Electronic TUBES

6CX8—8CX8

TRIODE-PENTODE

DESCRIPTION AND RATING

The 6CX8 is a miniature tube containing a sharp-cutoff pentode and a medium-mu triode in one envelope. The pentode section is intended primarily for use as a video amplifier. The triode section is suitable for a sweep oscillator, sync separator, sync amplifier, or sync clipper.

Except for heater ratings, the 8CX8 is identical to the 6CX8. In addition, it incorporates a controlled heater warm-up characteristic which makes it especially suited for use in television receivers with series-connected heaters.

GENERAL

ELECTRICAL	6CX8	8CX8	
Cathode—Coated Unipotential			
Heater Voltage, AC or DC	6.3 ± 10%	8.0	Volts
Heater Current	0.75	0.6 ± 6%	Amperes
Heater Warm-up Time*	....	11	Seconds
Direct Interelectrode Capacitances†			
Pentode Section			
Grid-Number 1 to Plate		0.06	μμf
Input		9.0	μμf
Output		4.4	μμf
Triode Section			
Grid to Plate		4.4	μμf
Input		2.2	μμf
Output		0.38	μμf
Pentode Grid-Number 1 to Triode Plate, maximum		.005	μμf
Triode Grid to Pentode Plate, maximum		.018	μμf
Pentode Plate to Triode Plate, maximum		0.17	μμf

MECHANICAL

Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1 Small Button 9-Pin

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES, See Note on page 2

	Pentode Section	Triode Section	
Plate Voltage	330	330	Volts
Screen-Supply Voltage	330	...	Volts
Screen Voltage—See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0	0	Volts
Plate Dissipation	5.0	2.0	Watts
Screen Dissipation	1.1	...	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

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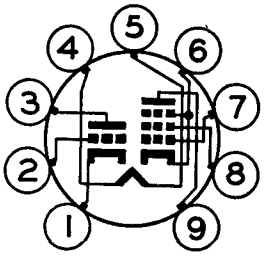
GENERAL ELECTRIC

Supersedes ET-T1387, dated 11-56

BASING DIAGRAM

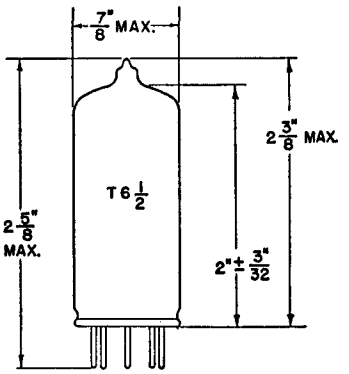


EIA 9DX

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

PHYSICAL DIMENSIONS



EIA 6-3

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey 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, taking responsibility for the effects of changes in operating conditions due to variations in tube characteristics.

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, and environmental conditions.

