

“SHADOW-GRID” BEAM PENTODE

FOR VHF RF AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6FG5 is a miniature tube, similar in construction to a beam pentode, with an internally connected grid between the control grid and the screen grid which serves to reduce the ratio of screen current to plate current. The tube is designed for use as a radio-frequency amplifier in VHF television receivers.

GENERAL

ELECTRICAL

| | | |
|---|-----------|---------|
| Cathode—Coated Unipotential | | |
| Heater Voltage, AC or DC..... | 6.3 ± 10% | Volts |
| Heater Current..... | 0.2 | Amperes |
| Direct Interelectrode Capacitances* | | |
| Grid-Number 1 to Plate, maximum: (g1 to p)..... | 0.02 | μμf |
| Input: g1 to (h+k+g2+g3+b.p.)..... | 4.2 | μμf |
| Output: p to (h+k+g2+g3+b.p.)..... | 2.8 | μμf |

MECHANICAL

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

| | | |
|---|------|--------------|
| Plate Voltage..... | 275 | Volts |
| Screen Voltage..... | 275 | Volts |
| Positive DC Grid-Number 1 Voltage..... | 0 | Volts |
| Negative DC Grid-Number 1 Voltage..... | 50 | Volts |
| Plate Dissipation..... | 2.75 | Watts |
| Screen Dissipation..... | 0.15 | Watts |
| DC Cathode Current..... | 20 | Milliamperes |
| 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..... | 3.3 | Megohms |

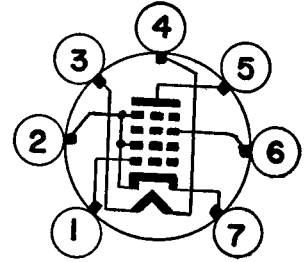
Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

These values are chosen by the tube manufacturer to provide acceptable serviceability of the tube, taking responsibility 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, variation in characteristics of all other tubes in the equipment, equipment control adjustment, load variation, signal variation, and environmental conditions.

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

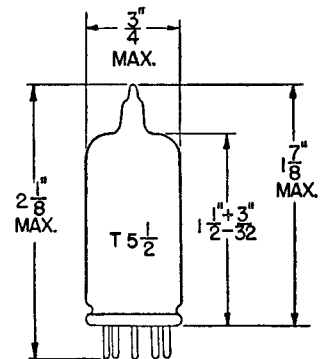


EIA 7GA

TERMINAL CONNECTIONS

- Pin 1—Grid Number 1 (Control Grid)
- Pin 2—Cathode, Grid Number 2 ("Shadow Grid"), and Beam Plate
- Pin 3—Heater
- Pin 4—Heater
- Pin 5—Plate
- Pin 6—Grid Number 3 (Screen Grid)
- Pin 7—Cathode, Grid Number 2 ("Shadow Grid"), and Beam Plate

