



6CL8-A—5CL8-A

TRIODE-TETRODE

DESCRIPTION AND RATING

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

The 6CL8-A is unilaterally interchangeable, both electrically and mechanically, with the 6CL8. It differs primarily from the 6CL8 in having a tetrode section with lower grid-plate capacitance and higher transconductance.

Except for heater ratings, 5CL8-A is identical with the 6CL8-A.

GENERAL

ELECTRICAL	5CL8-A	6CL8-A
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	11 Seconds

Direct Interelectrode Capacitances	With Shield†	Without Shield
Tetrode Section		
Grid-Number 1 to Plate, maximum	0.01	0.02 μf
Input	5.0	5.0 μf
Output	3.0	2.0 μf
Triode Section		
Grid to Plate	1.8	1.8 μf
Input	2.8	2.8 μf
Output	2.0	1.5 μf
Tetrode Grid-Number 1 to Triode Plate, maximum	0.01	0.015 μf
Tetrode Plate to Triode Plate, maximum	0.03	0.15 μf
Heater to Cathode, Each Section	3.0‡	3.0 μf

MECHANICAL

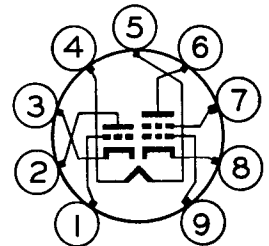
Mounting Position—Any
 Envelope—T-6½, Glass
 Base—E9-1, Small Button 9-Pin

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Supersedes ET-T1473, dated 10-57

BASING DIAGRAM

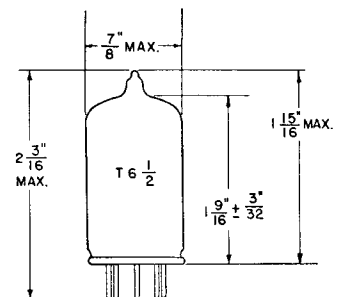


EIA 9FX

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



EIA 6-2

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

	5CL8-A	6CL8-A	
Allowable Heater Current	0.56 to 0.64	0.42 to 0.48	Amperes
	Tetrode Section	Triode Section	
Plate Voltage	330	330	Volts
Screen Supply Voltage	330	Volts
Screen Voltage—See Rating Chart			
Positive DC Grid-Number 1 Voltage	0	0	Volts
Plate Dissipation	3.0	2.5	Watts
Screen Dissipation	0.55	Watts
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	0.25	0.5	Megohms
With Cathode Bias	1.0	1.0	Megohms

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in tube characteristics.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, and environmental conditions.

