

# 6L6-GB

## BEAM PENTODE

### DESCRIPTION AND RATING

The 6L6-GB is a beam pentode designed primarily for use in audio-frequency power amplifier applications where relatively large power outputs are required. In addition to high power output capabilities, the tube features high power sensitivity, high efficiency, and low third and higher-order harmonic distortion.

The 6L6-GB employs a straight sided T-12 construction and may be used as a direct replacement for the 6L6, 6L6-G.

#### GENERAL

##### ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC . . . . .	6.3	Volts
Heater Current . . . . .	0.9	Amperes
Direct Interelectrode Capacitances, approximate*		
Grid-Number 1 to Plate . . . . .	0.9	$\mu\mu\text{f}$
Input . . . . .	11.5	$\mu\mu\text{f}$
Output . . . . .	9.5	$\mu\mu\text{f}$

##### MECHANICAL

Mounting Position—Any

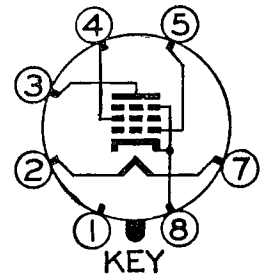
Envelope—T-12, Glass

Base—B7-12, Medium Shell Octal 7-Pin

    or B7-111 or B7-119, Short Medium Shell Octal 7-Pin

\* Without external shield.

#### BASING DIAGRAM

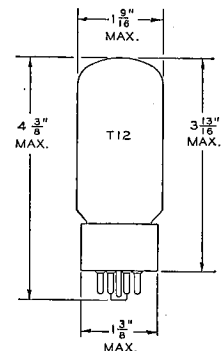


RETMA 7AC

#### 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

#### PHYSICAL DIMENSIONS



**MAXIMUM RATINGS**

**DESIGN-CENTER VALUES**

	<b>Triode† Connection</b>	<b>Pentode Connection</b>	
Plate Voltage . . . . .	275	360	Volts
Screen Voltage . . . . .	...	270	Volts
Plate Dissipation . . . . .	19	19	Watts
Screen Dissipation . . . . .	...	2.5	Watts
<b>Heater-Cathode Voltage</b>			
Heater Positive with Respect to Cathode . . . . .	180	180	Volts
Heater Negative with Respect to Cathode . . . . .	180	180	Volts
<b>Grid-Number 1 Circuit Resistance</b>			
With Fixed Bias . . . . .	0.1	0.1	Megohms
With Cathode Bias . . . . .	0.5	0.5	Megohms

**CHARACTERISTICS AND TYPICAL OPERATION**

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

	<b>Triode† Connection</b>		<b>Pentode Connection</b>		
Plate Voltage . . . . .	250	250	300	350	Volts
Screen Voltage . . . . .	...	250	200	250	Volts
Grid-Number 1 Voltage . . . . .	-20	-14	-12.5	-18	Volts
Peak AF Grid-Number 1 Voltage . . . . .	20	14	12.5	18	Volts
Amplification Factor . . . . .	8	...	...	...	Volts
Plate Resistance, approximate . . . . .	1700	22500	35000	33000	Ohms
Transconductance . . . . .	4700	6000	5300	5200	Micromhos
Zero-Signal Plate Current . . . . .	40	72	48	54	Milliamperes
Maximum-Signal Plate Current . . . . .	44	79	55	66	Milliamperes
Zero-Signal Screen Current . . . . .	...	5.0	2.5	2.5	Milliamperes
Maximum-Signal Screen Current . . . . .	...	7.3	4.7	7.0	Milliamperes
Load Resistance . . . . .	5000	2500	4500	4200	Ohms
Total Harmonic Distortion, approximate . . . . .	5	10	11	15	Percent
Maximum-Signal Power Output . . . . .	1.4	6.5	6.5	10.8	Watts

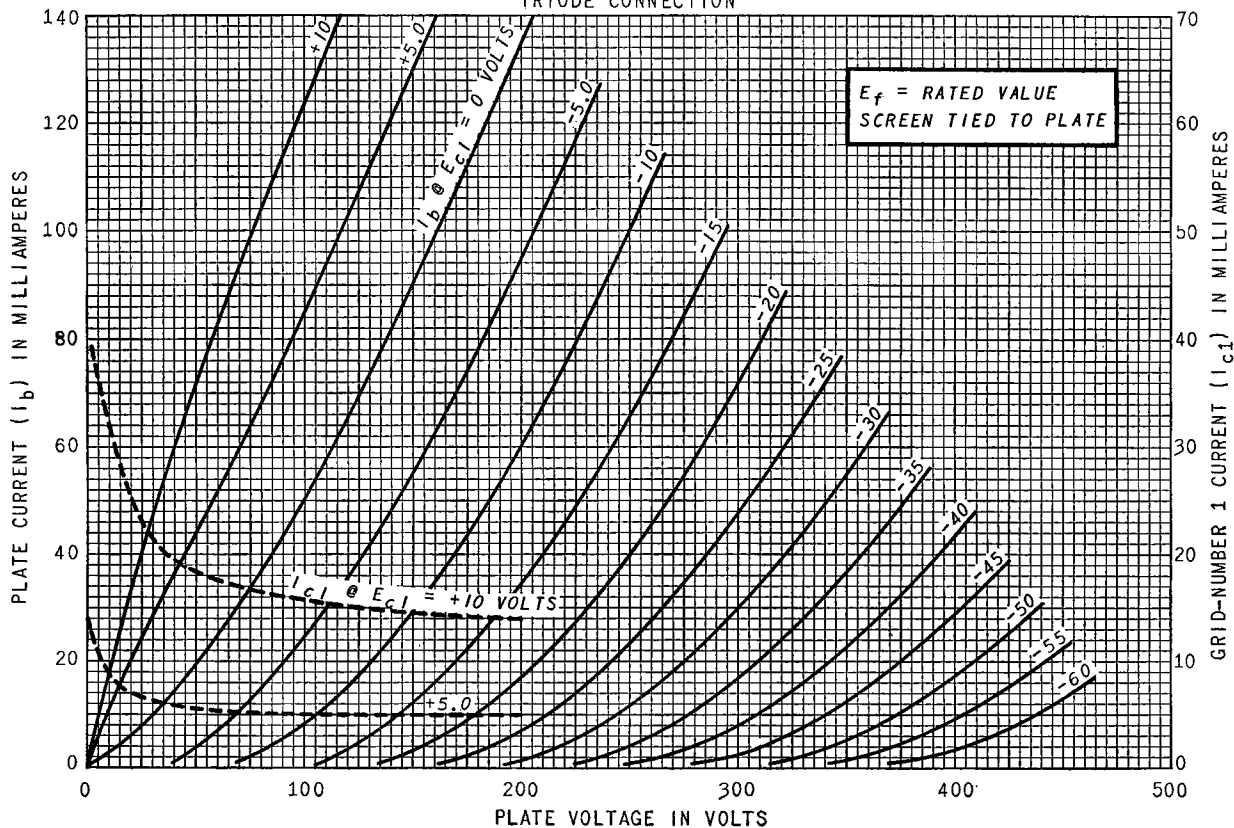
**PUSH-PULL AMPLIFIER, VALUES FOR TWO TUBES**

	<b>Class A<sub>1</sub></b>		<b>Class AB<sub>1</sub></b>		<b>Class AB<sub>2</sub></b>		
Plate Voltage . . . . .	250	270	360	360	360	360	Volts
Screen Voltage . . . . .	250	270	270	270	225	270	Volts
Grid-Number 1 Voltage . . . . .	-16	-17.5	-22.5	-22.5	-18	-22.5	Volts
Peak AF Grid-to-Grid Voltage . . . . .	32	35	45	45	52	72	Volts
Zero-Signal Plate Current . . . . .	120	134	88	88	78	88	Milliamperes
Maximum-Signal Plate Current . . . . .	140	155	132	140	142	205	Milliamperes
Zero-Signal Screen Current . . . . .	10	11	5.0	5.0	3.5	5.0	Milliamperes
Maximum-Signal Screen Current . . . . .	16	17	15	11	11	16	Milliamperes
Effective Load Resistance . . . . .	5000	5000	6600	3800	6000	3800	Ohms
Total Harmonic Distortion, approximate . . . . .	2	2	2	2	2	2	Percent
Maximum-Signal Power Output . . . . .	14.5	17.5	26.5	18	31	47	Watts

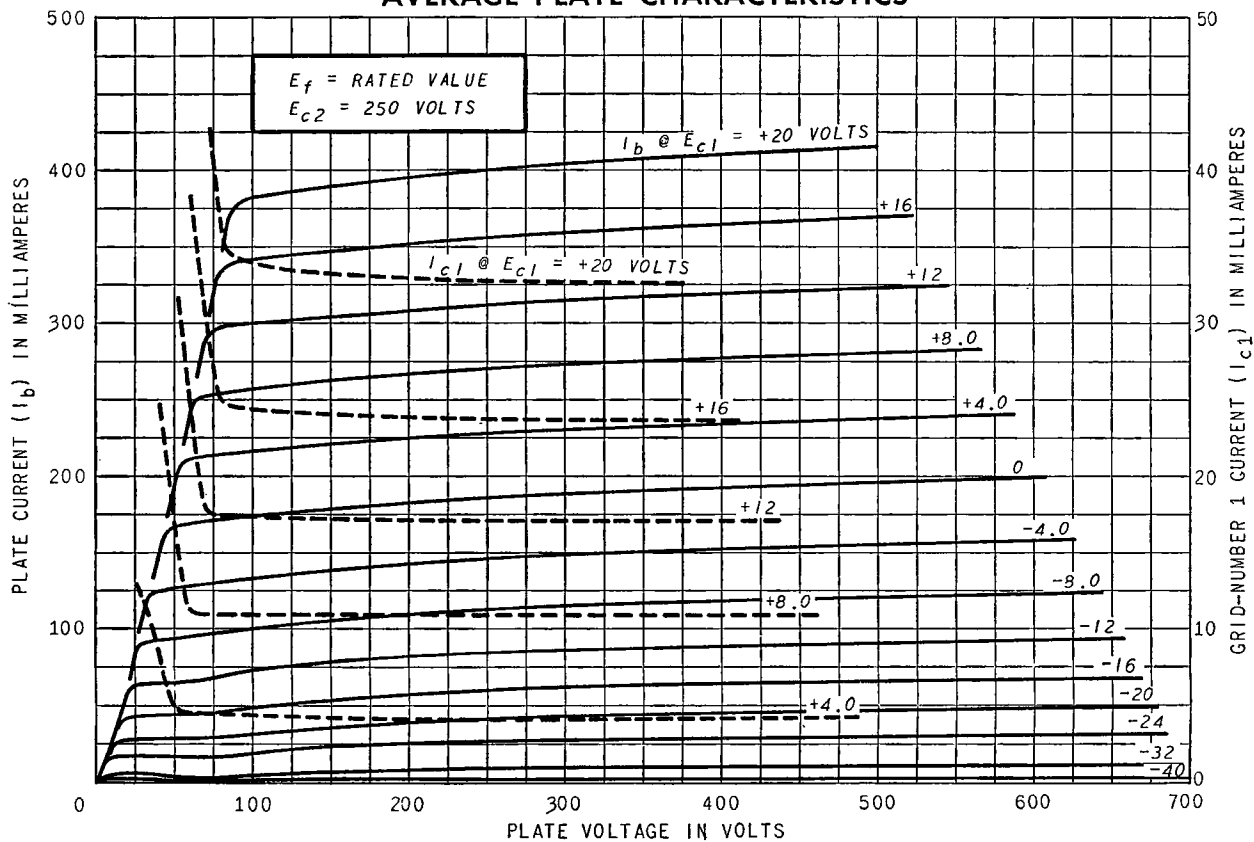
† With screen connected to plate.

**AVERAGE PLATE CHARACTERISTICS**

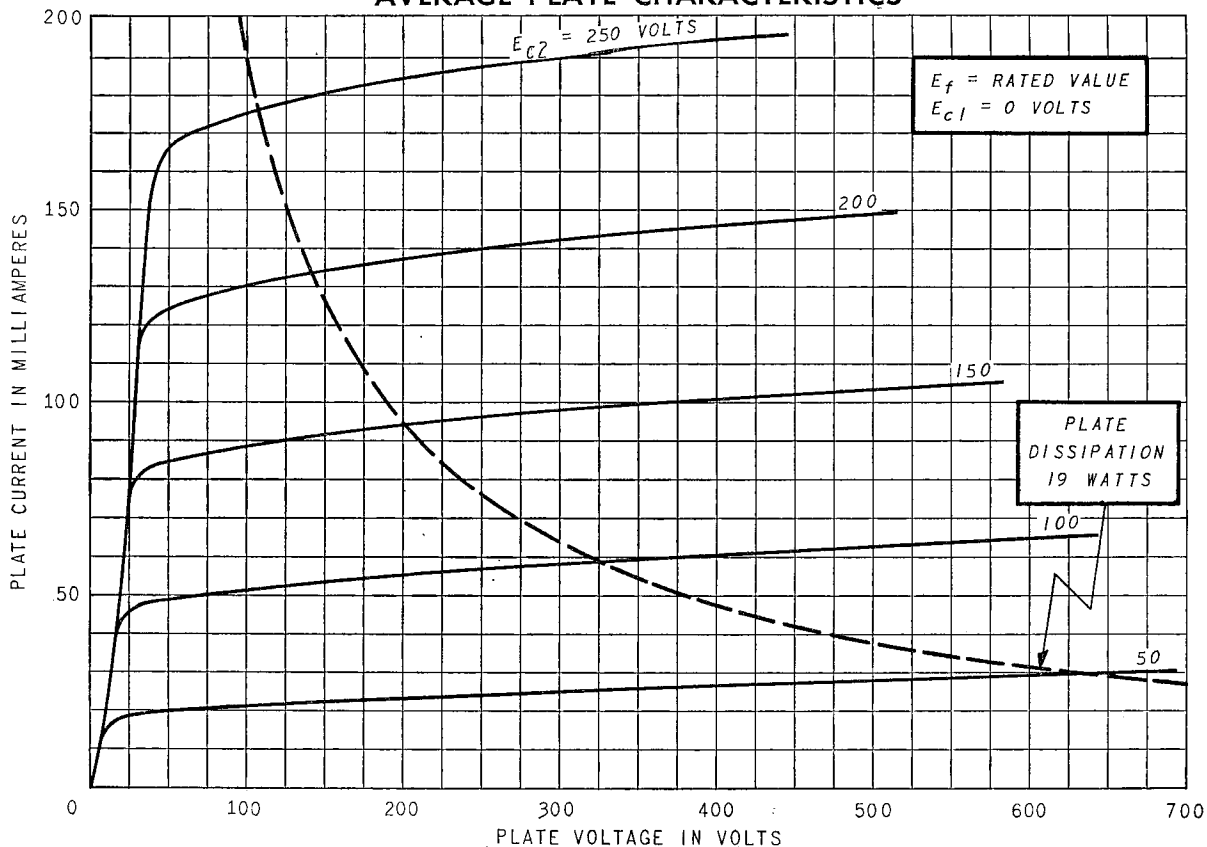
TRIODE CONNECTION



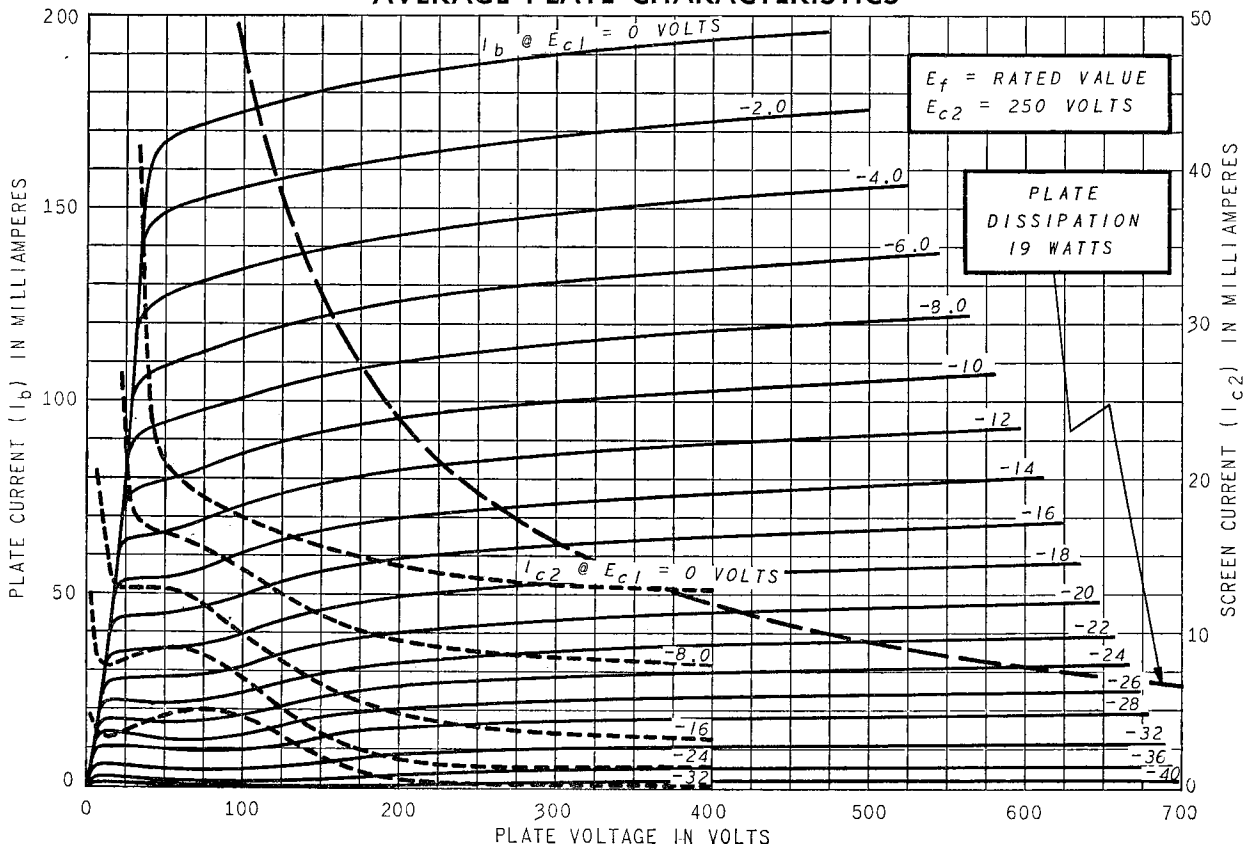
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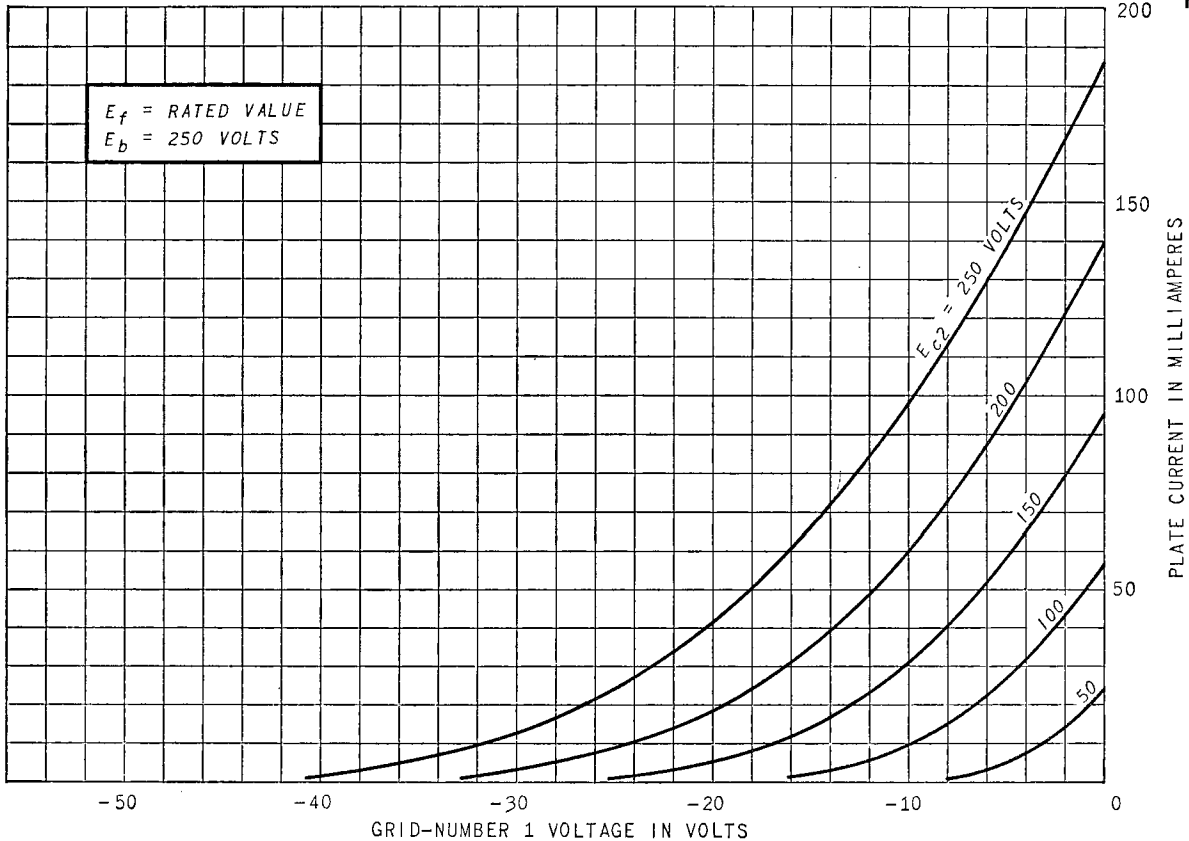
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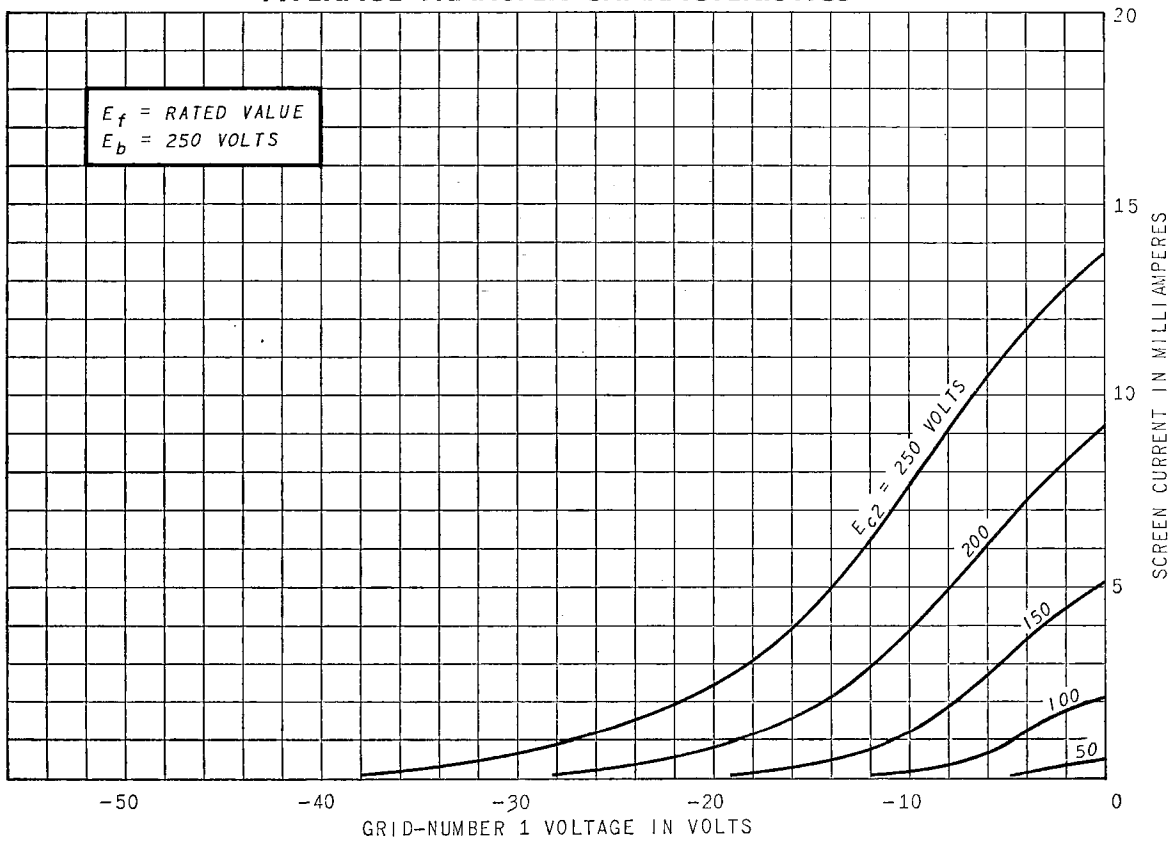
### AVERAGE PLATE CHARACTERISTICS



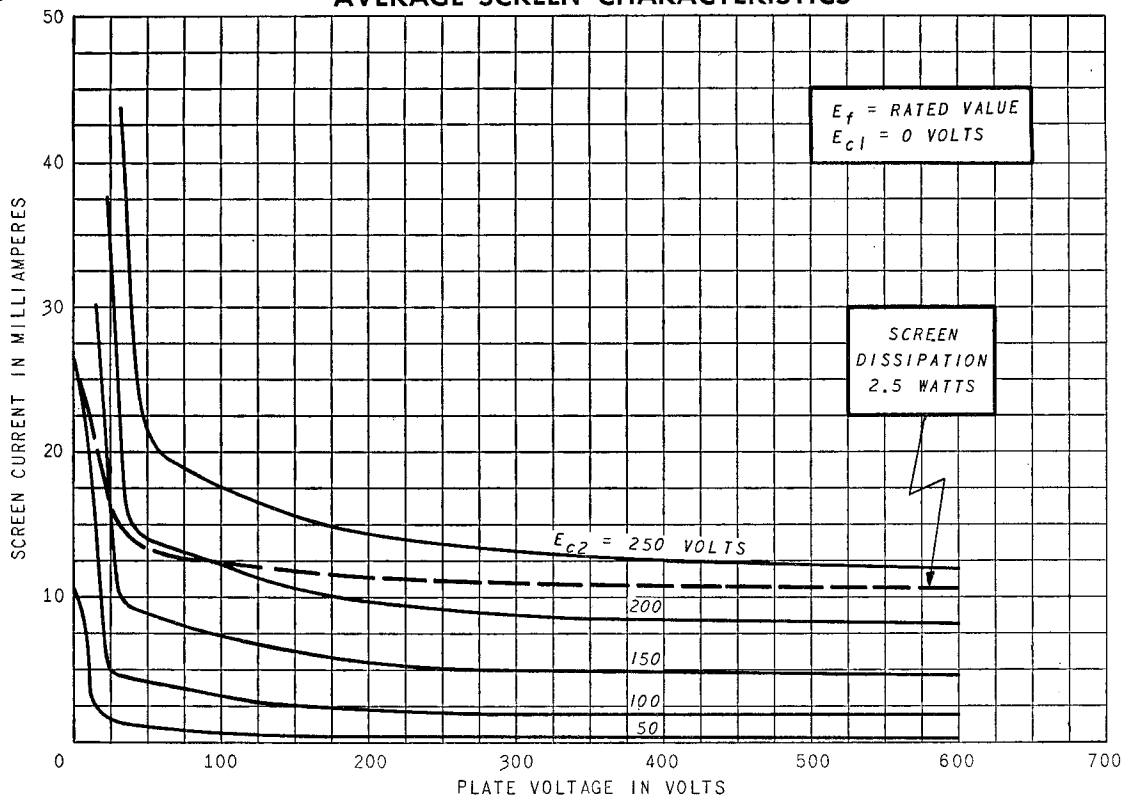
### AVERAGE TRANSFER CHARACTERISTICS



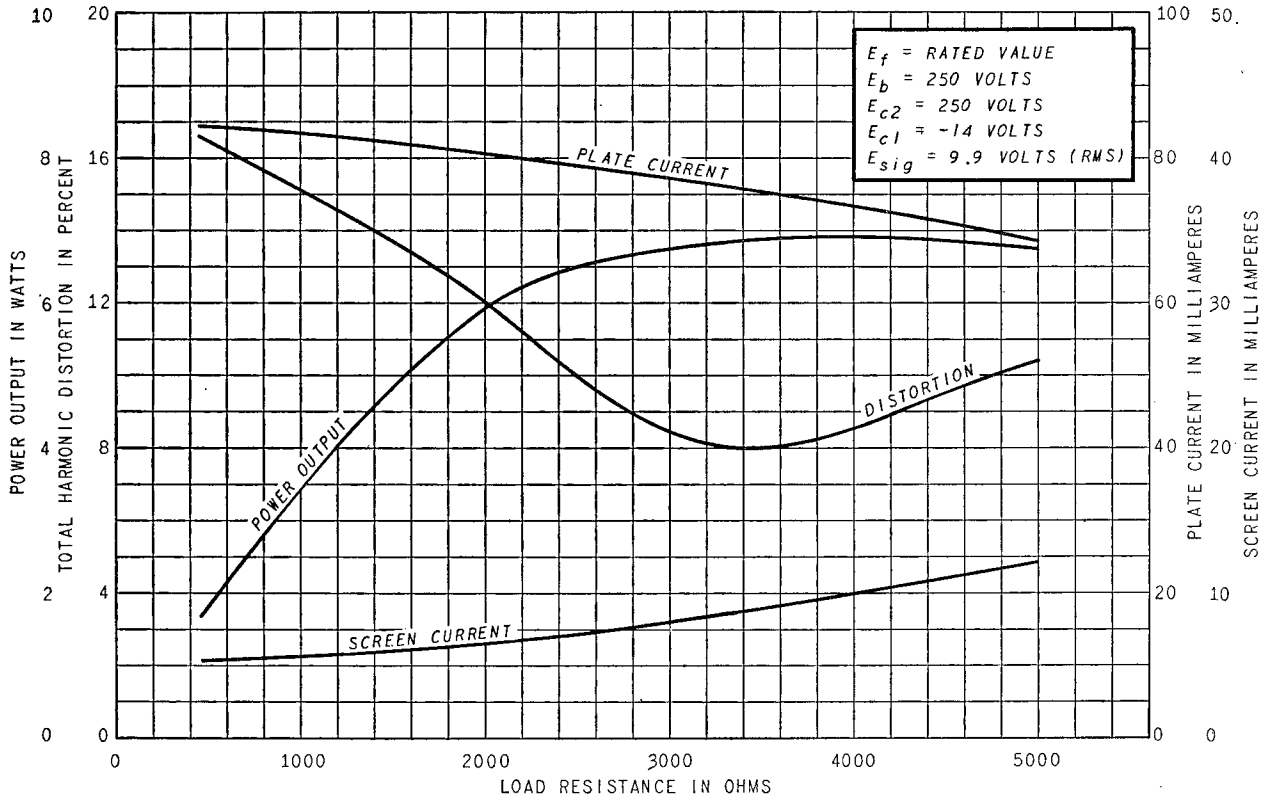
### AVERAGE TRANSFER CHARACTERISTICS



**AVERAGE SCREEN CHARACTERISTICS**



**OPERATION CHARACTERISTICS**



TUBE DEPARTMENT



Schenectady 5, N. Y.