PHYSICAL DIMENSIONS



EIA 5-2

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

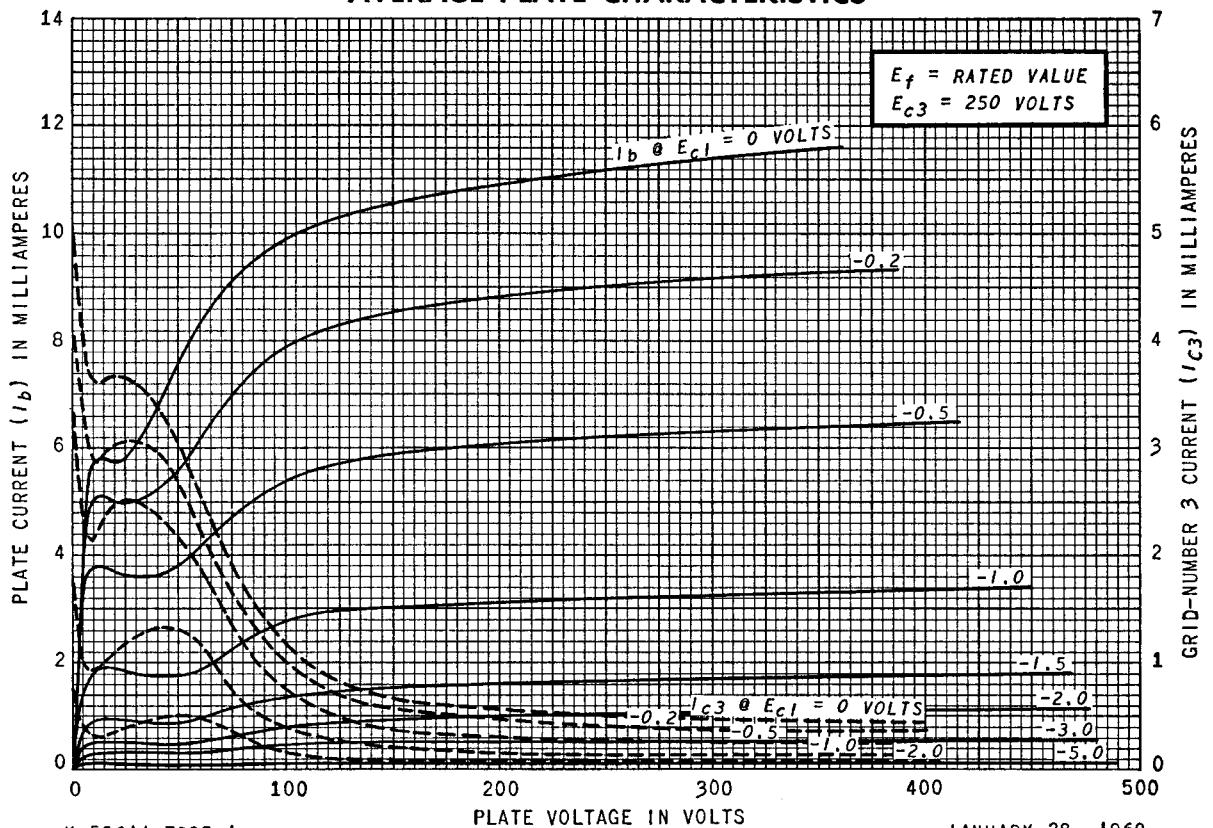
| | | |
|------------------------------------|------|--------------|
| Plate Voltage..... | 250 | Volts |
| Screen Voltage..... | 250 | Volts |
| Grid-Number 1 Voltage..... | -0.2 | Volts |
| Plate Resistance, approximate..... | 0.25 | Megohms |
| Transconductance..... | 9500 | Micromhos |
| Plate Current..... | 9.0 | Milliamperes |
| Screen Current..... | 0.42 | Milliamperes |

