



# 6W6-GT—12W6-GT—25W6-GT

## BEAM PENTODE

FOR TV VERTICAL-DEFLECTION AMPLIFIER APPLICATIONS

**6W6-GT**  
**12W6-GT**  
**25W6-GT**  
 ET-T1339  
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### DESCRIPTION AND RATING

The 6W6-GT is a beam-power pentode intended for service as a triode-connected or pentode-connected vertical-deflection amplifier in television receivers. It is also extremely useful as an audio-frequency power-output tube. In this application the 6W6-GT is capable of delivering relatively large power output at low plate supply voltages and features high power sensitivity and high plate efficiency.

The 6W6-GT, 12W6-GT, and 25W6-GT are alike, except for heater ratings and heater-cathode ratings. The 12W6-GT exhibits a controlled heater warm-up characteristic which makes it especially suited for use in television receivers that employ 600-milliamperere, series-connected heaters.

### GENERAL

#### ELECTRICAL

	6W6-GT	12W6-GT	25W6-GT	
Cathode—Coated Unipotential				
Heater Voltage, AC or DC	6.3	12.6	25.0	Volts
Heater Current	1.2	0.6	0.3	Amperes
Heater Warm-up Time*	11	...	...	Seconds
Direct Interelectrode Capacitances, approximate †				
Grid-Number 1 to Plate			0.8	μμf
Input			15	μμf
Output			9.0	μμf

#### MECHANICAL

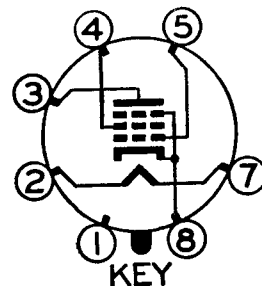
Mounting Position—Any  
 Envelope—T-9, Glass  
 Base—B6-81 or B7-7, Intermediate Shell Octal  
 or B6-84 or B7-59, Short Intermediate Shell Octal

### MAXIMUM RATINGS

#### CLASS A<sub>1</sub> AMPLIFIER SERVICE—DESIGN-CENTER VALUES

Plate Voltage		300	Volts
Screen Voltage		150	Volts
Plate Dissipation		10	Watts
Screen Dissipation		1.25	Watts
Heater-Cathode Voltage	12W6-GT	6W6-GT	
Heater Positive with Respect to Cathode		25W6-GT	
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
DC Component	200	...	Volts
Total DC and Peak	300	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias	0.1	0.1	Megohms
With Cathode Bias	0.5	0.5	Megohms

#### BASING DIAGRAM

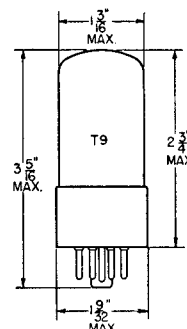


RETMA 74C

#### 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

#### PHYSICAL DIMENSIONS



RETMA 9-11 OR 9-41

**GENERAL ELECTRIC**

Supersedes ET-T727A, dated 6-53 and ET-T808A, dated 1-53

**MAXIMUM RATINGS (Cont'd)**

**VERTICAL-DEFLECTION AMPLIFIER SERVICE§**

DESIGN-CENTER VALUES UNLESS OTHERWISE INDICATED	Triode $\Delta$	Pentode
	Connection	Connection
DC Plate Voltage . . . . .	300	300 Volts
Peak Positive Pulse Plate Voltage . . . . .	1200 $\nabla$	1500 $\nabla$ Volts
Screen Voltage . . . . .		150 Volts
Peak Negative Grid-Number 1 Voltage . . . . .	250	250 Volts
Plate Dissipation $\phi$ . . . . .	7.5	7.0 Watts
Screen Dissipation $\phi$ . . . . .		1.0 Watts
DC Cathode Current . . . . .	.60	60 Milliampere
Peak Cathode Current . . . . .	180	180 Milliampere

	12W6-GT	6W6-GT	12W6-GT	6W6-GT
		25W6-GT		25W6-GT
Heater-Cathode Voltage				
Heater Positive with Respect to Cathode				
DC Component . . . . .	100	100	100	100 Volts
Total DC and Peak . . . . .	200	200	200	200 Volts
Heater Negative with Respect to Cathode				
DC Component . . . . .	200	...	200	... Volts
Total DC and Peak . . . . .	300	200	300	200 Volts
Grid-Number 1 Circuit Resistance				
With Cathode Bias . . . . .	2.2	2.2	2.2	2.2 Megohms

**CHARACTERISTICS AND TYPICAL OPERATION**

**CLASS A<sub>1</sub> AMPLIFIER**

Plate Voltage . . . . .	110	200 Volts
Screen Voltage . . . . .	110	125 Volts
Grid-Number 1 Voltage . . . . .	-7.5	... Volts
Cathode-Bias Resistor . . . . .		180 Ohms
Peak AF Grid-Number 1 Voltage . . . . .	7.5	8.5 Volts
Plate Resistance, approximate . . . . .	13000	28000 Ohms
Transconductance . . . . .	8000	8000 Micromhos
Zero-Signal Plate Current . . . . .	.49	46 Milliampere
Maximum-Signal Plate Current . . . . .	.50	47 Milliampere
Zero-Signal Screen Current . . . . .	4.0	2.2 Milliampere
Maximum-Signal Screen Current . . . . .	10	8.5 Milliampere
Load Resistance . . . . .	2000	4000 Ohms
Total Harmonic Distortion, approximate . . . . .	10	10 Percent
Maximum-Signal Power Output . . . . .	2.1	3.8 Watts

**AVERAGE CHARACTERISTICS, TRIODE CONNECTION  $\Delta$**

Plate Voltage . . . . .	225	Volts
Grid-Number 1 Voltage . . . . .	-30	Volts
Amplification Factor . . . . .	6.2	
Plate Resistance, approximate . . . . .	1600	Ohms
Transconductance . . . . .	3800	Micromhos
Plate Current . . . . .	.22	Milliampere
Grid-Number 1 Voltage, approximate		
I <sub>b</sub> = 0.5 Milliampere . . . . .	-42	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.

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

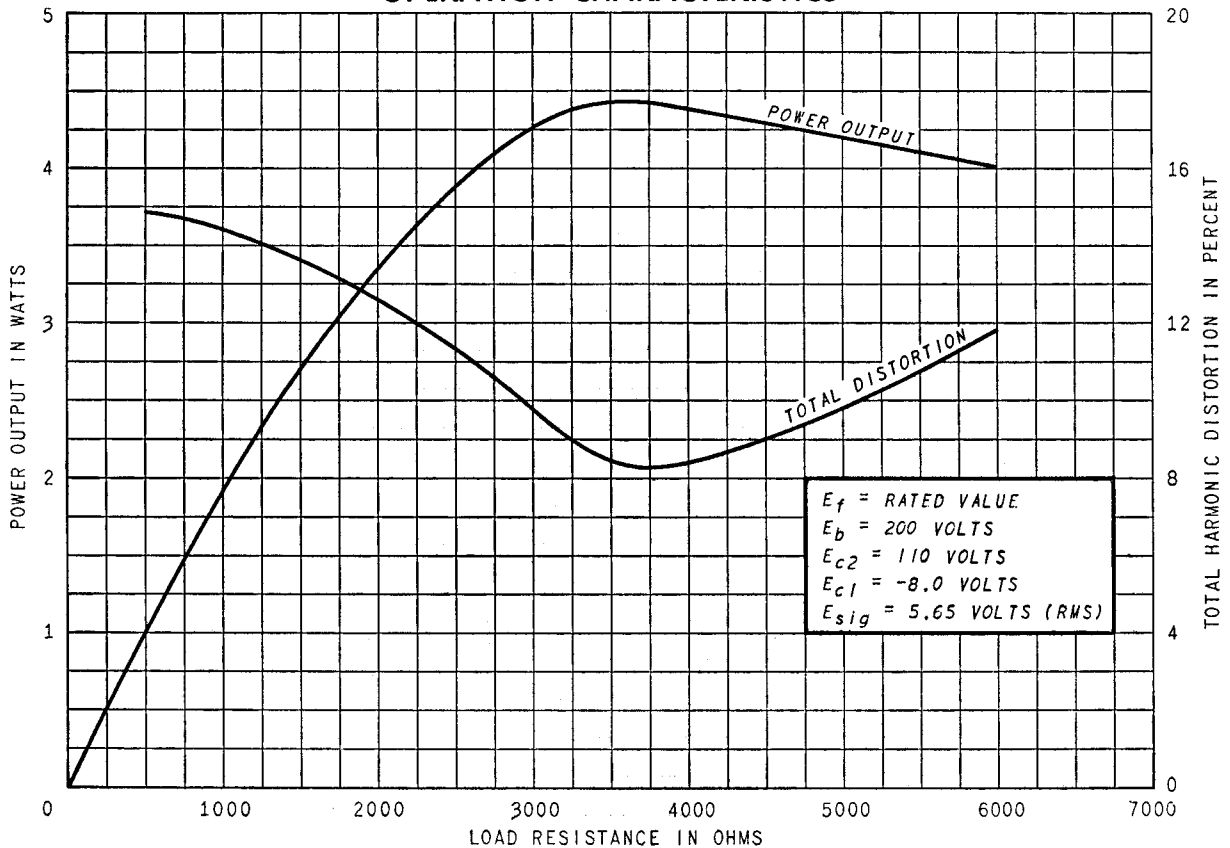
§ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

△ With screen connected to plate.

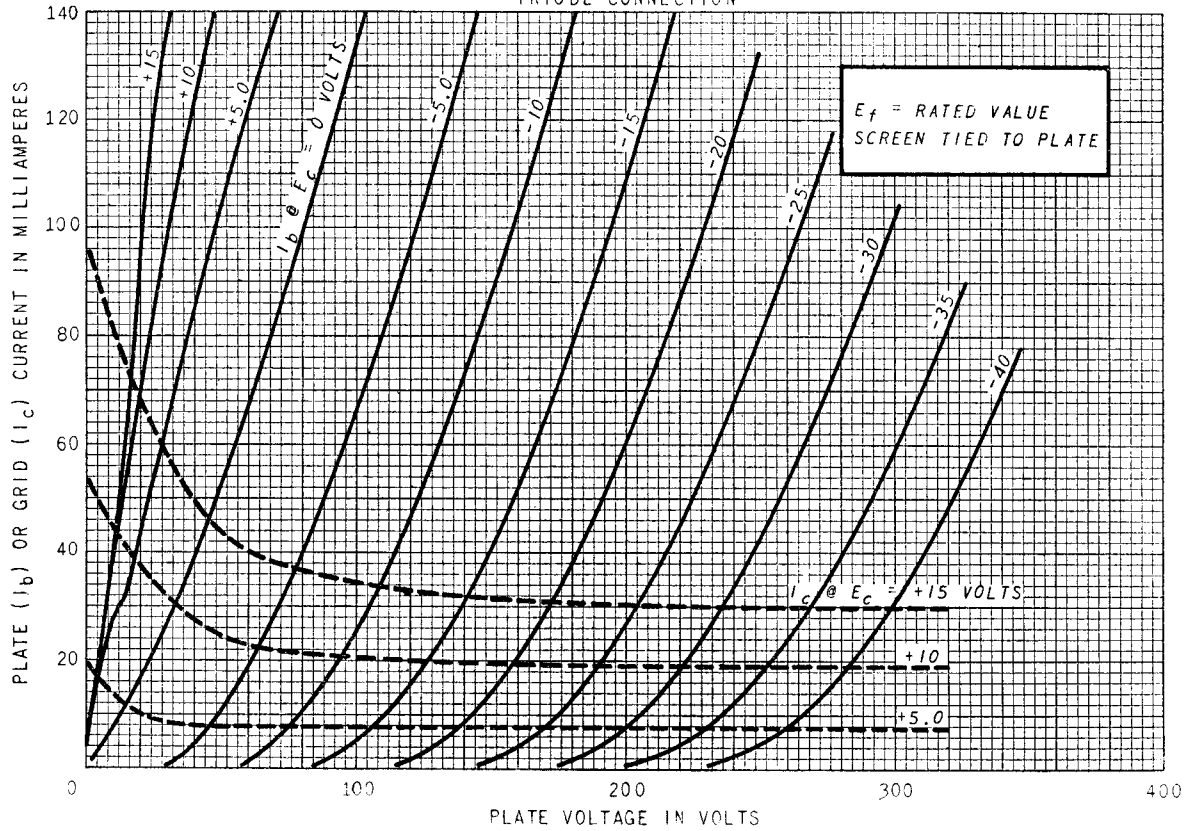
◆ Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

φ 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.