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A_1 AMPLIFIER

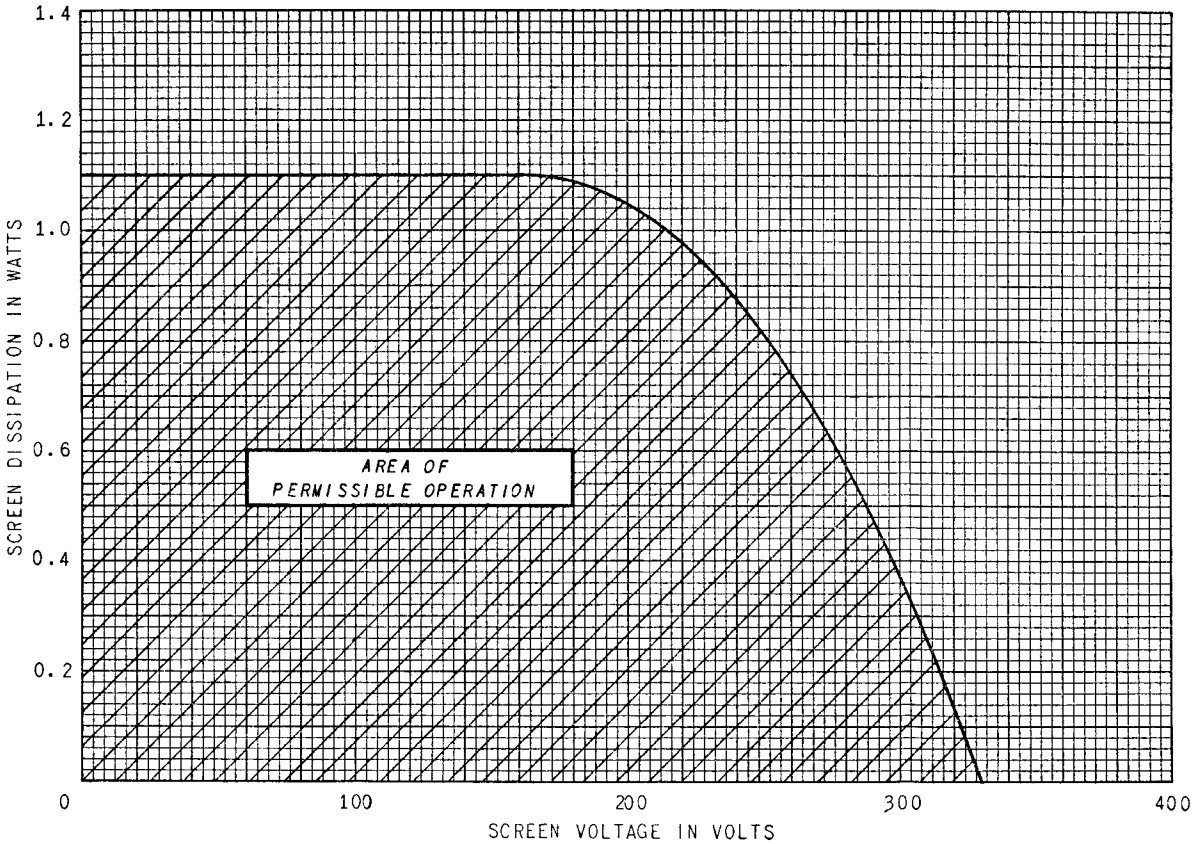
	Pentode Section		Triode Section	
Plate Voltage	40	200	150	Volts
Screen Voltage	125	125	....	Volts
Grid-Number 1 Voltage	0‡	.....	....	Volts
Cathode-Bias Resistor		68	150	Ohms
Amplification Factor		.....	40	
Plate Resistance, approximate		70000	8700	Ohms
Transconductance		10000	4600	Micromhos
Plate Current	40	24	9.2	Milliamperes
Screen Current	15.5	5.2	....	Milliamperes
Grid-Number 1 Voltage, approximate Ib = 100 Microamperes		−8.5	−5.0	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.

† Without external shield.

