



6W6-GT—12W6-GT—25W6-GT

BEAM PENTODE

FOR TV VERTICAL-DEFLECTION AMPLIFIER APPLICATIONS

6W6-GT
12W6-GT
25W6-GT
ET-T1339
Page 1
1-56

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	$\mu\mu\text{f}$
Input	...	...	15	$\mu\mu\text{f}$
Output	...	...	9.0	$\mu\mu\text{f}$

MECHANICAL

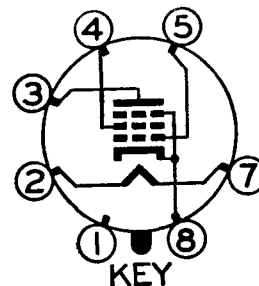
Mounting Position—Any
Envelope—T-9, Glass
Base—B6-81 or B7-7, Intermediate Shell Octal
or B6-84 or B7-59, Short Intermediate Shell Octal

MAXIMUM RATINGS

CLASS A₁ 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

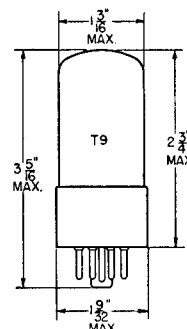


RETMA 74C

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 Δ Connection	Pentode Connection
DC Plate Voltage	300	300 Volts
Peak Positive Pulse Plate Voltage	1200♦	1500♦ Volts
Screen Voltage		150 Volts
Peak Negative Grid-Number 1 Voltage	250	250 Volts
Plate Dissipation ϕ	7.5	7.0 Watts
Screen Dissipation ϕ		1.0 Watts
DC Cathode Current	.60	60 Milliamperes
Peak Cathode Current	180	180 Milliamperes

	12W6-GT	6W6-GT 25W6-GT	12W6-GT	6W6-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 A₁ 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 Milliamperes
Maximum-Signal Plate Current	50	47 Milliamperes
Zero-Signal Screen Current	4.0	2.2 Milliamperes
Maximum-Signal Screen Current	10	8.5 Milliamperes
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 Δ

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	Milliamperes
Grid-Number 1 Voltage, approximate		
I _b = 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.

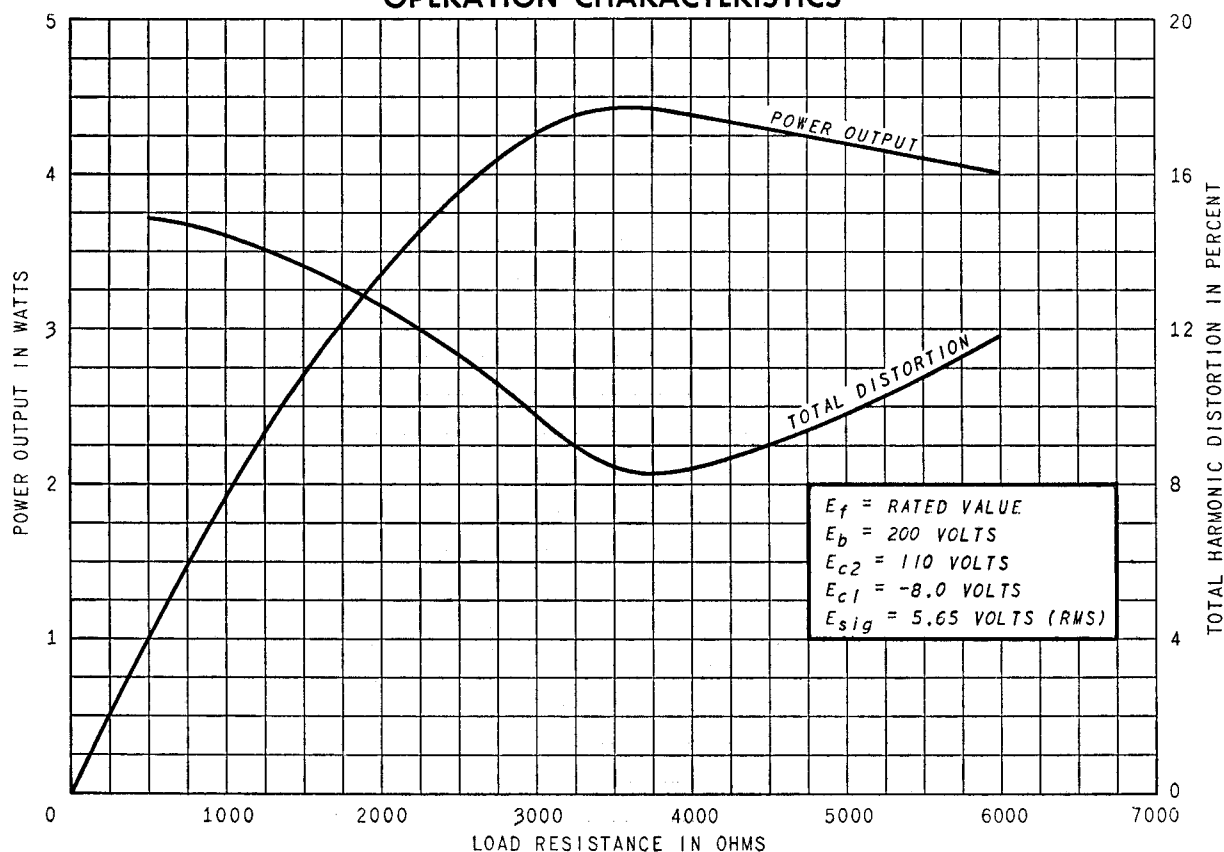
§ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

△ 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.

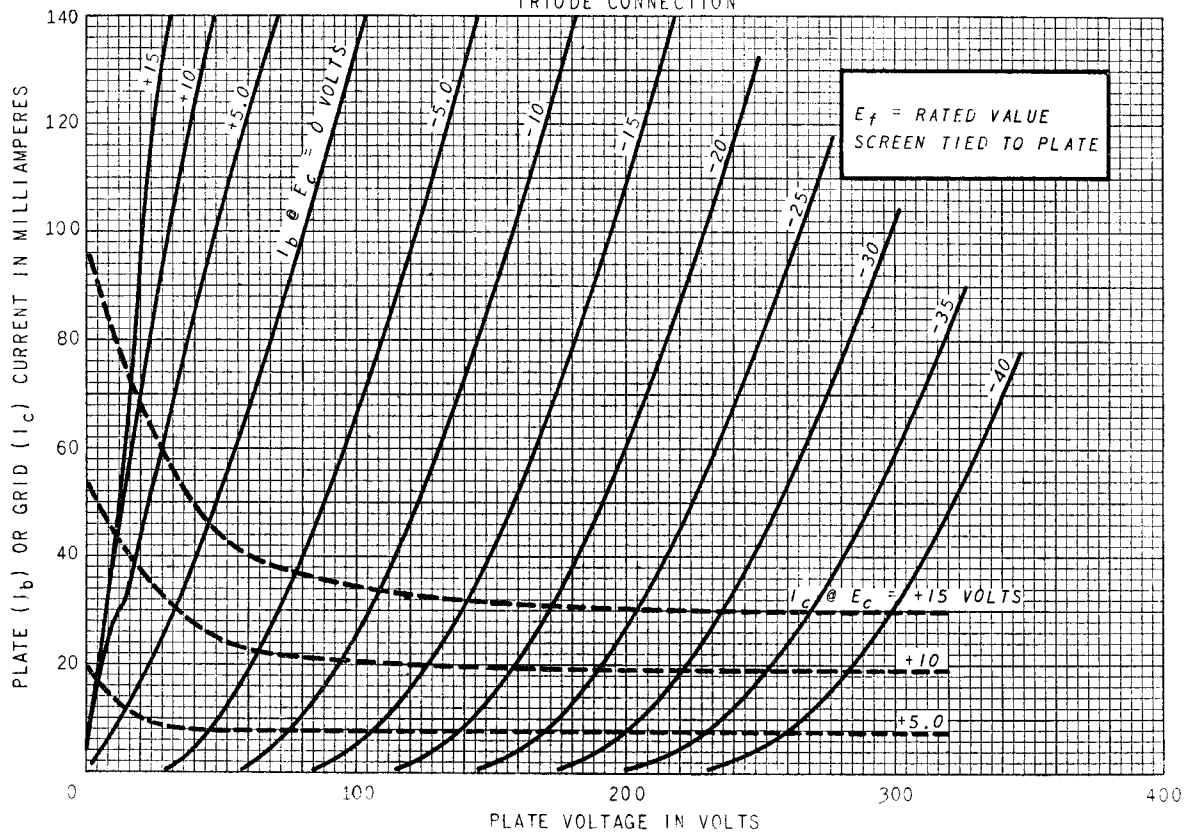
φ In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

