



COMPACTRON DISSIMILAR DOUBLE PENTODE

DESCRIPTION AND RATING

The 8BM11 is a compactron containing a semiremote-cutoff pentode (Section 1) and a sharp-cutoff pentode (Section 2). It is intended for intermediate-frequency amplifier service in television receivers.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*	. . . . .	8.4	Volts
Heater Current†	. . . . .	0.45±0.03	Amperes
Heater Warm-up Time, average‡	. . . . .	11	Seconds

Direct Interelectrode Capacitances¶

Section 1

Grid-Number 1 to Plate: (1g1 to 1p)	0.016	pf	
Input: 1g1 to (h + 1k + 1g2 + 1g3 + i.s.)	. . . . .	6.5	pf
Output: 1p to (h + 1k + 1g2 + 1g3 + i.s.)	. . . . .	2.4	pf

Section 2

Grid-Number 1 to Plate: (2g1 to 2p)	0.015	pf	
Input: 2g1 to (h + 2k + 2g2 + 2g3 + 1g3 + i.s.)	. . . . .	7.5	pf
Output: 2p to (h + 2k + 2g2 + 2g3 + 1g3 + i.s.)	. . . . .	2.6	pf

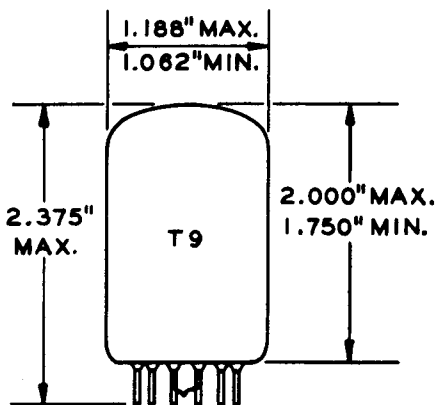
Coupling

Grid-Number 1 (Section 1) to Plate (Section 2): (1g1 to 2p), maximum.	. . . . .	0.001	pf
Grid-Number 1 (Section 2) to Plate (Section 1): (2g1 to 1p), maximum.	. . . . .	0.10	pf
Grid-Number 1 (Section 1) to Grid-Number 1 (Section 2): (1g1 to 2g1), maximum.	. . . . .	0.001	pf
Plate (Section 1) to Plate (Section 2): (1p to 2p) maximum.	. . . . .	0.002	pf

MECHANICAL

Operating Position - Any		
Envelope - T-9, Glass		
Base - E12-70, Button 12-Pin		
Outline Drawing - EIA 9-58		
Maximum Diameter	1.188	Inches
Minimum Diameter	1.062	Inches
Maximum Over-all Length.	2.375	Inches
Maximum Seated Height	2.000	Inches
Minimum Seated Height	1.750	Inches

PHYSICAL DIMENSIONS

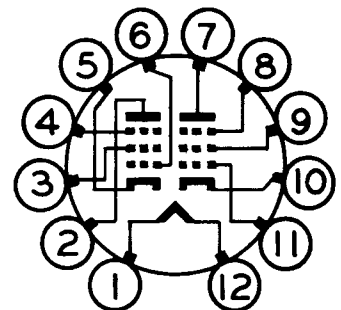


EIA 9-58

TERMINAL CONNECTIONS

- Pin 1 - Heater
- Pin 2 - Plate (Section 2)
- Pin 3 - Grid Number 2 (Screen) (Section 2)
- Pin 4 - Grid Number 3 (Suppressor) (Section 2)
- Pin 5 - Cathode (Section 2)
- Pin 6 - Grid Number 1 (Section 2)
- Pin 7 - Plate (Section 1)
- Pin 8 - Grid Number 3 (Suppressor) (Section 1) and Internal Shield
- Pin 9 - Grid Number 2 (Screen) (Section 1)
- Pin 10 - Cathode (Section 1)
- Pin 11 - Grid Number 1 (Section 1)
- Pin 12 - Heater

BASING DIAGRAM



EIA 12FU

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an

express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of any of the tubes with other devices or elements by any purchaser of tubes or others.

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Section 1

Plate Voltage	160	Volts
Suppressor Voltage	0	Volts
Screen Voltage	160	Volts
Positive DC Grid-Number 1 Voltage	0	Volts
Plate Dissipation	2.2	Watts
Screen Dissipation	0.55	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance		
With Cathode Bias	1.0	Megohms

Section 2

Plate Voltage	160	Volts
Suppressor Voltage	0	Volts
Screen Voltage	160	Volts
Positive DC Grid-Number 1 Voltage	0	Volts
Plate Dissipation	2.2	Watts
Screen Dissipation	0.55	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance		
With Cathode Bias	0.25	Megohms

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron 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, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

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, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Section 1

Plate Voltage	125	Volts
Suppressor, Connected to Cathode at Socket		
Screen Voltage	125	Volts
Cathode-Bias Resistor	56	Ohms
Plate Resistance, approximate	220000	Ohms
Transconductance	8800	Micromhos
Plate Current	14	Milliamperes
Screen Current	3.6	Milliamperes
Grid-Number 1 Voltage, approximate		
Gm = 50 Micromhos	-16.5	Volts

CHARACTERISTICS AND TYPICAL OPERATION (Cont'd)

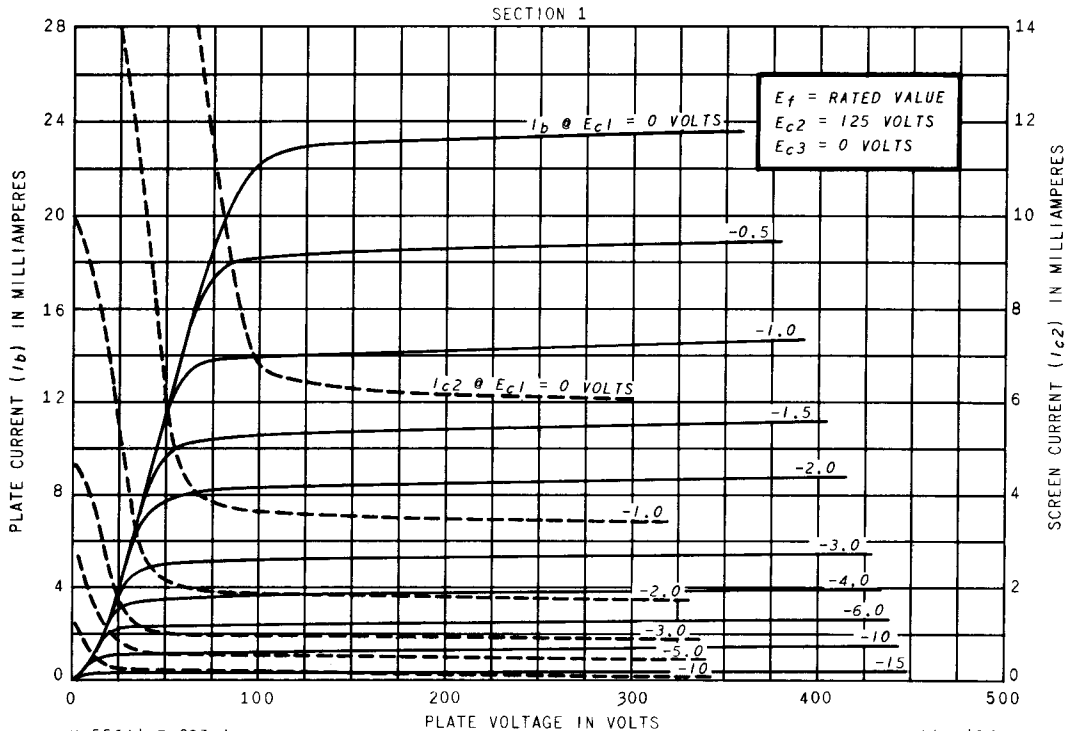
Section 2

Plate Voltage.	125	Volts
Suppressor, Connected to Cathode at Socket		
Screen Voltage	125	Volts
Cathode-Bias Resistor	120	Ohms
Plate Resistance, approximate	300000	Ohms
Transconductance.	8500	Micromhos
Plate Current.	9.0	Milliamperes
Screen Current	2.5	Milliamperes
Grid-Number 1 Voltage, approximate		
I _b = 20 Microamperes	-5.5	Volts

NOTES

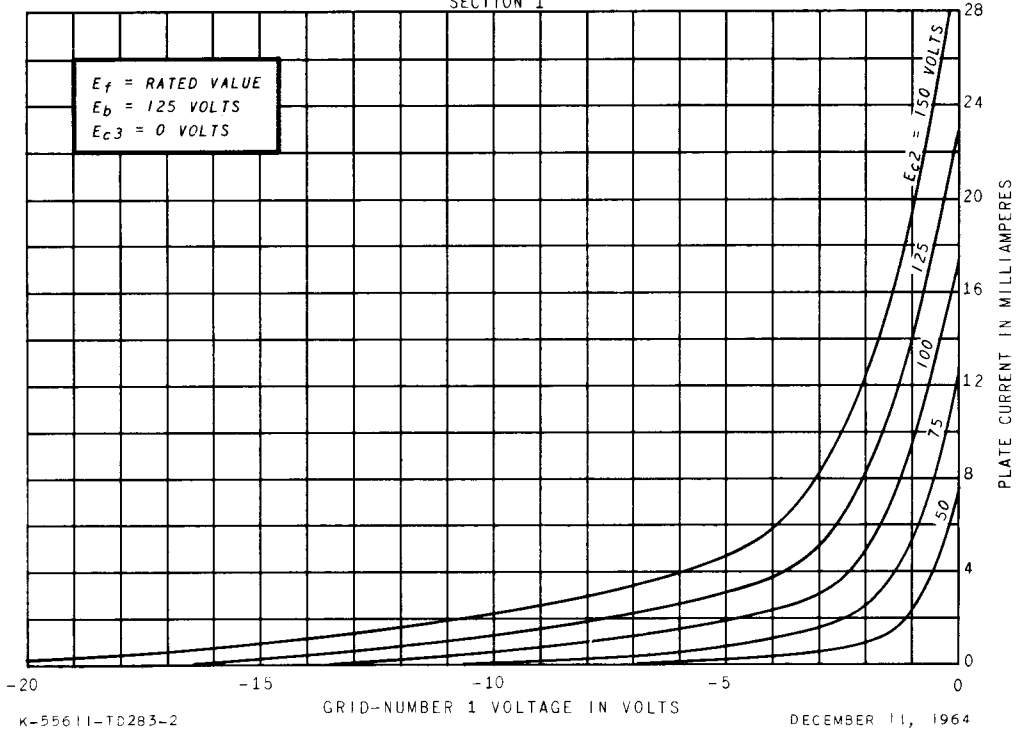
- * Heater voltage for a bogey tube at I_f = 0.45 amperes.
- ‡ The equipment designer should design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance.
- § The time required for the voltage across the heater to reach 80 percent of the bogey value after applying 4 times the bogey heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the bogey heater voltage divided by the bogey heater current.
- ¶ With external shield (EIA 309) connected to cathode of section under test.

AVERAGE PLATE CHARACTERISTICS



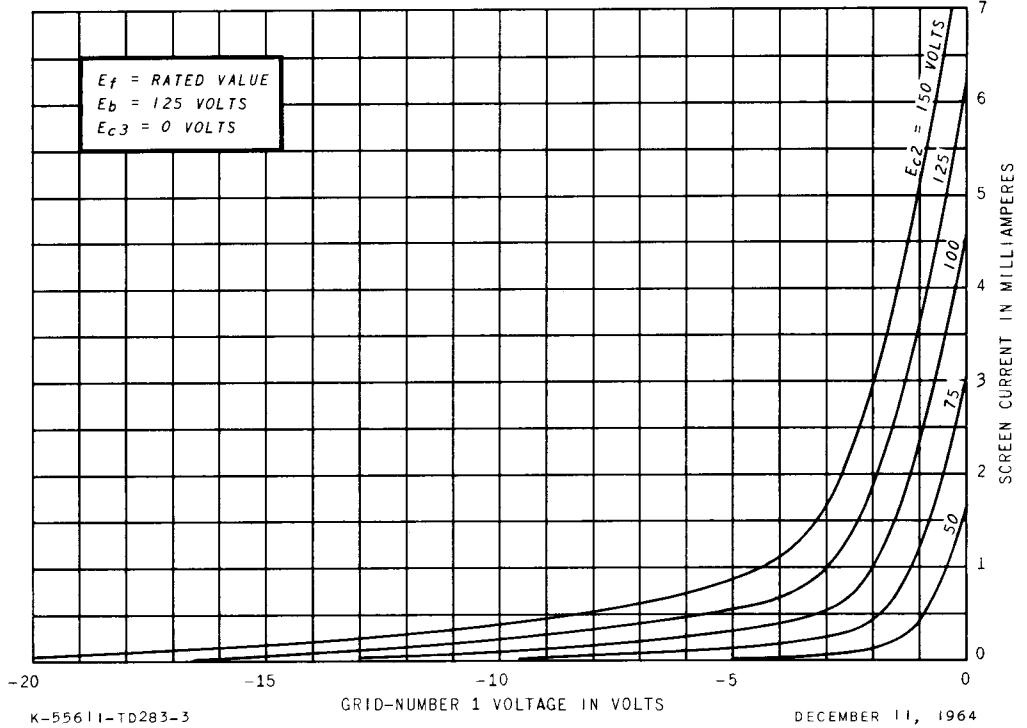
AVERAGE TRANSFER CHARACTERISTICS

SECTION 1



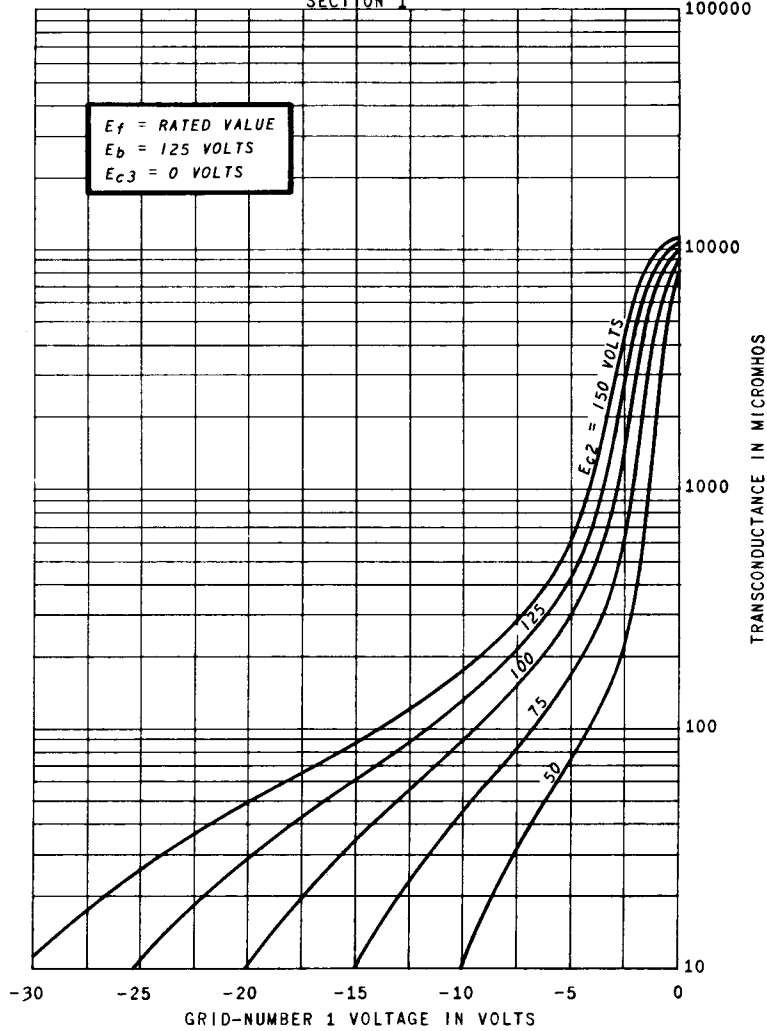
AVERAGE TRANSFER CHARACTERISTICS

SECTION 1



AVERAGE TRANSFER CHARACTERISTICS

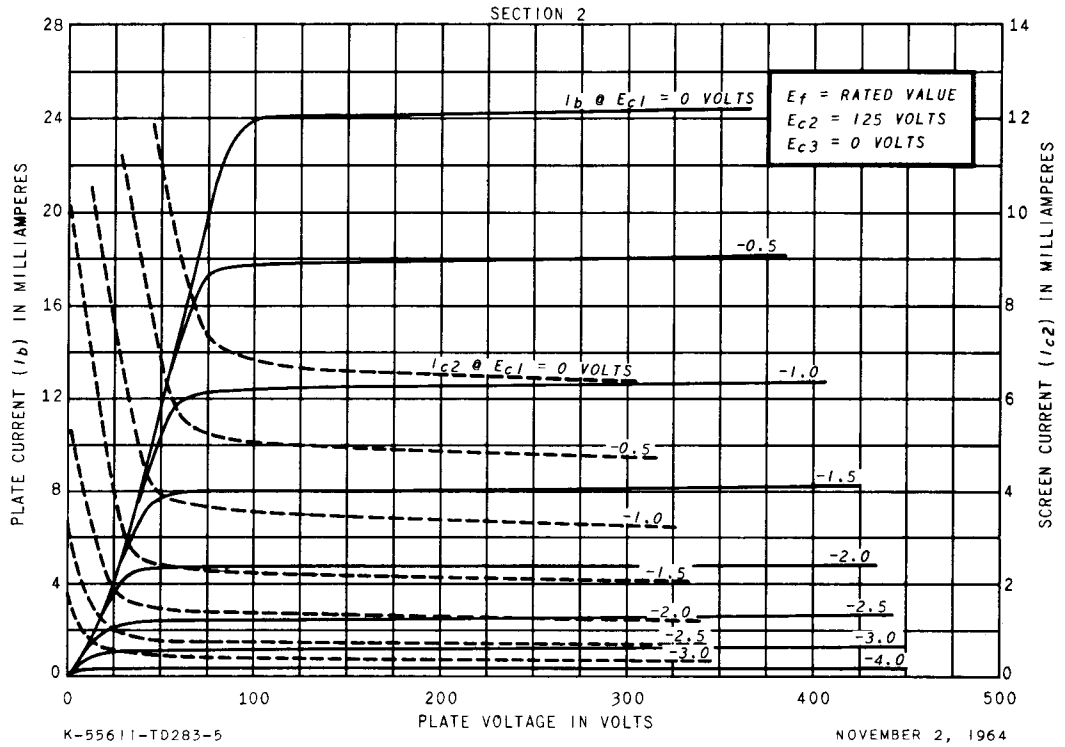
SECTION 1



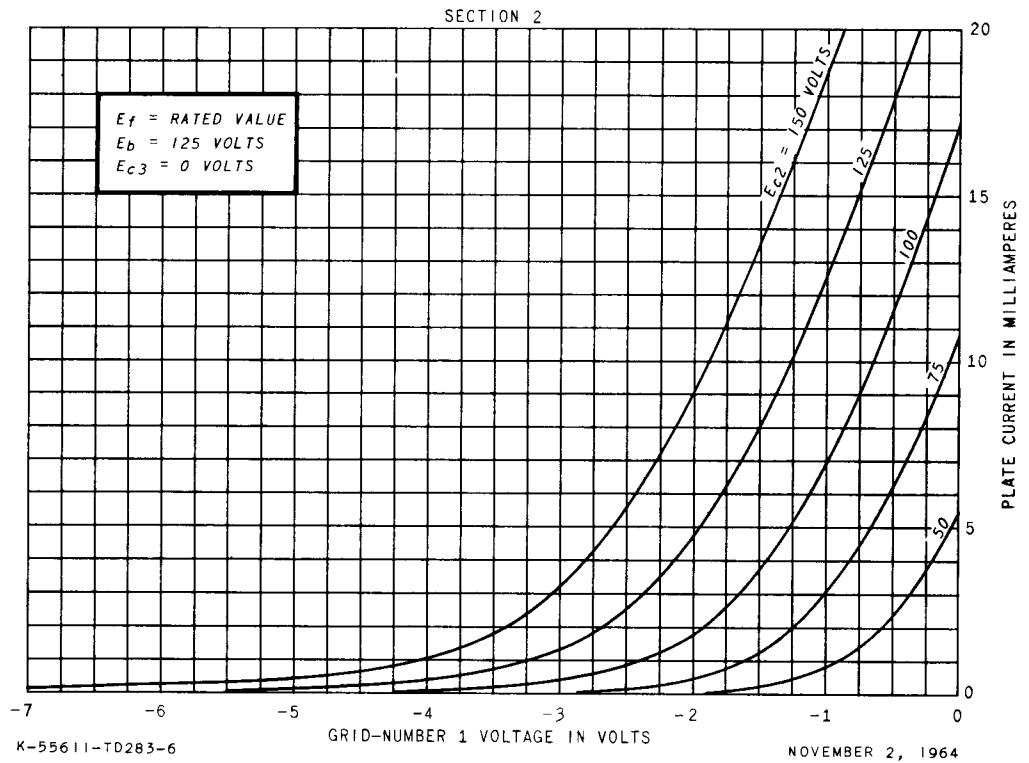
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AVERAGE PLATE CHARACTERISTICS

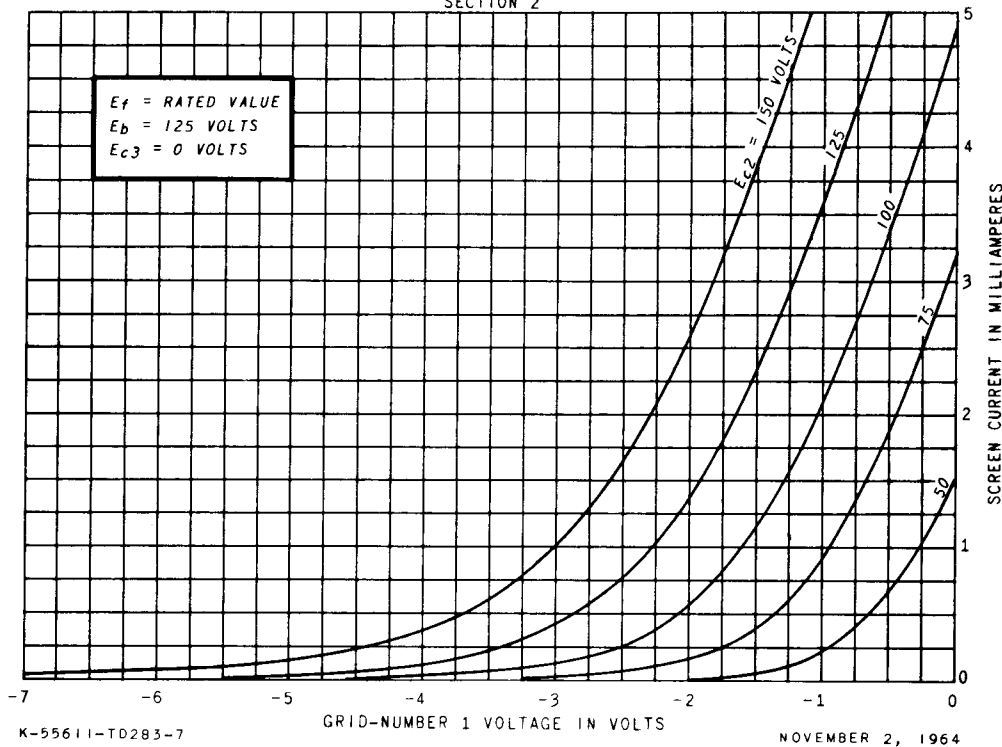


AVERAGE TRANSFER CHARACTERISTICS



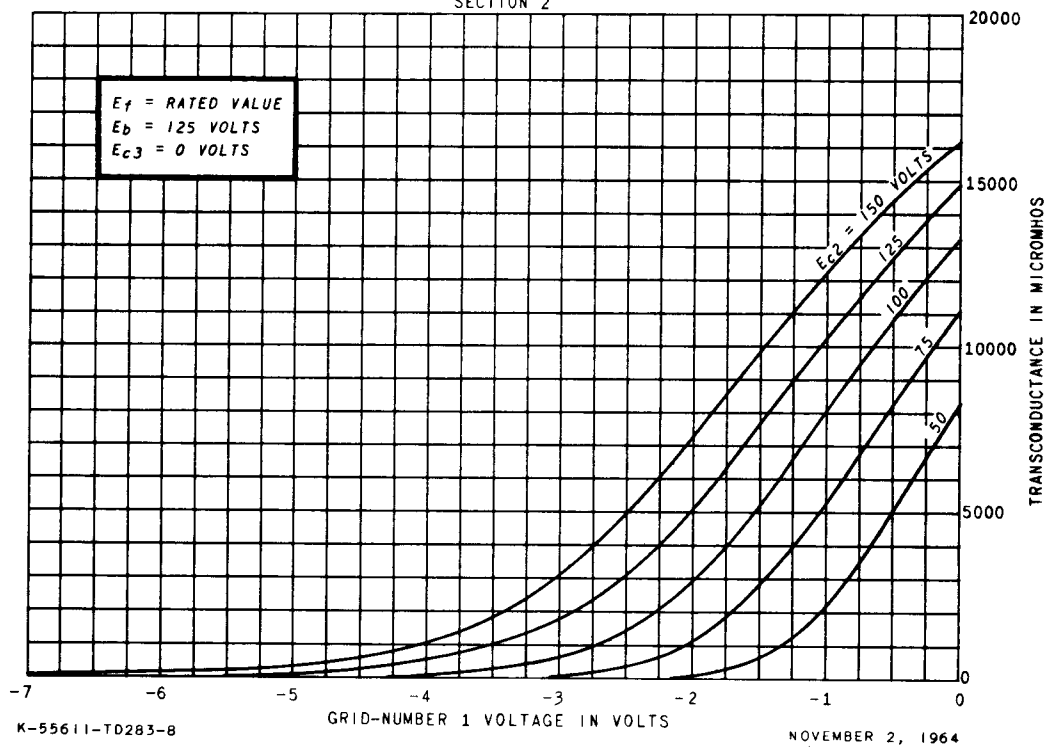
AVERAGE TRANSFER CHARACTERISTICS

SECTION 2



AVERAGE TRANSFER CHARACTERISTICS

SECTION 2



TUBE DEPARTMENT
GENERAL  **ELECTRIC**
Owensboro, Kentucky