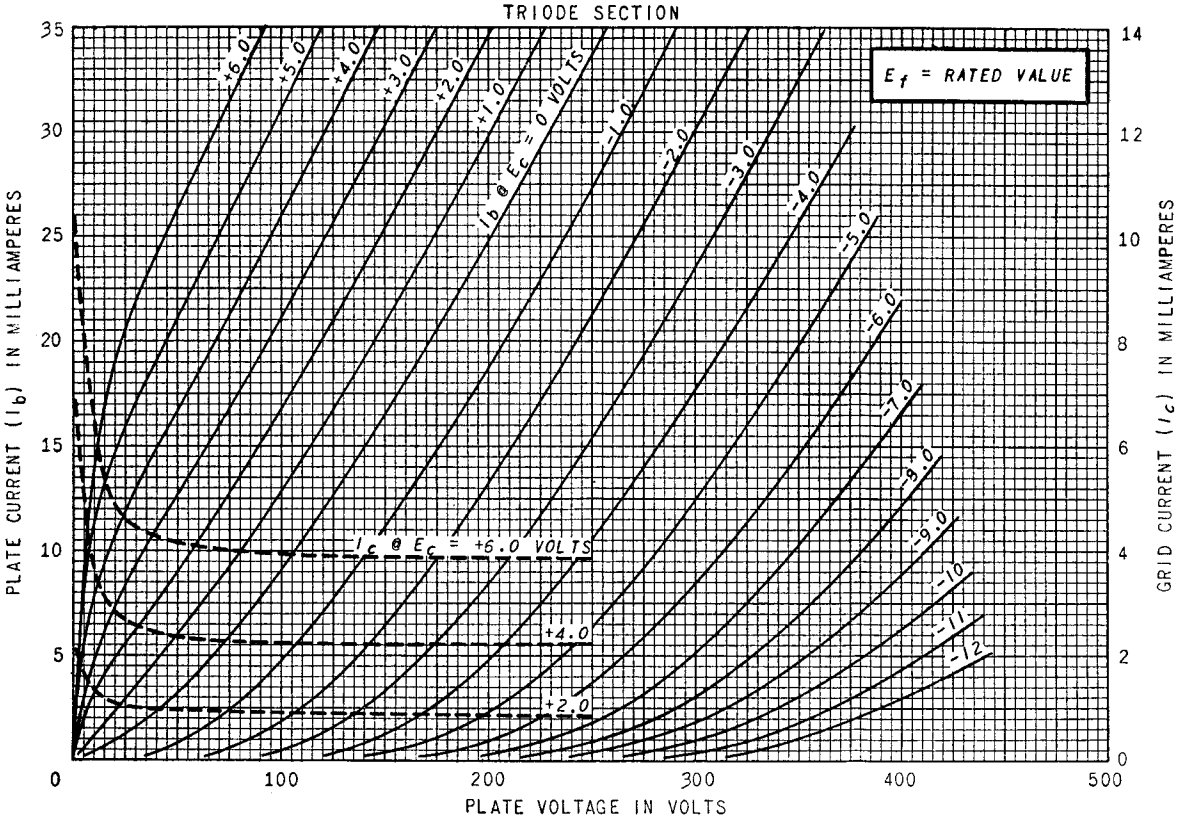
‡ Applied for short interval (two seconds maximum) so as not to damage tube.

