Electronic TUBES

6V6-GT—5V6-GT

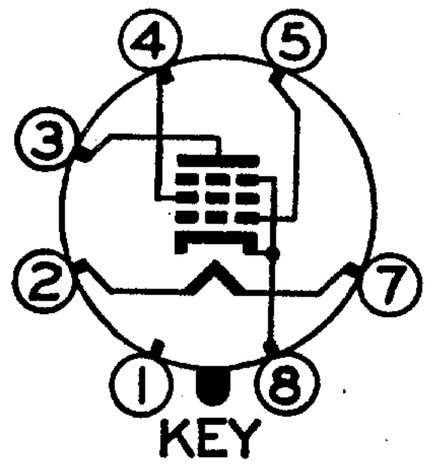
BEAM PENTODE

DESCRIPTION AND RATING

The 6V6-GT is a beam-power pentode designed for use in the audio-frequency power output stage of television and radio receivers. In this application, it is capable of supplying high power output with high sensitivity, high efficiency, and low third and higher-order harmonic distortion. The 6V6-GT may also be used as a triode-connected vertical-deflection amplifier in television receivers.

Except for heater ratings, the 5V6-GT is identical to the 6V6-GT. In addition, the 5V6-GT, as a result of its controlled heater warm-up characteristic, is especially suited for use in television receivers which employ series-connected heaters. When the 5V6-GT is used in conjunction with other 600-milliampere types which exhibit essentially the same heater warm-up characteristic, heater voltage surges across the individual tubes are minimized during the warm-up period.

BASING DIAGRAM



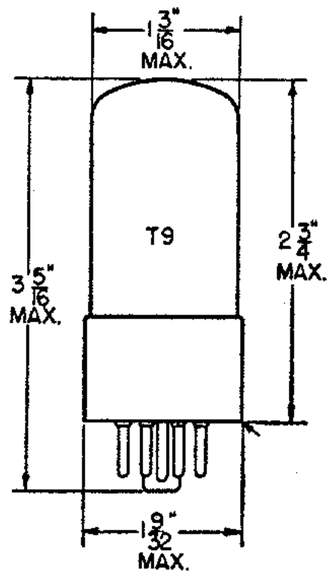
RETMA 7AC

TERMINAL CONNECTIONS

Pin 1—No Connection‡
Pin 2—Heater
Pin 3—Plate
Pin 4—Grid Number 2 (Screen)
Pin 5—Grid Number 1
Pin 7—Heater
Pin 8—Cathode and Beam Plates

‡ Pin 1 omitted on bases B6-81 and B6-84.

PHYSICAL DIMENSIONS



RETMA 9-11 or 9-41

GENERAL

ELECTRICAL

	5V6-GT	6V6-GT
Cathode—Coated Unipotential		
Heater Voltage, AC or DC	4.7	6.3 Volts
Heater Current	0.6	0.45 Amperes
Heater Warm-up Time*	11	____Seconds
Direct Interelectrode Capacitances, approximate†		
Grid-Number 1 to Plate	0.7	μμf
Input	9.0	μμf
Output	7.5	μμf

MECHANICAL

Mounting Position—Any
Envelope—T-9, Glass
Base—B6-81 or B7-7, Intermediate Shell Octal
or B6-84 or B7-59, Short Intermediate Shell Octal

MAXIMUM RATINGS

DESIGN-CENTER VALUES UNLESS OTHERWISE INDICATED

	Class A_1 Amplifier	Vertical-Deflection Amplifier§ (Triode Connection) π	
DC Plate Voltage	315	315	Volts
Peak Positive Pulse Plate Voltage	—	1200▲	Volts
Screen-Supply Voltage	315	—	Volts
Screen Voltage	285	—	Volts
Peak Negative Grid-Number 1 Voltage	—	250	Volts
Plate Dissipation♦	12	9.0	Watts
Screen Dissipation	2.0	—	Watts
DC Cathode Current	—	35	Milliamperes
Peak Cathode Current	—	105	Milliamperes
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	2.2	Megohms

