



## BEAM PENTODE

FOR AF POWER-AMPLIFIER APPLICATIONS

## DESCRIPTION AND RATING

The 7408 is a beam-power pentode primarily designed for use in audio-frequency power-amplifier applications. The tube is a direct replacement for the 6V6-GT, but features additional controlled zero-bias characteristics.

## GENERAL

## ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC\* . . . . .  $6.3 \pm 0.6$  Volts

Heater Current† . . . . . 0.45 Amperes

Direct Interelectrode Capacitances†

Grid-Number 1 to Plate: (g1 to p) . . . . . 0.7 pf

Input: g1 to (h+k+g2+b.p.) . . . . . 9.0 pf

Output: p to (h+k+g2+b.p.) . . . . . 7.5 pf

## MECHANICAL

Mounting Position—Any

Envelope—T-9, Glass

Base—B7-7, Intermediate-Shell Octal 7-Pin or

B7-59, Short Intermediate-Shell Octal 7-Pin with carriers

## MAXIMUM RATINGS

## DESIGN-MAXIMUM VALUES

Plate Voltage . . . . . 350 Volts

Screen Voltage . . . . . 315 Volts

Plate Dissipation . . . . . 14 Watts

Screen Dissipation . . . . . 2.2 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 Fixed Bias . . . . . 0.1 Megohms

With Cathode Bias . . . . . 0.5 Megohms

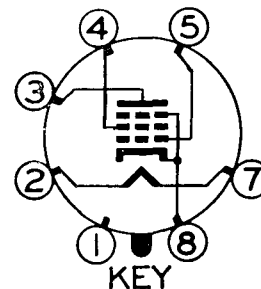
Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

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.

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 the tubes with other devices or elements by any purchaser of tubes or others.

## BASING DIAGRAM



EIA 7AC

## TERMINAL CONNECTIONS

Pin 1—No Connection

Pin 2—Heater

Pin 3—Plate

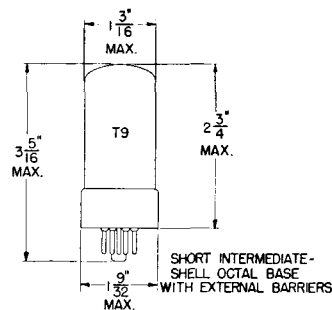
Pin 4—Grid Number 2  
(Screen)