SCREEN RATING CHART



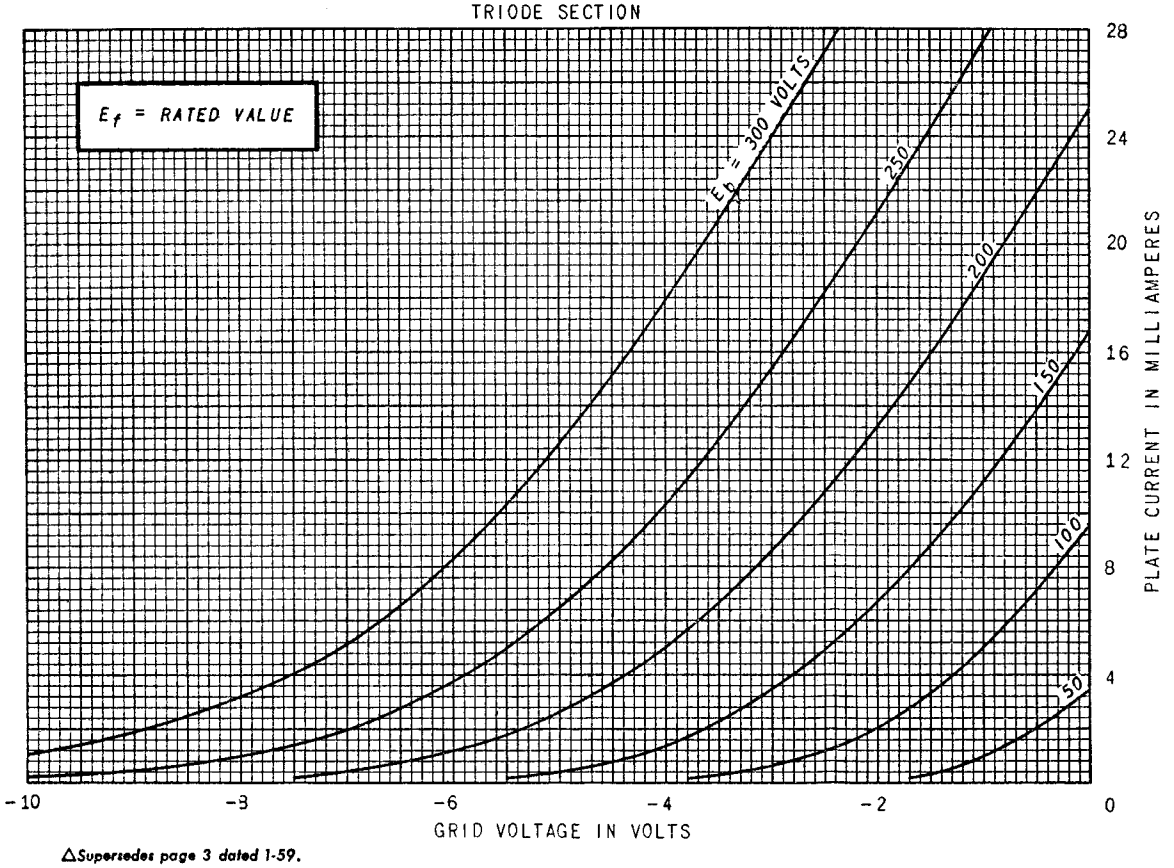
AVERAGE PLATE CHARACTERISTICS

TRIODE SECTION



AVERAGE TRANSFER CHARACTERISTICS

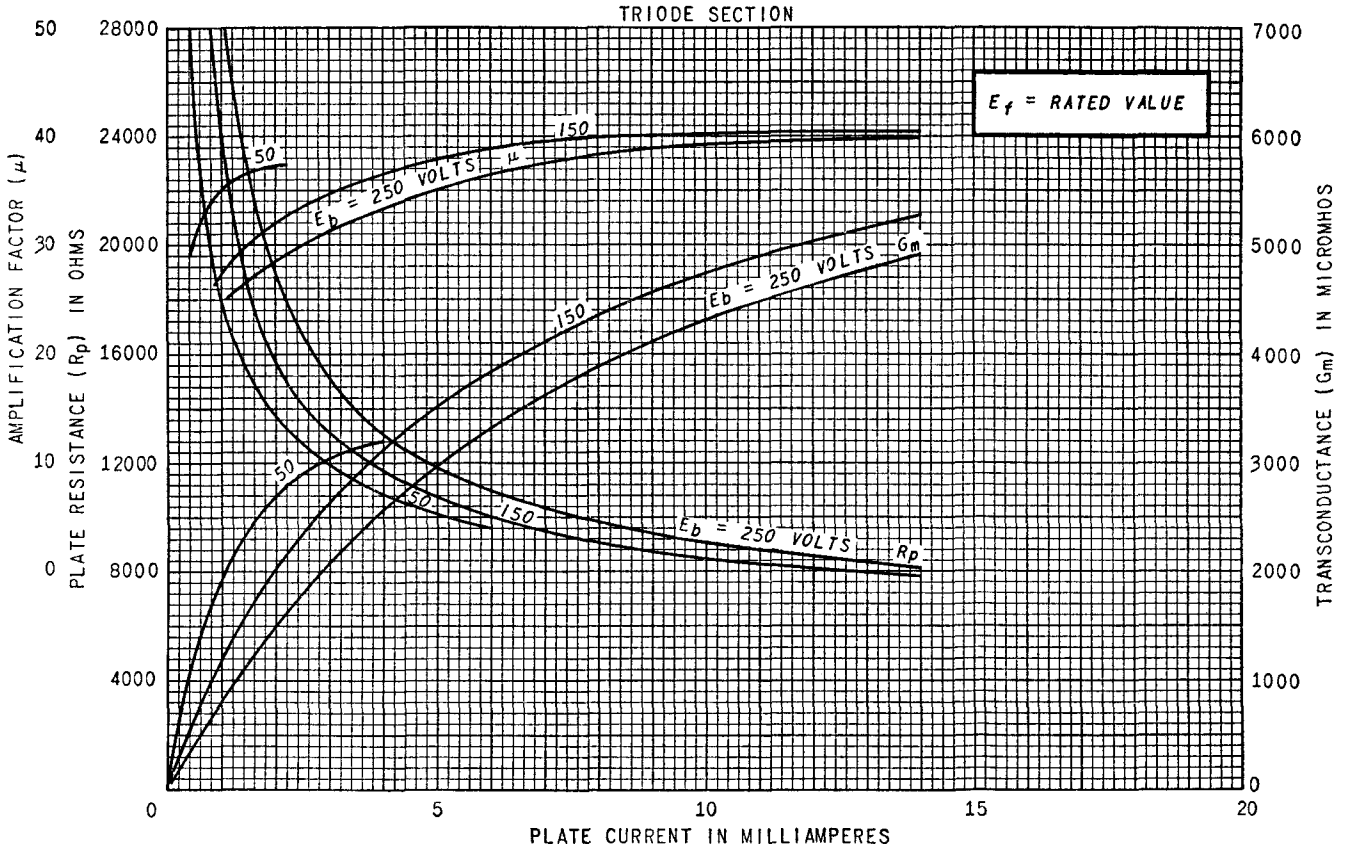
TRIODE SECTION



△*Supersedes page 3 dated 1-59.*

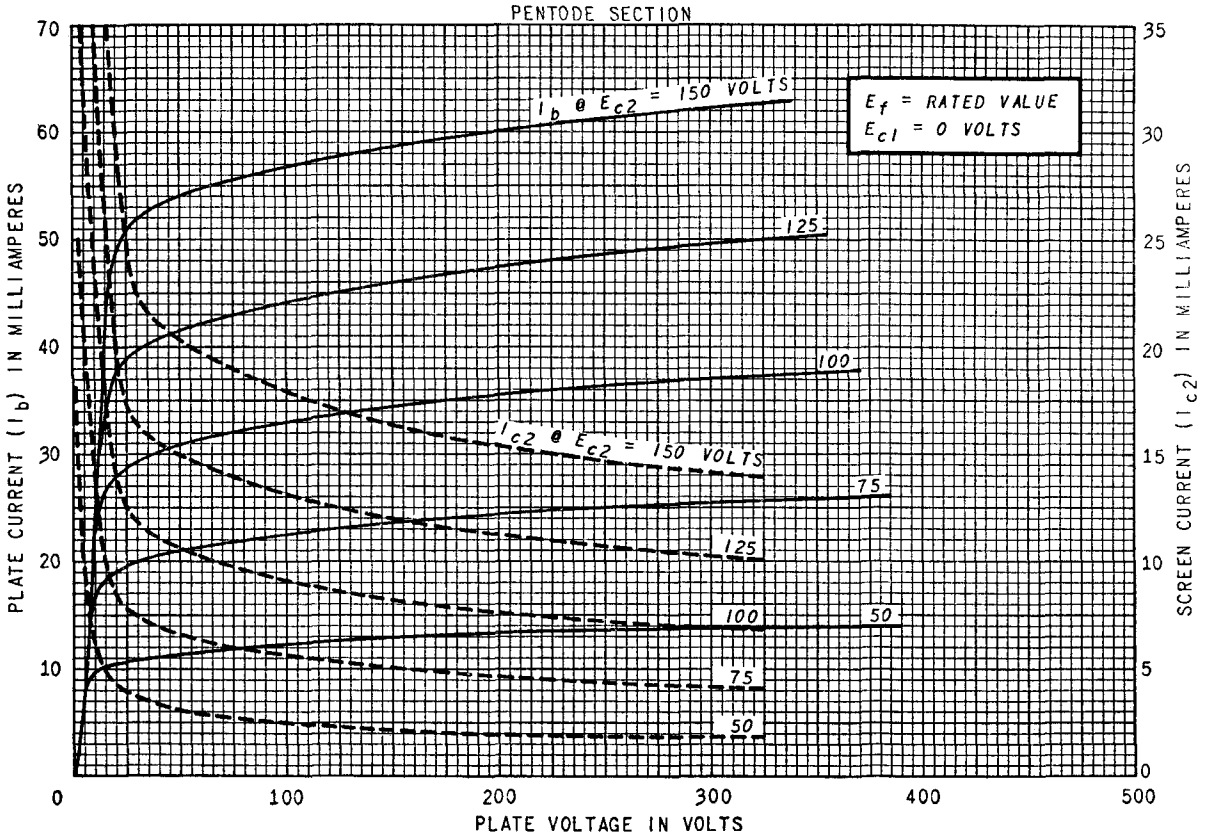
AVERAGE CHARACTERISTICS

TRIODE SECTION



AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