OPERATION CHARACTERISTICS

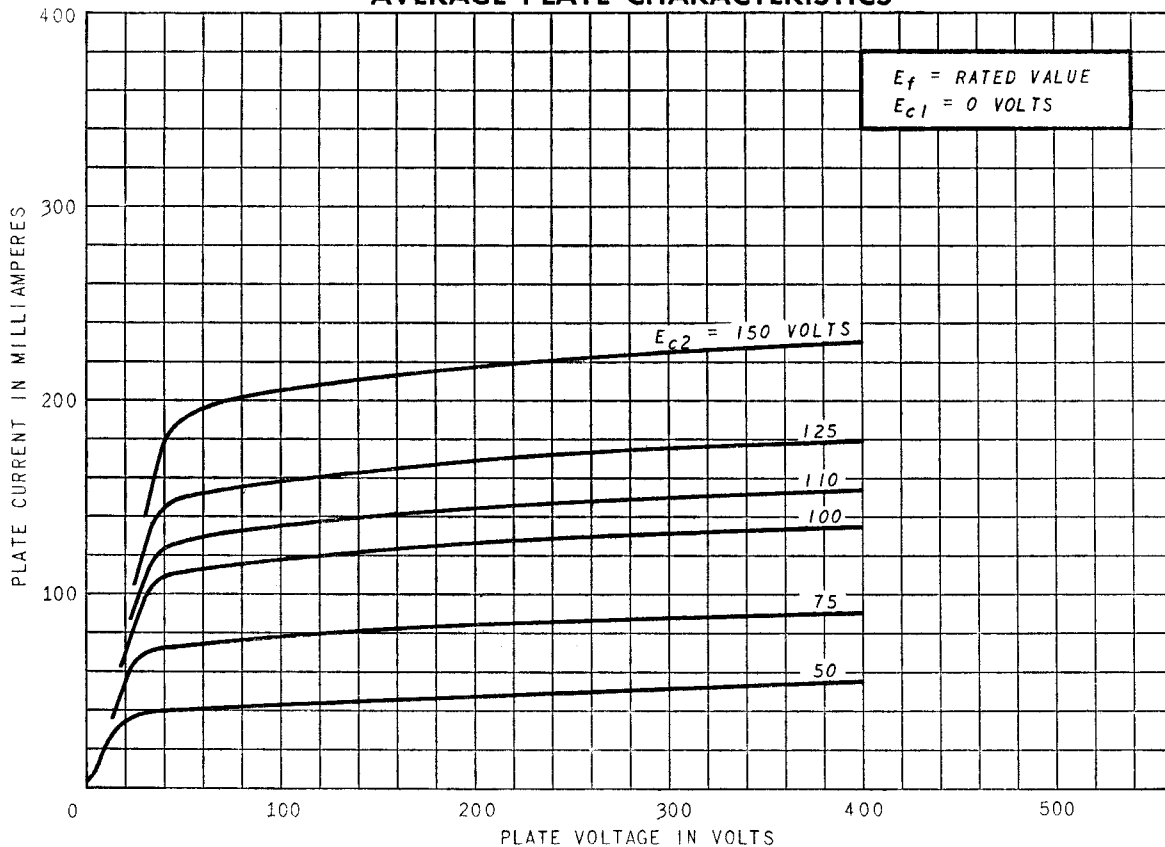


AVERAGE PLATE CHARACTERISTICS

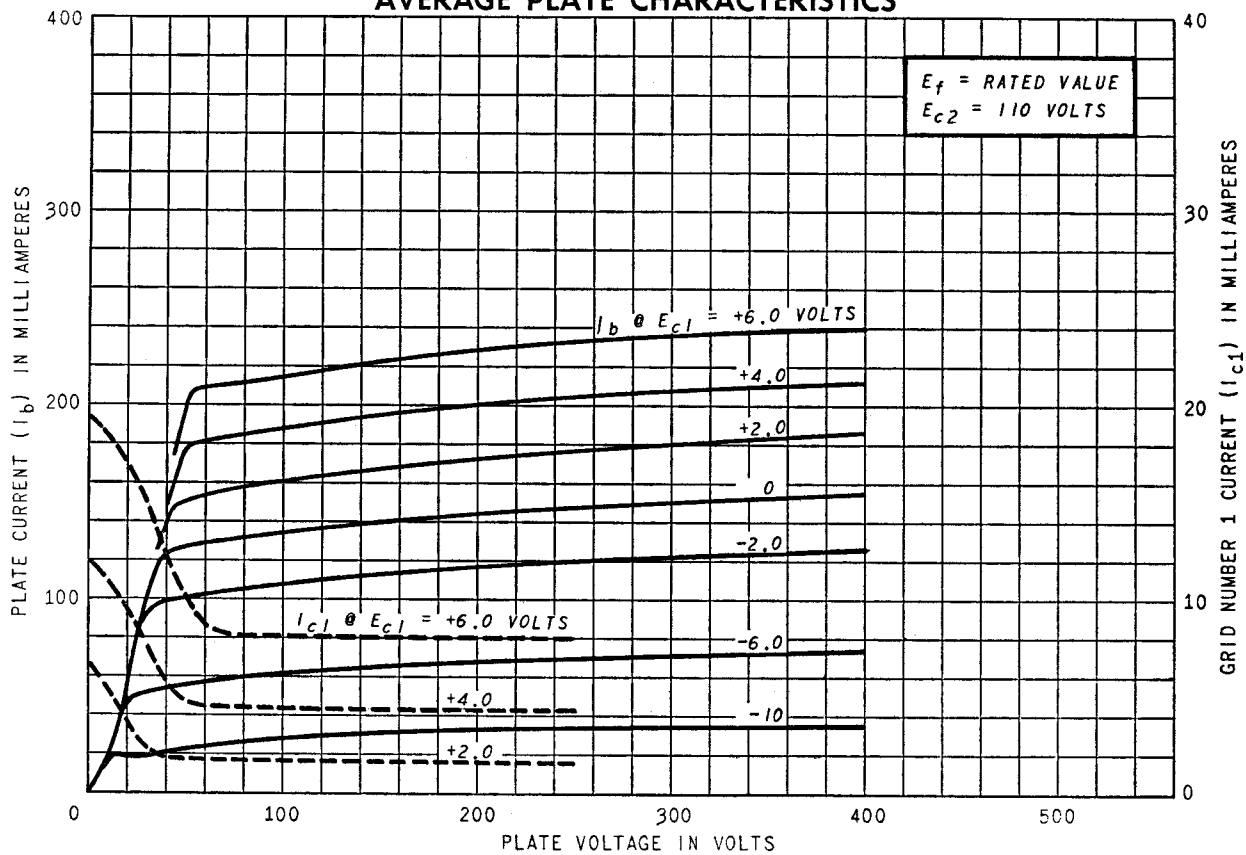
TRIODE CONNECTION



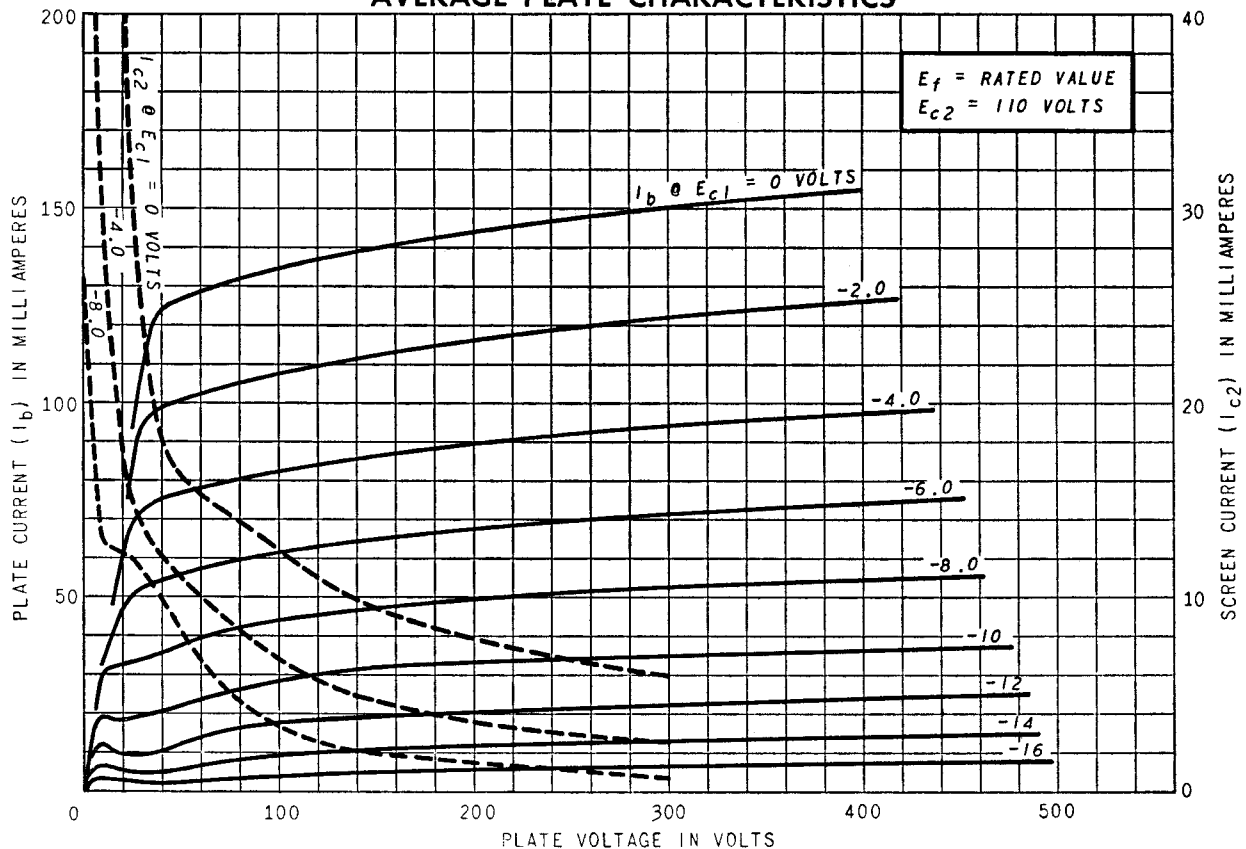
AVERAGE PLATE CHARACTERISTICS



