—PRODUCT INFORMATION—

Compactron Triode-Pentode

6LU8

FOR TV VERTICAL-DEFLECTION OSCILLATOR AND AMPLIFIER APPLICATIONS

The 6LU8 is a compactron containing a medium-mu triode and a beam pentode. The triode is designed for service as a vertical-deflection oscillator and the pentode as a vertical-deflection amplifier in television receivers.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3±0.6	Volts
Heater Current‡	1.5	Amperes

Direct Interelectrode Capacitances§

Pentode Section

Grid-Number 1 to Plate: (Pg1 to Pp)	0.5	pf
Input: Pg1 to (h + Pk + Pg2 + b.p.)	16	pf
Output: Pp to (h + Pk + Pg2 + b.p.)	9.0	pf

Triode Section

Grid to Plate: (Tg to Tp)	6.0	pf
Input: Tg to (h + Tk)	7.0	pf
Output: Tp to (h + Tk)	2.0	pf

Coupling

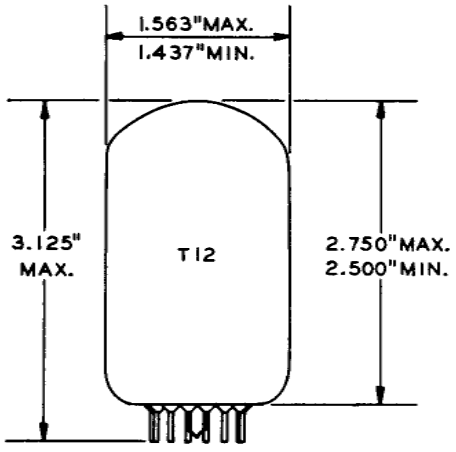
Pentode Grid-Number 1 to Triode Plate: (Pg1 to Tp), max	0.13	pf
Pentode Plate to Triode Plate: (Pp to Tp), max	0.40	pf

MECHANICAL

Operating Position - Any
Envelope - T-12, Glass
Base - E12-74, Button 12-Pin
Outline Drawing - EIA 12-57

Maximum Diameter	1.563	Inches
Minimum Diameter	1.437	Inches
Maximum Over-all Length	3.125	Inches
Maximum Seated Height	2.750	Inches
Minimum Seated Height	2.500	Inches

PHYSICAL DIMENSIONS

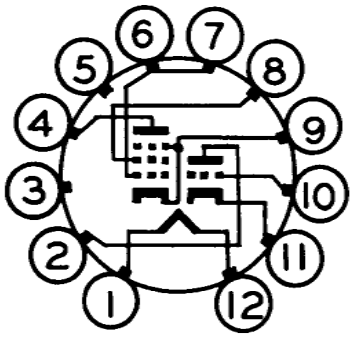


EIA 12-57

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Triode Plate
Pin 3 - No Connection
Pin 4 - Pentode Plate
Pin 5 - No Connection
Pin 6 - Pentode Grid Number 1
Pin 7 - Pentode Grid Number 1
Pin 8 - Pentode Grid Number 2 (Screen)
Pin 9 - Pentode Cathode and Beam Plates
Pin 10 - Triode Grid
Pin 11 - Triode Cathode
Pin 12 - Heater

BASING DIAGRAM



EIA 12DZ

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Triode Section-Vertical Oscillator Service¶

DC Plate Voltage	400	Volts
Peak Negative Grid Voltage	400	Volts
Plate Dissipation	2.5	Watts
DC Cathode Current	30	Milliamperes
Peak Cathode Current	105	Milliamperes
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 Cathode Bias	2.2	Megohms

Pentode Section-Vertical Deflection Amplifier Service¶

DC Plate Voltage	400	Volts
Peak Pulse Plate Voltage	2500	Volts
Screen Voltage	300	Volts
Peak Negative Grid-Number 1 Voltage	250	Volts
Plate Dissipation#	14	Watts
Screen Dissipation	2.75	Watts
DC Cathode Current	75	Milliamperes
Peak Cathode Current	260	Milliamperes
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	1.0	Megohms
With Cathode Bias	2.2	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

Triode Section

Plate Voltage	250	Volts
Grid Voltage	-4.0	Volts
Amplification Factor	58	
Plate Resistance, approximate	16000	Ohms
Transconductance	3600	Micromhos
Plate Current	2.3	Milliamperes
Grid Voltage, approximate		
Ib = 10 Microamperes	-6.6	Volts