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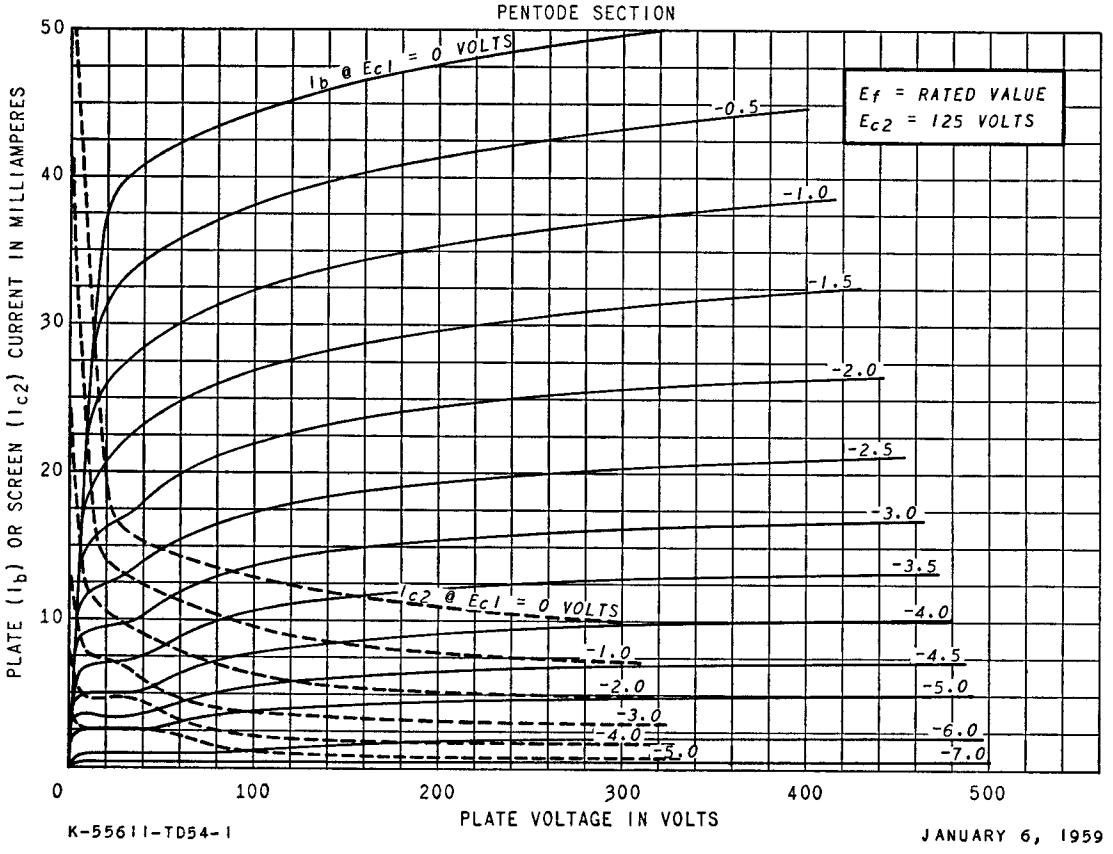

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AVERAGE TRANSFER CHARACTERISTICS