GENERAL ELECTRIC

Supersedes ET-T351D, dated 6-53

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A_1 AMPLIFIER

Plate Voltage	180	250	315	Volts
Screen Voltage	180	250	225	Volts
Grid-Number 1 Voltage	−8.5	−12.5	−13.0	Volts
Peak AF Grid-Number 1 Voltage	8.5	12.5	13.0	Volts
Plate Resistance, approximate	50000	50000	80000	Ohms
Transconductance	3700	4100	3750	Micromhos
Zero-Signal Plate Current	29	45	34	Milliamperes
Maximum-Signal Plate Current	30	47	35	Milliamperes
Zero-Signal Screen Current	3.0	4.5	2.2	Milliamperes
Maximum-Signal Screen Current	4.0	7.0	6.0	Milliamperes
Load Resistance	5500	5000	8500	Ohms
Total Harmonic Distortion, approximate	8	8	12	Percent
Maximum-Signal Power Output	2.0	4.5	5.5	Watts

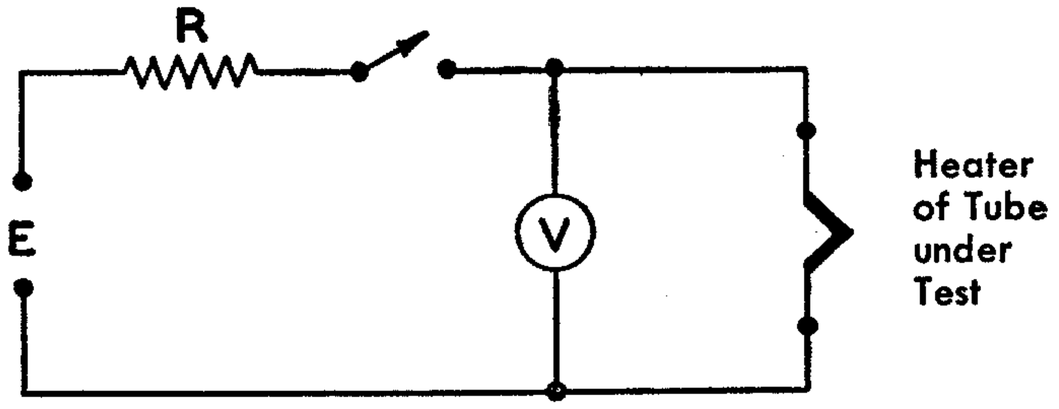
PUSH-PULL CLASS AB_1 AMPLIFIER, VALUES FOR TWO TUBES

Plate Voltage	250	285	Volts
Screen Voltage	250	285	Volts
Grid-Number 1 Voltage	−15	−19	Volts
Peak AF Grid-to-Grid Voltage	30	38	Volts
Zero-Signal Plate Current	70	70	Milliamperes
Maximum-Signal Plate Current	79	92	Milliamperes
Zero-Signal Screen Current	5.0	4.0	Milliamperes
Maximum-Signal Screen Current	13	13.5	Milliamperes
Effective Load Resistance, Plate-to-Plate	10000	8000	Ohms
Total Harmonic Distortion	5	3.5	Percent
Maximum-Signal Power Output	10	14	Watts

AVERAGE CHARACTERISTICS, TRIODE CONNECTIONπ

Plate Voltage	250	Volts
Grid-Number 1 Voltage	−12.5	Volts
Amplification Factor	9.8	
Plate Resistance, approximate	1960	Ohms
Transconductance	5000	Micromhos
Plate Current	49.5	Milliamperes
Grid-Number 1 Voltage, approximate I_b = 0.5 Milliampere	−36	Volts

* Heater warm-up time is defined as the time required in the circuit shown at the right for the voltage across the heater terminals to increase from zero to the heater test voltage (V_1). For this type, E = 18.7 volts (RMS or DC), V_1 = 3.73 volts (RMS or DC), and R = 23.5 ohms.



† Without external shield.

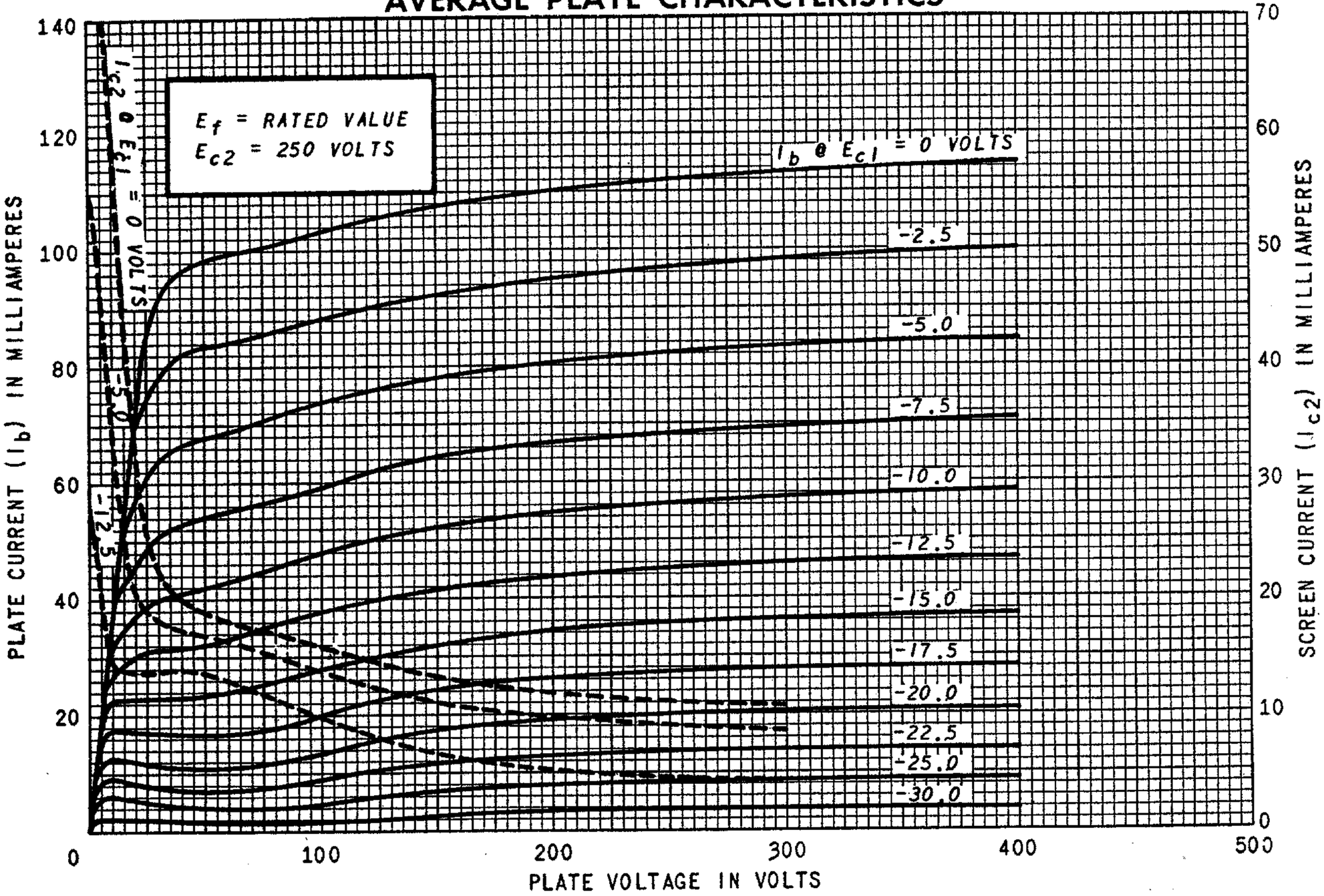
§ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

π With screen connected to plate.

▲ Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

♦ 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.

AVERAGE PLATE CHARACTERISTICS



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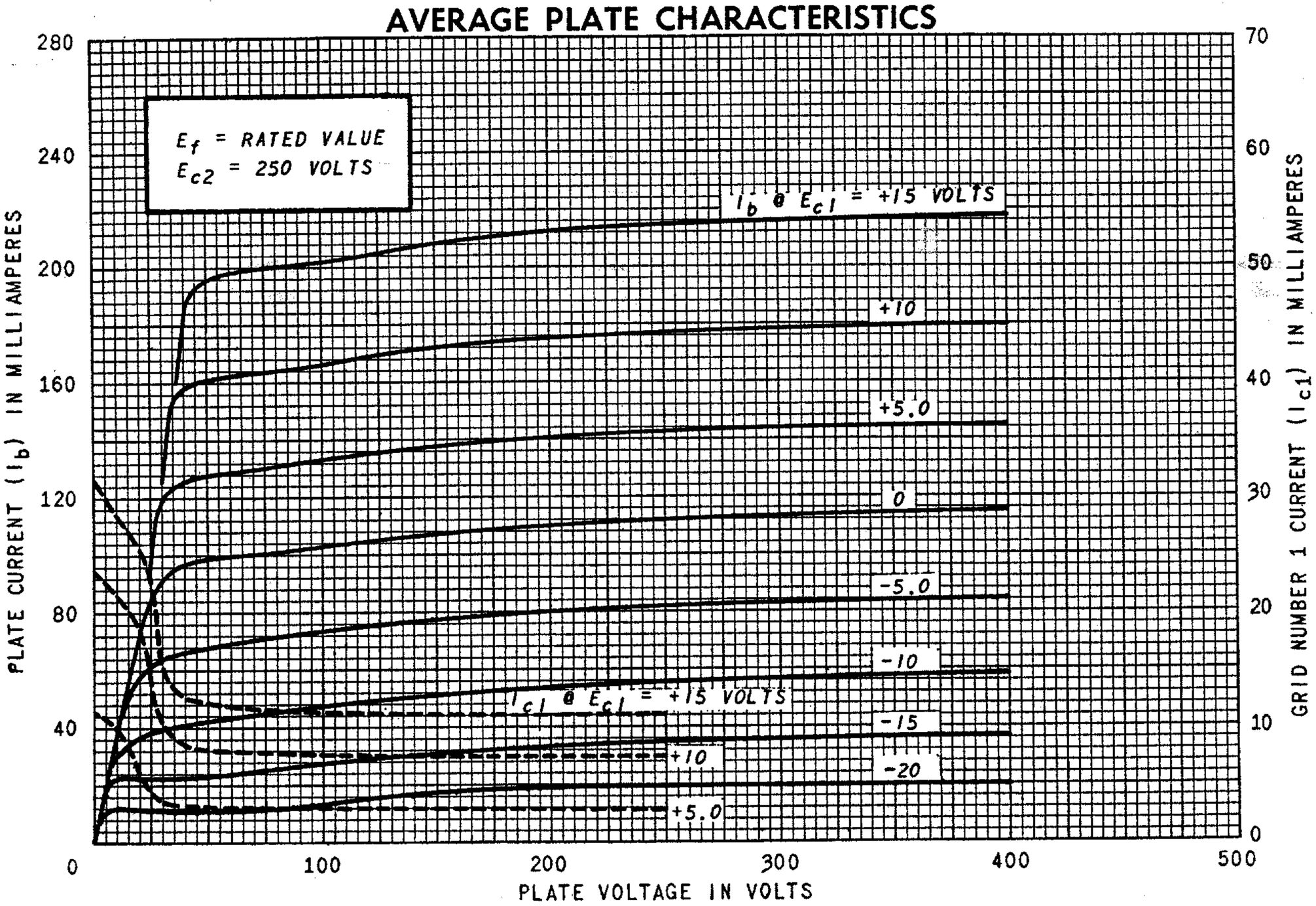

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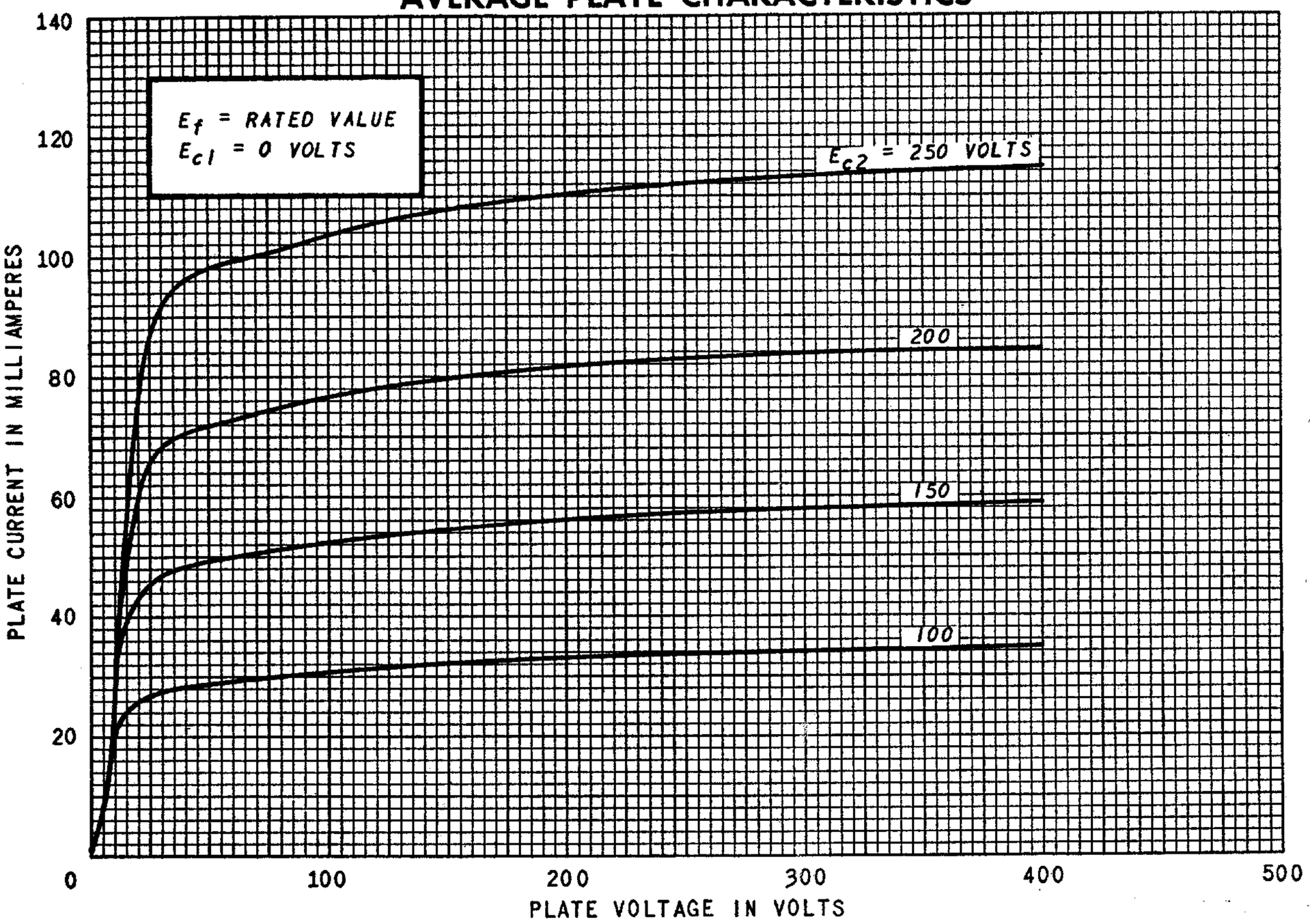
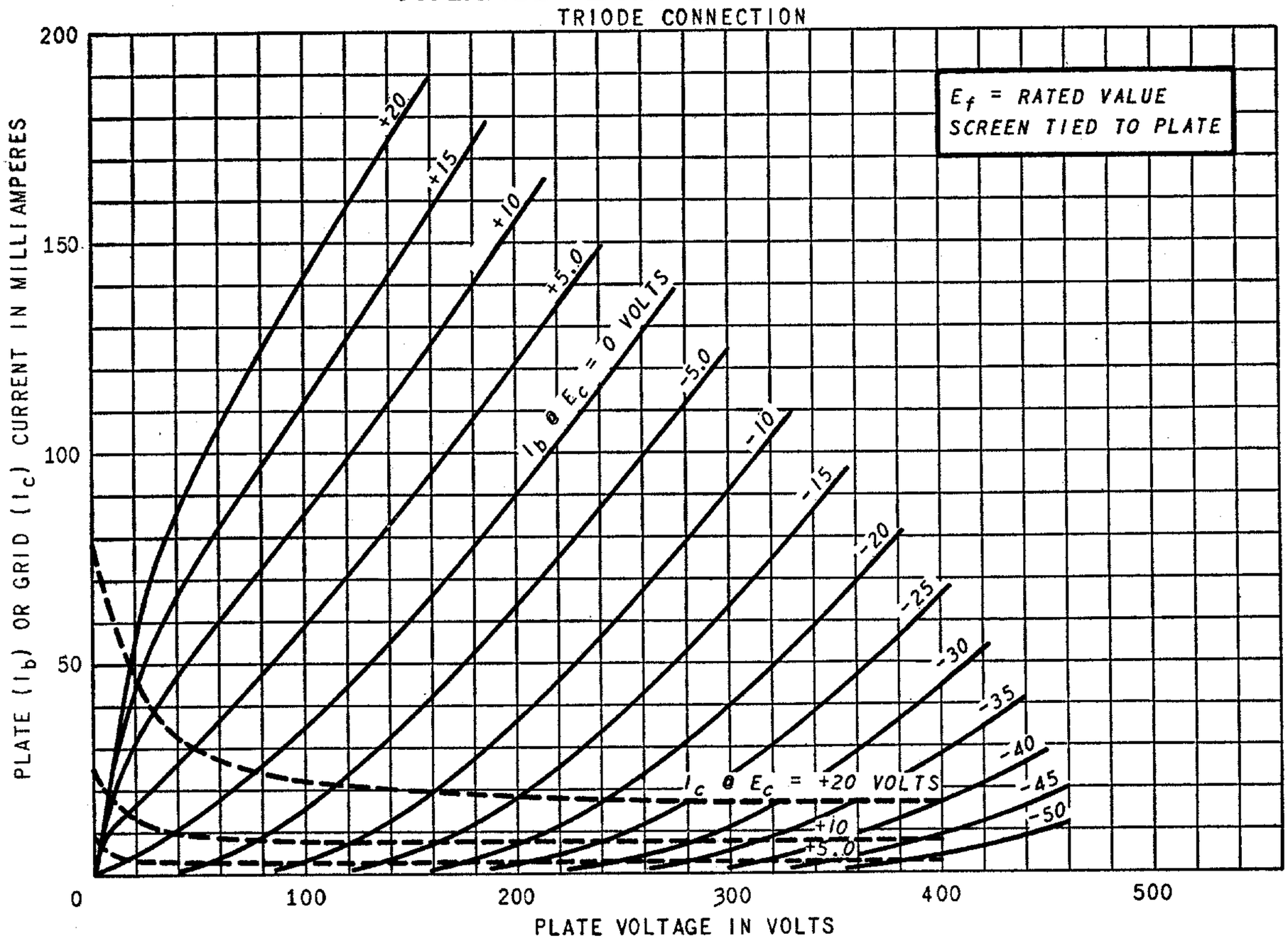
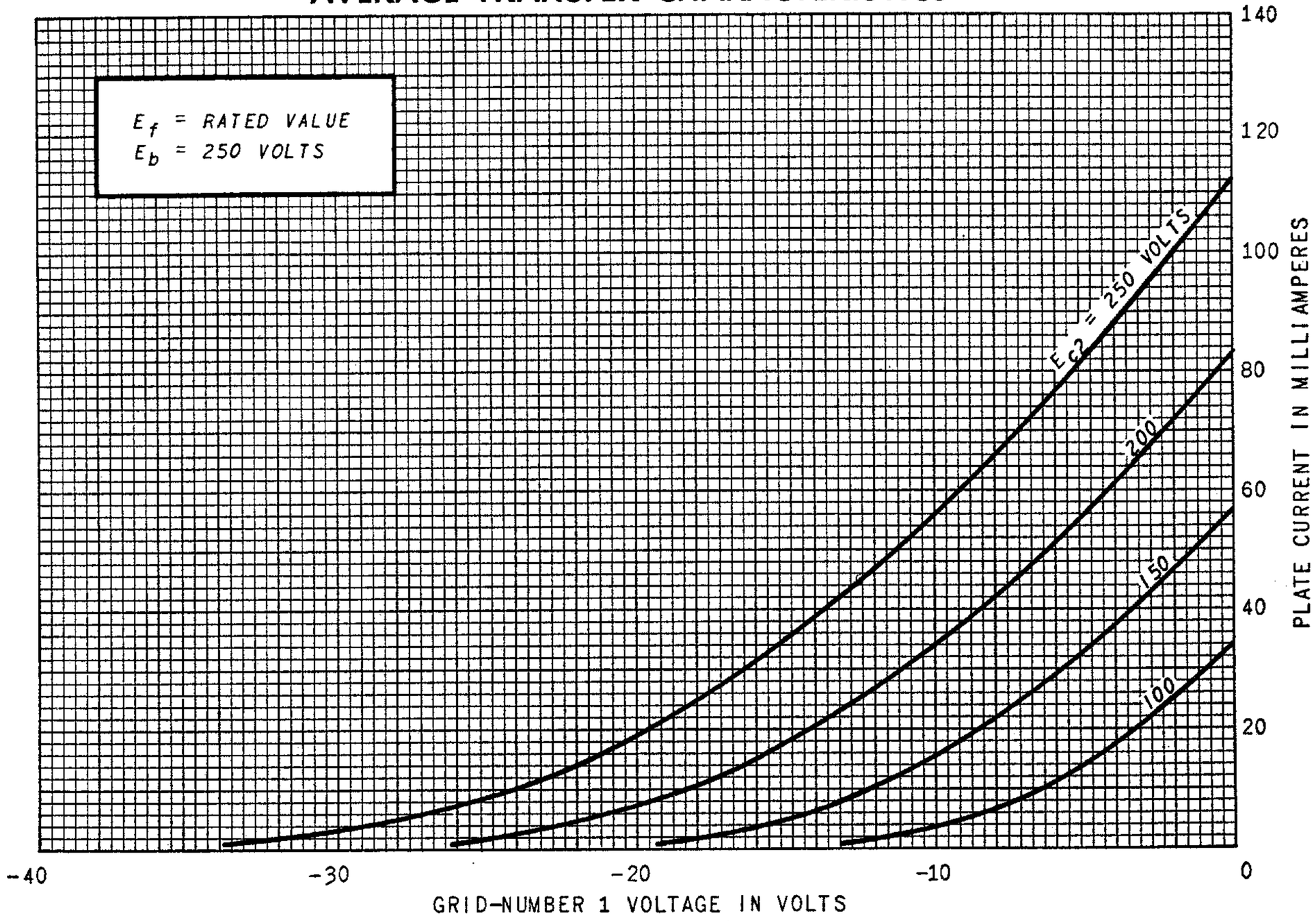


AVERAGE PLATE CHARACTERISTICS

TRIODE CONNECTION



AVERAGE TRANSFER CHARACTERISTICS



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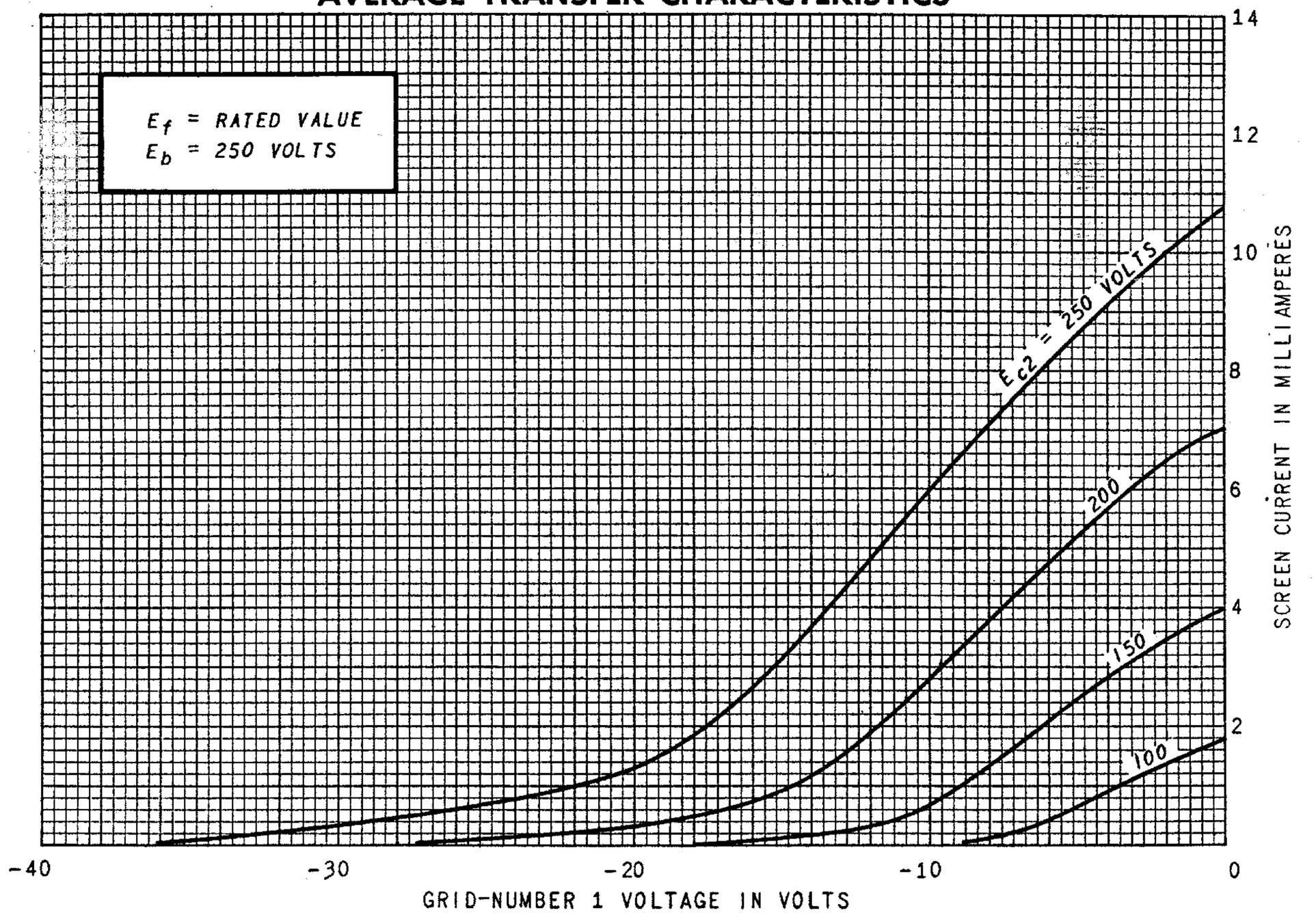
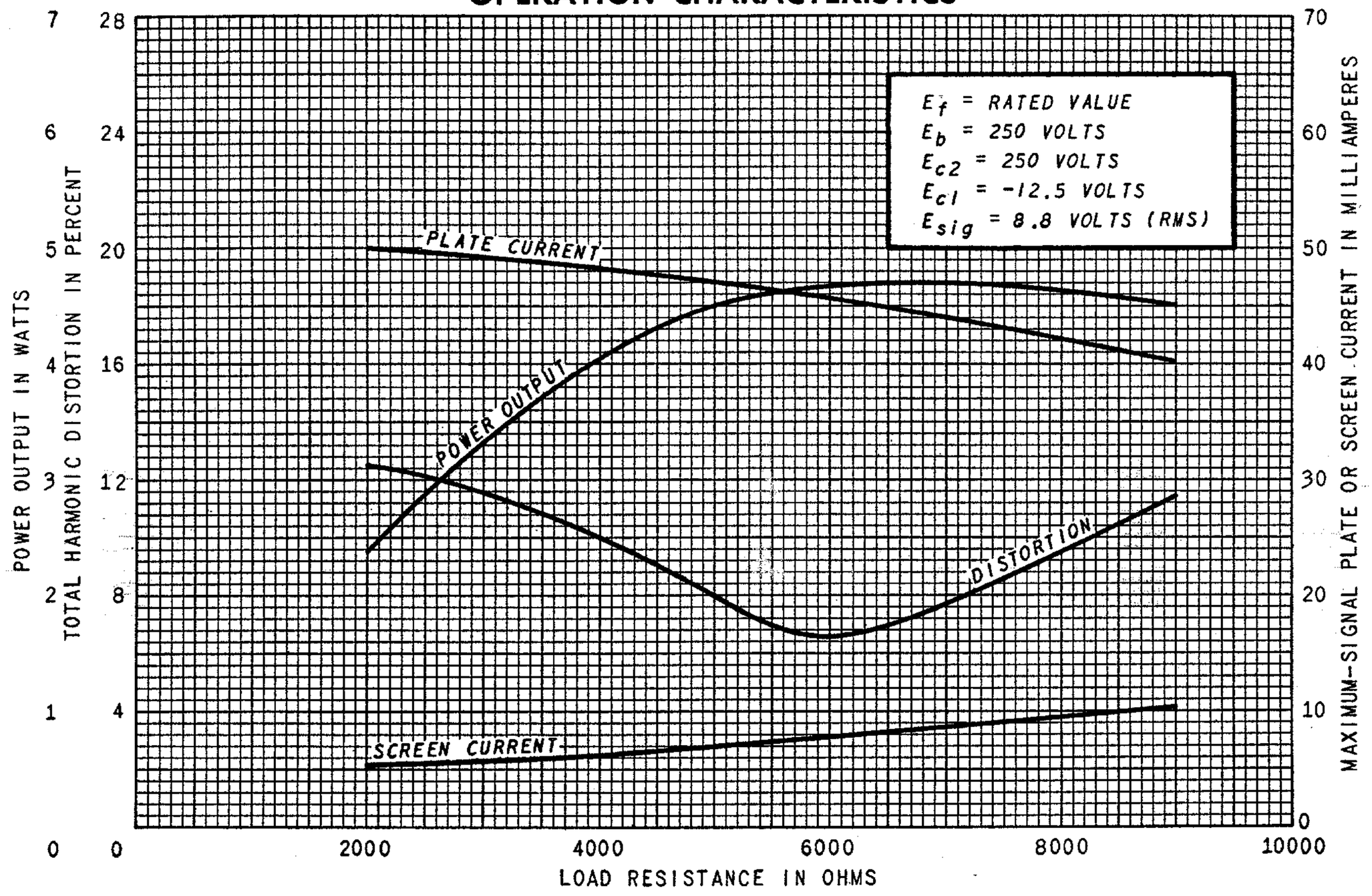


OPERATION CHARACTERISTICS



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