CHARACTERISTICS AND TYPICAL OPERATION (Cont'd)

Pentode Section

Plate Voltage	45	135	Volts
Screen Voltage	125	120	Volts
Grid-Number 1 Voltage	0Δ	-10	Volts
Plate Resistance, approximate	---	12000	Ohms
Transconductance	---	9300	Micromhos
Plate Current	200	56	Milliamperes
Screen Current	20	3.0	Milliamperes
Grid-Number 1 Voltage, approximate Ib = 100 Microamperes	---	-30	Volts
Grid-Number 1 Voltage, approximate Ib = 1.0 Milliampere	---	-26	Volts
Triode Amplification Factor**	---	6.5	

NOTES

* 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.

§ Without external shield.

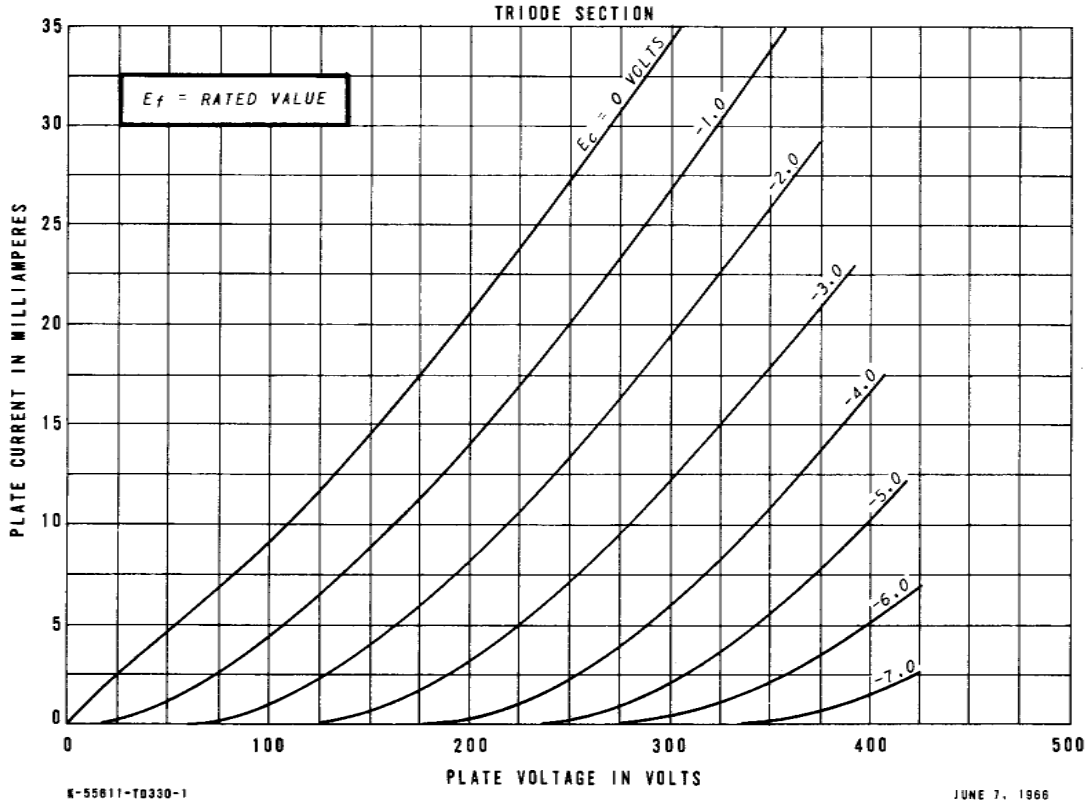
¶ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

\# In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

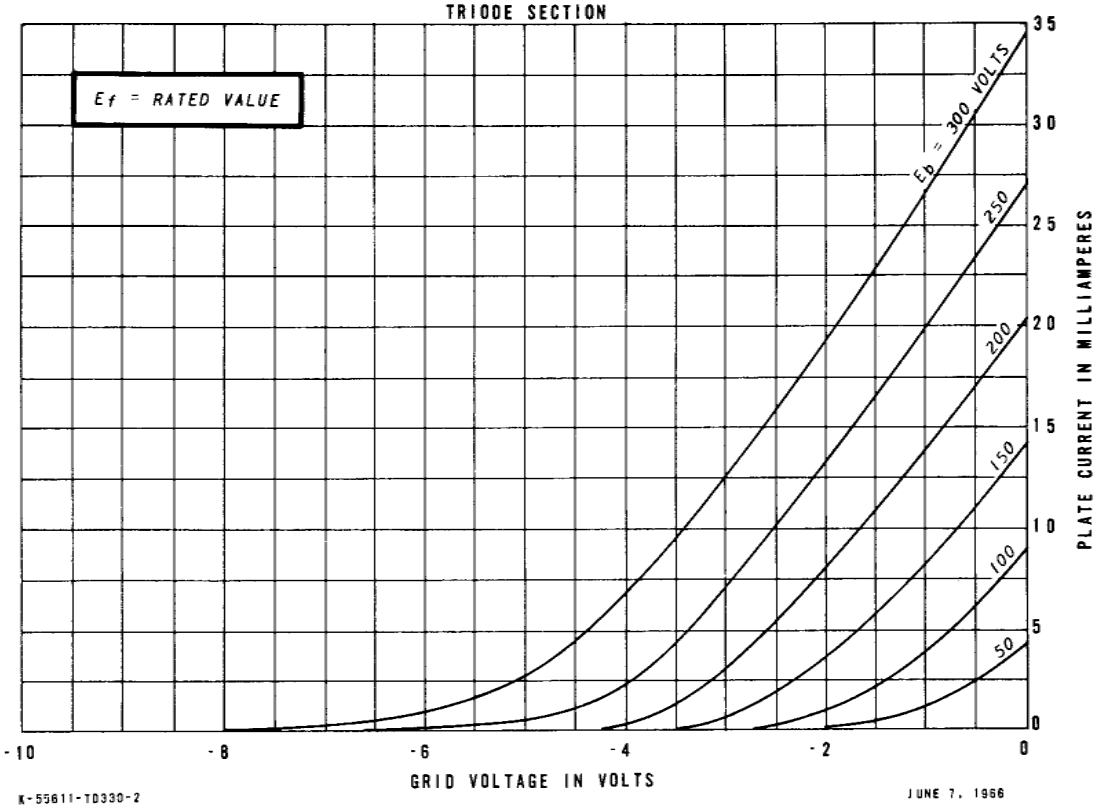
Δ Applied for short interval (two seconds maximum) so as not to damage tube.

** Triode connection (screen tied to plate) with Eb = Ec2 = 120 volts and Ec1 = -10 volts.

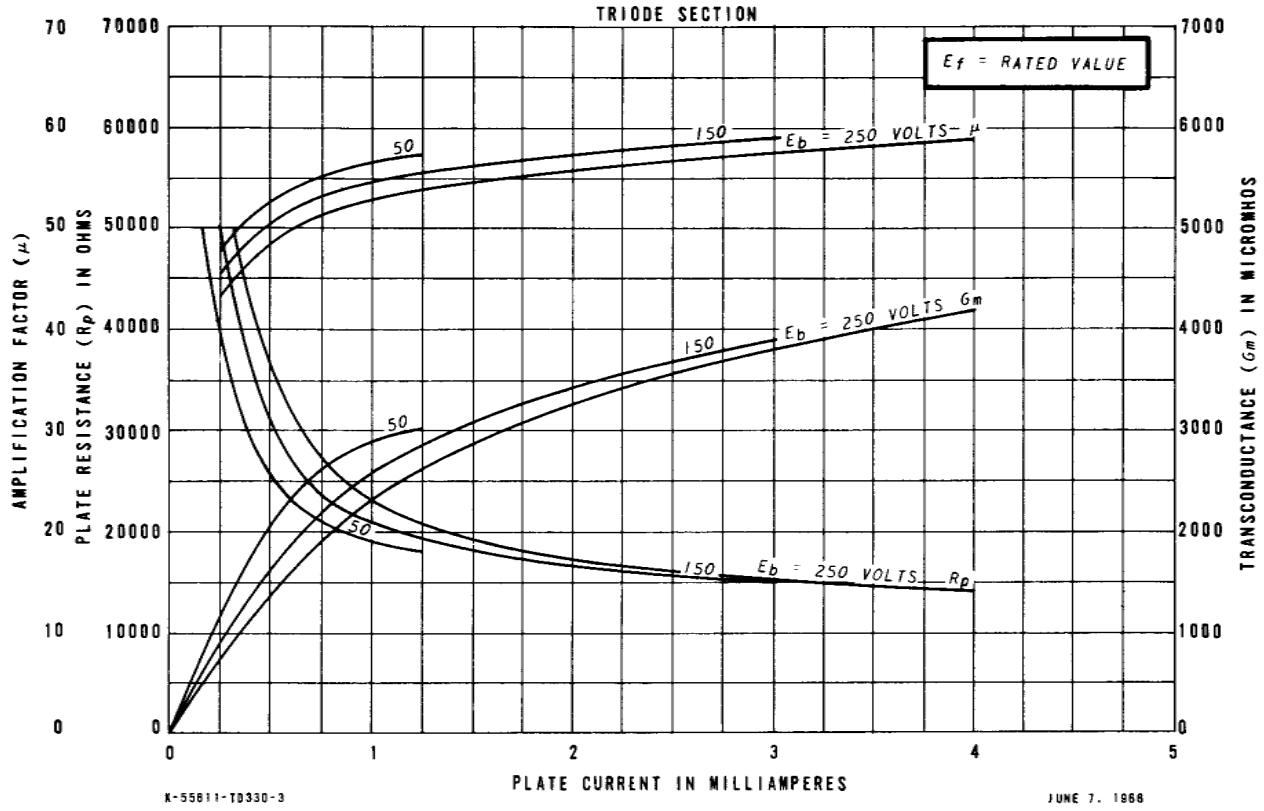
AVERAGE PLATE CHARACTERISTICS



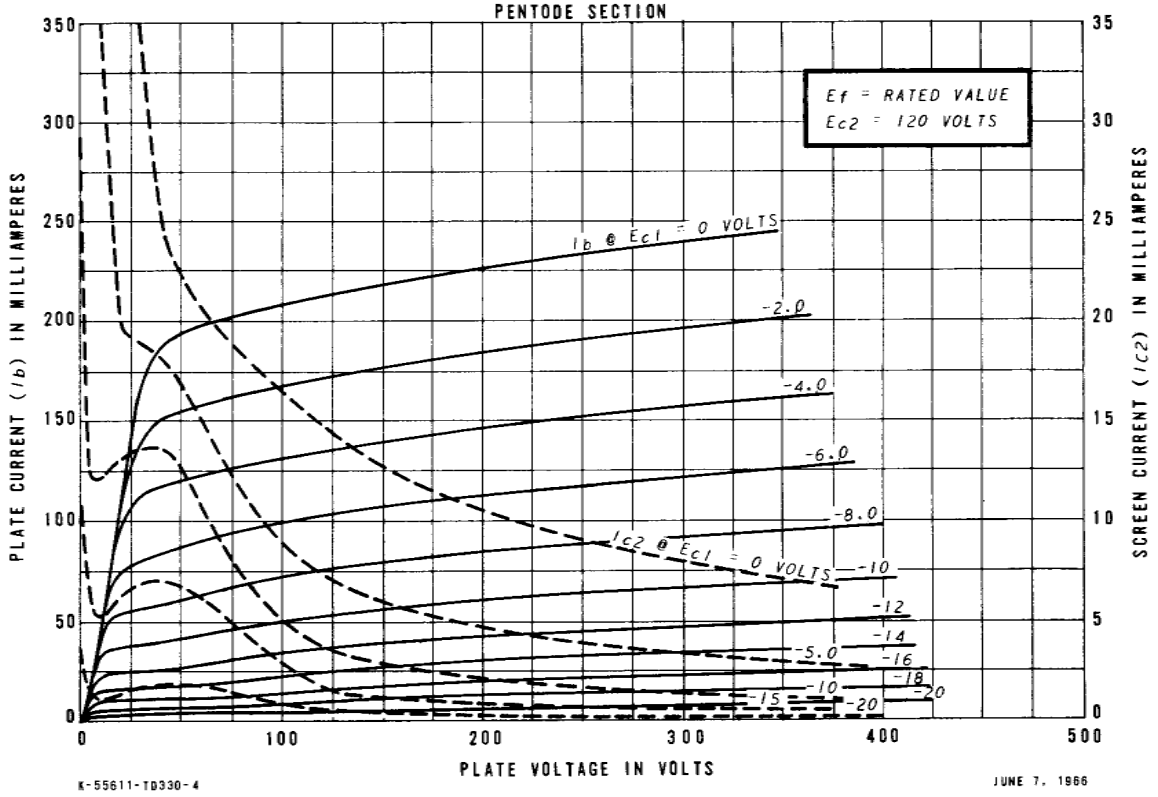
AVERAGE TRANSFER CHARACTERISTICS



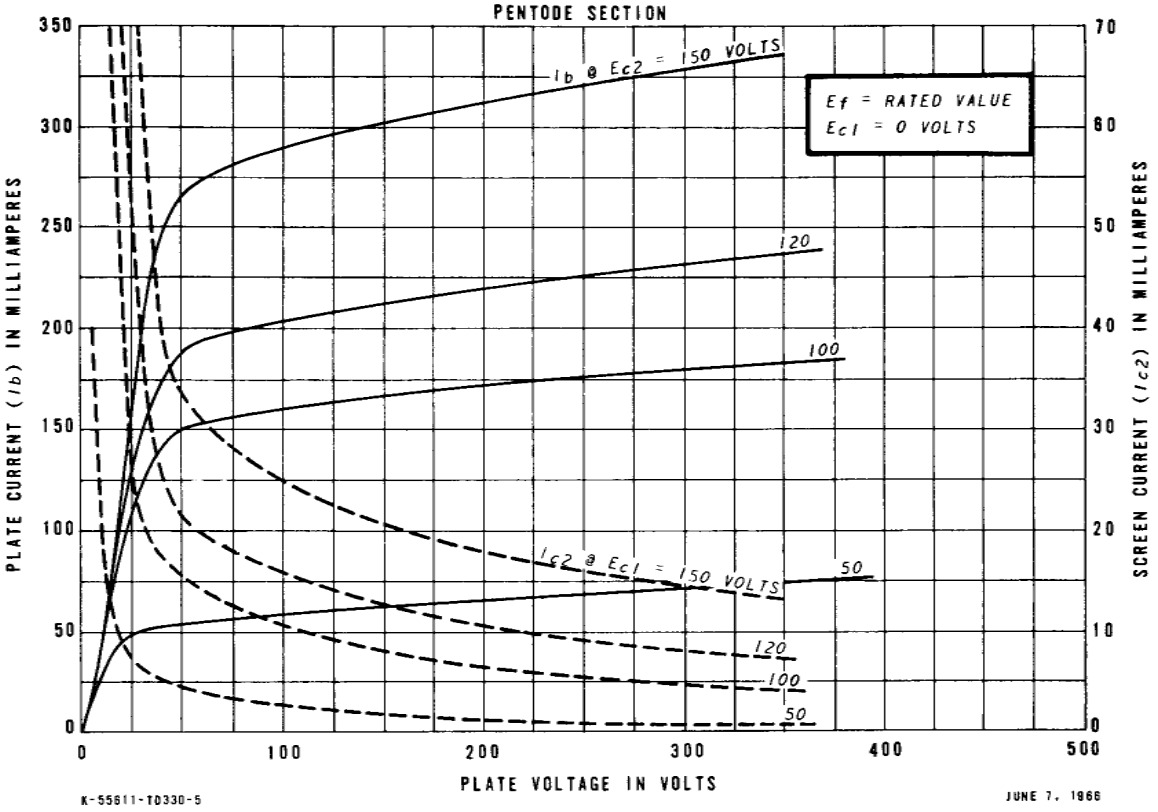
AVERAGE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS

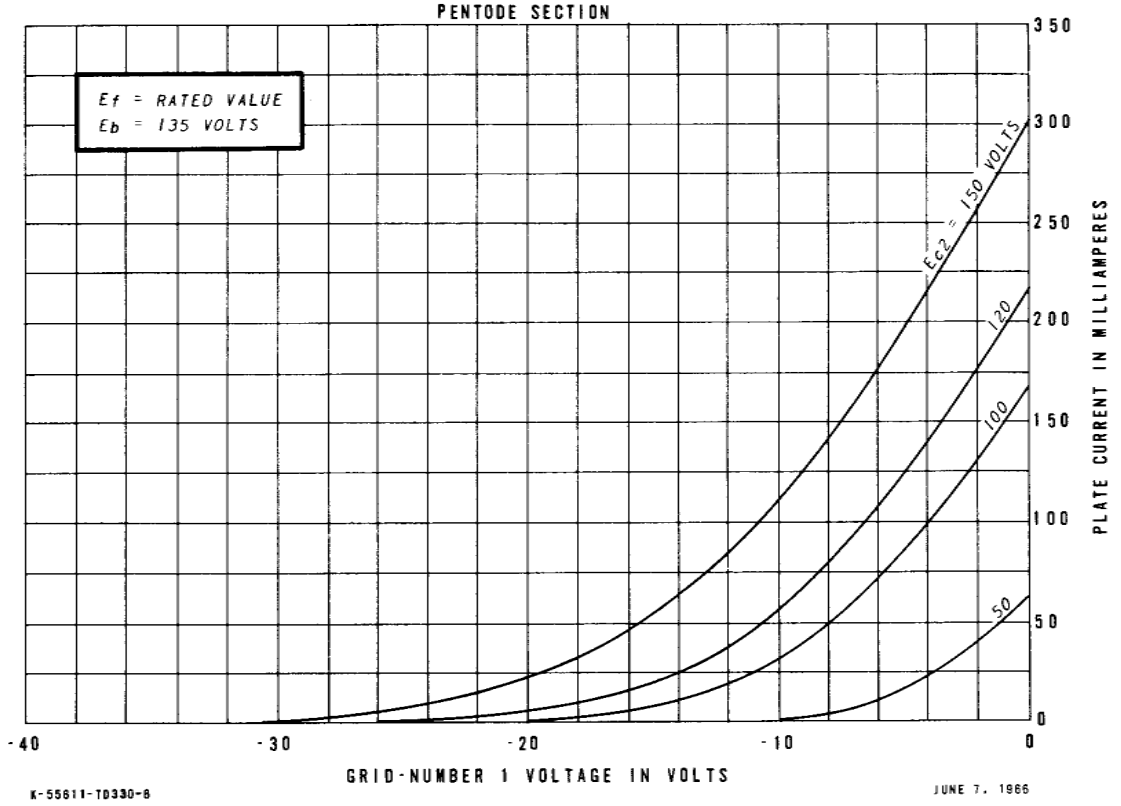


AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



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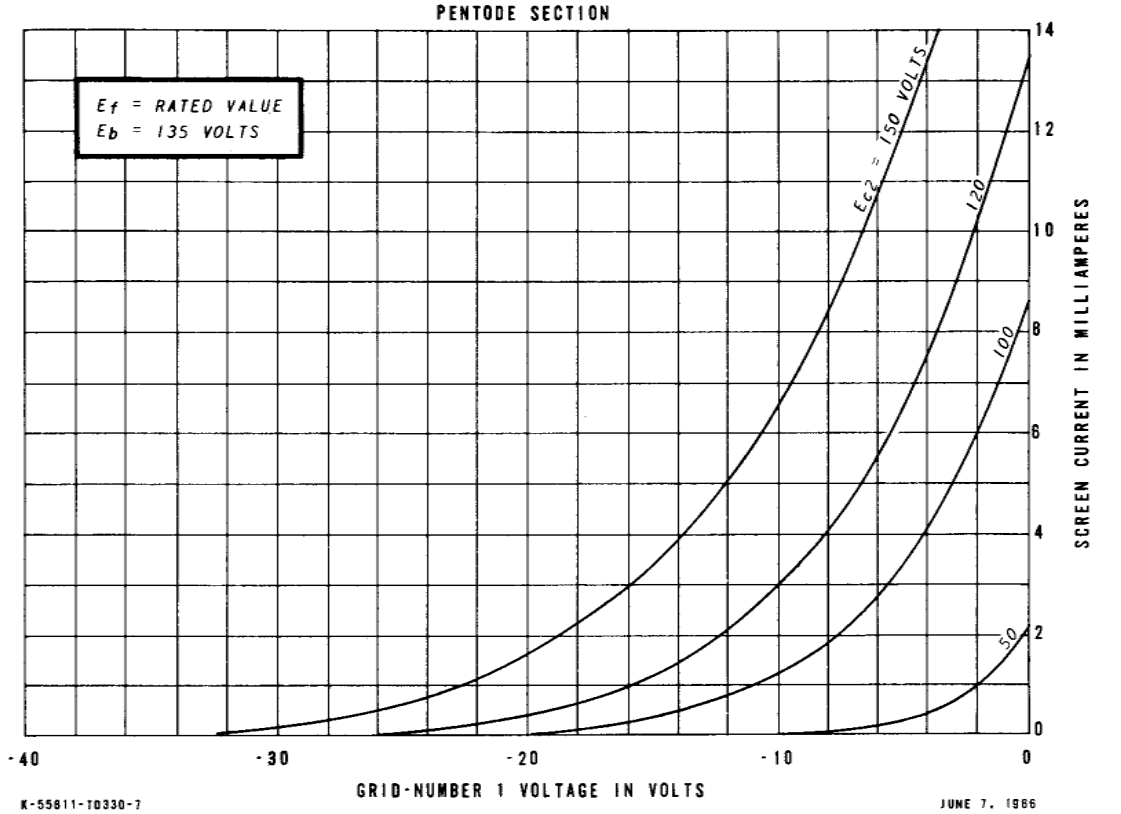
JUNE 7, 1966

AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



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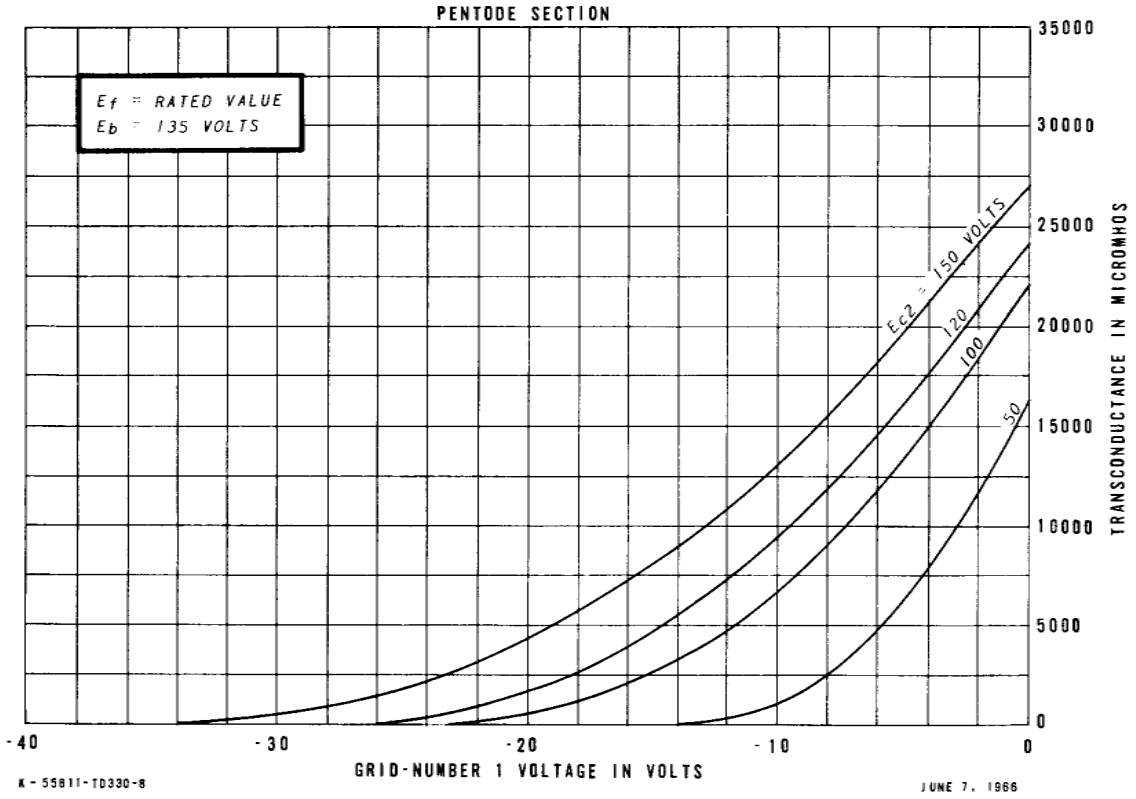
AVERAGE TRANSFER CHARACTERISTICS



TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky