PRODUCT INFORMATION

8BU11

Compactron Twin-Triode Pentode

The 8BU11 is a compactron containing two medium-mu triodes and a sharp-cutoff pentode.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings		
Heater Voltage, AC or DC*	7.8	Volts
Heater Current‡	0.6±0.04	Amperes
Heater Warm-up Time, Average§	11	Seconds
Direct Interelectrode Capacitances¶		

Triode (Section 1)

Grid to Plate: (T1g to T1p)	1.7	pf
Input: T1g to (T1k + Pk + Pg3 + h + i.s.)	3.2	pf
Output: T1p to (T1k + Pk + Pg3 + h + i.s.)	2.0	pf

Triode (Section 2)

Grid to Plate: (T2g to T2p)	1.8	pf
Input: T2g to (T1k + T2k + Pk + Pg3 + h + i.s.)	3.0	pf
Output: T2p to (T1k + T2k + Pk + Pg3 + h + i.s.)	1.7	pf

Pentode Section

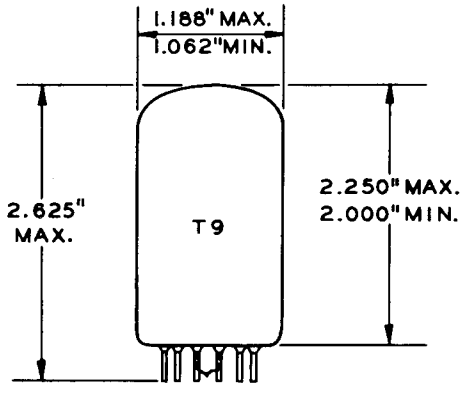
Grid-Number 1 to Plate: (Pg1 to Pp)	0.11	pf
Input: Pg1 to (T1k + Pk + Pg2 + Pg3 + h + i.s.)	5.0	pf
Output: Pp to (T1k + Pk + Pg2 + Pg3 + h + i.s.)	2.4	pf

MECHANICAL

Operating Position - Any
Envelope - T-9, Glass
Base - E12-70, Button 12-Pin
Outline Drawing - EIA 9-59

Maximum Diameter	1.188	Inches
Minimum Diameter	1.062	Inches
Maximum Over-all Length	2.625	Inches
Maximum Seated Height	2.250	Inches
Minimum Seated Height	2.000	Inches

PHYSICAL DIMENSIONS

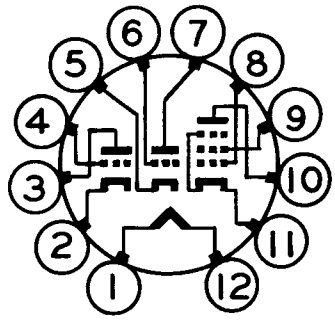


EIA 9-59

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Triode Cathode (Section 2)
Pin 3 - Triode Plate (Section 2)
Pin 4 - Triode Grid (Section 2)
Pin 5 - Triode Cathode (Section 1) and Internal Shield
Pin 6 - Triode Grid (Section 1)
Pin 7 - Triode Plate (Section 1)
Pin 8 - Pentode Grid Number 1
Pin 9 - Pentode Grid Number 2 (Screen)
Pin 10 - Pentode Plate
Pin 11 - Pentode Cathode, Grid Number 3, and Internal Shield
Pin 12 - Heater

BASING DIAGRAM



EIA 12FP

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Pentode Section

Plate Voltage	330	Volts
Screen Supply Voltage	330	Volts
Screen Voltage - See Screen Rating Chart		
Positive DC Grid-Number 1 Voltage	0	Volts
Plate Dissipation	2.5	Watts
Screen Dissipation	0.55	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance		
With Fixed Bias	0.5	Megohms
With Cathode Bias	1.0	Megohms

Each Triode Section

Plate Voltage	330	Volts
Positive DC Grid Voltage	0	Volts
Plate Dissipation	1.8	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Circuit Resistance		
With Fixed Bias	0.5	Megohms
With Cathode Bias	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	125	Volts
Screen Voltage	125	Volts
Grid-Number 1 Voltage	-1.0	Volts
Plate Resistance, approximate	200000	Ohms
Transconductance	7500	Micromhos
Plate Current	12	Milliamperes
Screen Current	4.0	Milliamperes
Grid-Number 1 Voltage, approximate		
Ib = 30 Microamperes	-8	Volts

CHARACTERISTICS AND TYPICAL OPERATION (Cont'd)

Each Triode Section

Plate Voltage	125	Volts
Cathode-Bias Resistor	68	Ohms
Amplification Factor	43	
Plate Resistance, approximate	5000	Ohms
Transconductance	8600	Micromhos
Plate Current	13.5	Milliamperes
Grid-Voltage, approximate Ib = 100 Microamperes	-8	Volts

NOTES

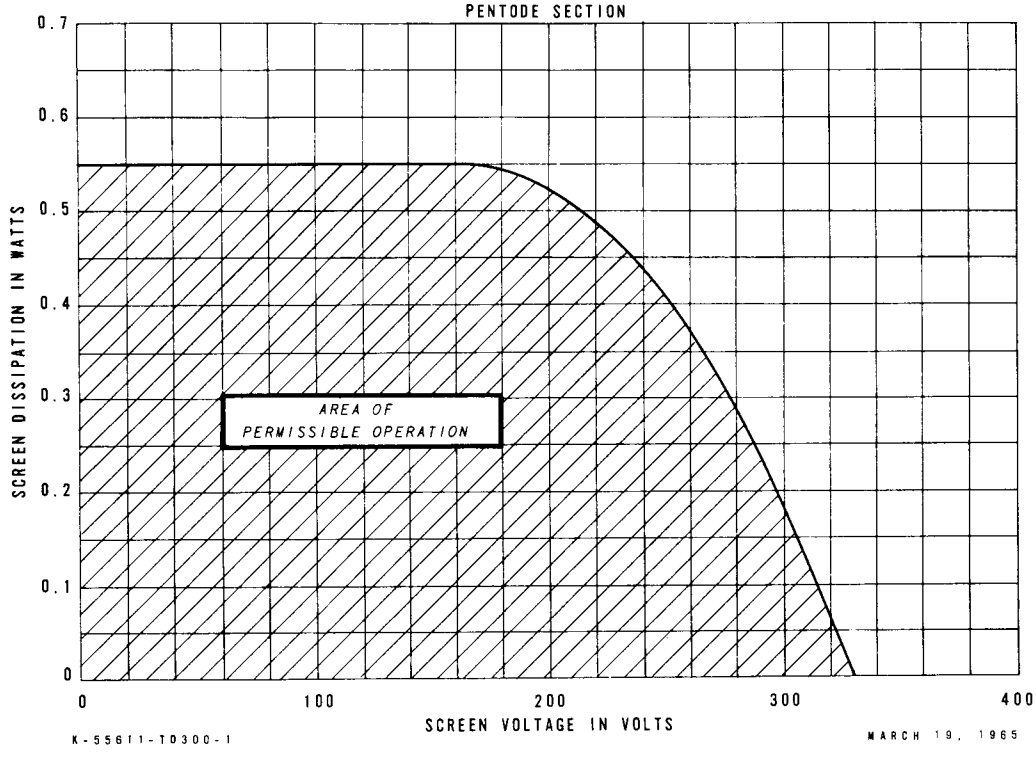
* Heater voltage for a bogey tube at If = 0.6 amperes.

‡ 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.

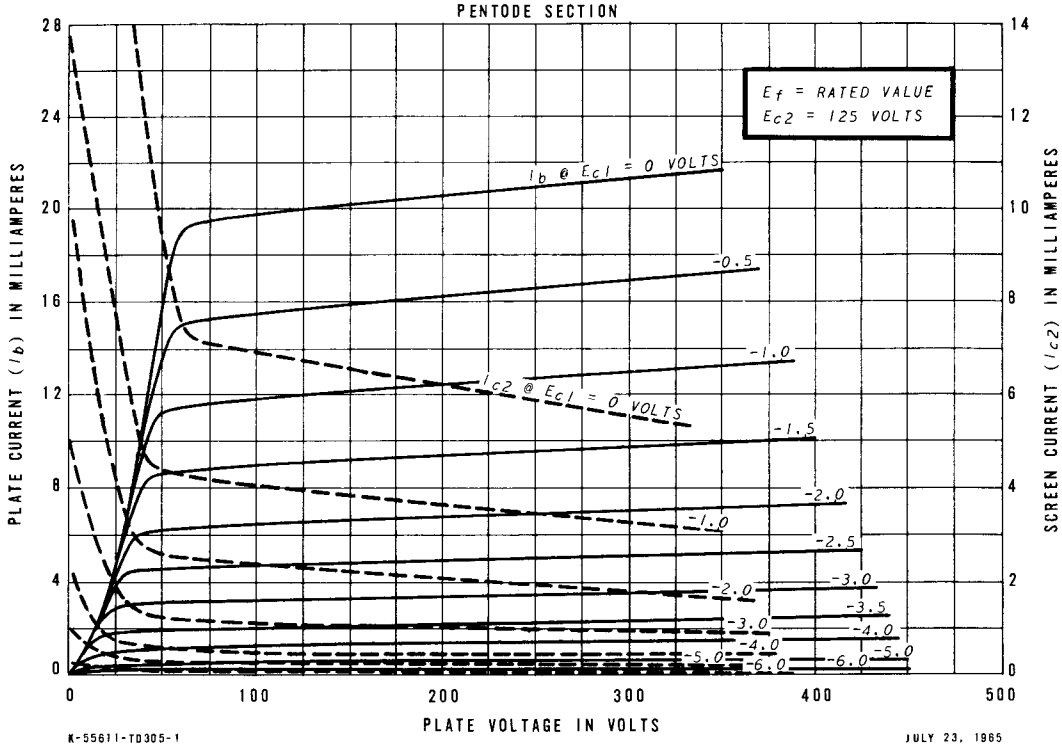
§ The time required for the voltage across the heater to reach 80 percent of the bogey value after applying 4 times the bogey heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the bogey heater voltage divided by the bogey heater current.

¶ Without external shield.

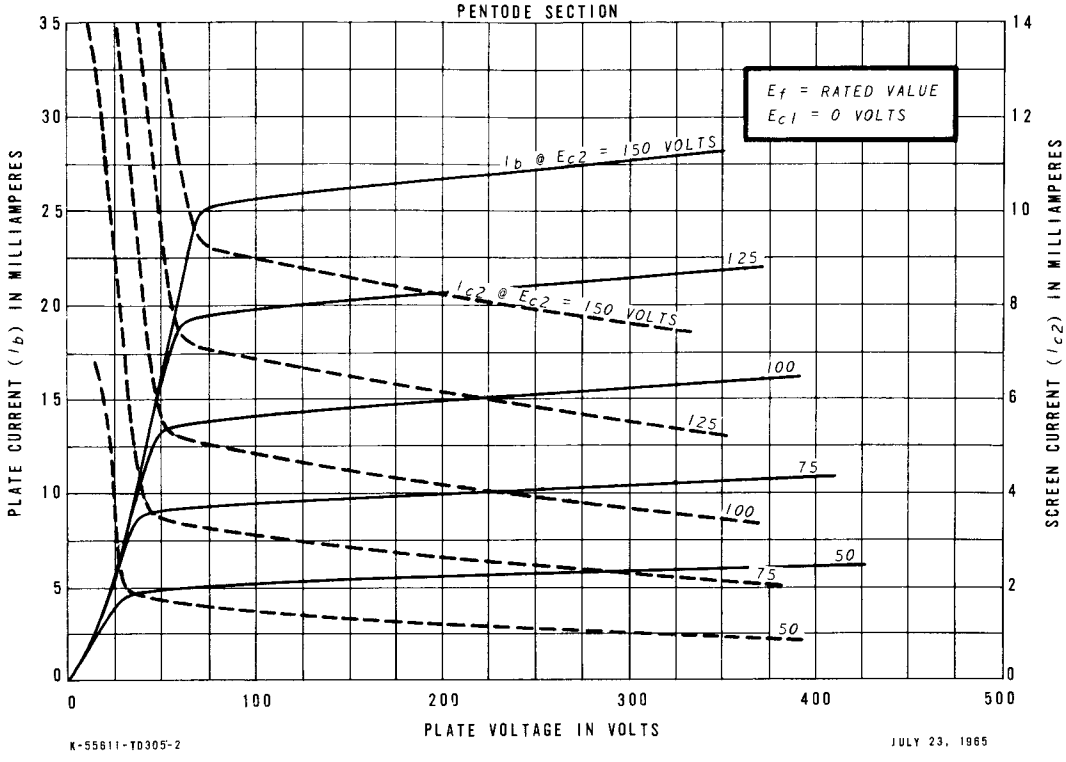
SCREEN RATING CHART



AVERAGE PLATE CHARACTERISTICS

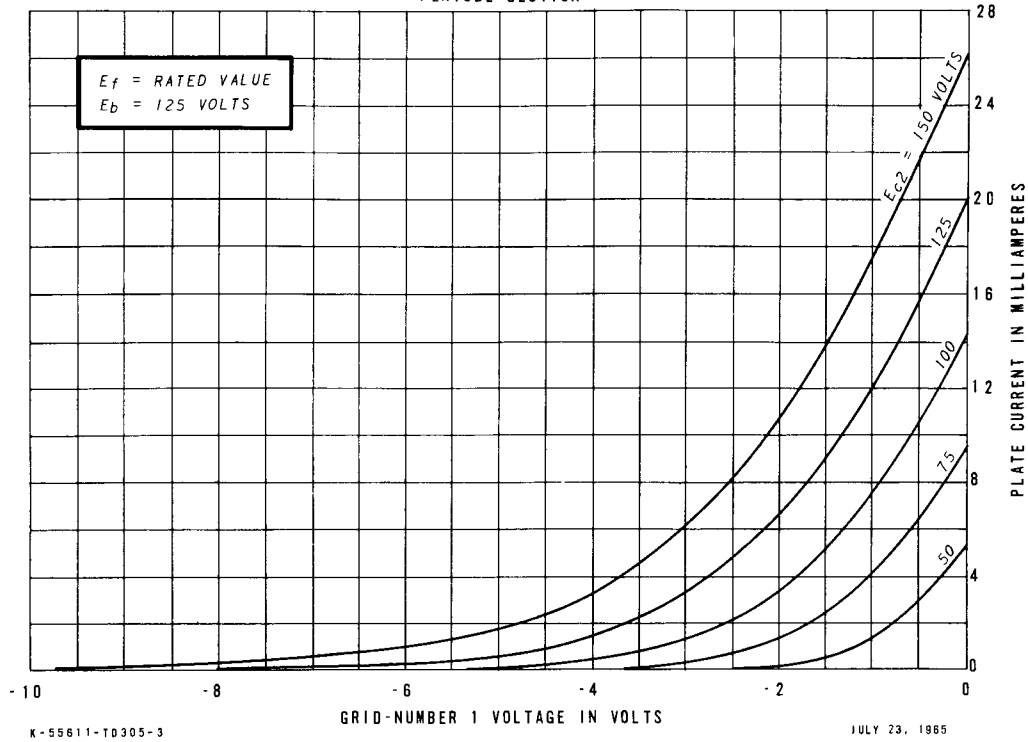


AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