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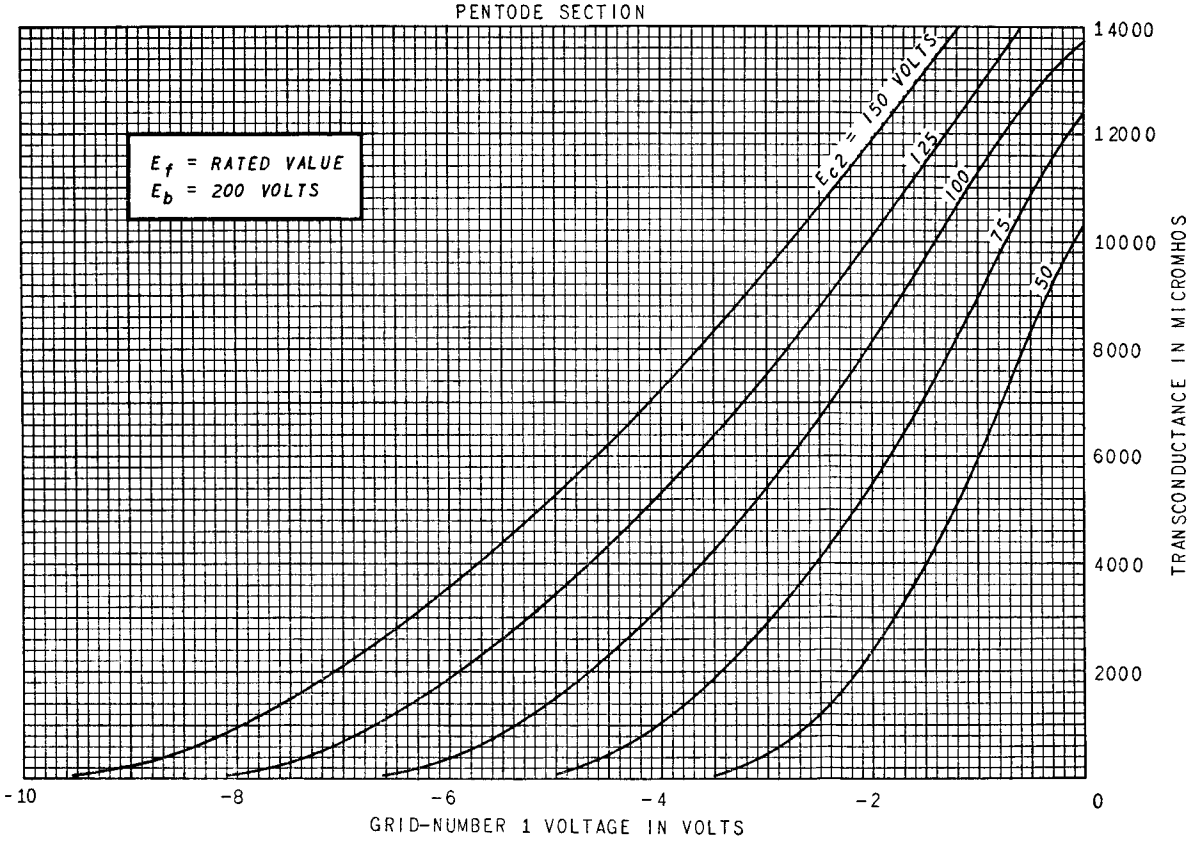