Grid-Number 1 Voltage, approximate

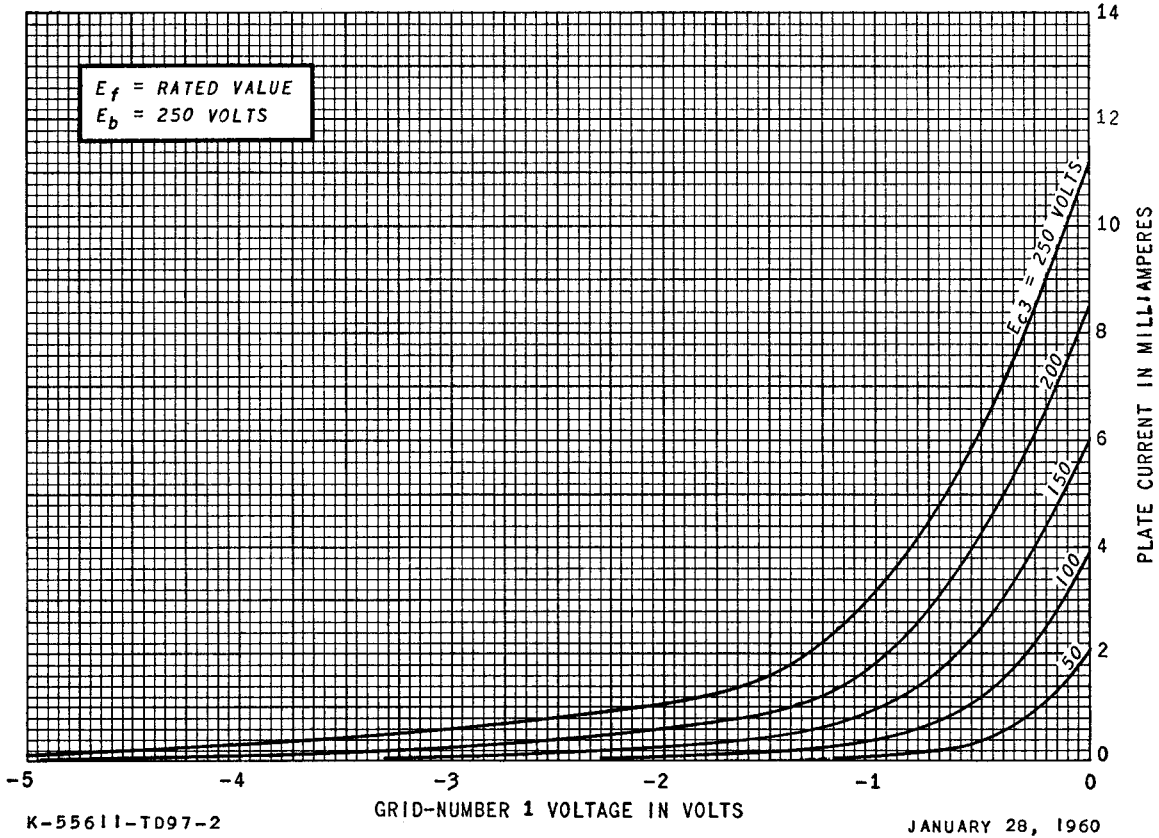
| | | |
|----------------------------|----|-------|
| $G_m = 100$ Micromhos..... | -5 | Volts |
|----------------------------|----|-------|

* Without external shield.