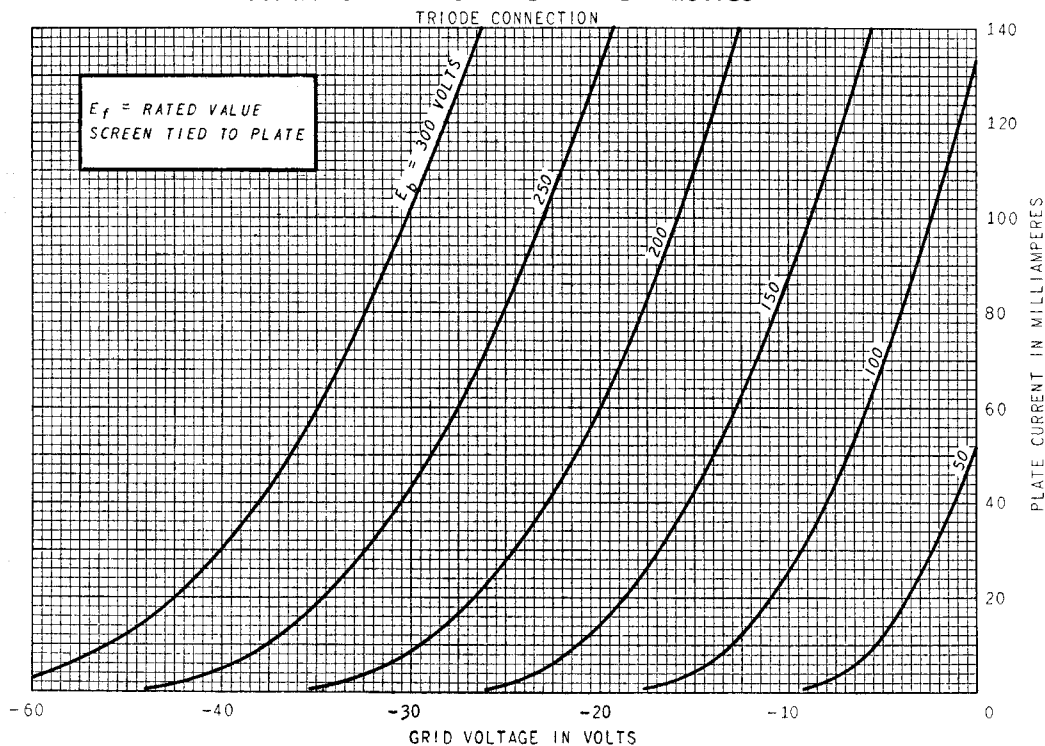
AVERAGE PLATE CHARACTERISTICS



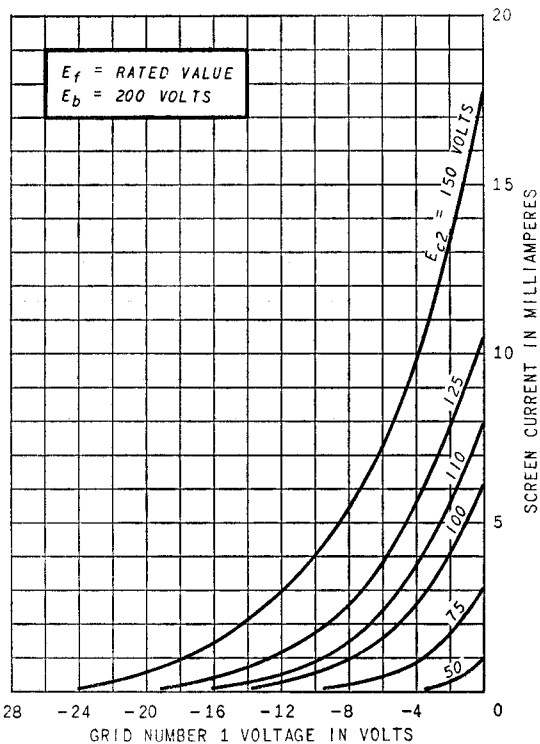
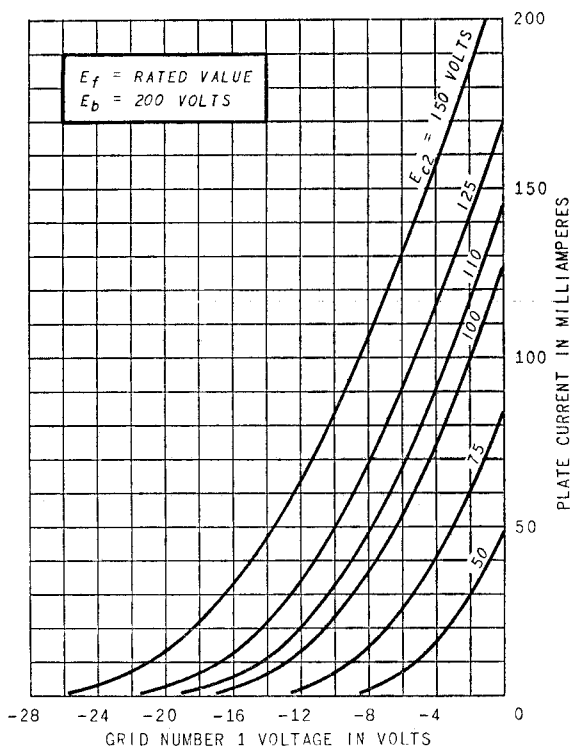
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



ELECTRONIC COMPONENTS DIVISION



Schenectady 5, N. Y.