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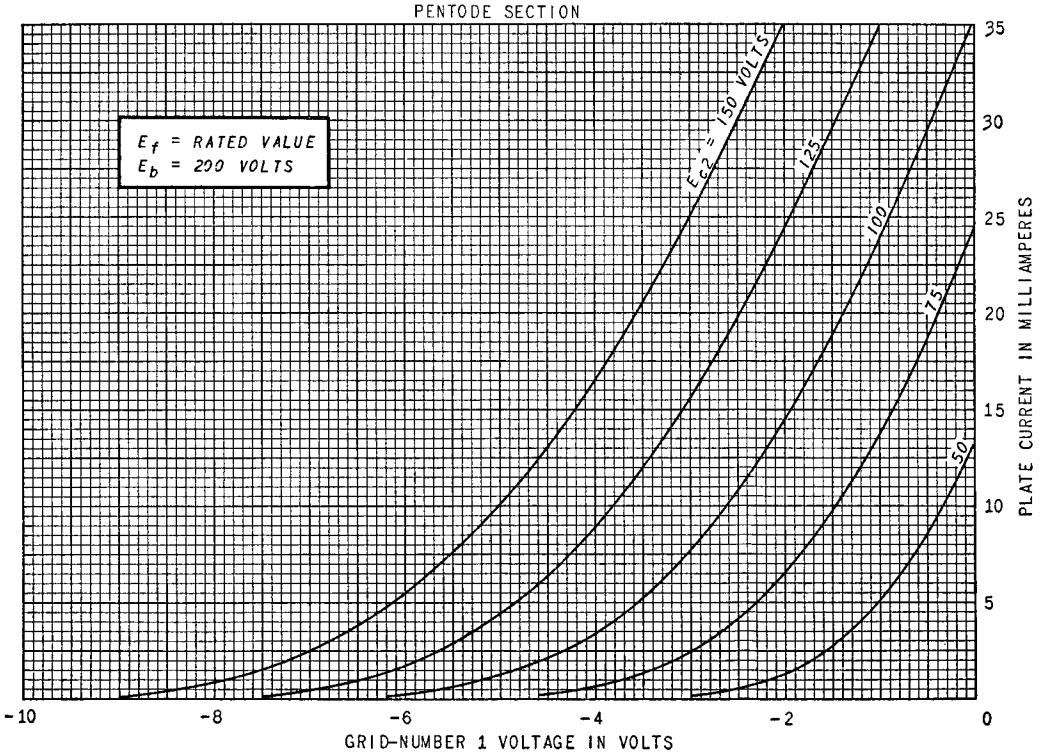

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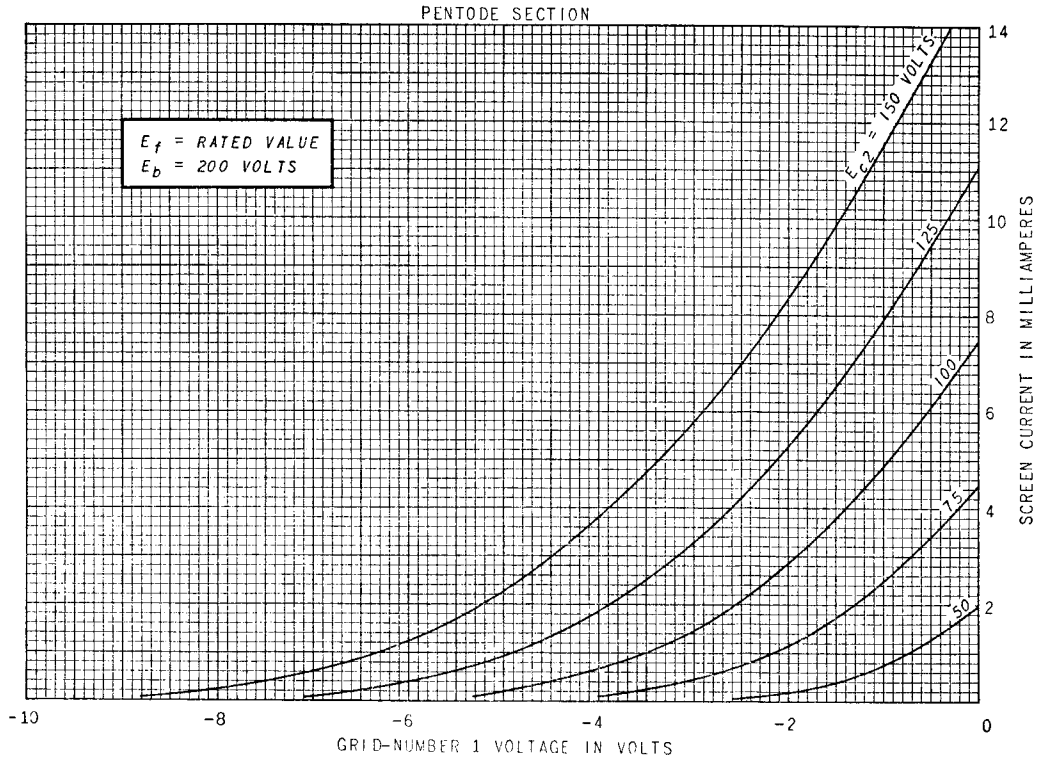
PENTODE SECTION