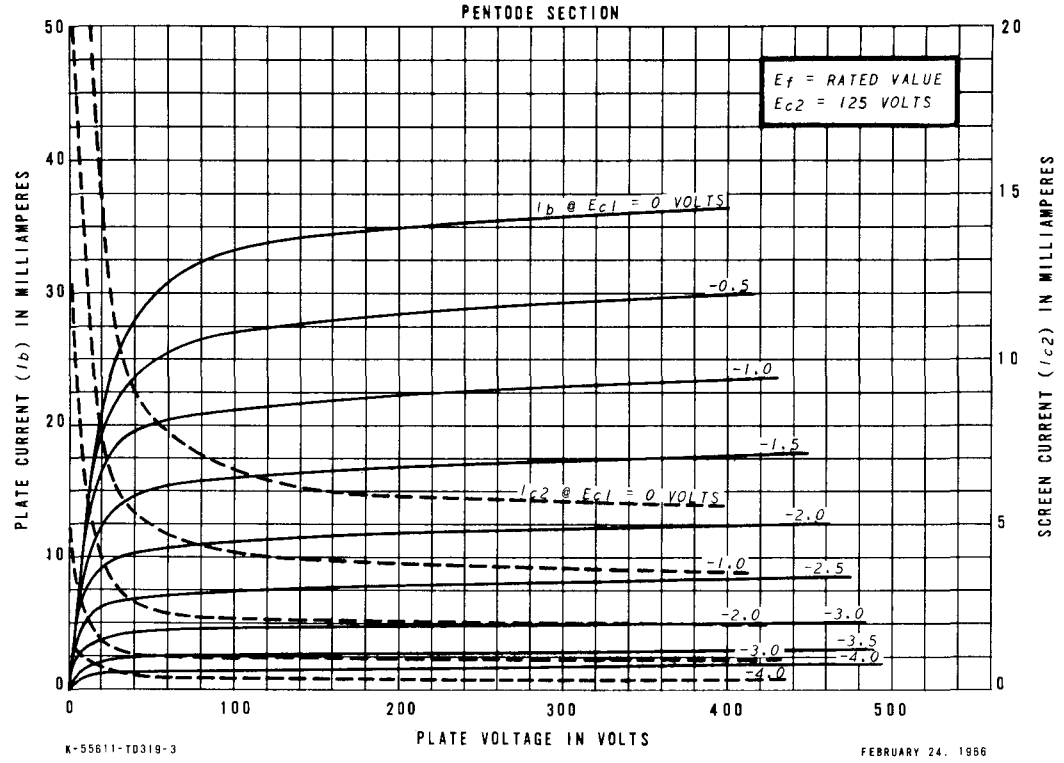


K-55611-TD319-2

FEBRUARY 24, 1966

AVERAGE PLATE CHARACTERISTICS

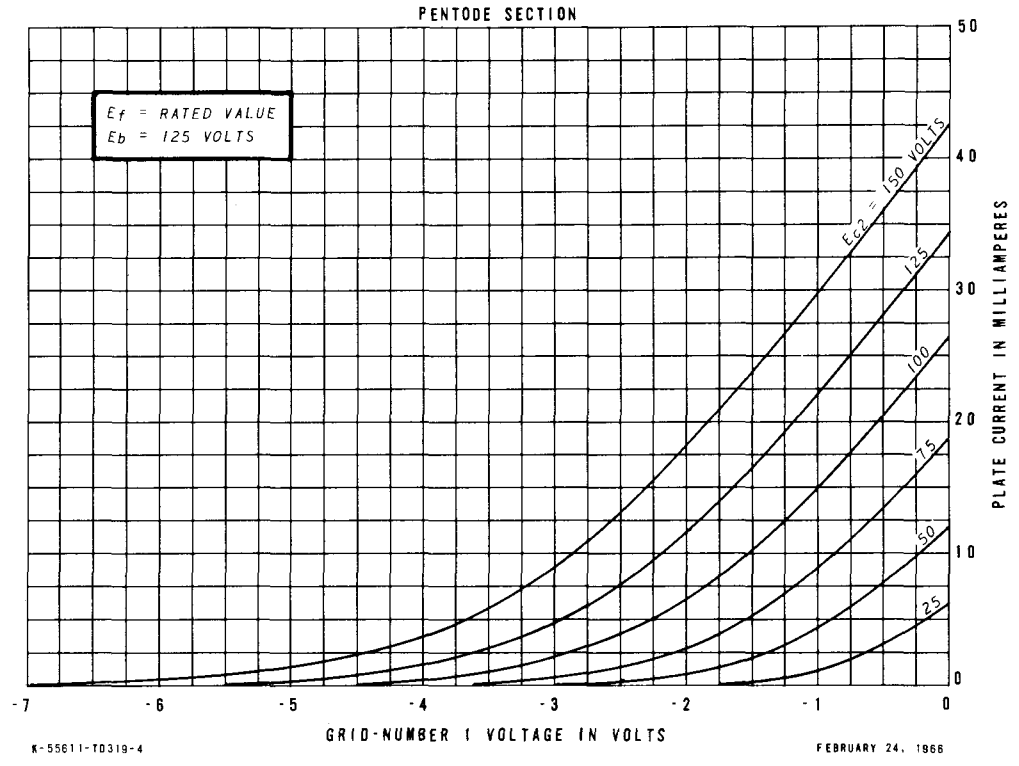
PENTODE SECTION



