



## COMPACTRON BEAM PENTODE FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

### DESCRIPTION AND RATING

The 6GV5 is a compactron beam-power pentode primarily designed for use as the horizontal-deflection amplifier in television receivers.

#### GENERAL

##### ELECTRICAL

Cathode—Coated Unipotential	
Heater Characteristics and Ratings	
Heater Voltage, AC or DC* . . . . .	6.3 ± 0.6 Volts
Heater Current † . . . . .	1.2 Amperes
Direct Interelectrode Capacitances, approximate ‡	
Grid-Number 1 to Plate: (g1 to p) . . . . .	0.6 pf
Input: g1 to (h+k+g2+b.p.) . . . . .	16 pf
Output: p to (h+k+g2+b.p.) . . . . .	7.0 pf

##### MECHANICAL

Operating Position—Any	
Envelope—T-12, Glass	
Base—E12-74, Button 12-Pin	
Top Cap—C1-3, Skirted Miniature	
Outline Drawing—EIA 12-79	
Maximum Diameter . . . . .	1.563 Inches
Maximum Over-all Length . . . . .	3.625 Inches
Maximum Seated Height . . . . .	3.250 Inches
Minimum Seated Height . . . . .	3.000 Inches

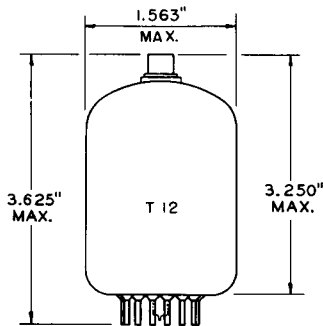
#### MAXIMUM RATINGS

##### HORIZONTAL-DEFLECTION AMPLIFIER SERVICE— DESIGN-MAXIMUM VALUES §

DC Plate-Supply Voltage (Boost + DC Power Supply) . . . . .	770 Volts
Peak Positive Pulse Plate Voltage . . . . .	6500 Volts
Peak Negative Pulse Plate Voltage . . . . .	1500 Volts
Screen Voltage . . . . .	220 Volts
Negative DC Grid-Number 1 Voltage . . . . .	55 Volts
Peak Negative Grid-Number 1 Voltage . . . . .	330 Volts
Plate Dissipation ¶ . . . . .	17.5 Watts
Screen Dissipation . . . . .	3.5 Watts

DC Cathode Current . . . . .	175 Milliamperes
Peak Cathode Current . . . . .	550 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 . . . . .	1.0 Megohms
Bulb Temperature at Hottest Point . . . . .	220 C

#### PHYSICAL DIMENSIONS

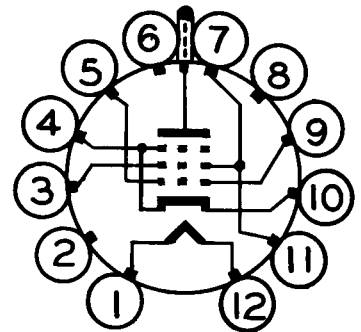


EIA 12-79

#### TERMINAL CONNECTIONS

- Pin 1—Heater
- Pin 2—No Connection
- Pin 3—Grid Number 2 (Screen)
- Pin 4—Cathode and Beam Plates
- Pin 5—Grid Number 1
- Pin 6—No Connection
- Pin 7—Grid Number 2 (Screen)
- Pin 8—No Connection
- Pin 9—Grid Number 1
- Pin 10—Cathode and Beam Plates
- Pin 11—Grid Number 2 (Screen)
- Pin 12—Heater
- Cap—Plate

#### BASING DIAGRAM



EIA 12DR

**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**

**AVERAGE CHARACTERISTICS**

Plate Voltage.....	5000	60	250	Volts
Screen Voltage.....	150	150	150	Volts
Grid-Number 1 Voltage.....		0 #	-22.5	Volts
Plate Resistance, approximate.....			18000	Ohms
Transconductance.....			7300	Micromhos
Plate Current.....		345	65	Milliamperes
Screen Current.....		27	1.8	Milliamperes
Grid-Number 1 Voltage, approximate				
I <sub>b</sub> = 1.0 Milliamperes.....	-100		-42	Volts
Triode Amplification Factor Δ.....			4.4	