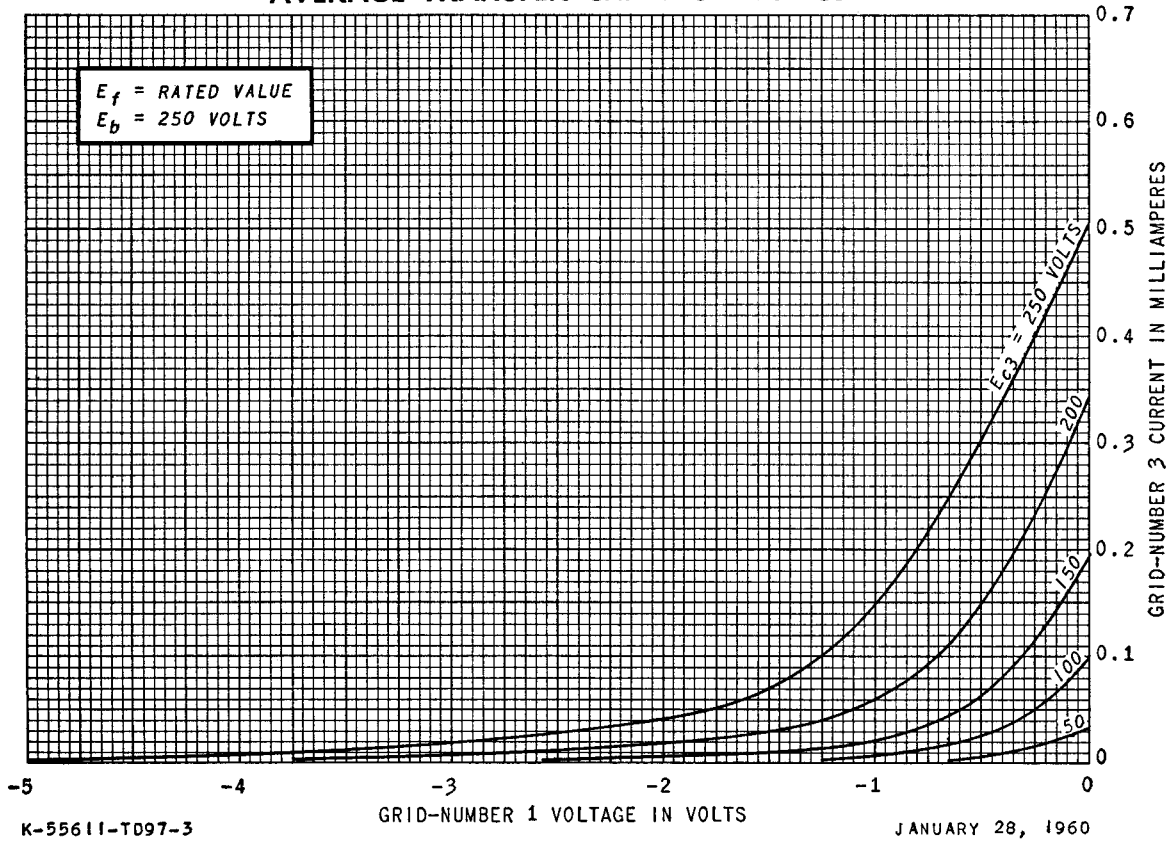
AVERAGE PLATE CHARACTERISTICS



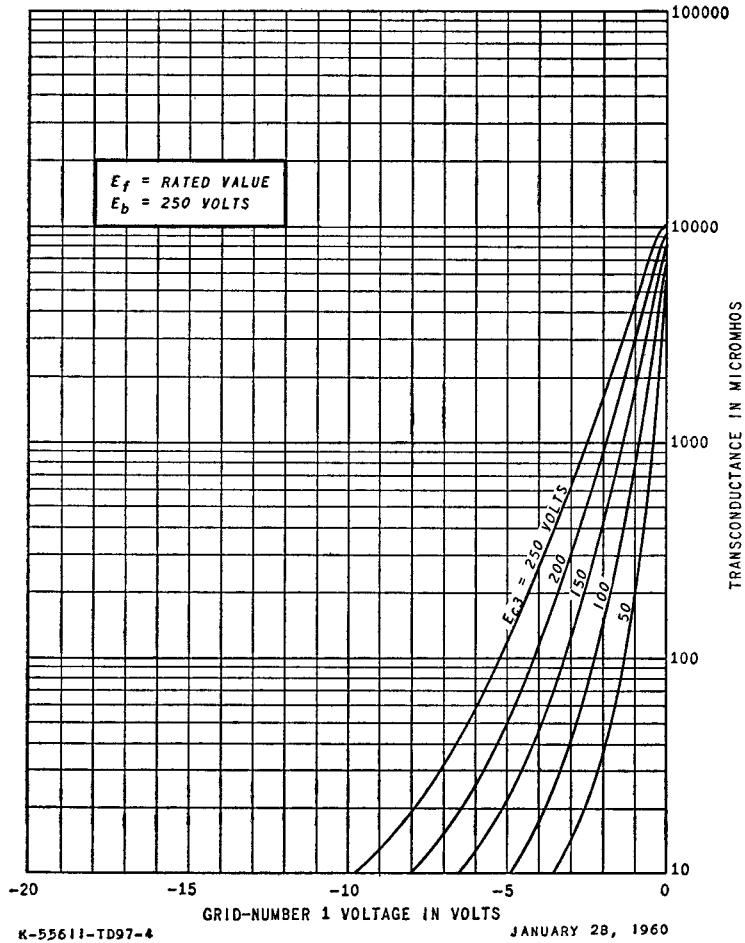
AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



ELECTRONIC COMPONENTS DIVISION



Schenectady 5, N. Y.