CHARACTERISTICS AND TYPICAL OPERATION

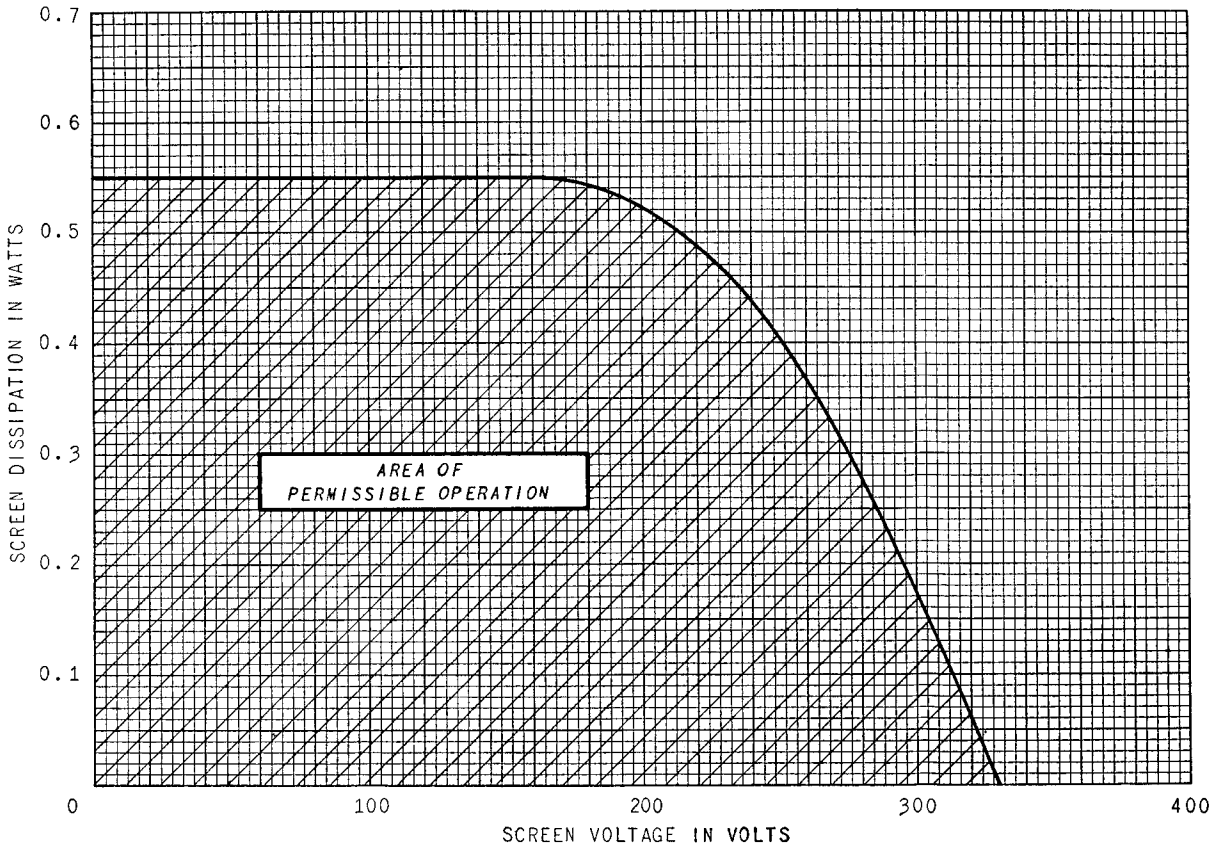
	Tetrode Section	Triode Section	
AVERAGE CHARACTERISTICS			
Plate Voltage	100	125	125 Volts
Screen Voltage	70	125 Volts
Grid-Number 1 Voltage	0	-1.0	-1.0 Volts
Amplification Factor	40
Plate Resistance, approximate	200000	5000	5000 Ohms
Transconductance	7000	6500	8000 Micromhos
Plate Current		12	14 Milliamperes
Screen Current		4.0 Milliamperes
Grid-Number 1 Voltage, approximate			
I _b = 20 Microamperes		-9	-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.