K-55611-TD319-3

FEBRUARY 24, 1966

AVERAGE TRANSFER CHARACTERISTICS



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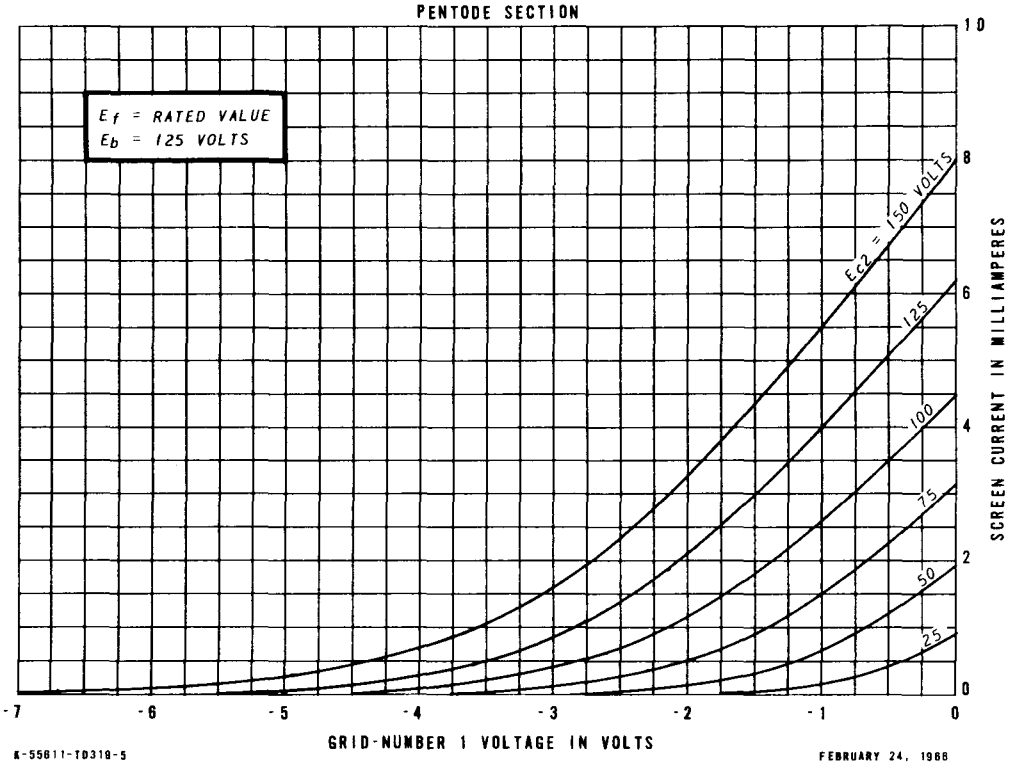

