



# 6CL8—5CL8—9CL8

## TRIODE-TETRODE

**6CL8**  
**5CL8**  
**9CL8**  
 ET-T1434  
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### DESCRIPTION AND RATING

The 6CL8 is a miniature tube which contains a sharp-cutoff tetrode and a medium-mu triode in one envelope. Intended primarily for service as a combined triode oscillator and tetrode mixer in VHF television tuners, the 6CL8 features a controlled heater-warm-up characteristic which makes it especially suited for use in television receivers that employ series-connected heaters.

Except for heater ratings, the 5CL8 and 9CL8 are identical to the 6CL8.

#### GENERAL

##### ELECTRICAL

	5CL8	6CL8	9CL8	
Cathode—Coated Unipotential				
Heater Voltage, AC or DC	4.7	6.3	9.5	Volts
Heater Current	0.6	0.45	0.3	Amperes
Heater Warm-up Time*	11	11	11	Seconds

##### Direct Interelectrode Capacitances

	With Shield †	Without Shield	
<b>Tetrode Section</b>			
Grid-Number 1 to Plate, maximum	0.016	0.028	$\mu\mu\text{f}$
Input	5.0	5.0	$\mu\mu\text{f}$
Output	3.0	2.0	$\mu\mu\text{f}$
<b>Triode Section</b>			
Grid to Plate	1.8	1.8	$\mu\mu\text{f}$
Input	2.7	2.7	$\mu\mu\text{f}$
Output	1.2	0.4	$\mu\mu\text{f}$
Heater to Cathode, Each Section, approximate	2.5 †	2.5	$\mu\mu\text{f}$

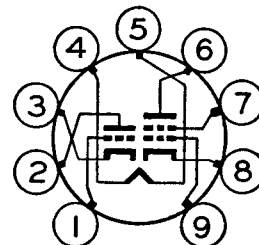
##### MECHANICAL

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

#### MAXIMUM RATINGS

DESIGN-CENTER VALUES	Tetrode Section	Triode Section	
Plate Voltage	300	300	Volts
Screen-Supply Voltage	300	...	Volts
Screen Voltage—See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0	0	Volts
Plate Dissipation	2.8	2.7	Watts
Screen Dissipation	0.5	...	Watts
<b>Heater-Cathode Voltage</b>			
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
<b>Grid-Number 1 Circuit Resistance</b>			
With Fixed Bias	0.25	0.5	Megohms
With Cathode Bias	1.0	1.0	Megohms

#### BASING DIAGRAM

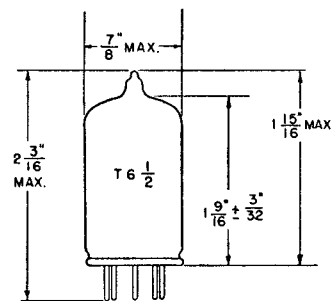


RETMA 9FX

#### TERMINAL CONNECTIONS

- Pin 1—Triode Grid
- Pin 2—Triode Plate
- Pin 3—Triode Cathode
- Pin 4—Heater
- Pin 5—Heater
- Pin 6—Tetrode Plate
- Pin 7—Tetrode Grid Number 2 (Screen)
- Pin 8—Tetrode Cathode
- Pin 9—Tetrode Grid Number 1

#### PHYSICAL DIMENSIONS



RETMA 6-2

## CHARACTERISTICS AND TYPICAL OPERATION

### AVERAGE CHARACTERISTICS

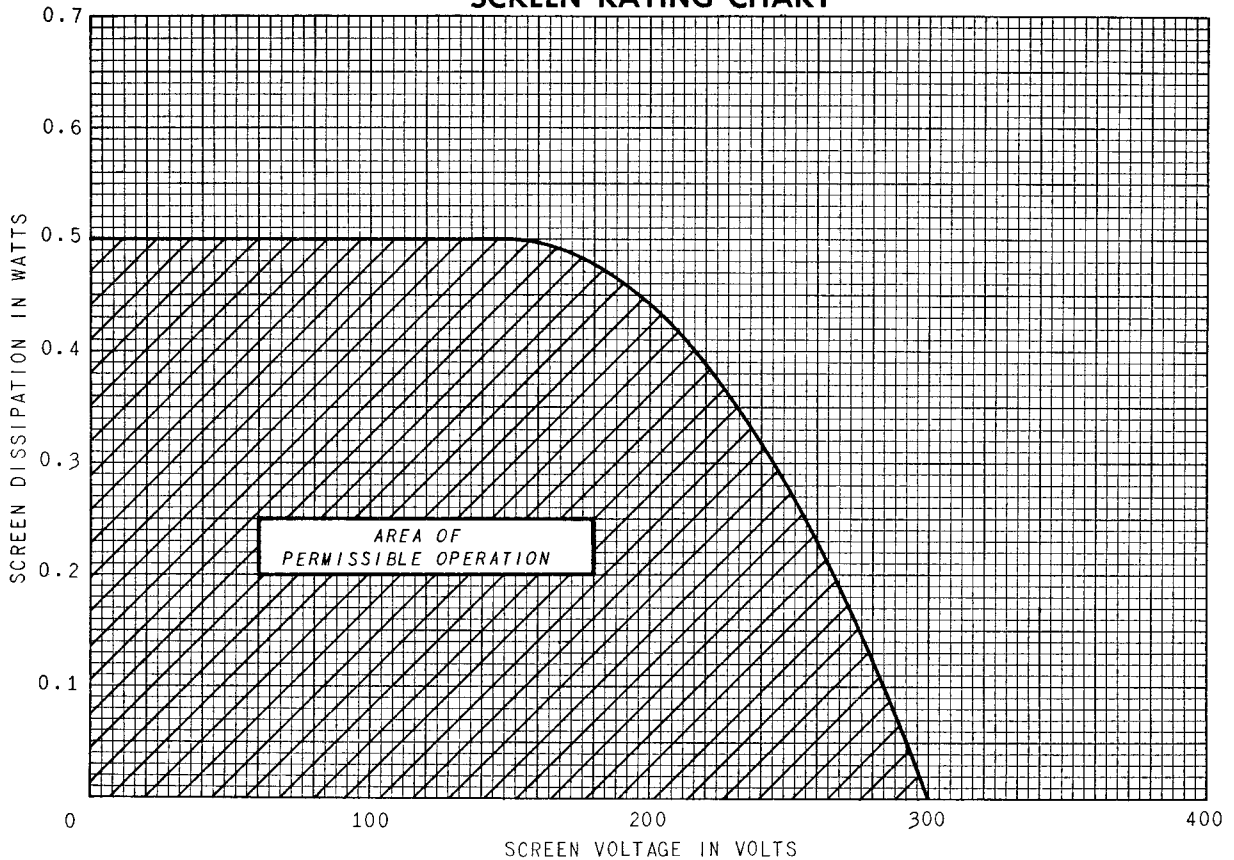
	Tetrode Section	Triode Section	
Plate Voltage .....	125	125	Volts
Screen Voltage .....	125	.....	Volts
Grid-Number 1 Voltage .....	-1.0	.....	Volts
Cathode-Bias Resistor .....	.....	56	Ohms
Amplification Factor .....	.....	40	
Plate Resistance, approximate .....	100000	5000	Ohms
Transconductance .....	5800	8000	Micromhos
Plate Current .....	12	15	Milliamperes
Screen Current .....	4.0	.....	Milliamperes
Grid-Number 1 Voltage, approximate I <sub>b</sub> = 10 Microamperes .....	-10	-9	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.

† With external shield (RETMA 315) connected to cathode of section under test unless otherwise indicated.