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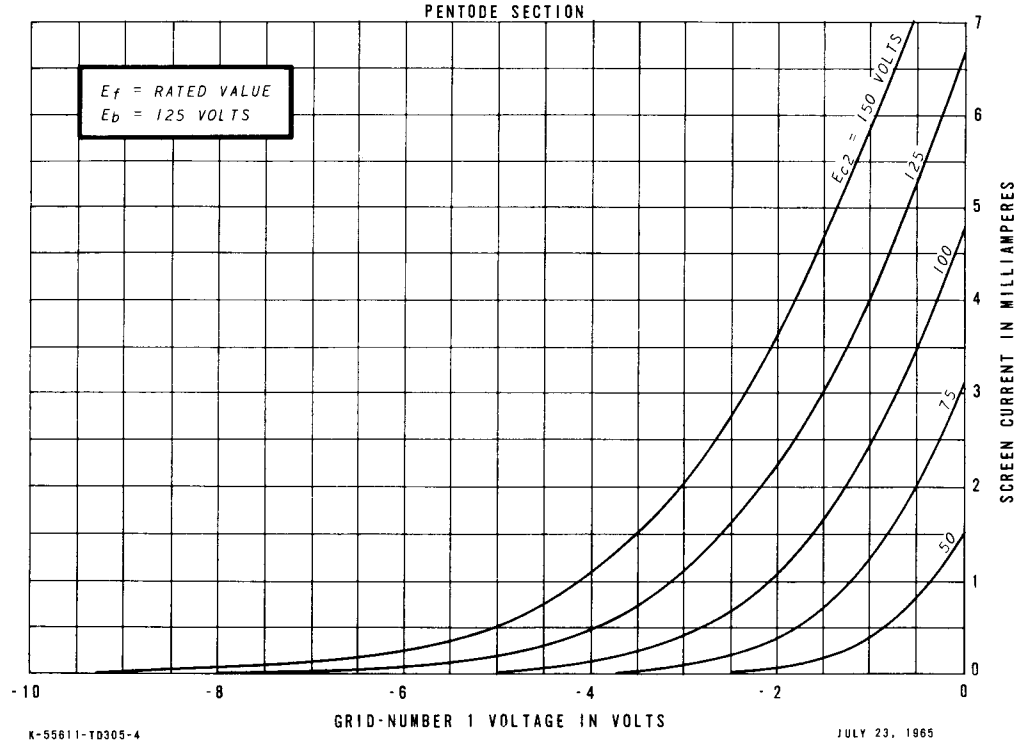
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