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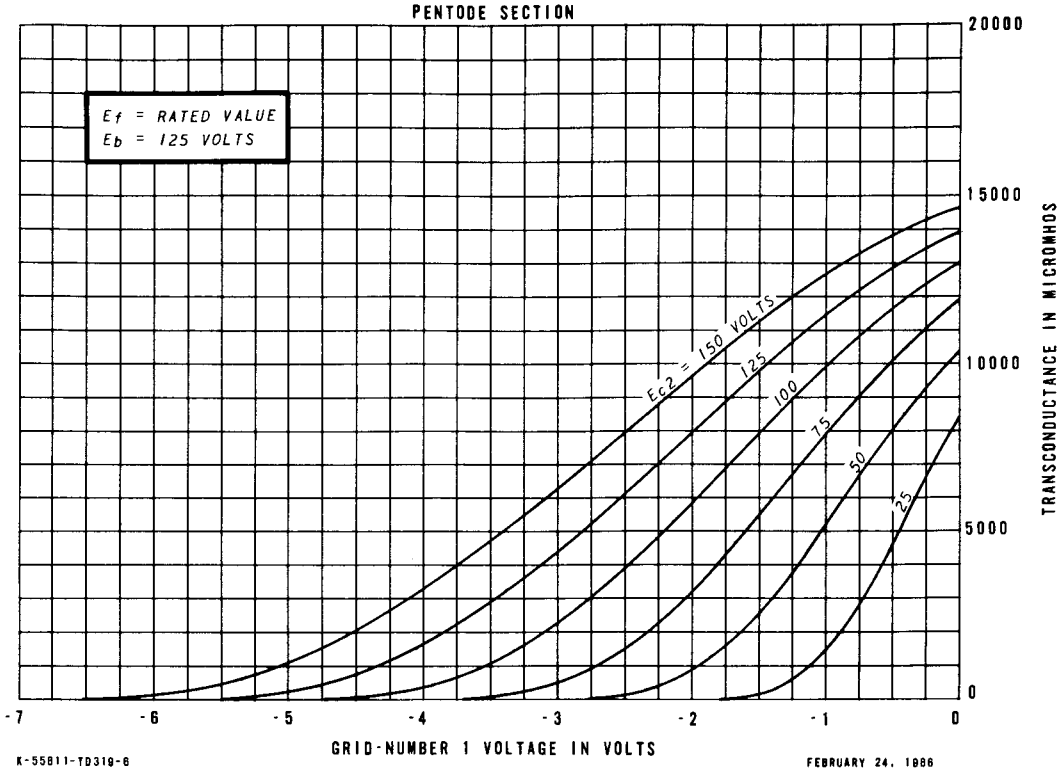
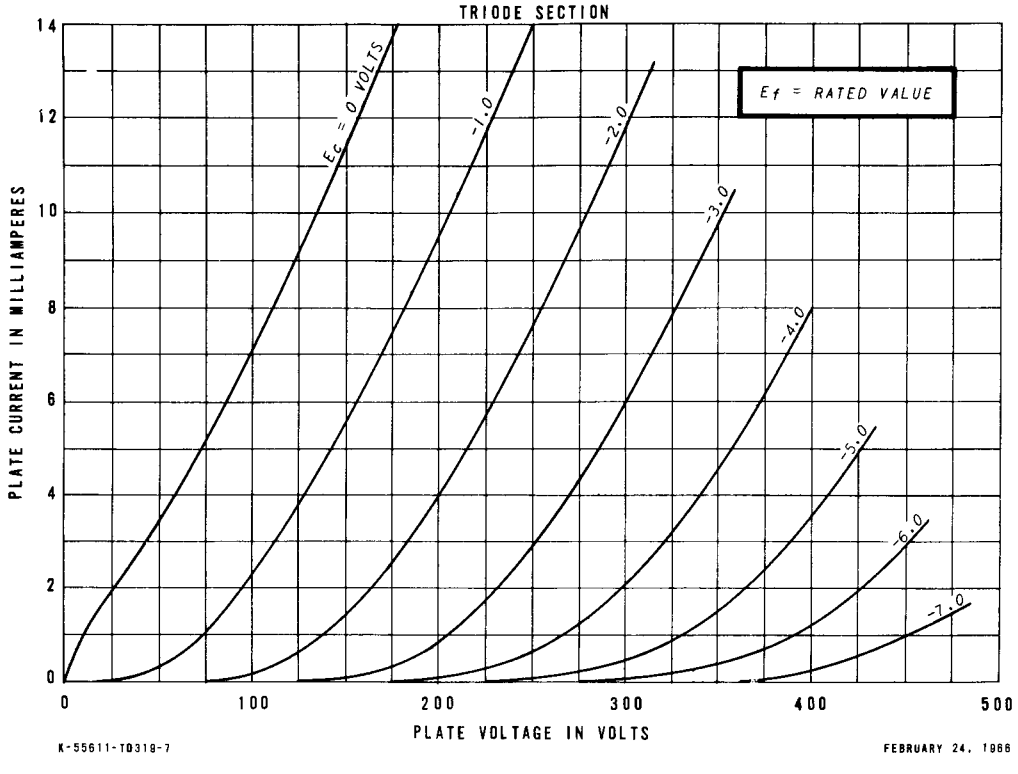
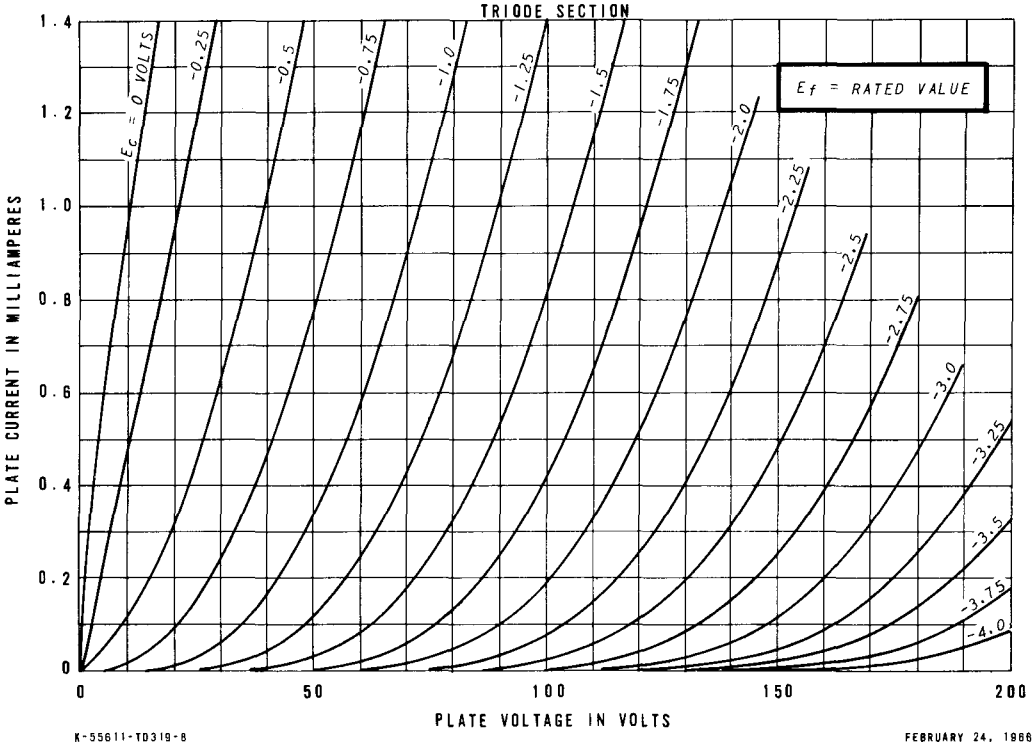