Pin 5—Grid Number 1

Pin 7—Heater

Pin 8—Cathode and Beam  
Plates

## PHYSICAL DIMENSIONS



EIA 9-41

## CHARACTERISTICS AND TYPICAL OPERATION

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

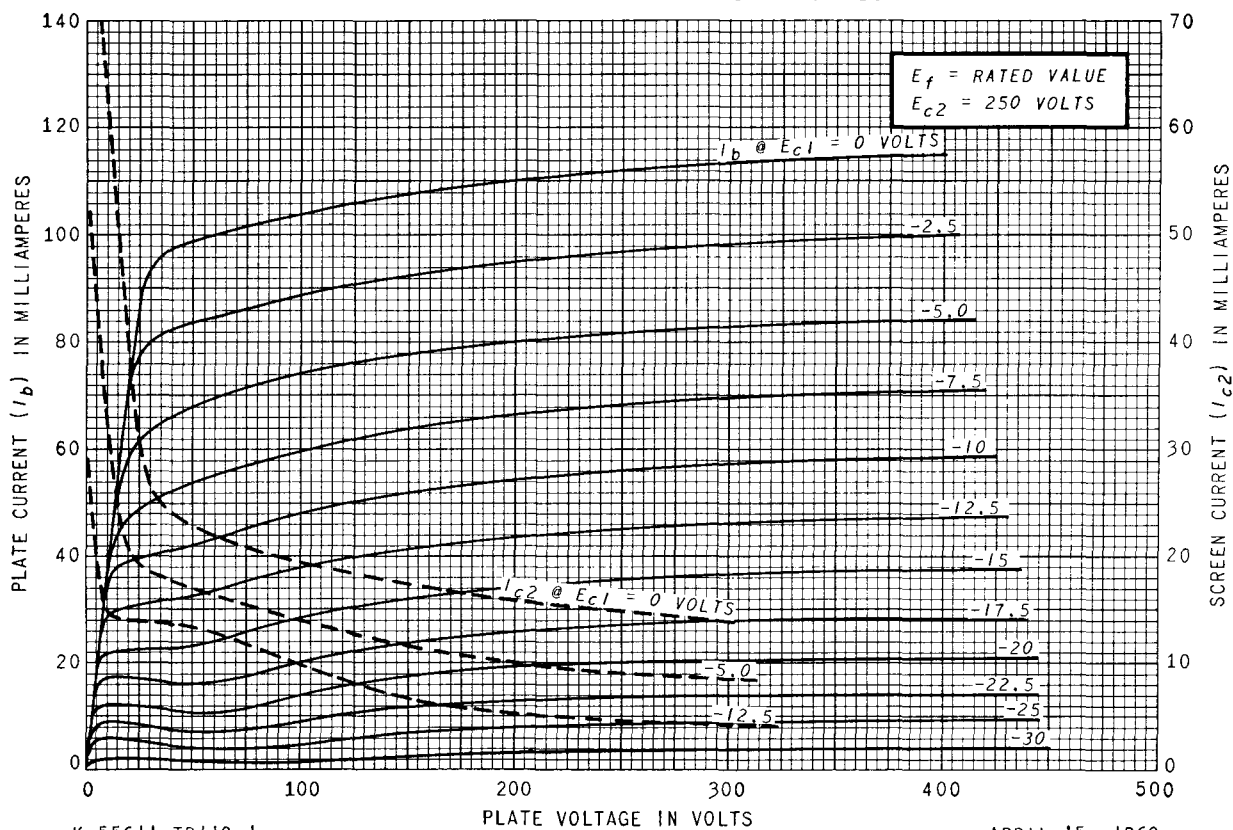
|                                             |     |        |              |
|---------------------------------------------|-----|--------|--------------|
| Plate Voltage.....                          | 60  | 250    | Volts        |
| Screen Voltage.....                         | 250 | 250    | Volts        |
| Grid-Number 1 Voltage.....                  | 0   | -12.5  | Volts        |
| Peak AF Grid-Number 1 Voltage.....          | —   | 12.5   | Volts        |
| Plate Resistance, approximate.....          | —   | 50,000 | Ohms         |
| Transconductance.....                       | —   | 4100   | Micromhos    |
| Zero-Signal Plate Current.....              | 100 | 45     | Milliamperes |
| Maximum-Signal Plate Current.....           | —   | 47     | Milliamperes |
| Zero-Signal Screen Current.....             | 22  | 4.5    | Milliamperes |
| Maximum-Signal Screen Current.....          | —   | 7.0    | Milliamperes |
| Load Resistance.....                        | —   | 5000   | Ohms         |
| Total Harmonic Distortion, approximate..... | —   | 7      | Percent      |
| Maximum-Signal Power Output.....            | —   | 4.5    | Watts        |

\* 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  $E_f = 6.3$  volts.

‡ Without external shield.

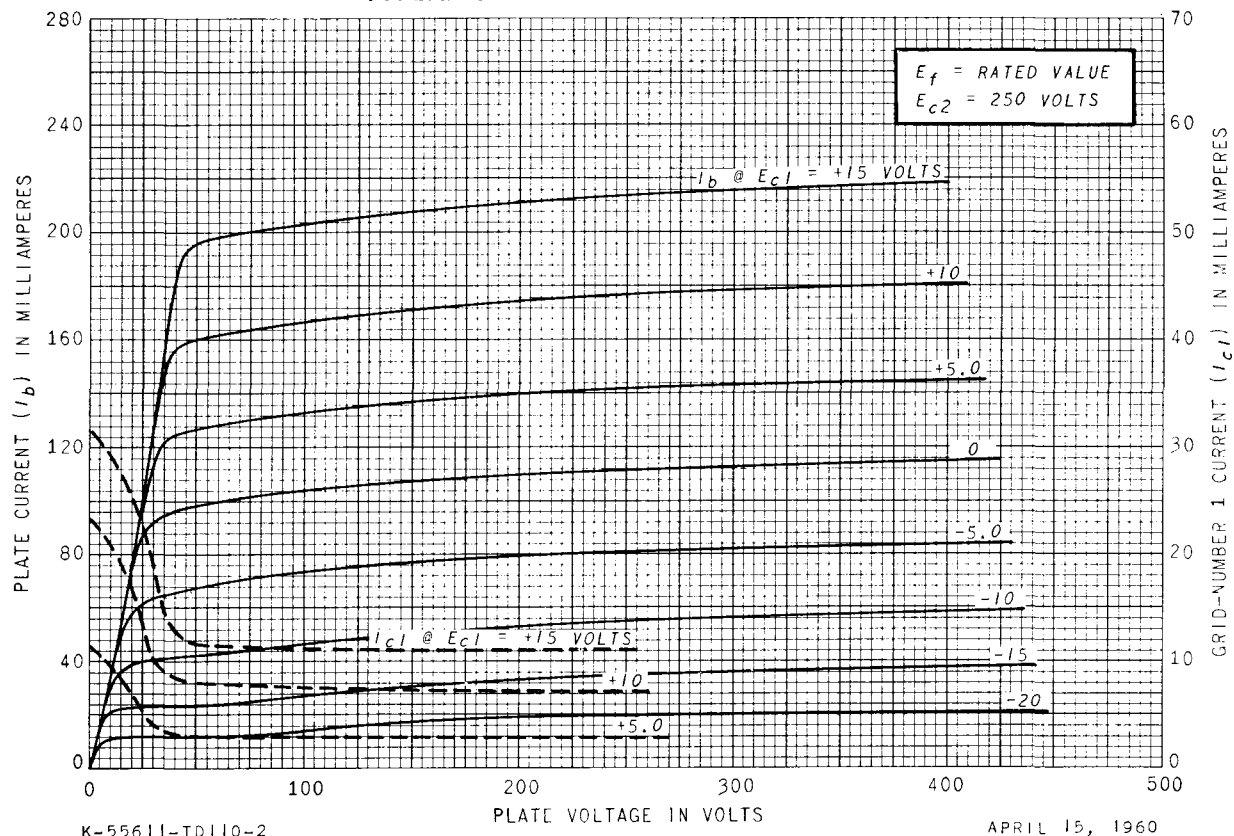
### AVERAGE PLATE CHARACTERISTICS



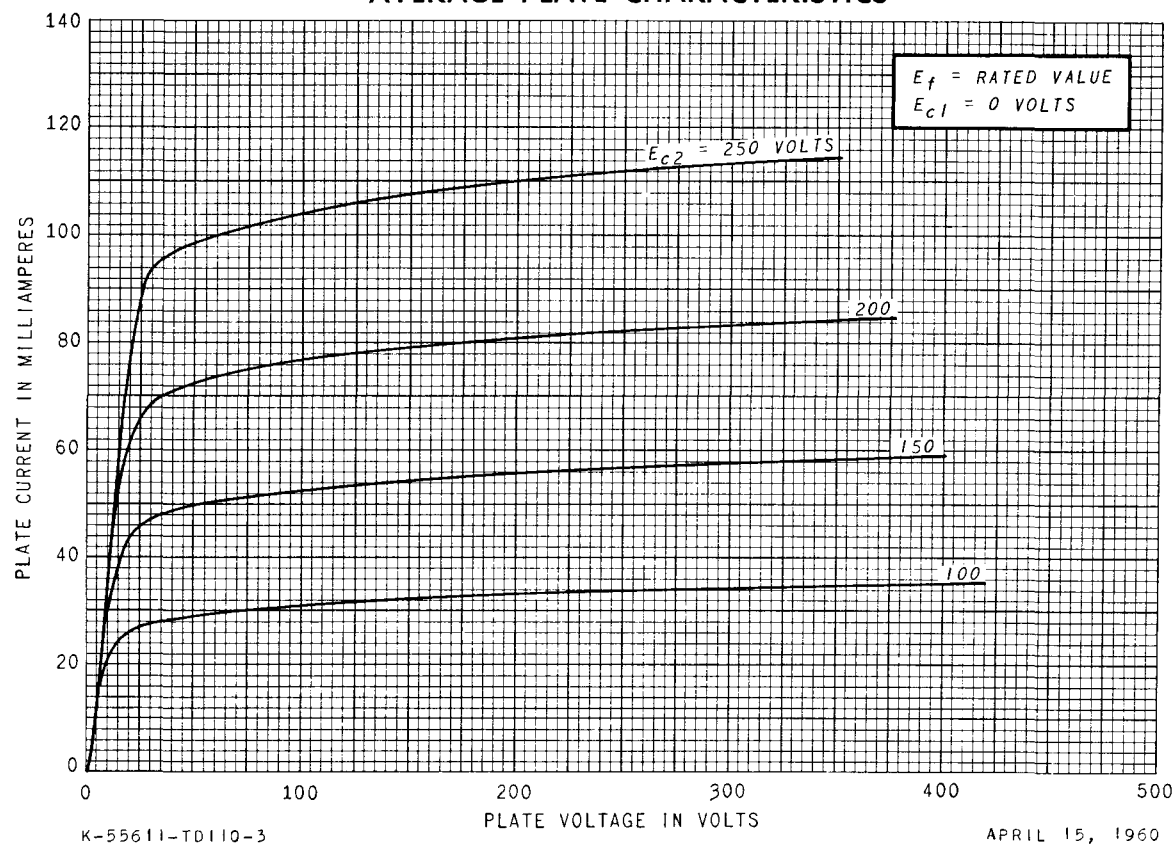
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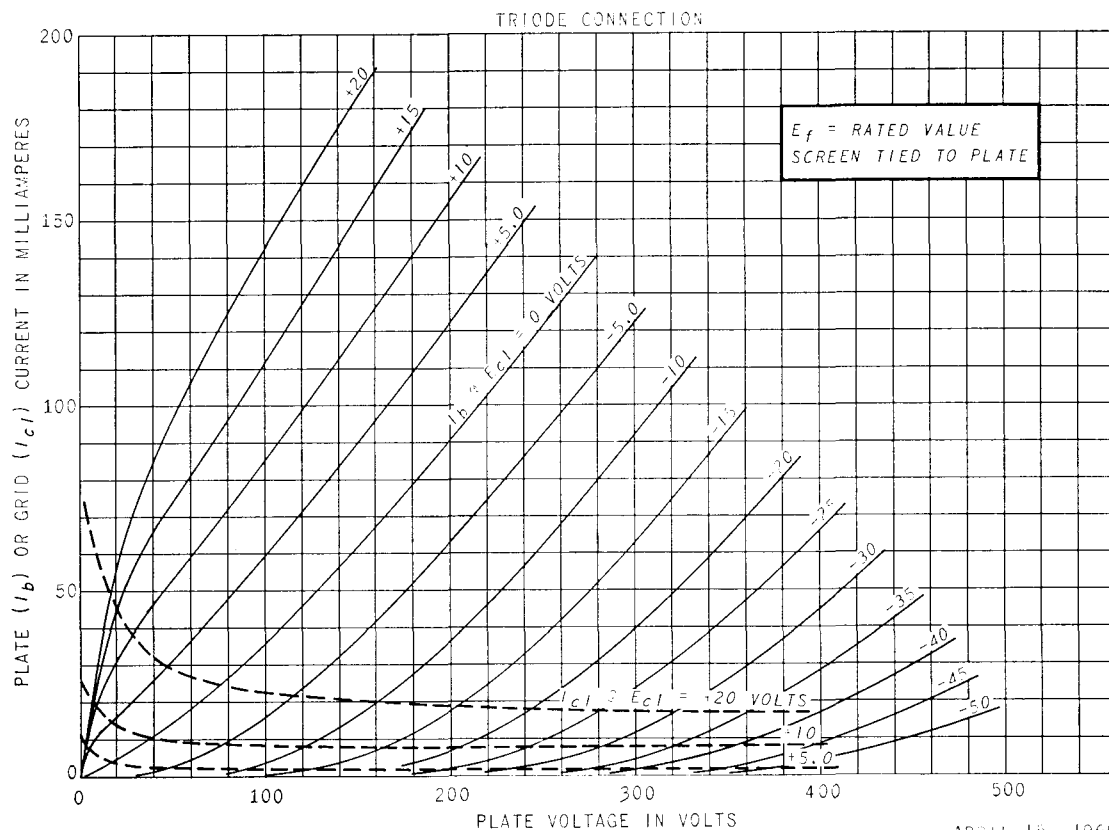
# AVERAGE PLATE CHARACTERISTICS



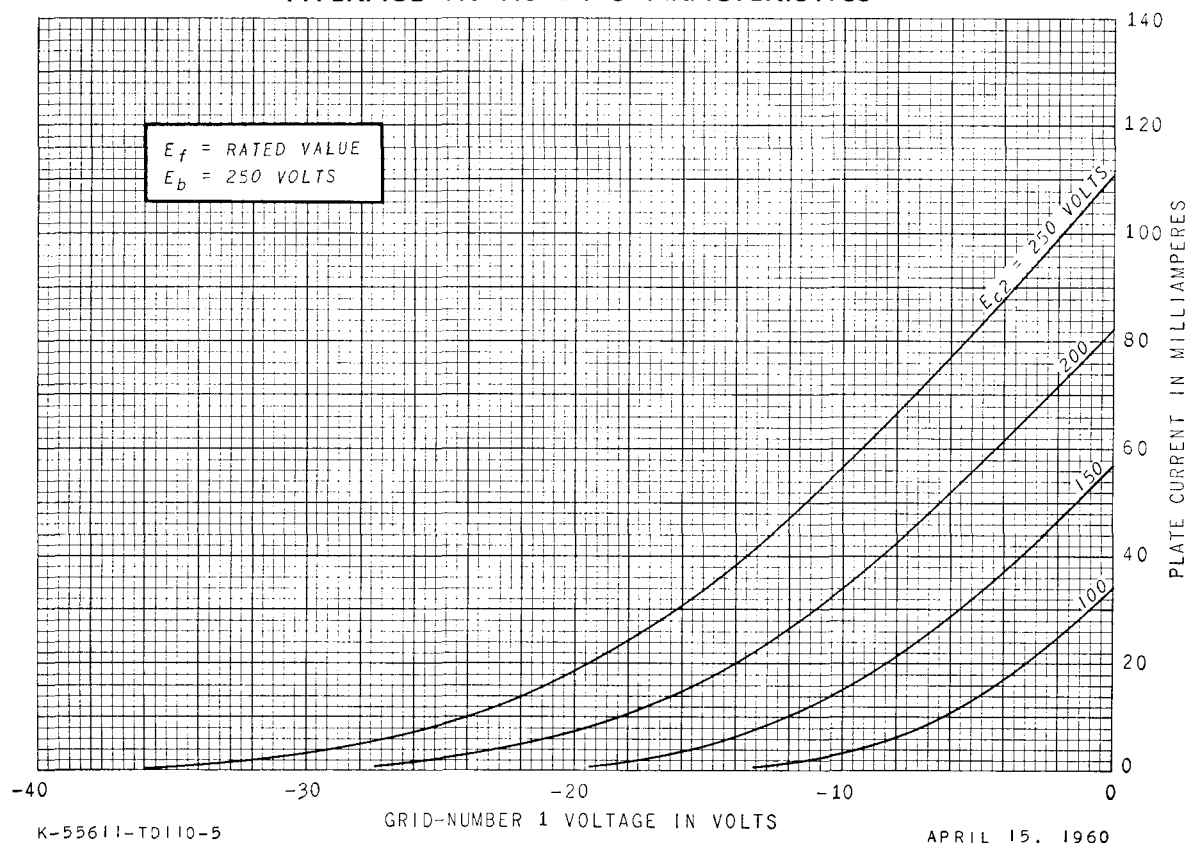
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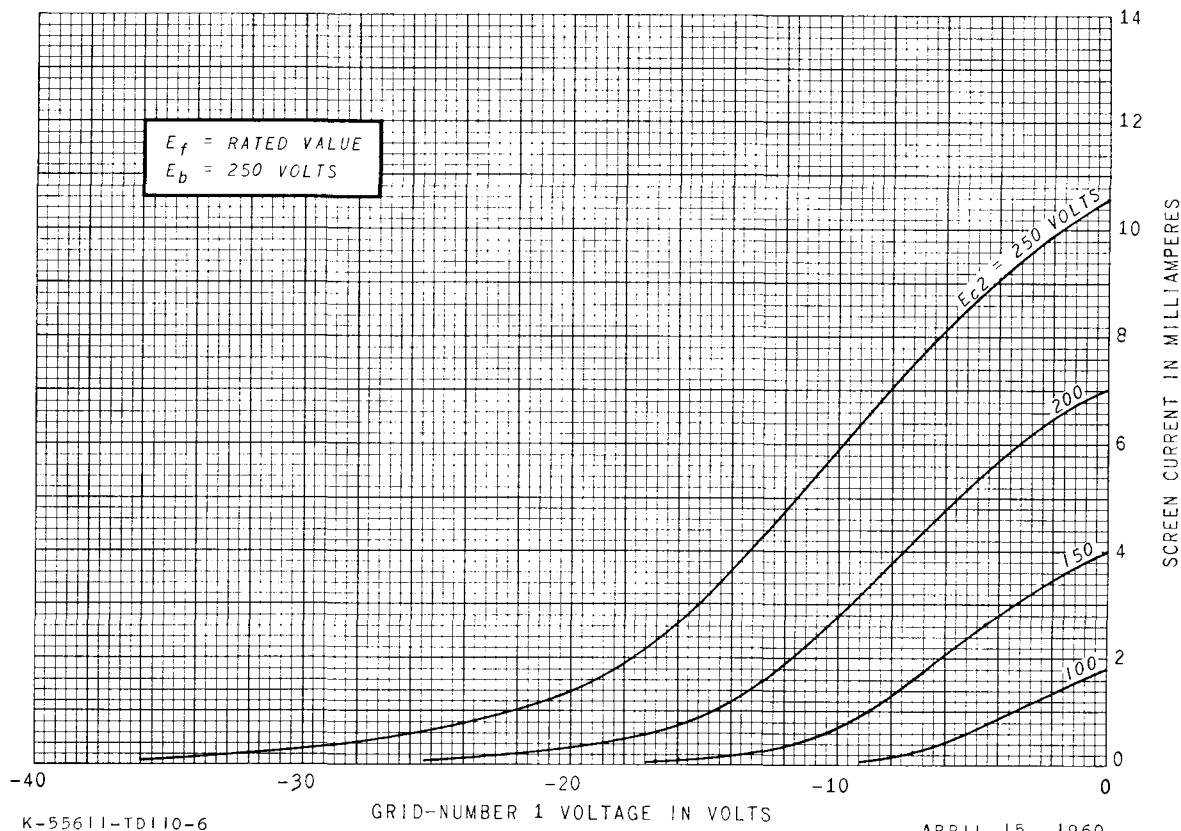
## AVERAGE PLATE CHARACTERISTICS



## AVERAGE TRANSFER CHARACTERISTICS



## AVERAGE TRANSFER CHARACTERISTICS



## OPERATION CHARACTERISTICS