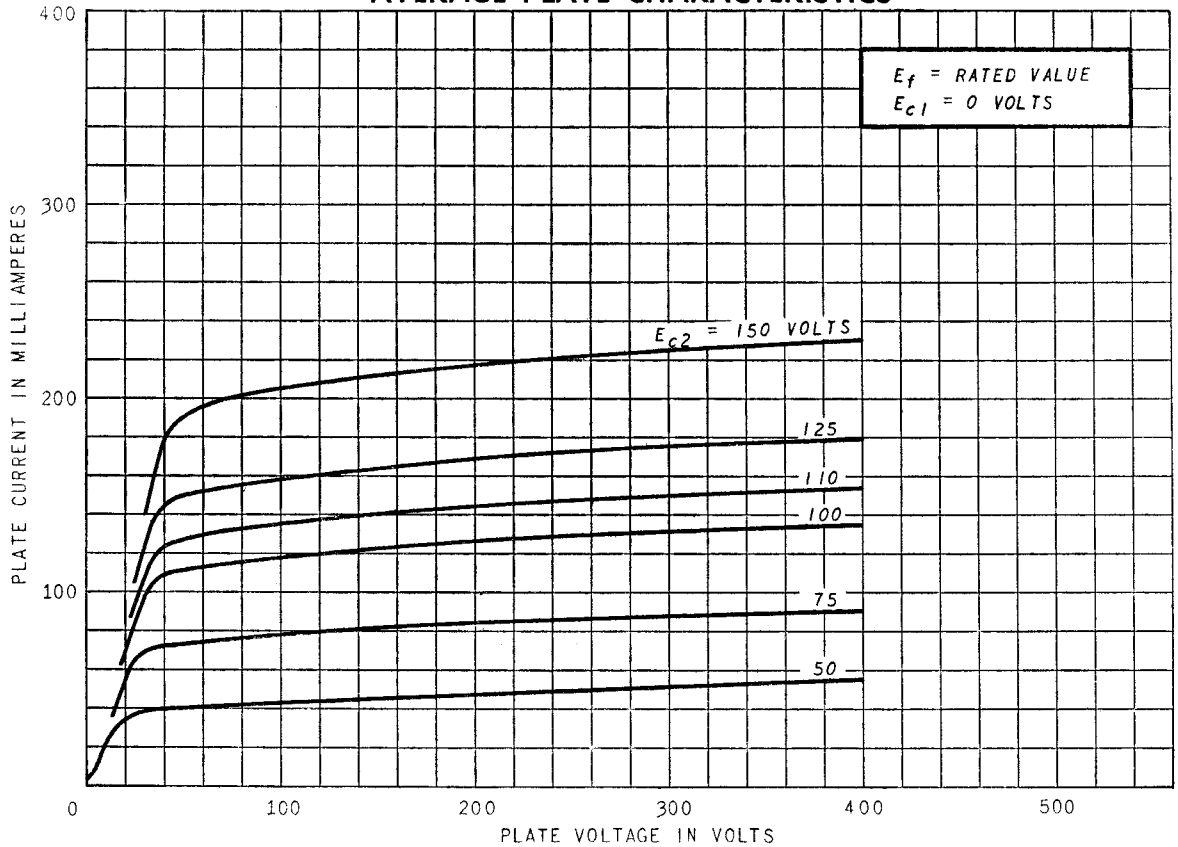
### OPERATION CHARACTERISTICS



**AVERAGE PLATE CHARACTERISTICS**  
 TRIODE CONNECTION

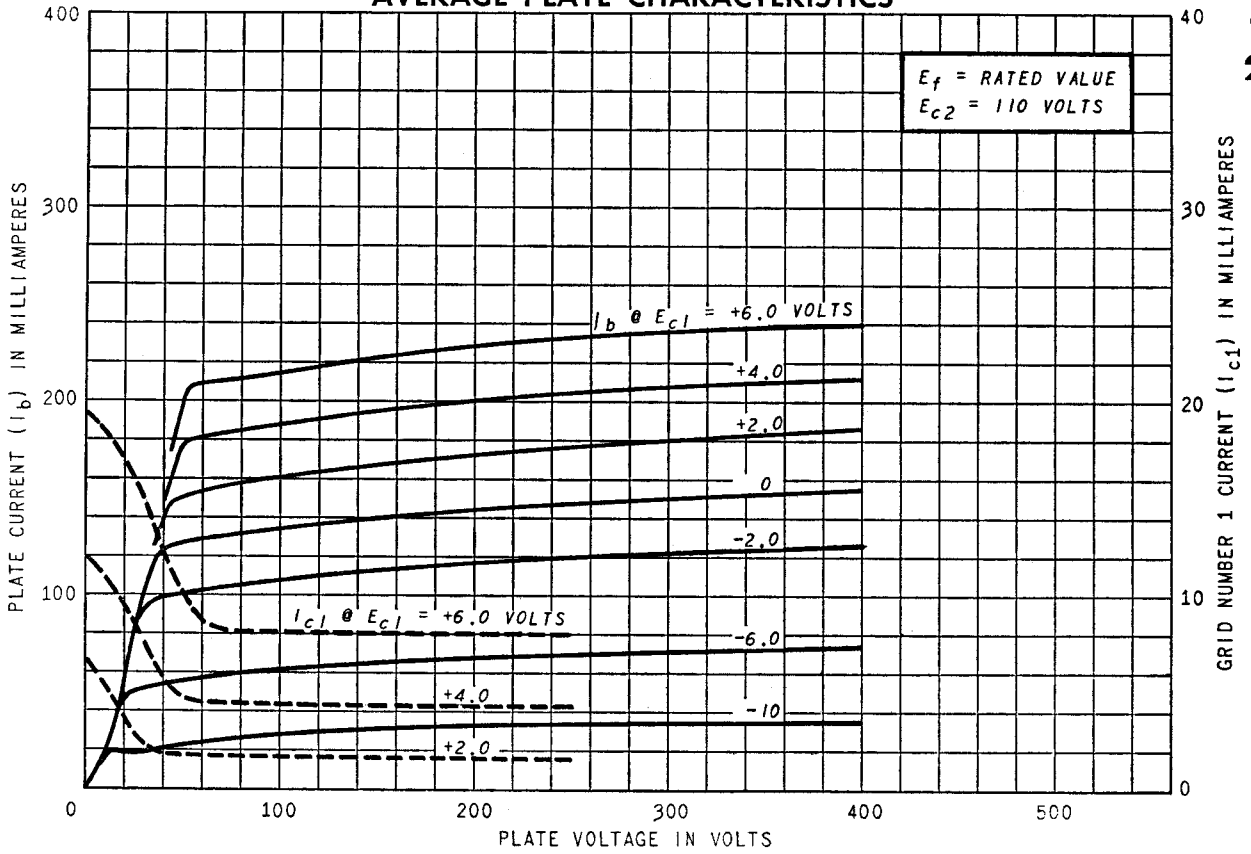


**AVERAGE PLATE CHARACTERISTICS**

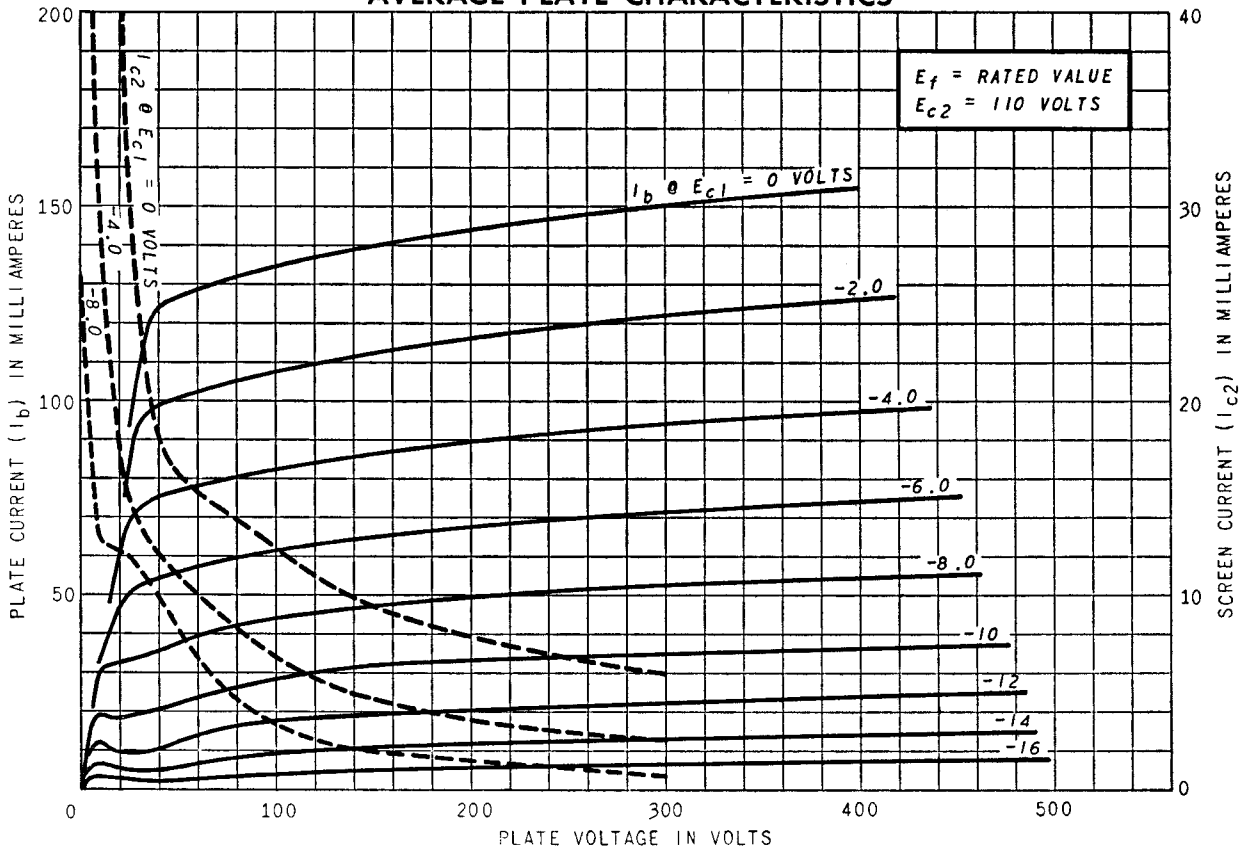


# AVERAGE PLATE CHARACTERISTICS

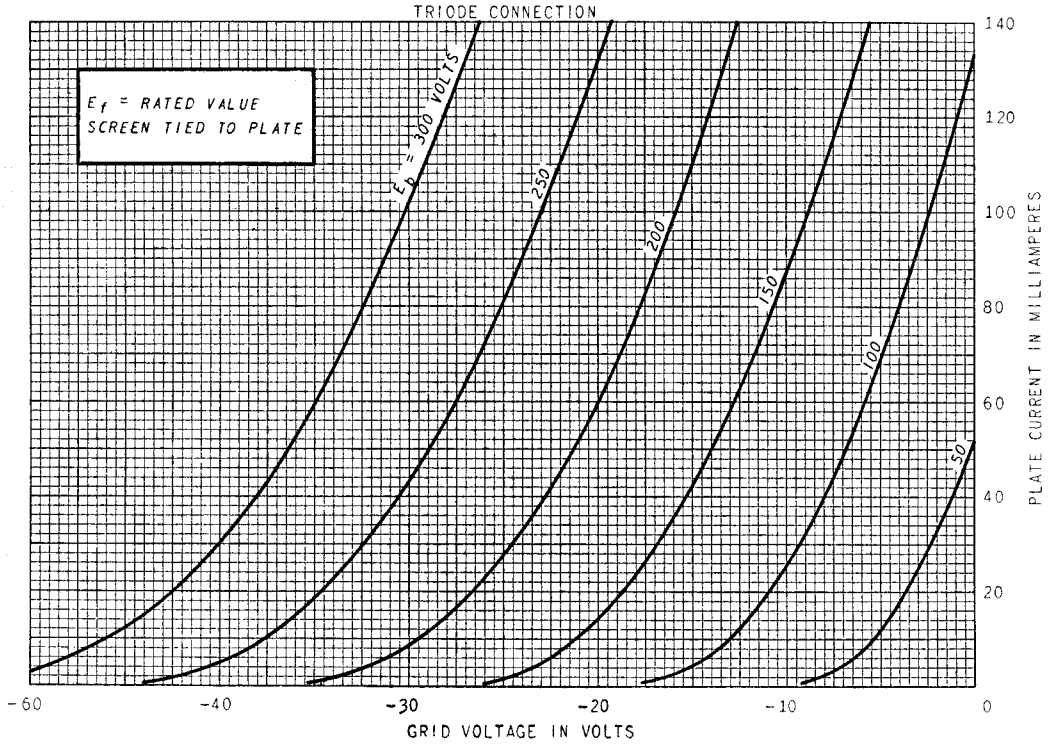
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# AVERAGE PLATE CHARACTERISTICS



**AVERAGE TRANSFER CHARACTERISTICS**



**AVERAGE TRANSFER CHARACTERISTICS**