AVERAGE PLATE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS



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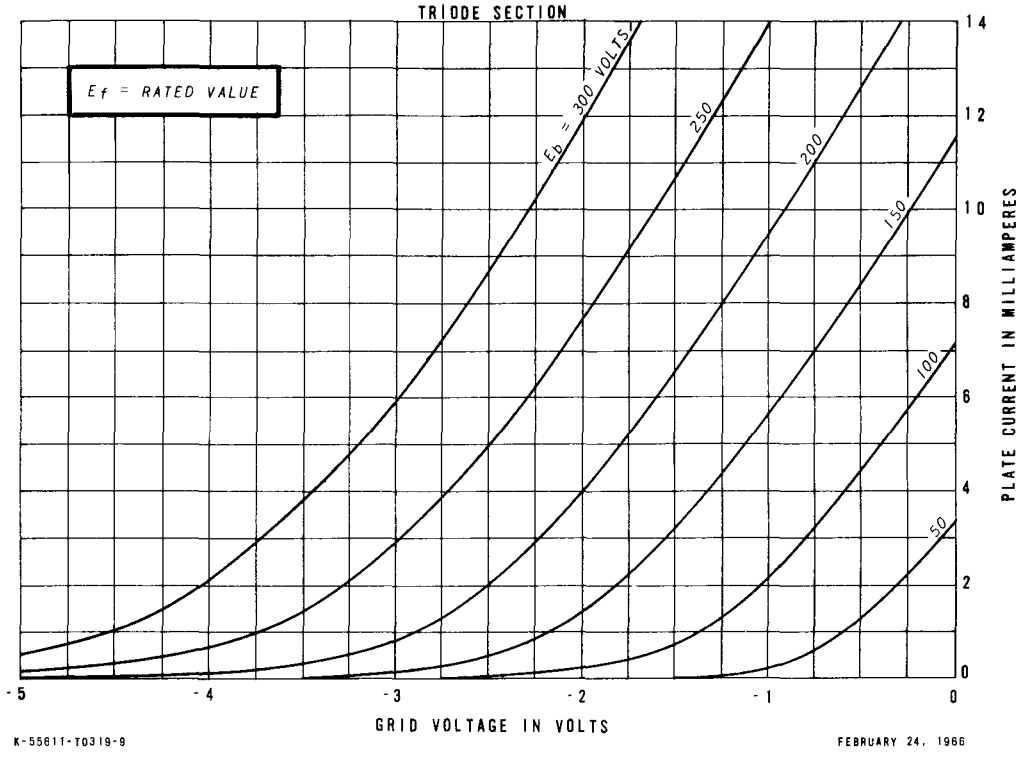

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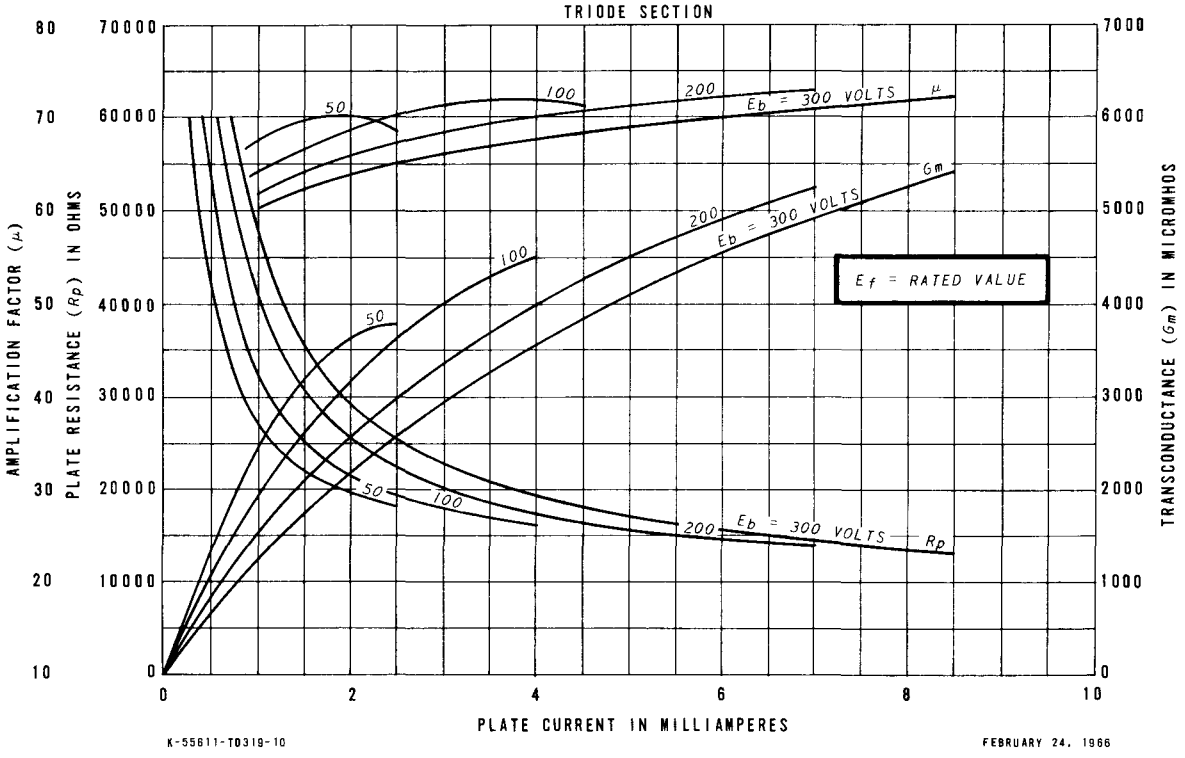

TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky