Electronic TUBES

6BR8 — 5BR8

TRIODE-PENTODE

FOR VHF CONVERTER APPLICATIONS

DESCRIPTION AND RATING

The 6BR8 is a miniature tube which contains a sharp-cutoff pentode and a medium-mu triode in one envelope. It is intended primarily for service as a combined triode oscillator and pentode mixer in VHF television tuners although the tube is also suitable for a wide variety of general-purpose applications in both monochrome and color television receivers. Except for basing arrangement and direct interelectrode capacitances, the 6BR8 is identical to the 6U8.

The 5BR8 is a 600-milliampere version of the 6BR8 which differs only in heater ratings. The 5BR8 exhibits a controlled heater warm-up characteristic which makes it particularly suited for use in television receivers which employ 600-milliampere series-connected heaters.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential	5BR8	6BR8	
Heater Voltage, AC or DC	4.7	6.3	Volts
Heater Current	0.6	0.45	Amperes
Heater Warm-up Time*	11	....	Seconds

Direct Interelelectrode Capacitances	With† Shield	Without Shield	
Pentode Section			
Grid-Number 1 to Plate, maximum	0.008	0.015	μμf
Input	5.0	5.0	μμf
Output	3.5	2.6	μμf
Triode Section			
Grid to Plate	1.8	1.8	μμf
Input	2.5	2.5	μμf
Output	1.0	0.4	μμf
Heater to Cathode, Each Section	3.0‡	3.0	μμf

MECHANICAL

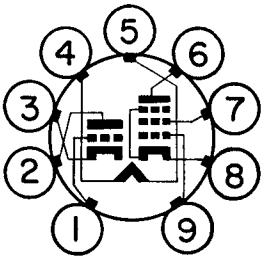
Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES	Pentode 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
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode	200	200	Volts
Heater Negative with Respect to Cathode	200	200	Volts

GENERAL ELECTRIC

BASING DIAGRAM

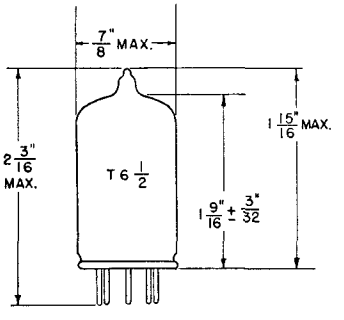


RETMA 9FA

TERMINAL CONNECTIONS

Pin 1—Triode Grid
Pin 2—Triode Plate
Pin 3—Triode Cathode
Pin 4—Heater
Pin 5—Heater
Pin 6—Pentode Plate
Pin 7—Pentode Grid Number 2 (Screen)
Pin 8—Pentode Cathode, Grid Number 3 and Internal Shield
Pin 9—Pentode Grid Number 1

PHYSICAL DIMENSIONS



RETMA 6-2

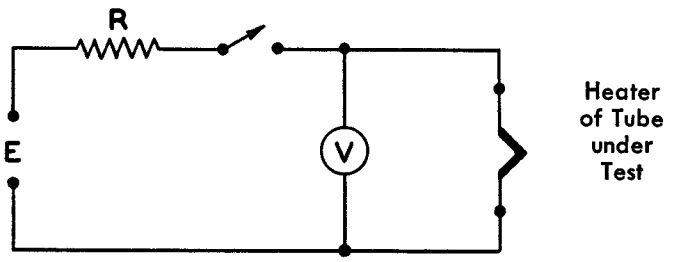
CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS	Pentode Section	Triode Section	
Plate Voltage	250	150	Volts
Screen Voltage	110	...	Volts
Cathode-Bias Resistor	68	56	Ohms
Amplification Factor	...	40	
Plate Resistance, approximate	400000	5000	Ohms
Transconductance	5200	8500	Micromhos
Plate Current	10	18	Milliamperes
Screen Current	3.5	...	Milliamperes
Grid-Number 1 Voltage, approximate $I_b = 10$ Microamperes	−10	−12	Volts

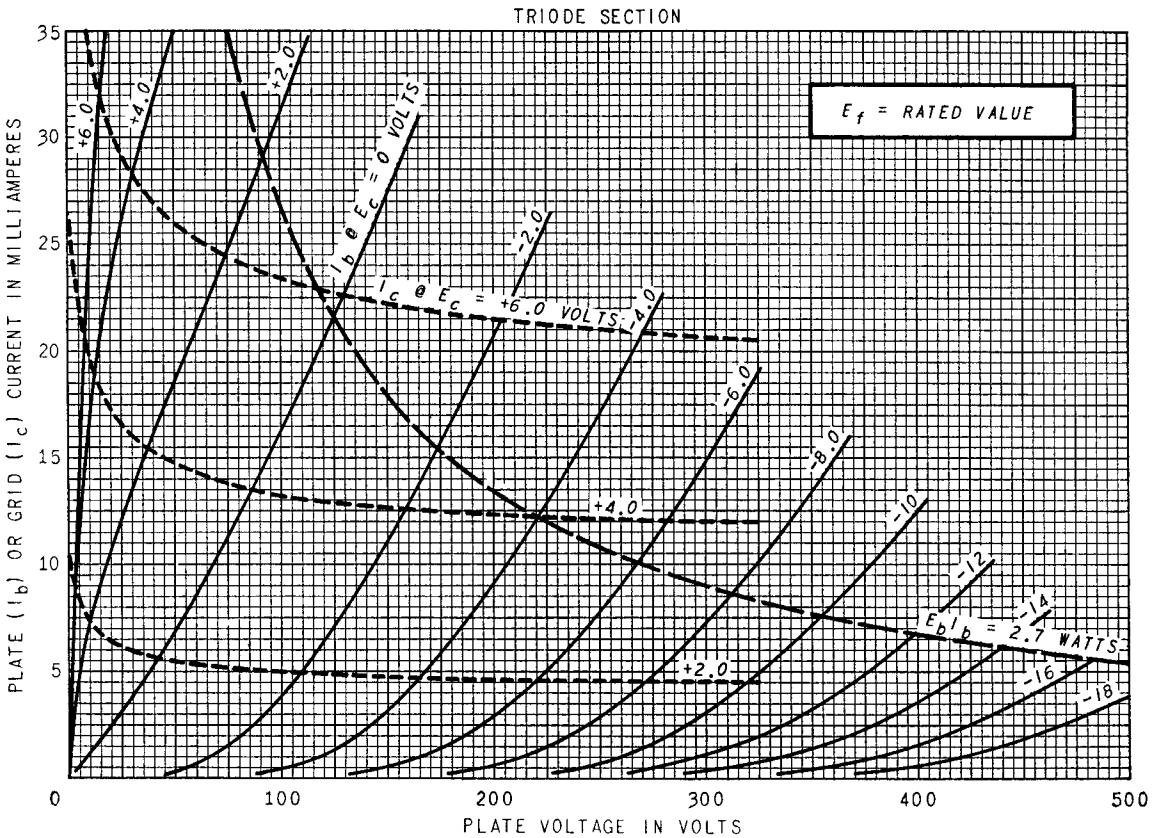
* Heater warm-up time is defined as the time required in the circuit shown at the right for the voltage across the heater terminals (V) to increase from zero to the heater test voltage (V_1). For this type, E = 18.7 volts (RMS or DC), V_1 = 3.73 volts (RMS or DC), and R = 23.5 ohms.

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

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

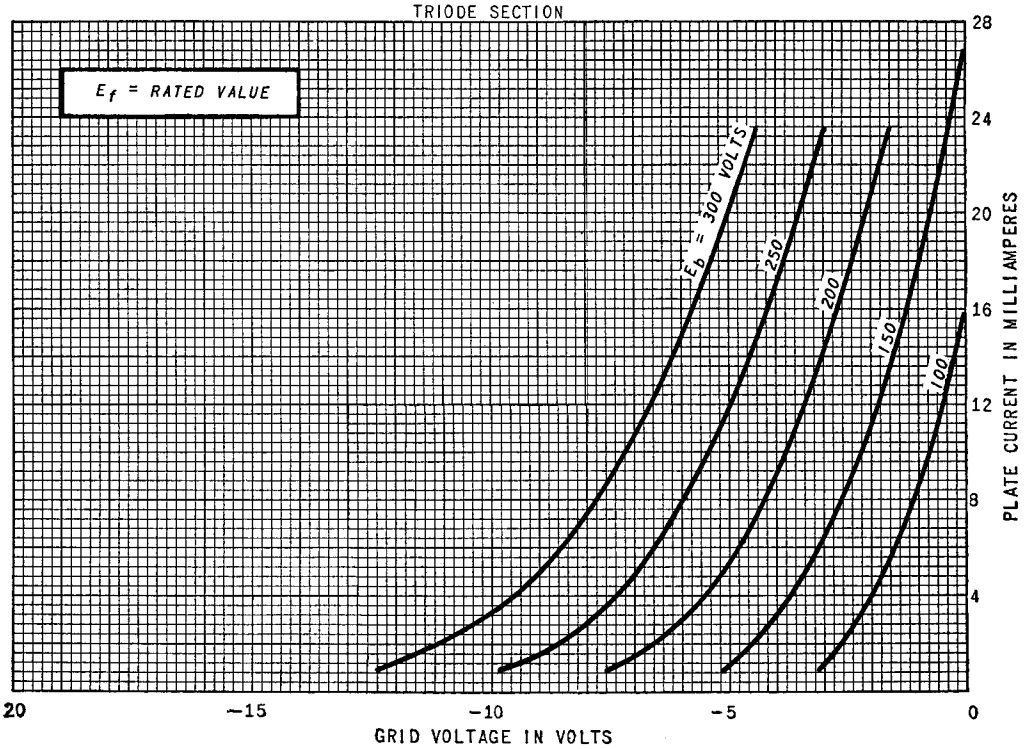


AVERAGE PLATE CHARACTERISTICS



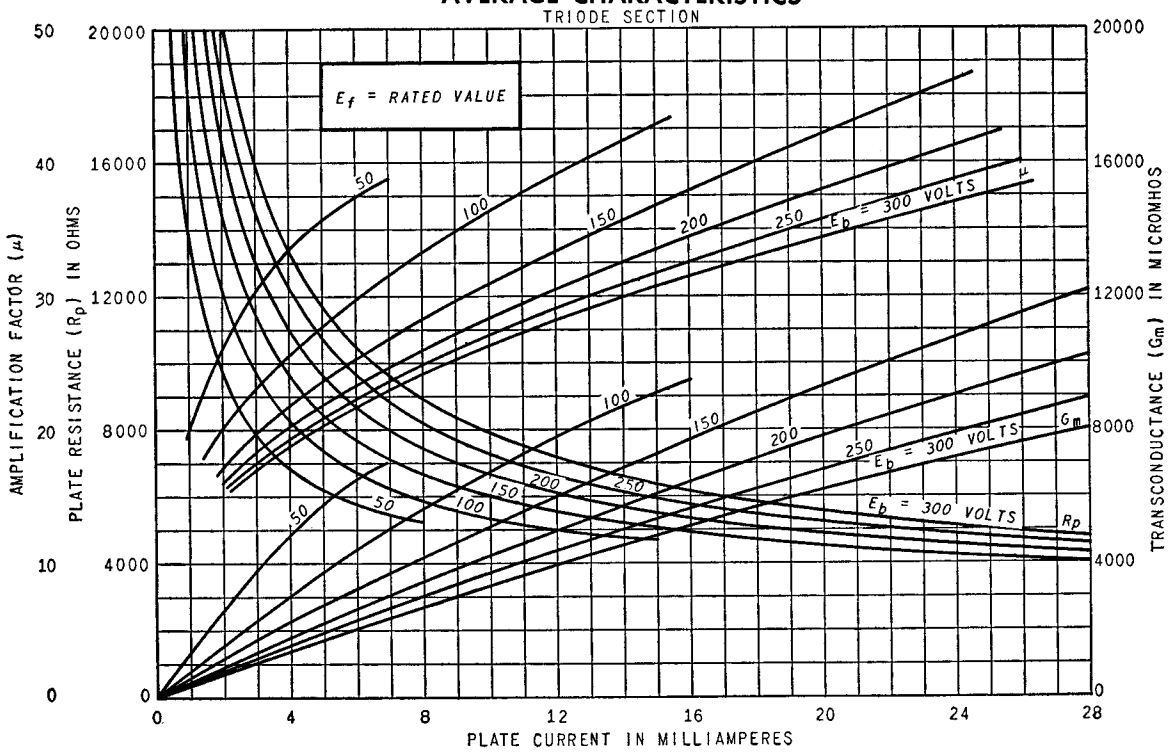
AVERAGE TRANSFER CHARACTERISTICS

TRIODE SECTION



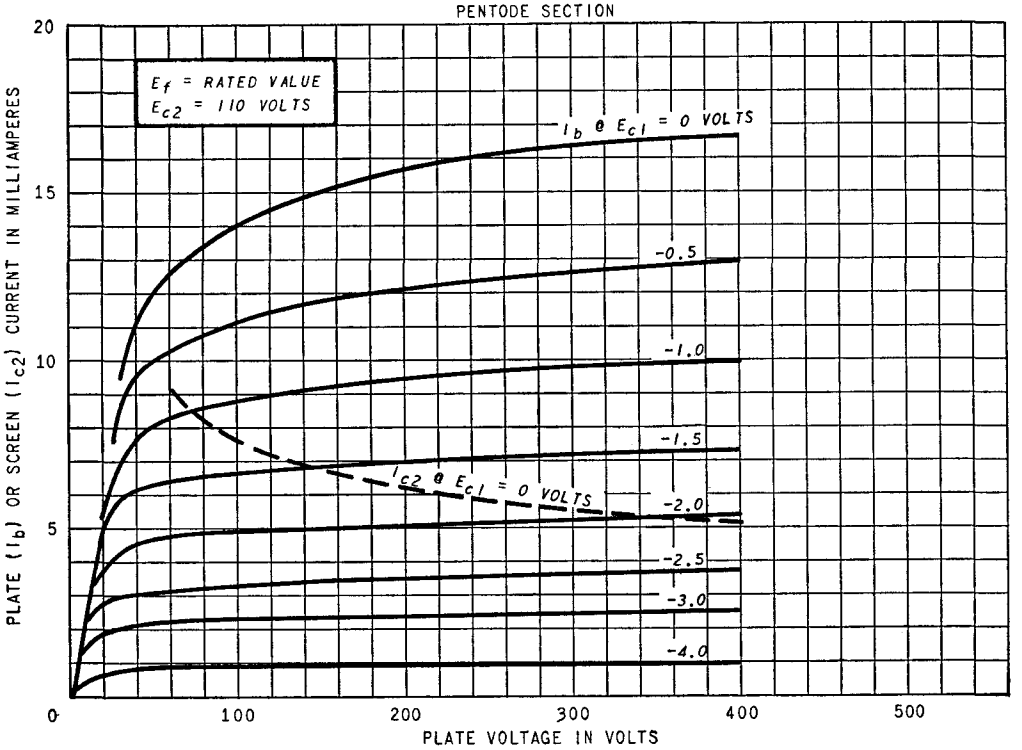
AVERAGE CHARACTERISTICS

TRIODE SECTION



AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



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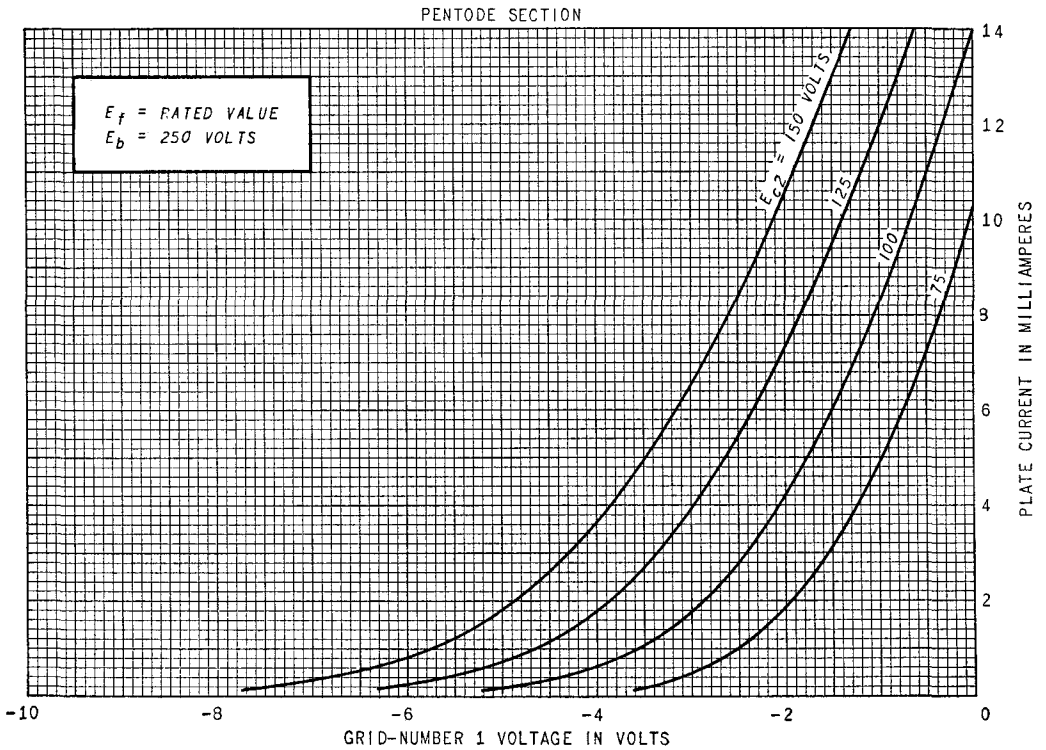

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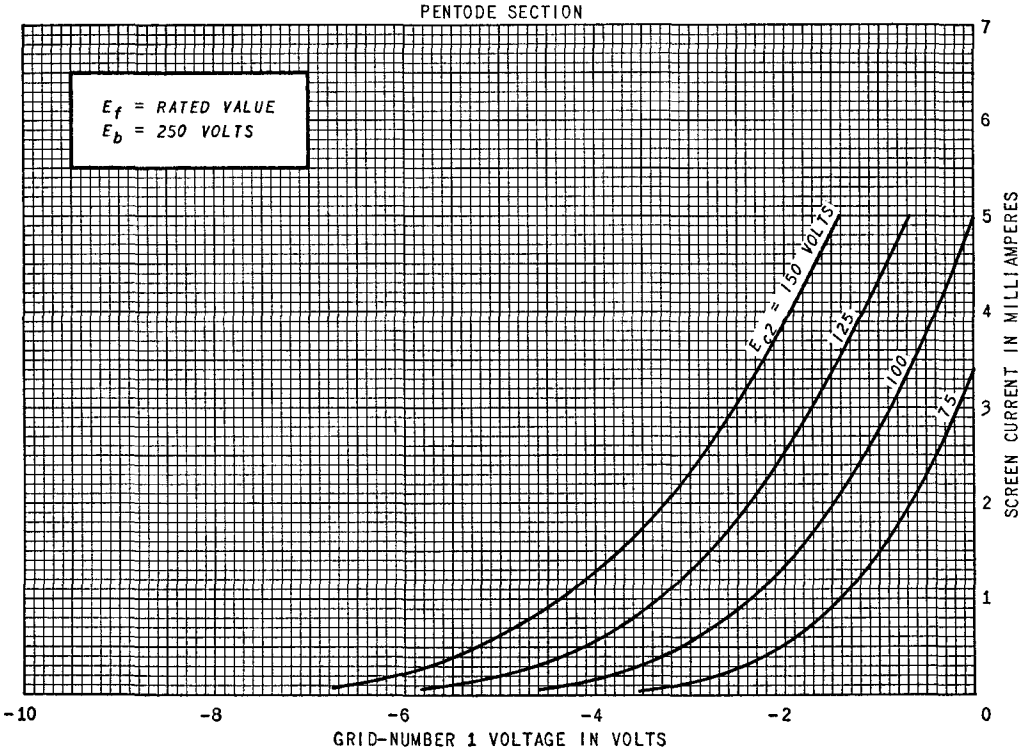

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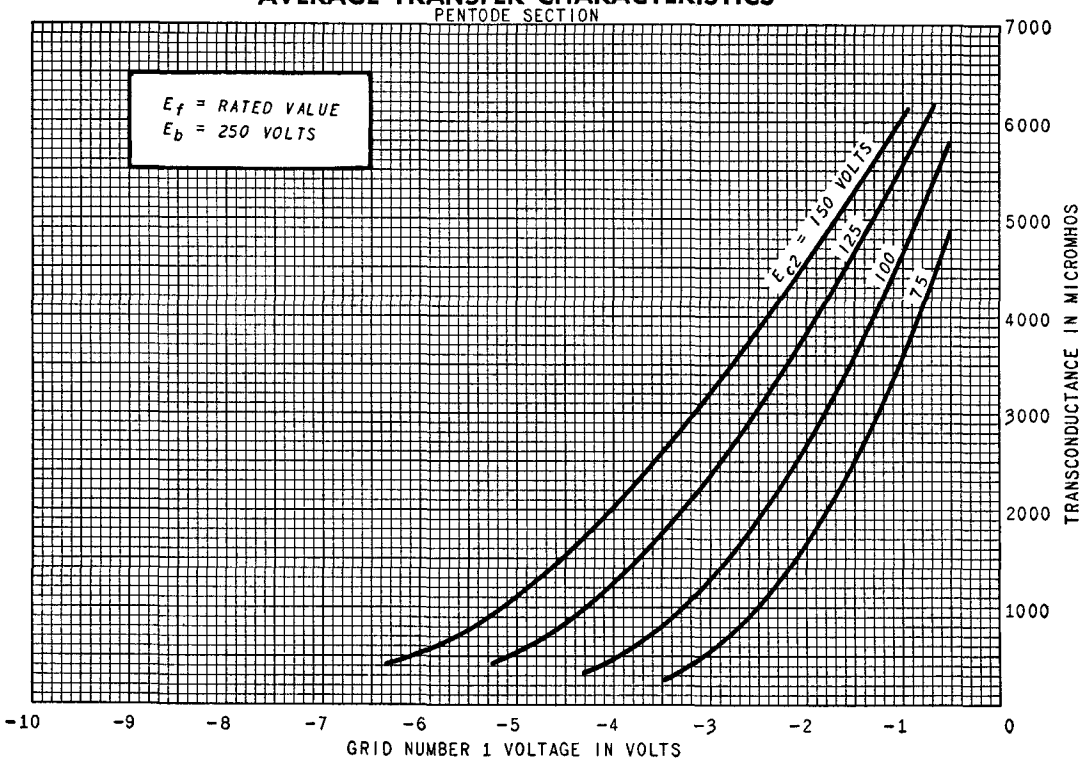
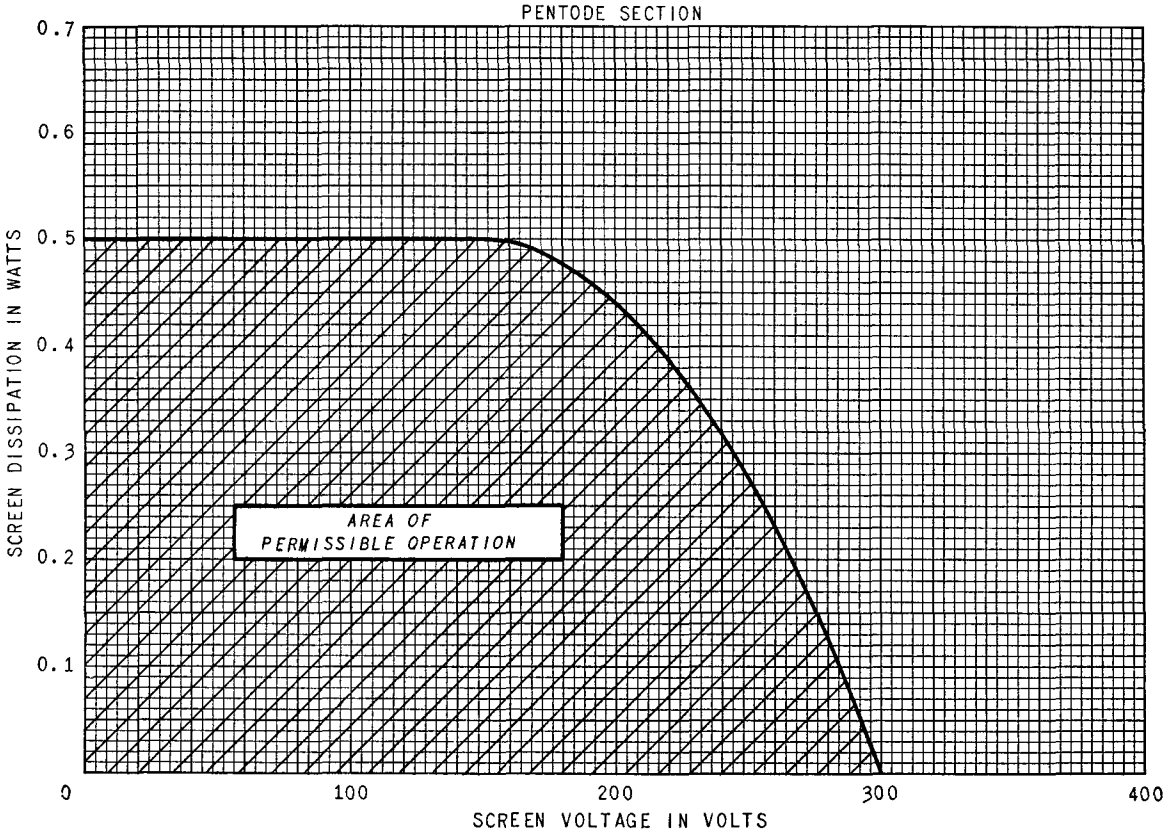


SCREEN RATING CHART



TUBE DEPARTMENT

GENERAL ELECTRIC

Schenectady 5, N. Y.

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