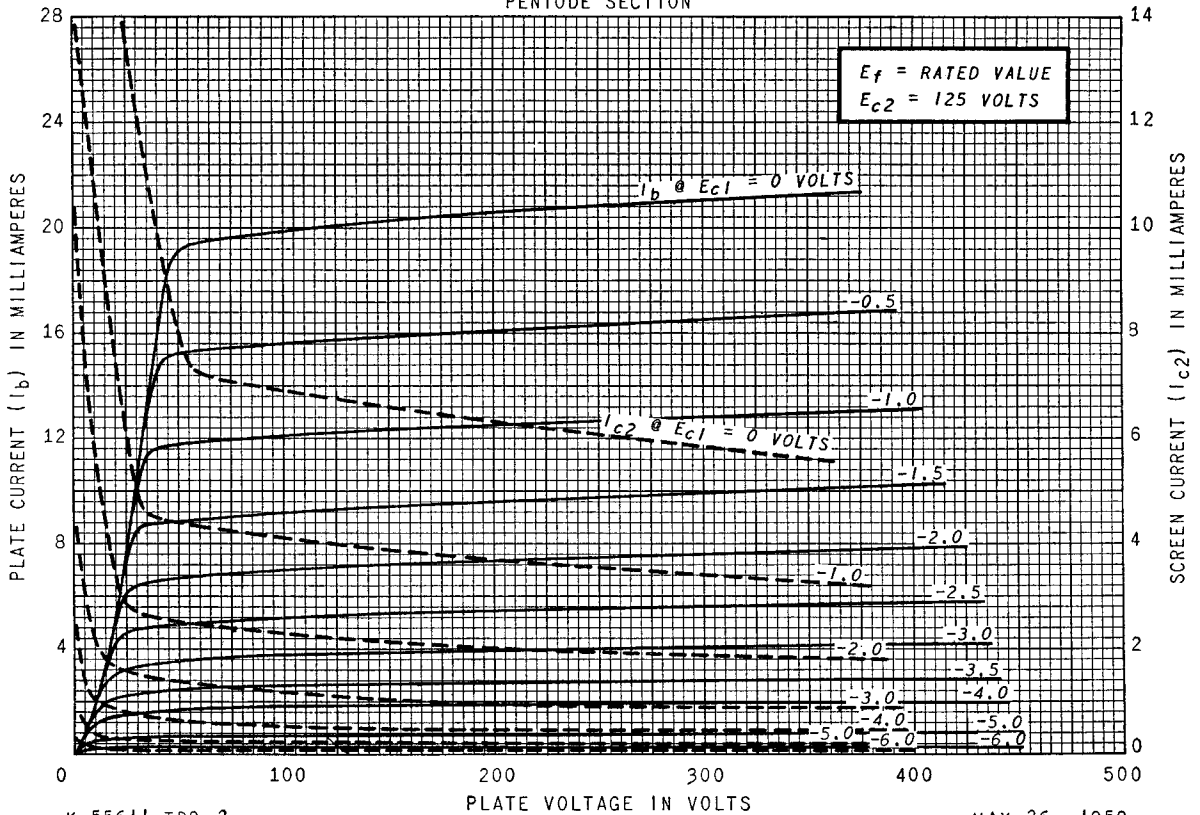
† With external shield (EIA 315) connected to cathode of section under test unless otherwise indicated.