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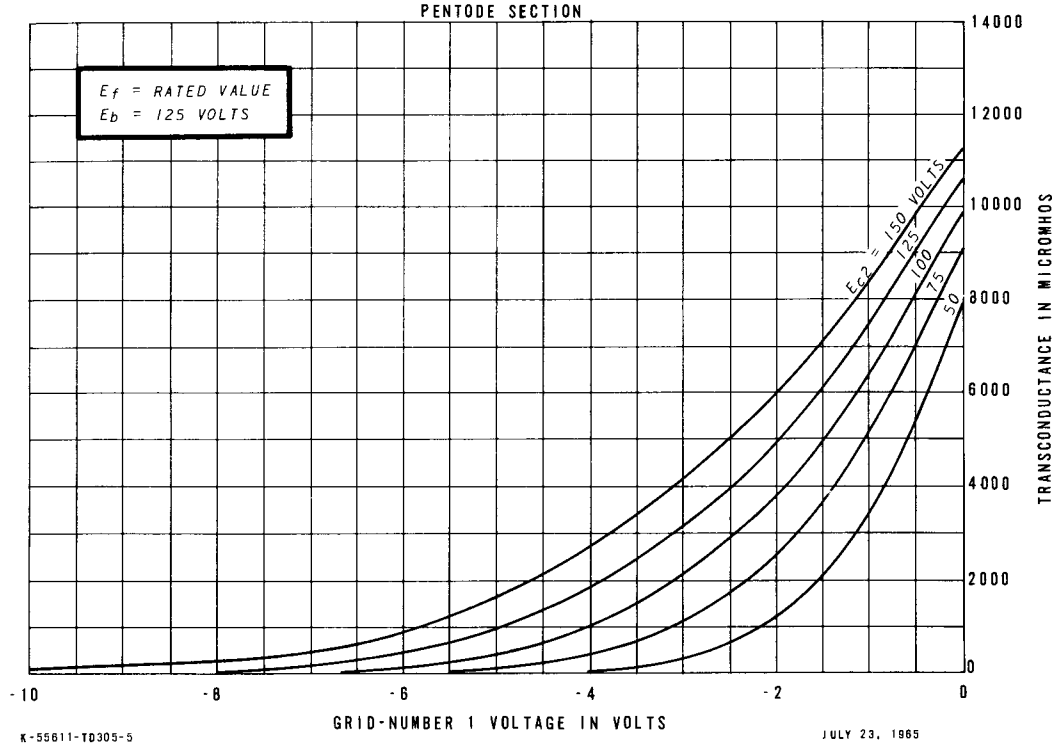
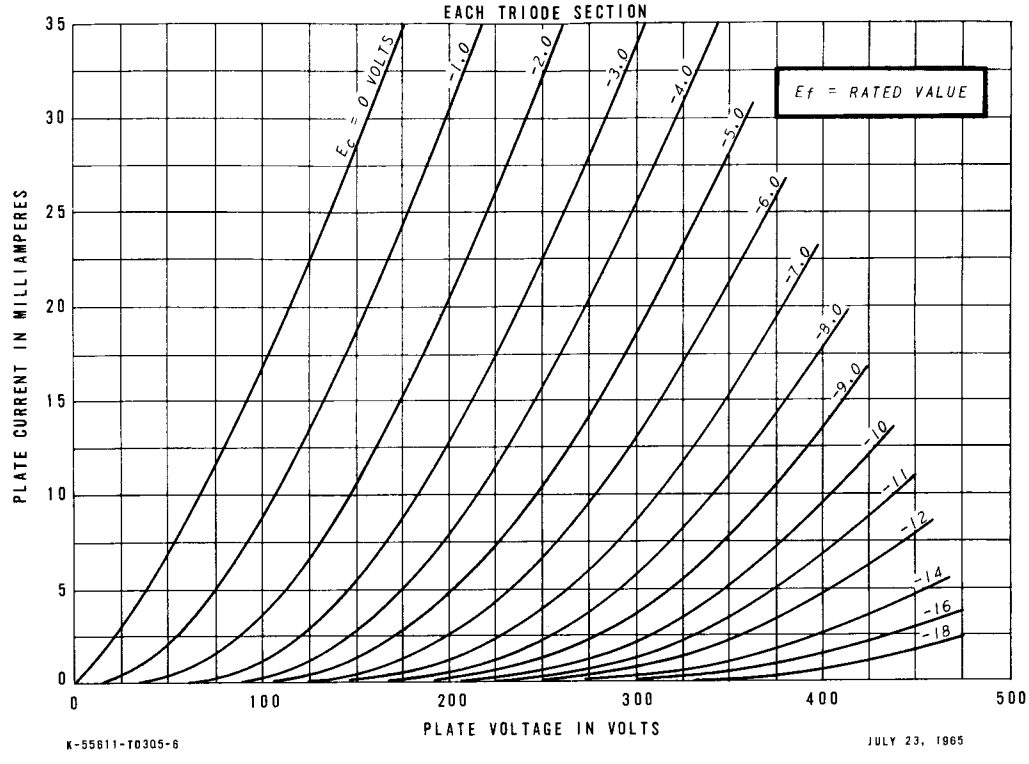
AVERAGE TRANSFER CHARACTERISTICS

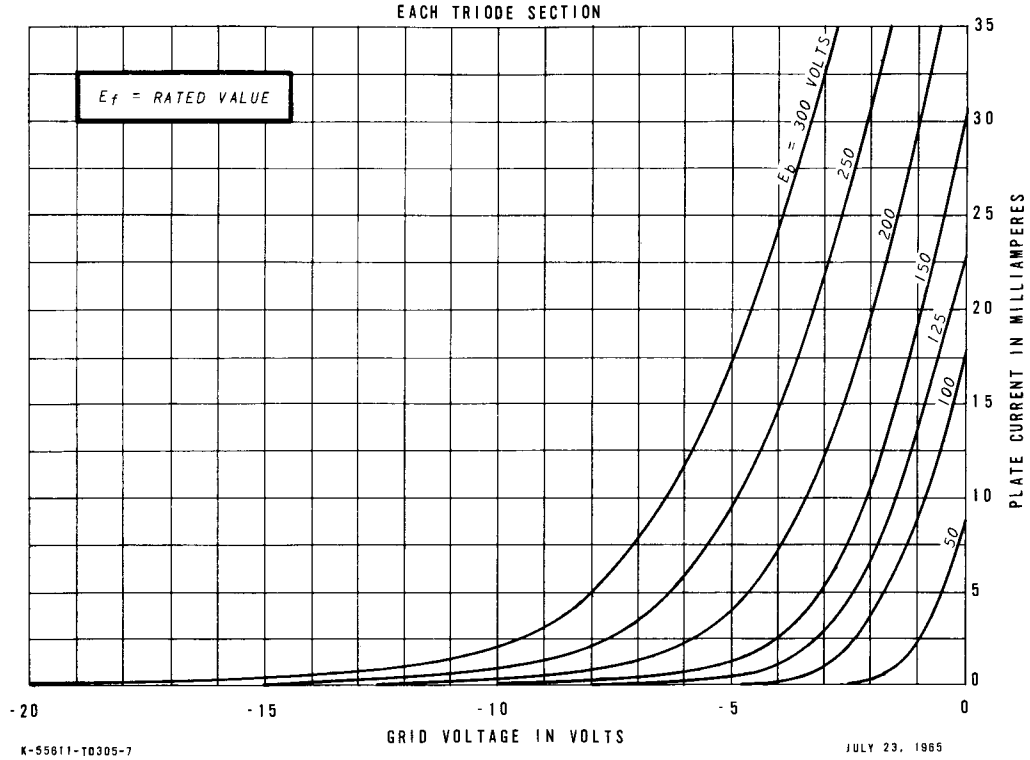


AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS

EACH TRIODE SECTION



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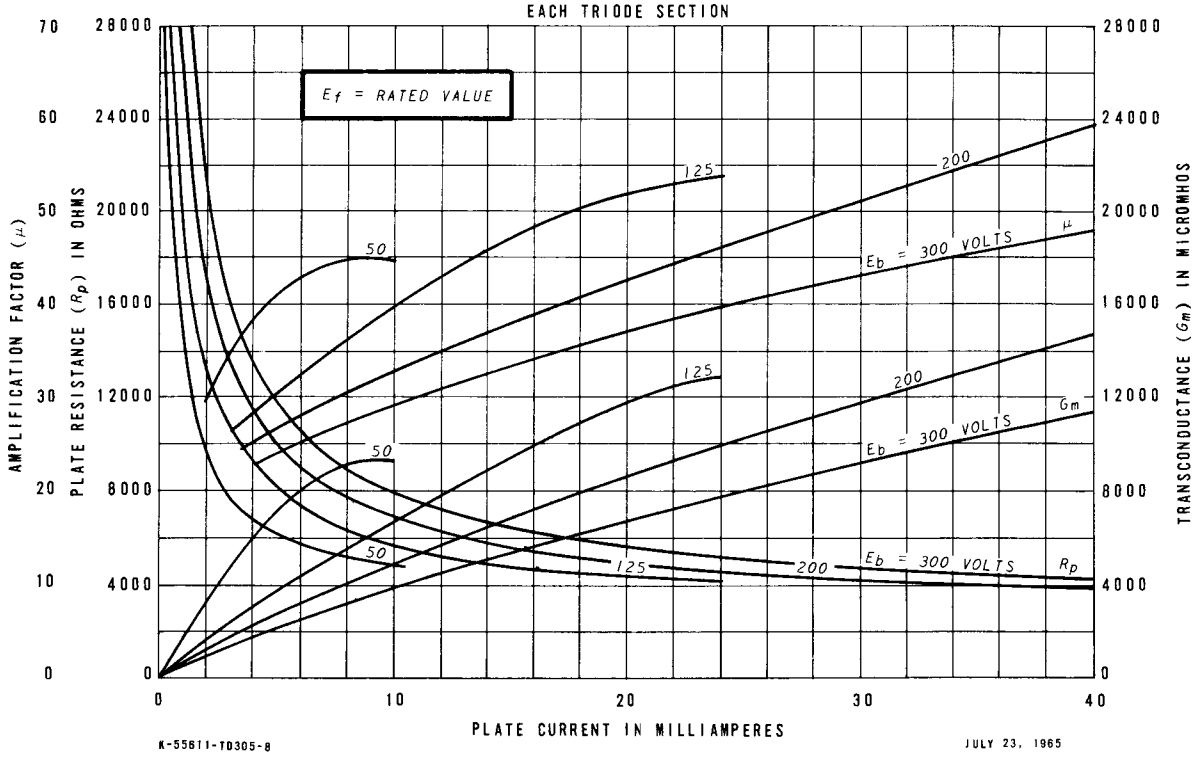
AVERAGE CHARACTERISTICS

EACH TRIODE SECTION



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JULY 23, 1965

TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky