



## TRIODE-PENTODE

### DESCRIPTION AND RATING

The 6HZ8 is a 9-pin, T-9 tube containing a high-mu triode and a sharp-cutoff pentode. The triode is intended for use as a voltage amplifier or sync separator, and the pentode is intended for video amplifier service.

### GENERAL

#### ELECTRICAL

Cathode—Coated Unipotential	
Heater Characteristics and Ratings	
Heater Voltage, AC or DC*	6.3 ± 0.6 Volts
Heater Current†	1.125 Amperes
Direct Interelectrode Capacitances‡	
Pentode Section	
Grid-Number 1 to Plate: (Pg1 to Pp), Max.	0.1 pf
Input: Pg1 to (h+k+Pg2+Pg3+i.s.)	12 pf
Output: Pp to (h+k+Pg2+Pg3+i.s.)	5.0 pf
Triode Section	
Grid to Plate: (Tg to Tp)	5.0 pf
Input: Tg to (h+Tk)	3.8 pf
Output: Tp to (h+Tk)	0.4 pf
Pentode Grid-Number 1 to Triode Plate:	
(Pg1 to Tp), Max.	0.005 pf
Triode Grid to Pentode Plate:	
(Tg to Pp), Max.	0.04 pf
Pentode Plate to Triode Plate:	
(Pp to Tp), Max.	0.2 pf

#### MECHANICAL

Operating Position—Any	
Envelope—T-9, Glass	
Base—E9-82, Small Button 9-Pin	
Outline Drawing—EIA 9-77	
Maximum Diameter	1.188 Inches
Maximum Over-all Length	2.990 Inches
Maximum Seated Height	2.710 Inches

### MAXIMUM RATINGS

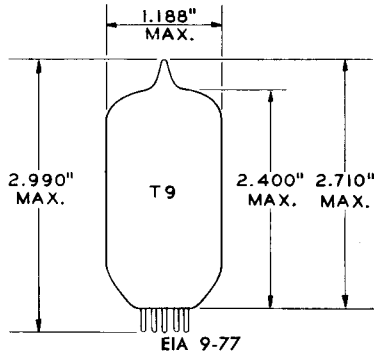
#### DESIGN-MAXIMUM VALUES

	Pentode Section	Triode Section	
Plate Voltage	330	300	Volts
Screen Supply Voltage	330	...	Volts
Screen Voltage—See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0	0	Volts
Plate Dissipation	8.0	1.0	Watts
Screen Dissipation	2.0	...	Watts

#### Pentode Triode Section Section

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

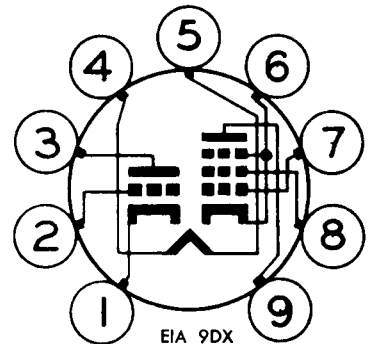
#### PHYSICAL DIMENSIONS



#### TERMINAL CONNECTIONS

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

#### BASING DIAGRAM



## MAXIMUM RATINGS (CONT'D)

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

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

	Pentode Section		Triode Section	
Plate Voltage . . . . .	60	250	200	Volts
Screen Voltage . . . . .	170	170	....	Volts
Grid-Number 1 Voltage . . . . .	0	....	-2.0	Volts
Cathode-Bias Resistor . . . . .		100	....	Ohms
Amplification Factor . . . . .		....	70	
Plate Resistance, approximate . . . . .		140000	....	Ohms
Transconductance . . . . .		12600	4000	Micromhos
Plate Current . . . . .	90	29	3.5	Milliamperes
Screen Current . . . . .	22.5	6.0	....	Milliamperes
Grid-Number 1 Voltage, approximate I <sub>b</sub> = 10 Microamperes . . . . .		-11.5	-5	Volts

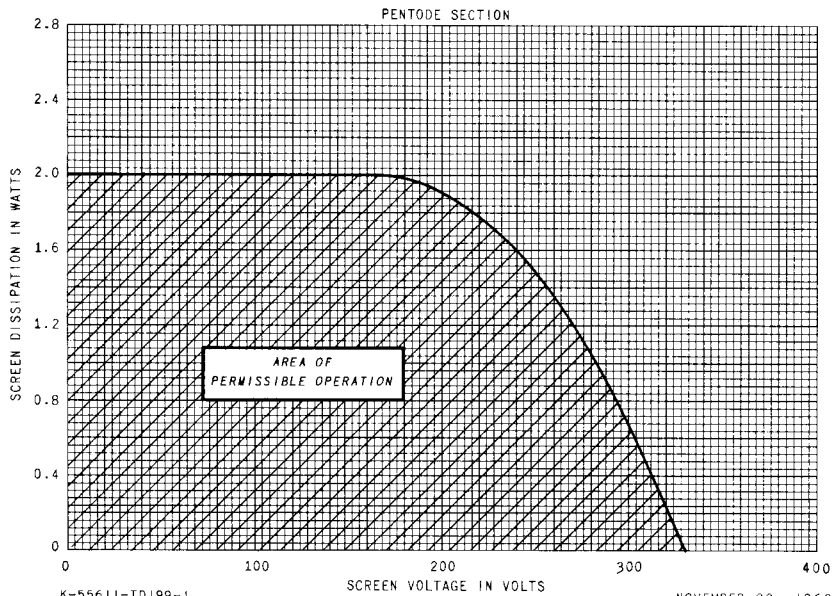
### NOTES

- \* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.
- † Heater current of a bogey tube at E<sub>f</sub> = 6.3 volts.
- ‡ Without external shield.

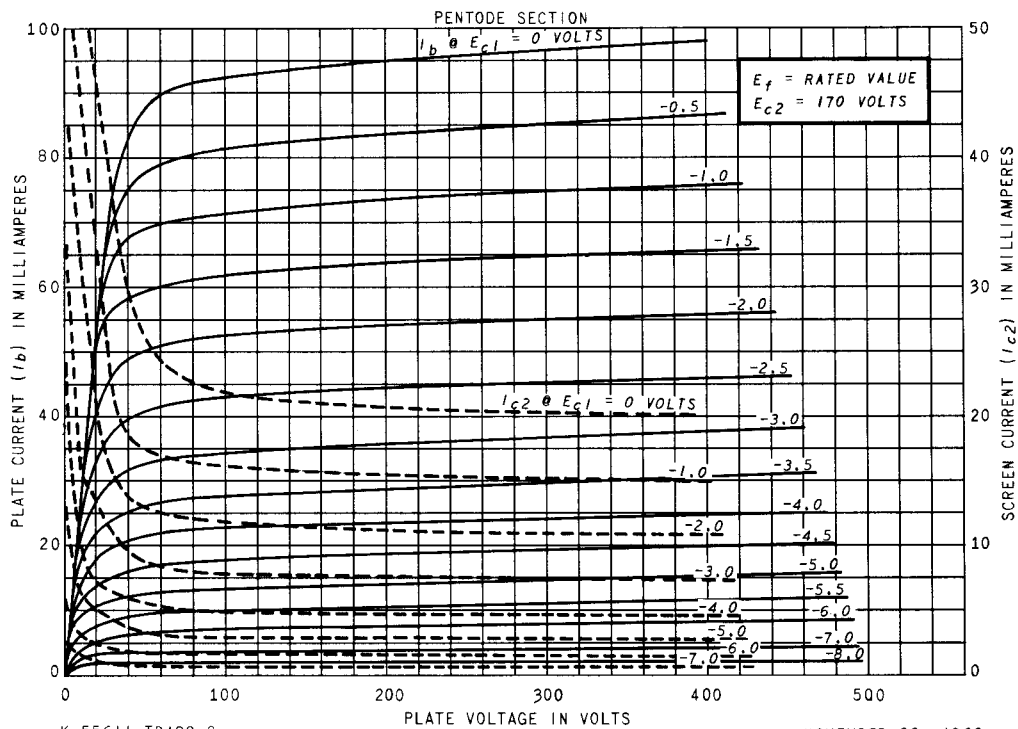
The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or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

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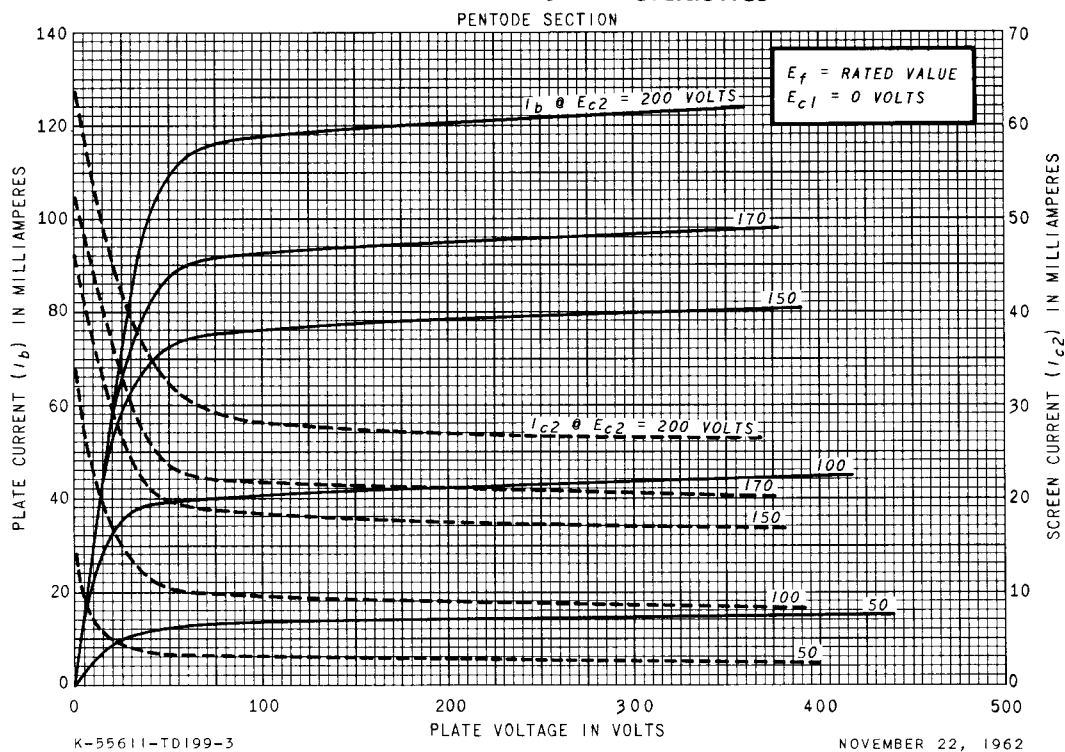
### SCREEN RATING CHART



**AVERAGE PLATE CHARACTERISTICS**

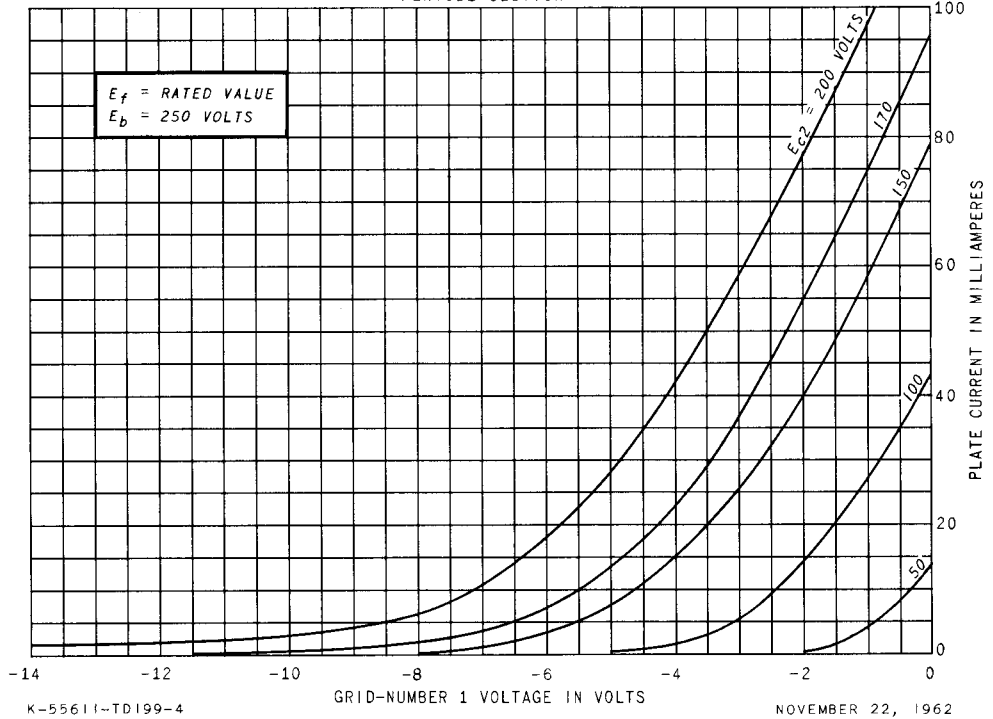


**AVERAGE PLATE CHARACTERISTICS**



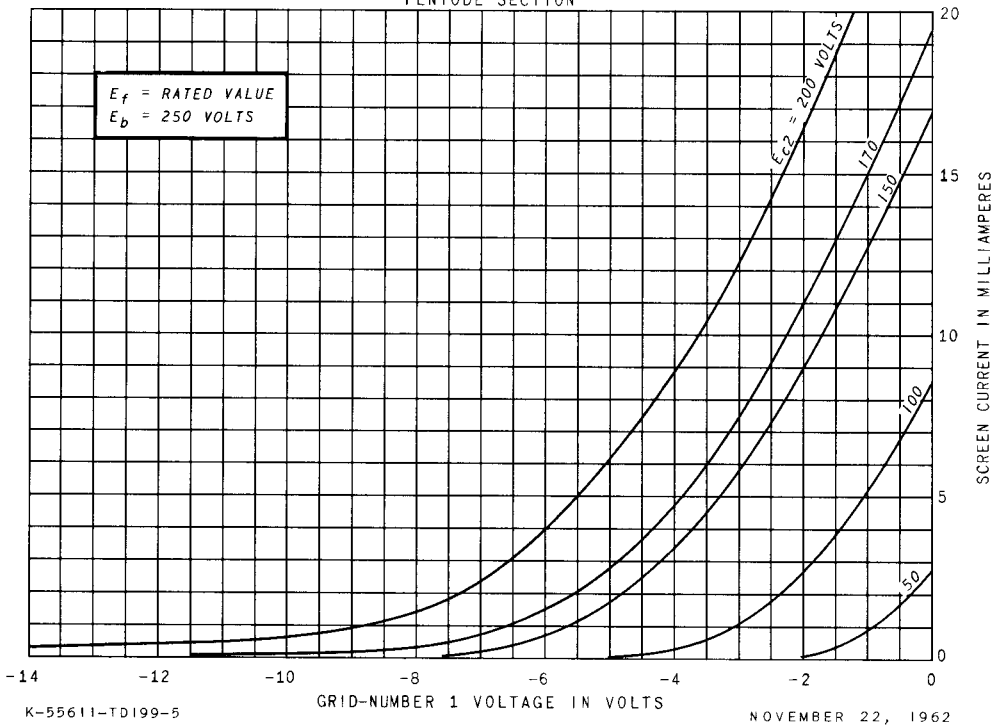
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



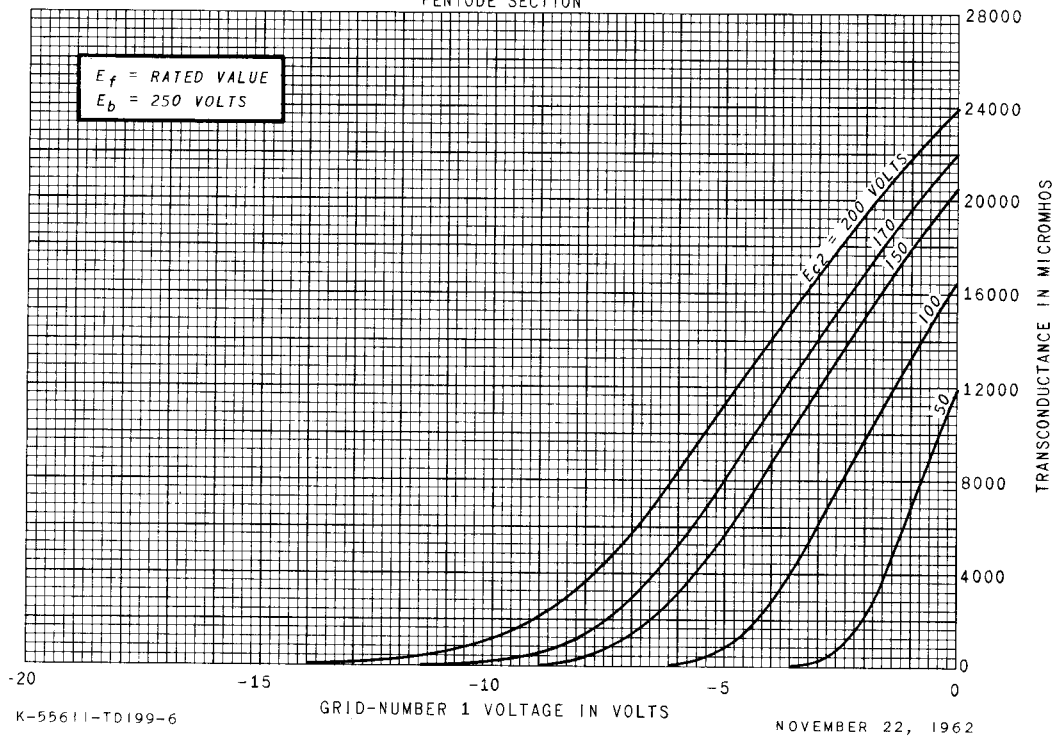
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PENTODE SECTION



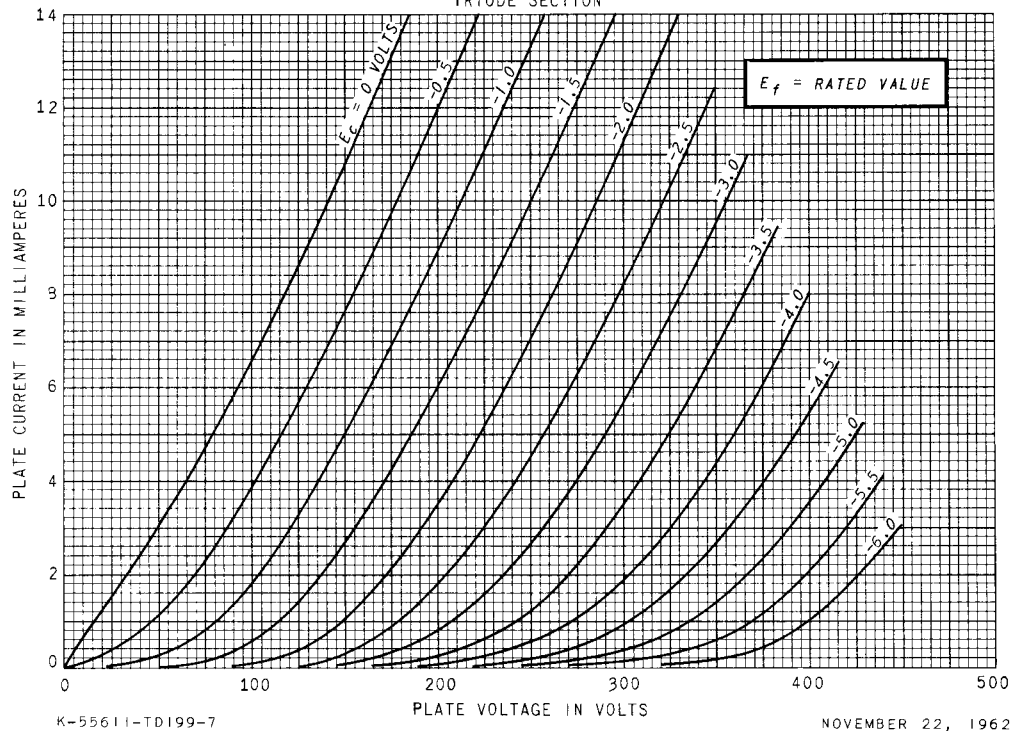
**AVERAGE TRANSFER CHARACTERISTICS**

PENTODE SECTION

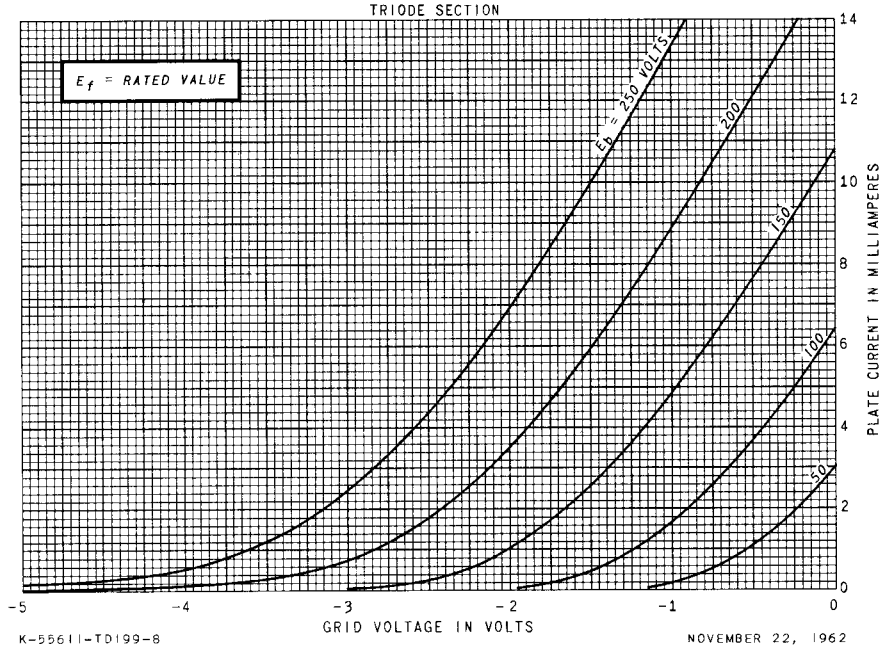


**AVERAGE PLATE CHARACTERISTICS**

TRIODE SECTION



**AVERAGE TRANSFER CHARACTERISTICS**



**AVERAGE CHARACTERISTICS**