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

SCREEN RATING CHART

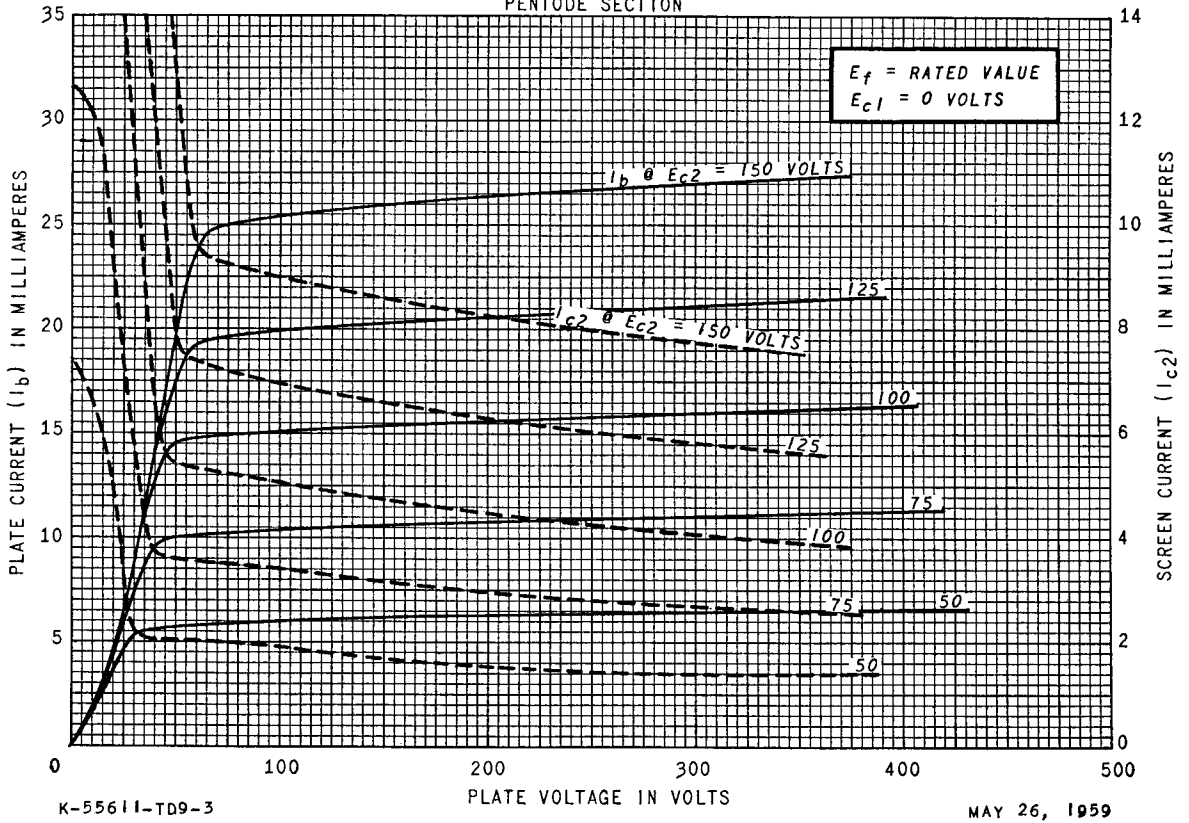


AVERAGE PLATE CHARACTERISTICS
 PENTODE SECTION



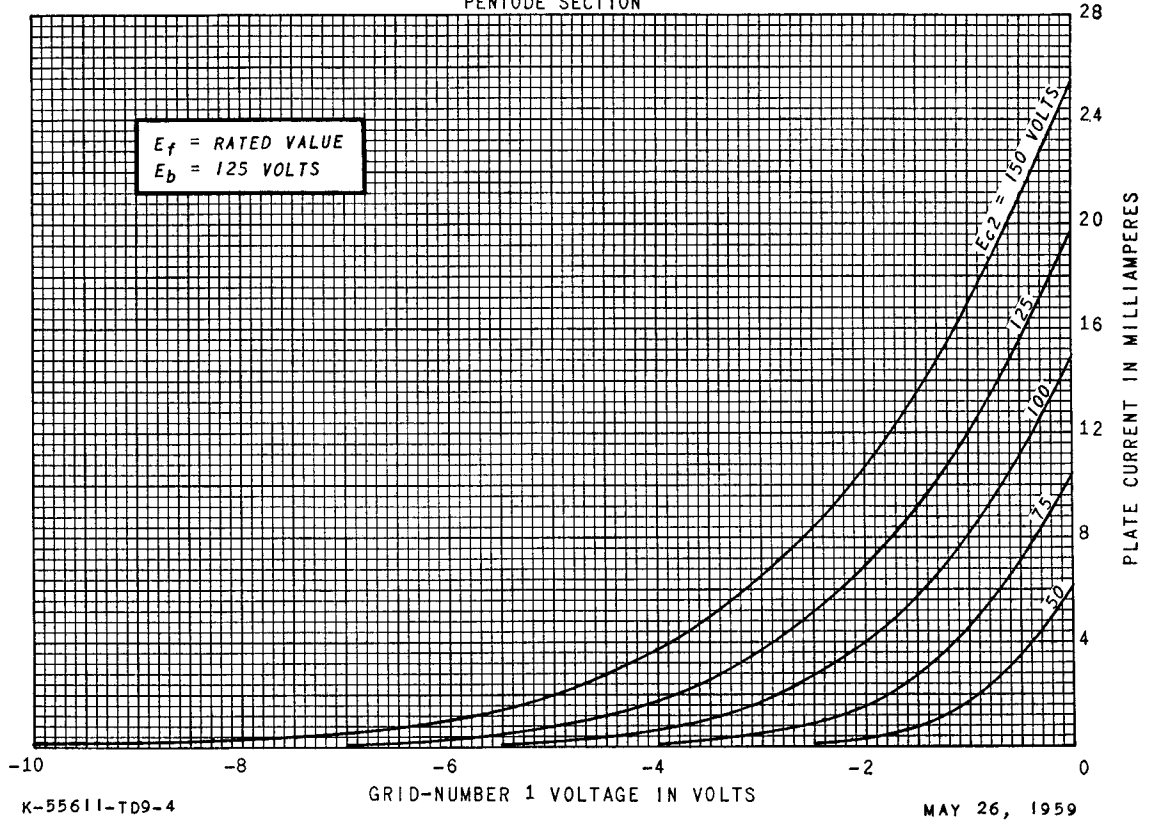
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION

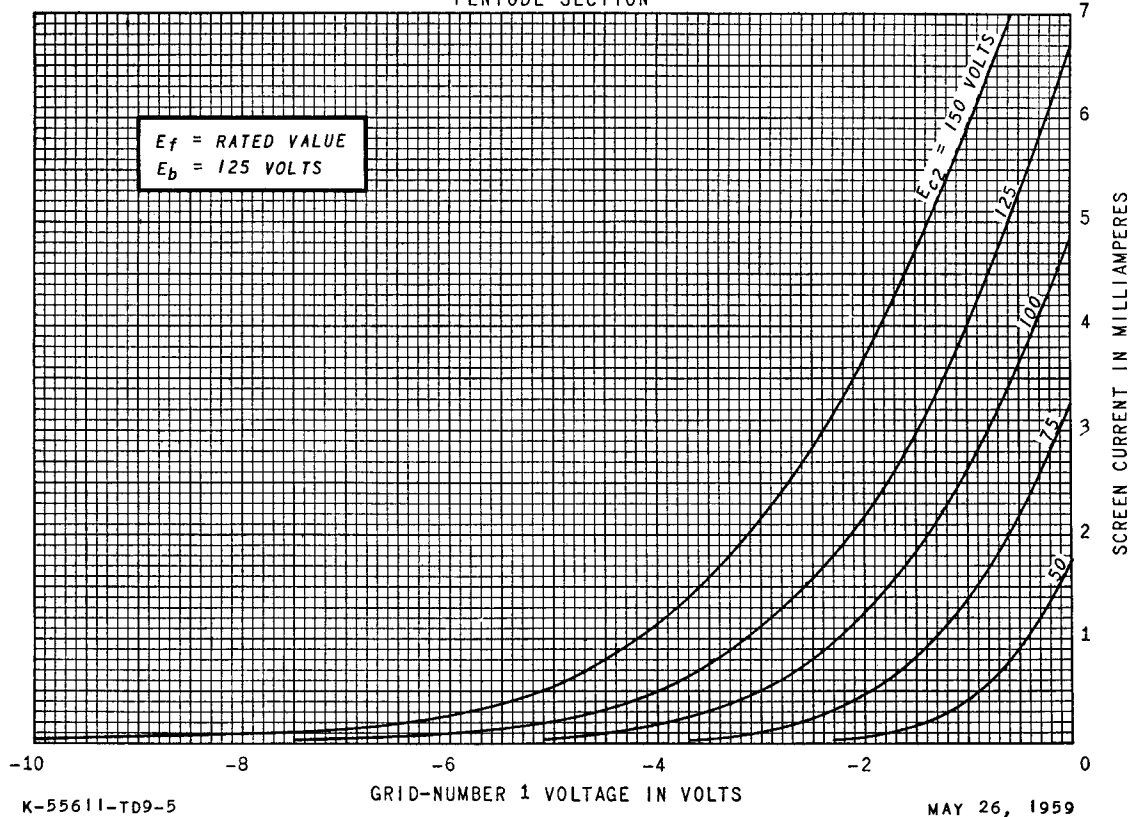


AVERAGE TRANSFER CHARACTERISTICS

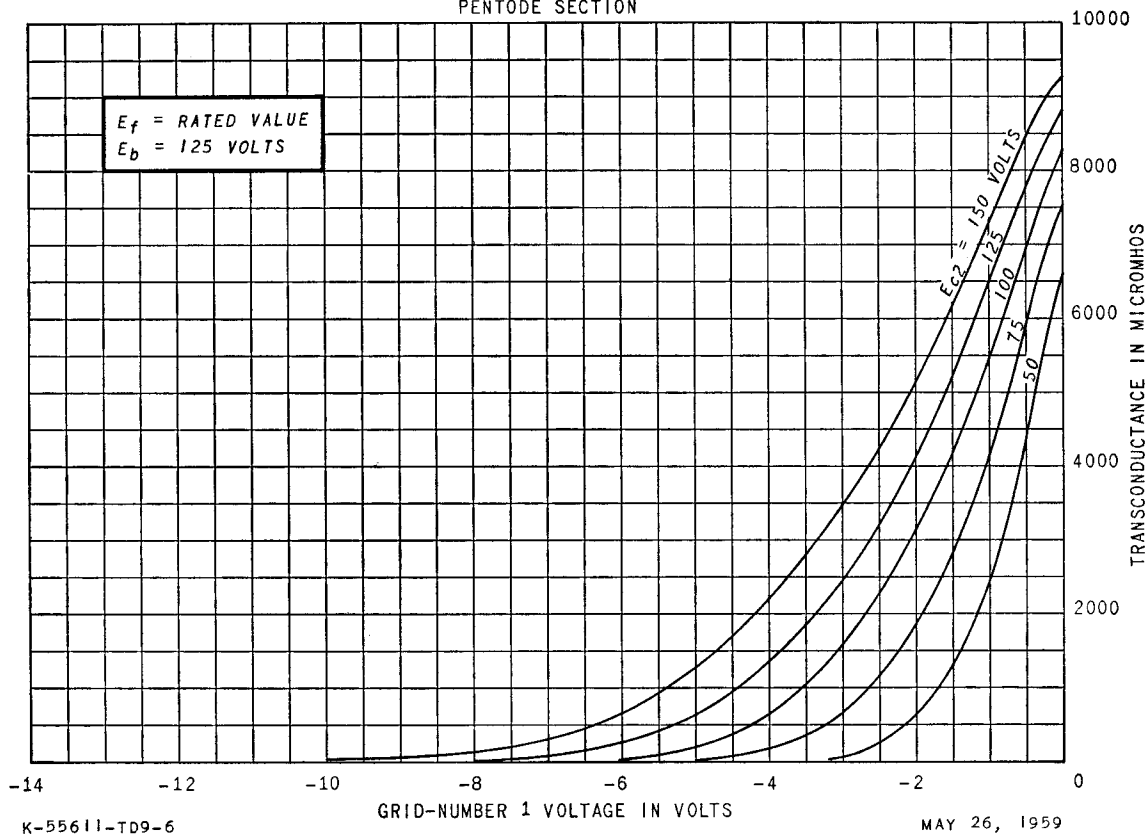
PENTODE SECTION



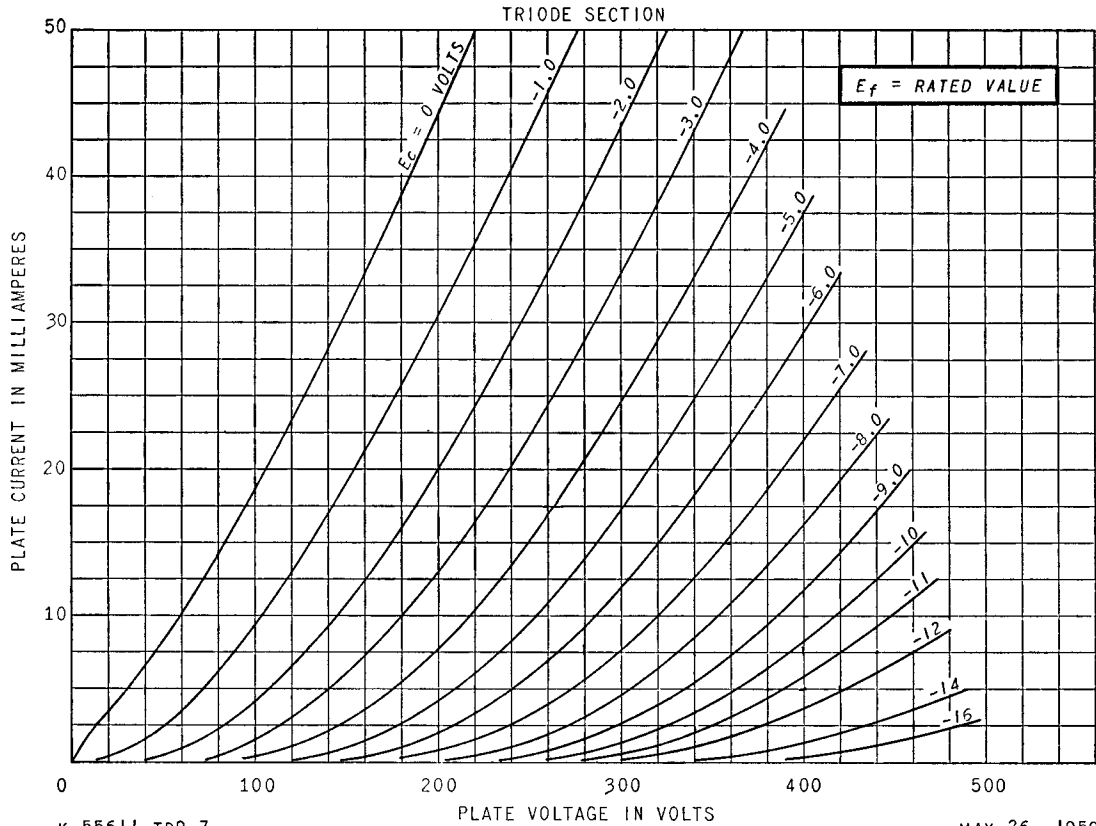
AVERAGE TRANSFER CHARACTERISTICS
 PENTODE SECTION



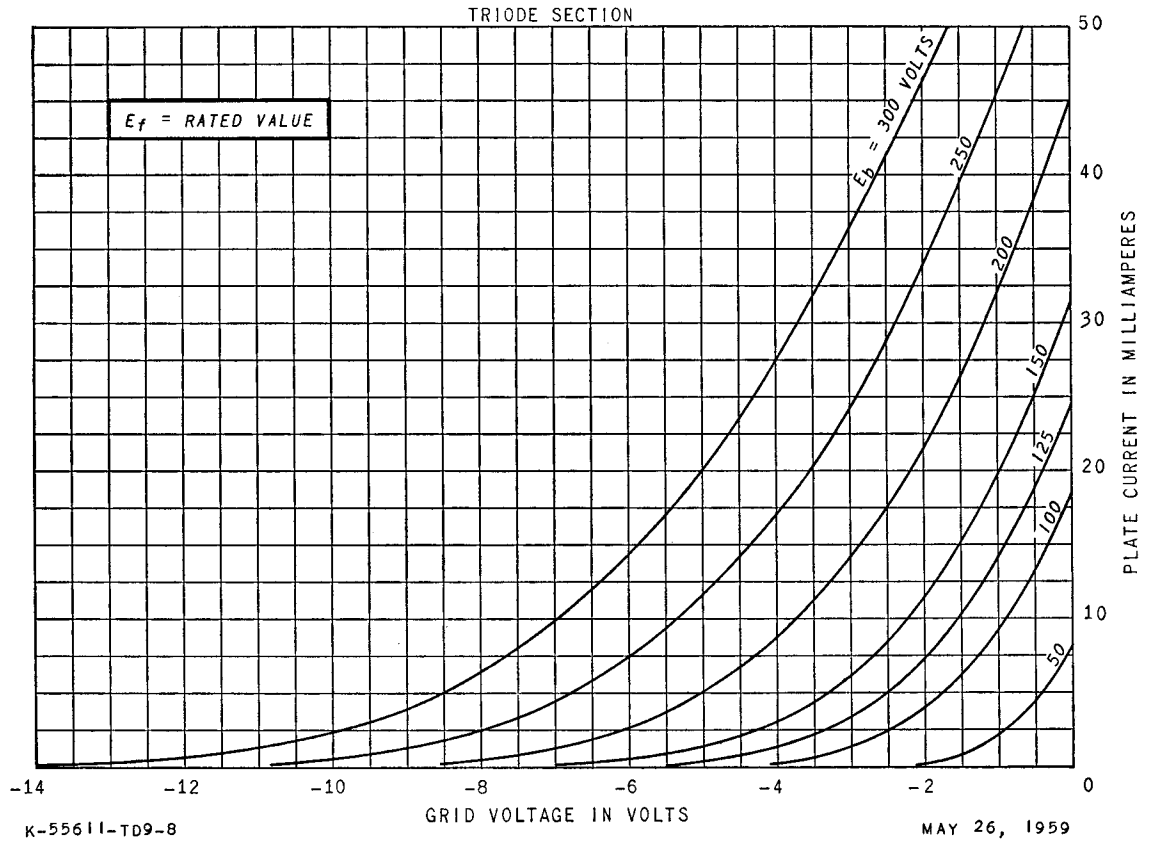
AVERAGE TRANSFER CHARACTERISTICS
 PENTODE SECTION



AVERAGE PLATE CHARACTERISTICS

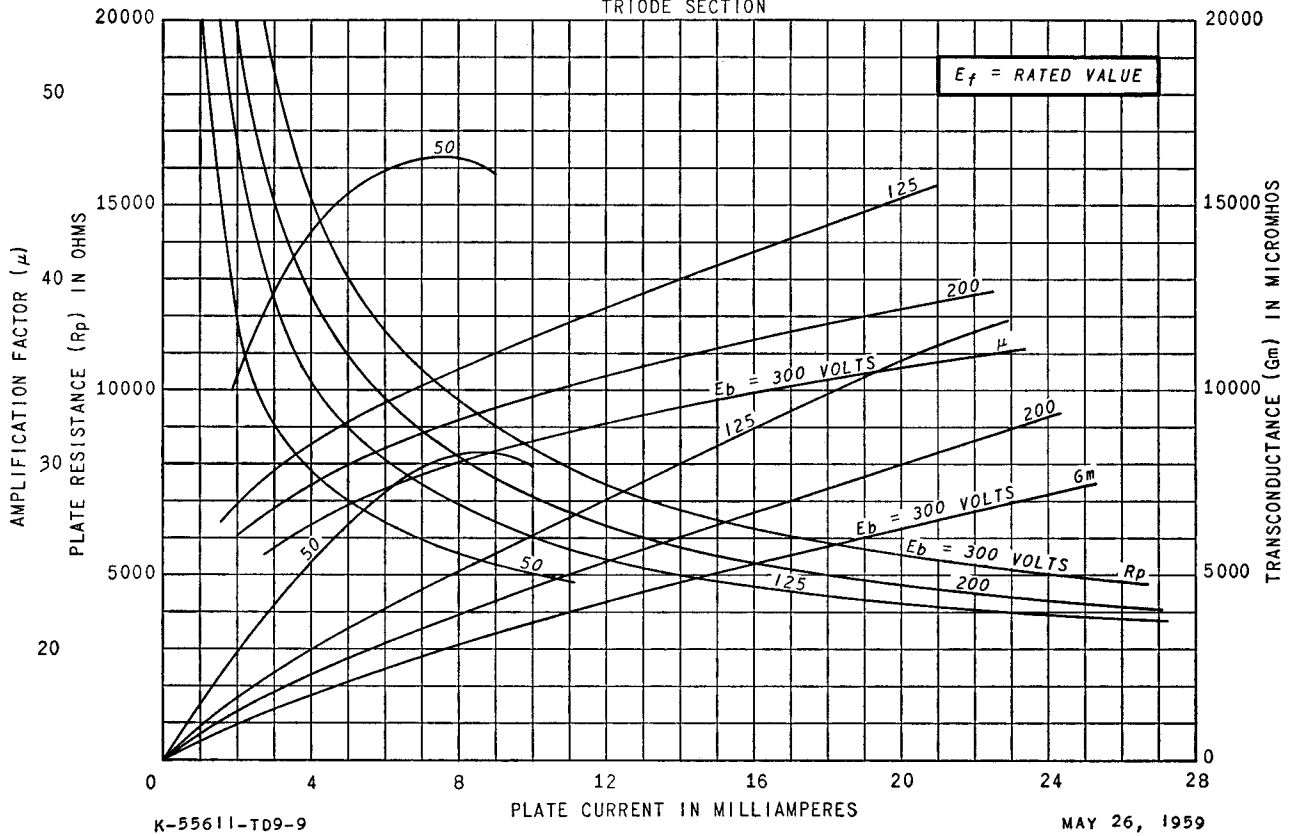


AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS

TRIODE SECTION



K-55611-TD9-9

MAY 26, 1959