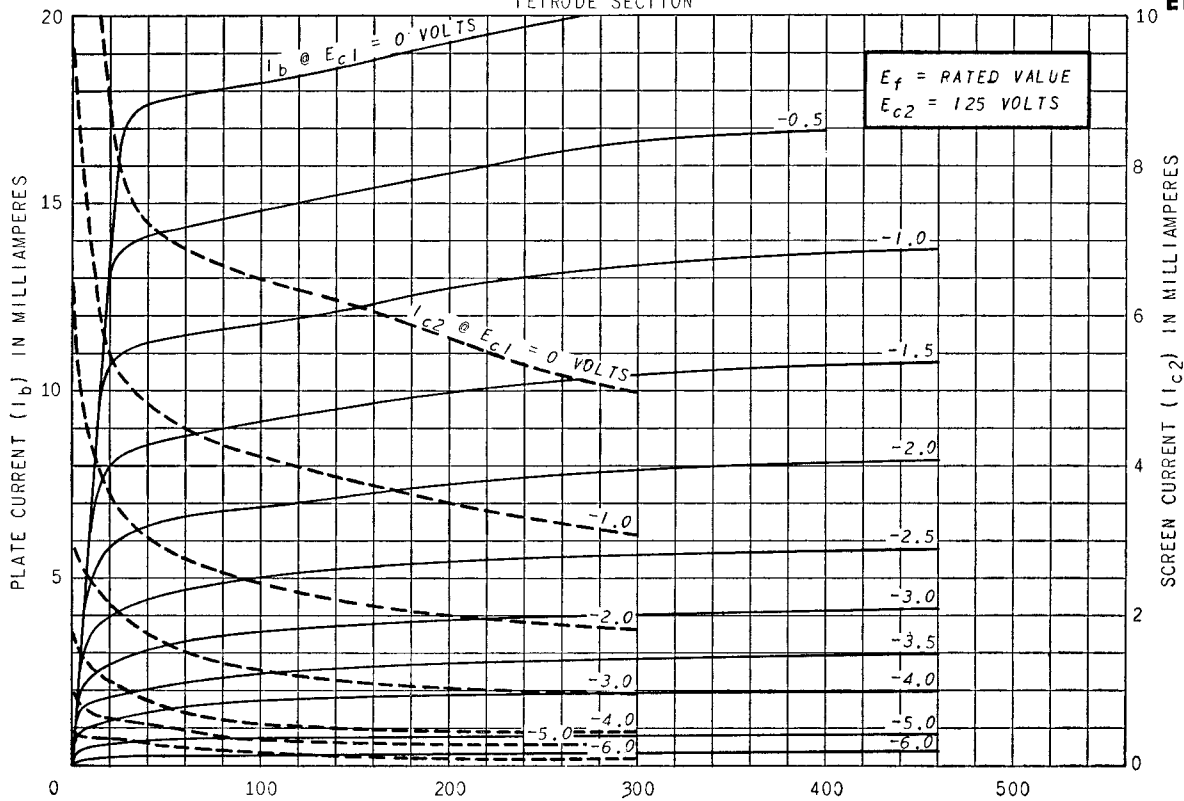
‡ With external shield (RETMA 315) connected to ground.

### SCREEN RATING CHART



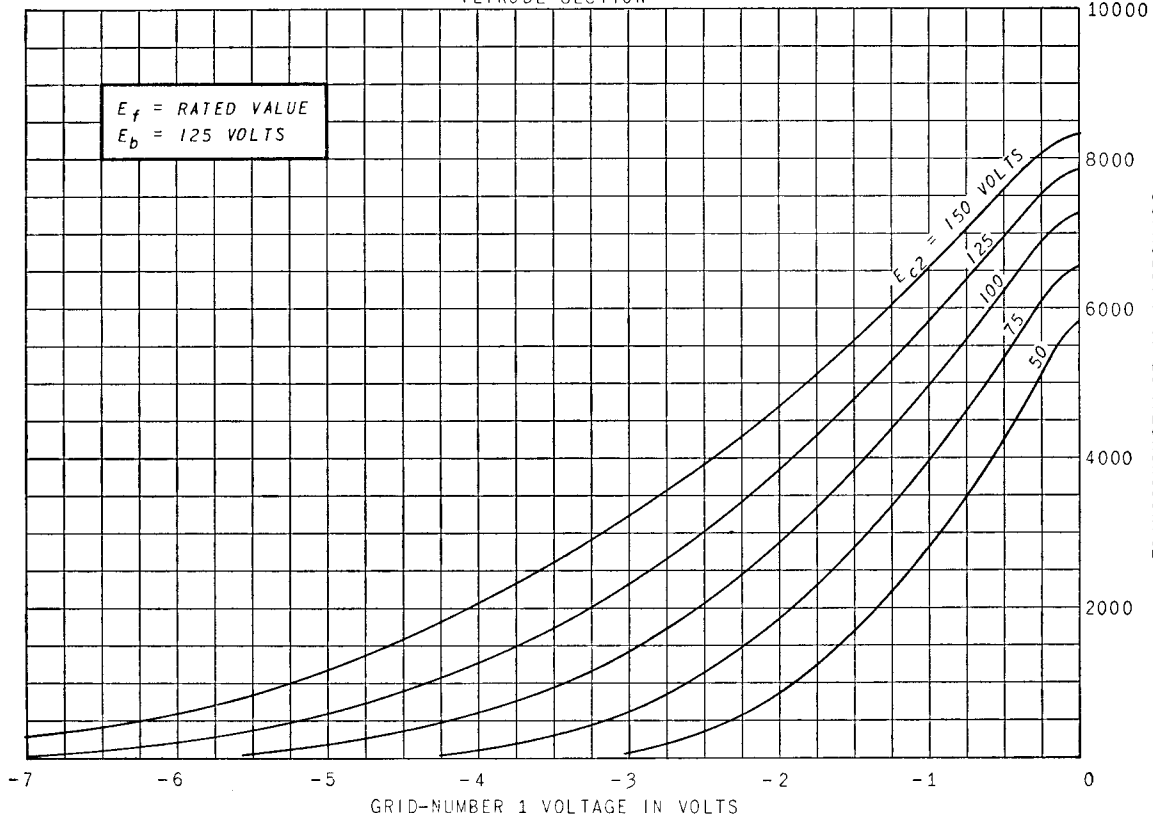
# AVERAGE PLATE CHARACTERISTICS

TETRODE SECTION



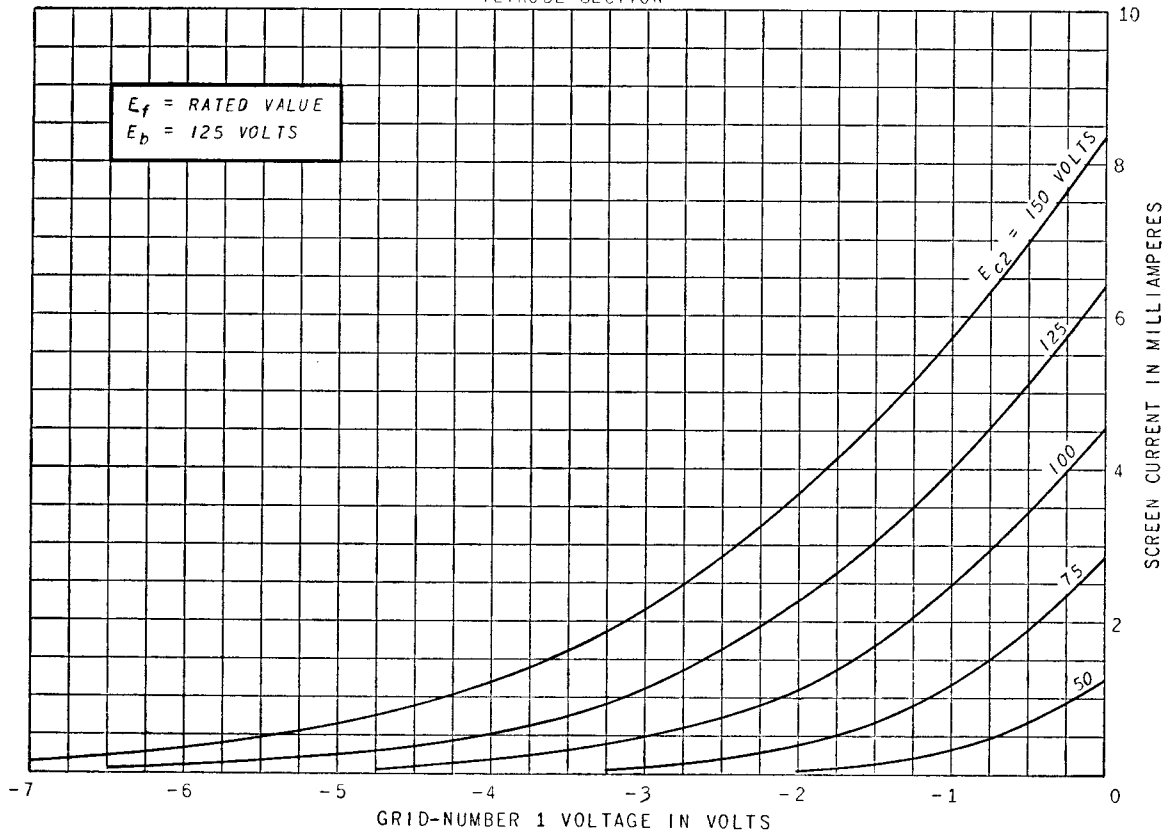
# AVERAGE TRANSFER CHARACTERISTICS

TETRODE SECTION



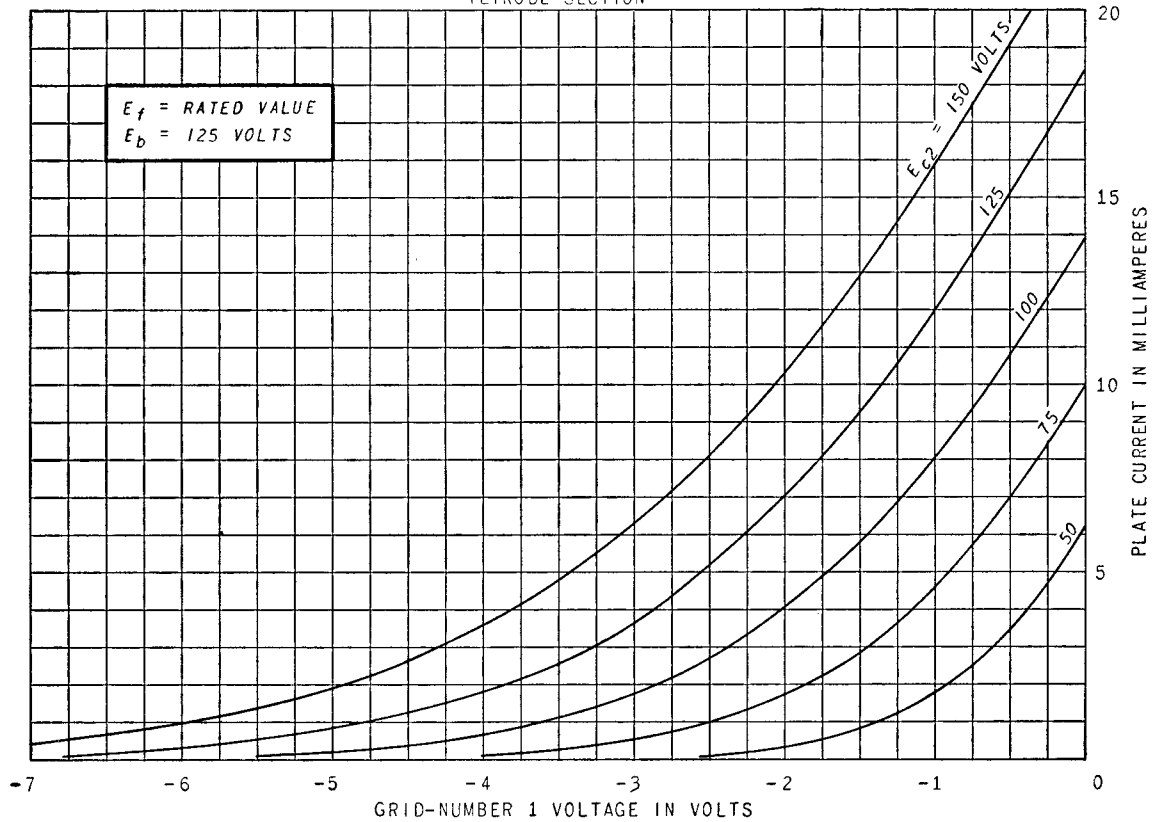
### AVERAGE TRANSFER CHARACTERISTICS

TETRODE SECTION



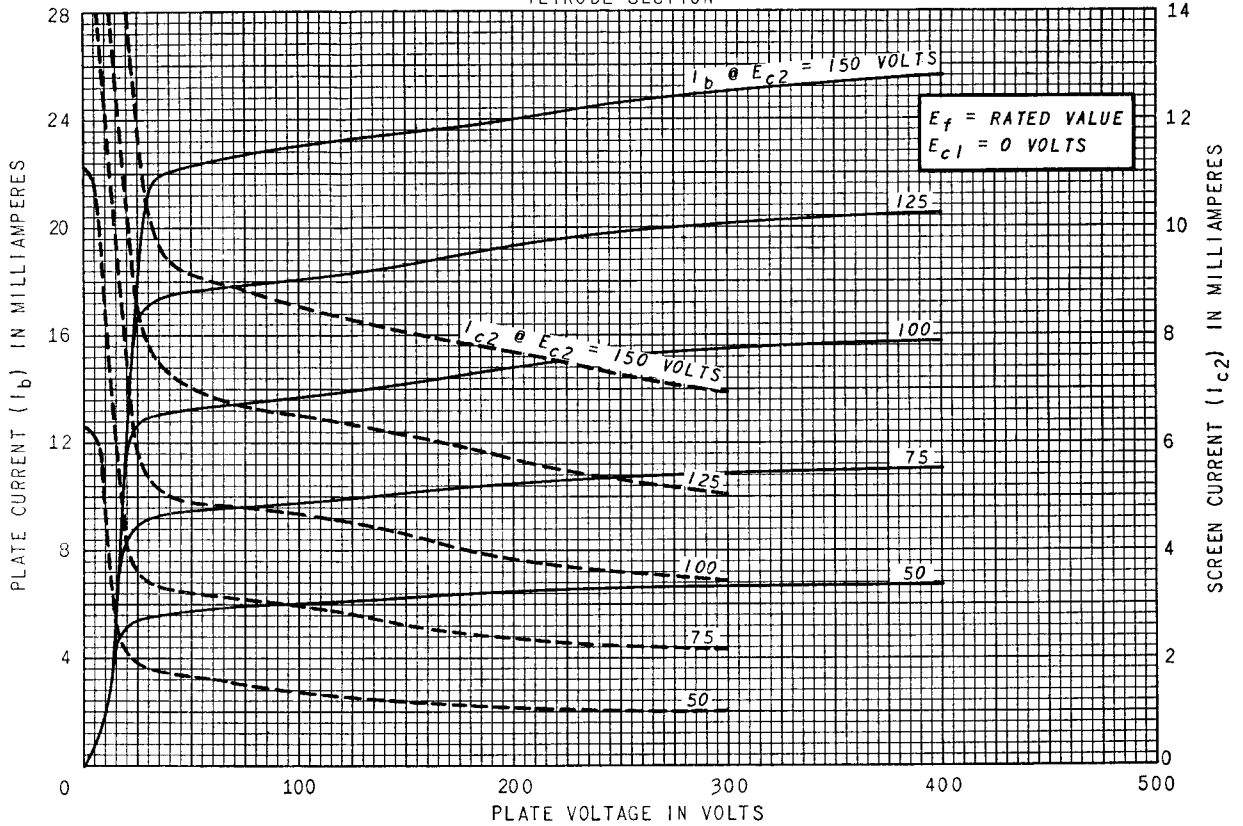
### AVERAGE TRANSFER CHARACTERISTICS

TETRODE SECTION



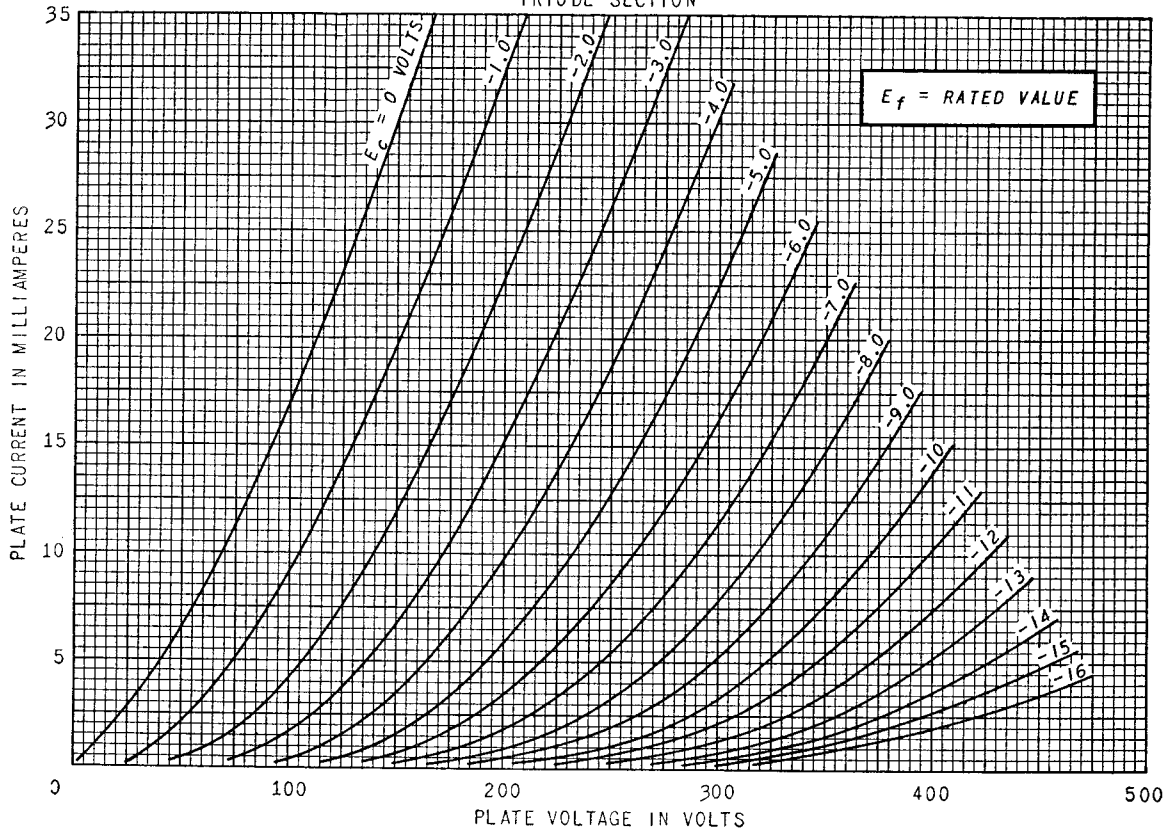
**AVERAGE PLATE CHARACTERISTICS**

TETRODE SECTION

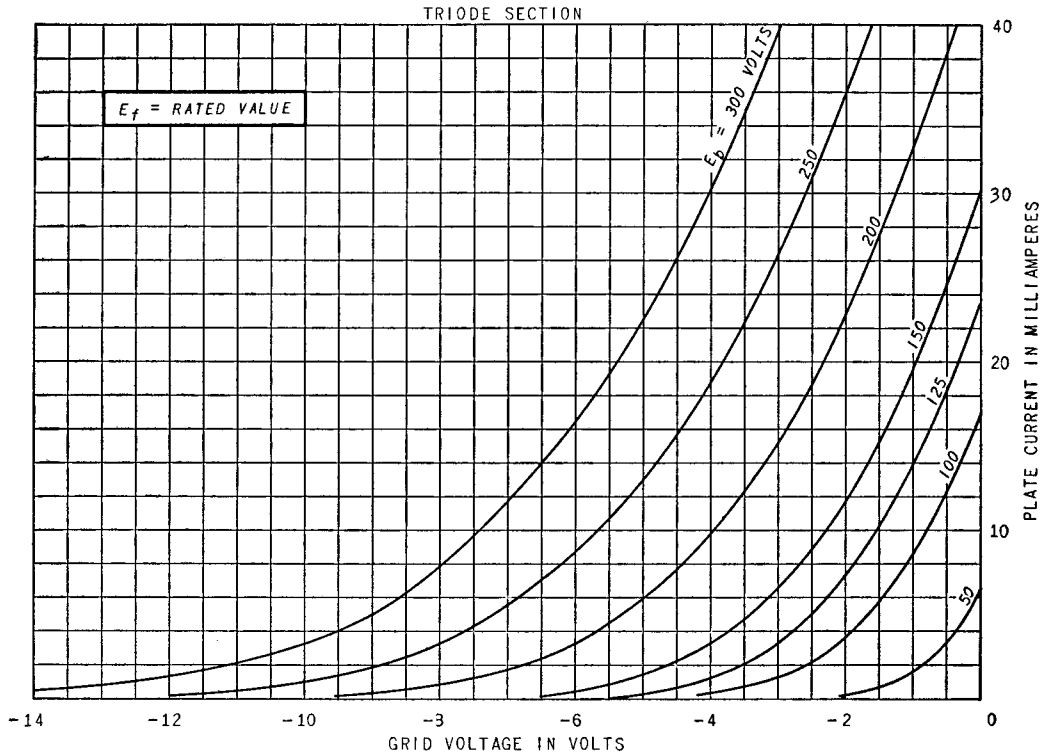


**AVERAGE PLATE CHARACTERISTICS**

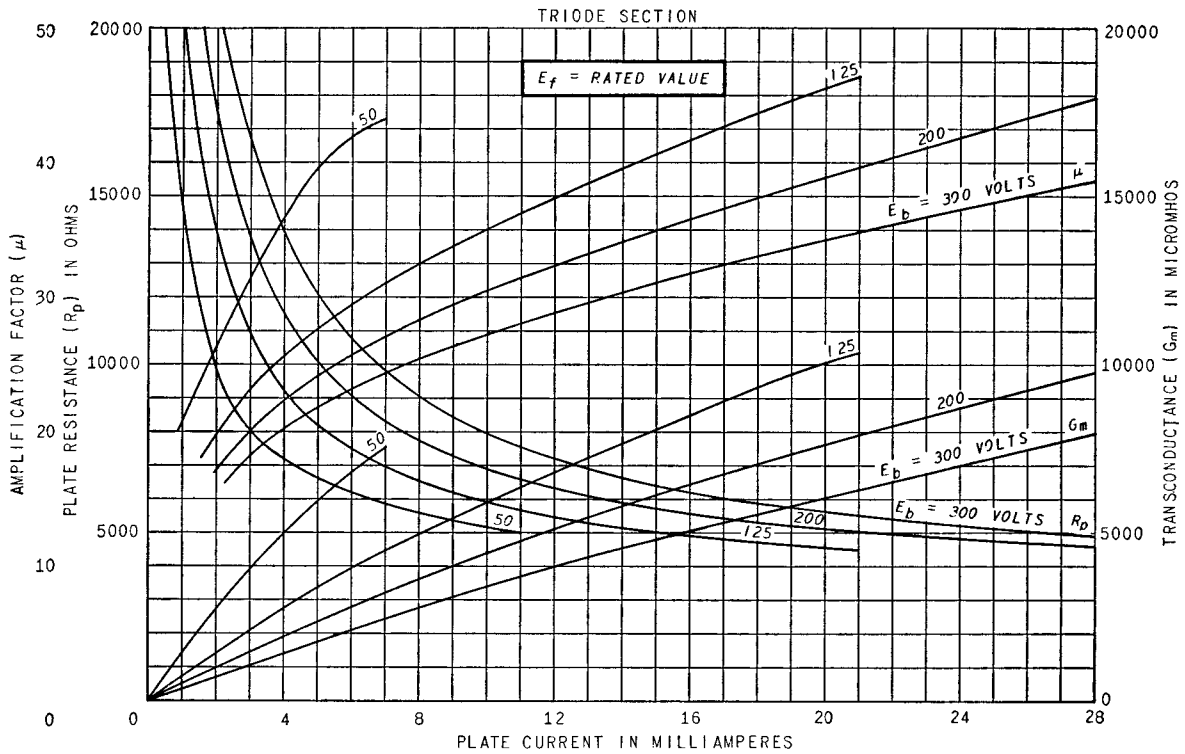
TRIODE SECTION



**AVERAGE TRANSFER CHARACTERISTICS**



**AVERAGE CHARACTERISTICS**



**ELECTRONIC COMPONENTS DIVISION**



**Schenectady 5, N. Y.**