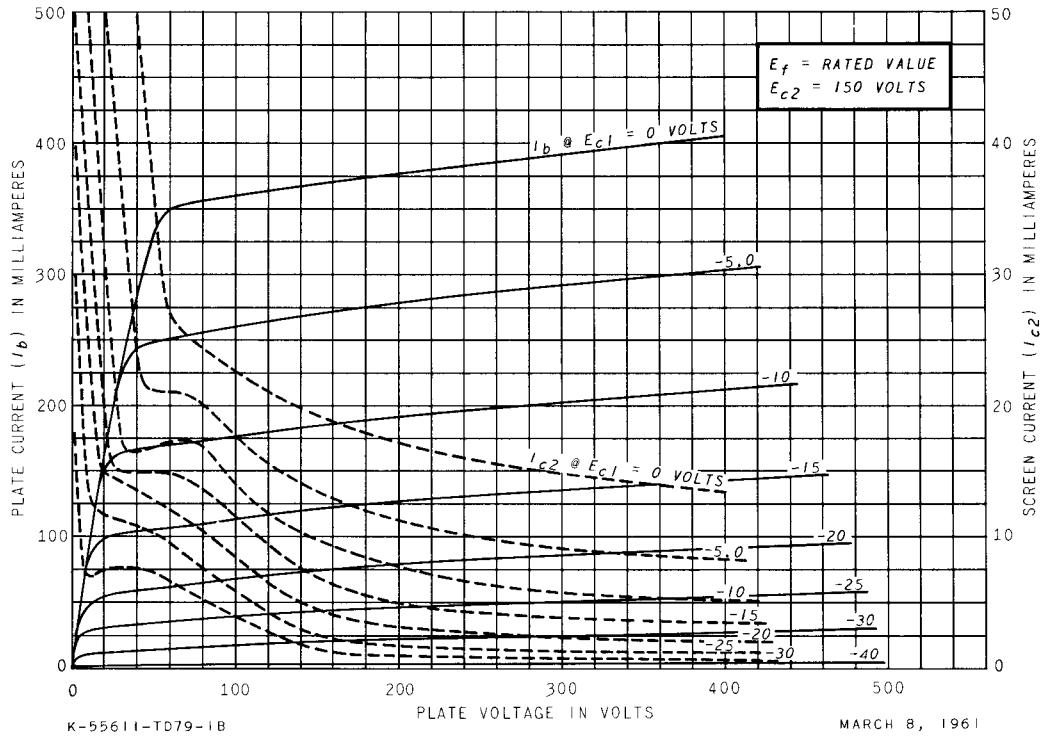
**NOTES**

- \* 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.
- § For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.
- ¶ In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.
- # Applied for short interval (two seconds maximum) so as not to damage tube.
- Δ Triode connection (screen tied to plate) with E<sub>b</sub> = E<sub>c2</sub> = 150 volts and E<sub>c1</sub> = -22.5 volts.

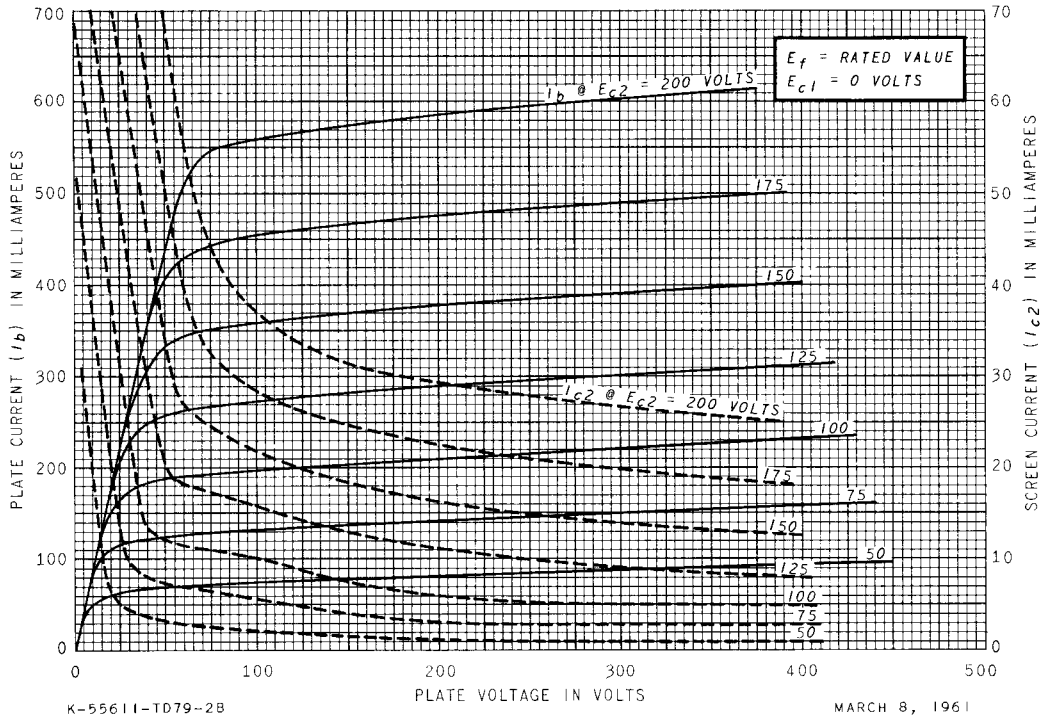
The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or

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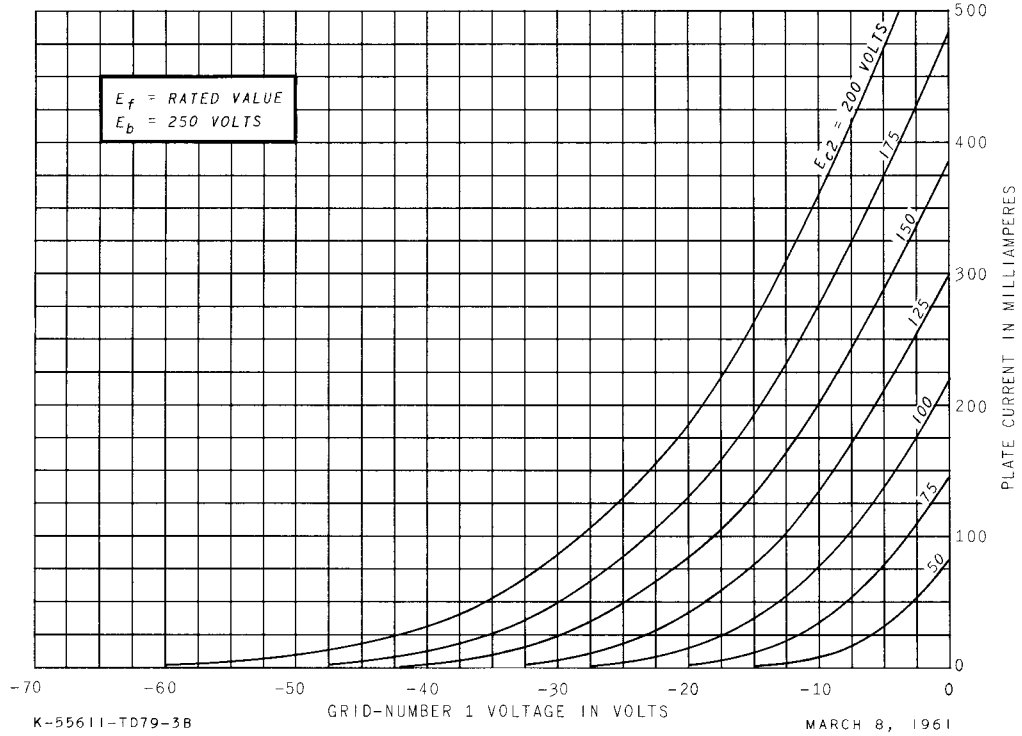
### AVERAGE PLATE CHARACTERISTICS



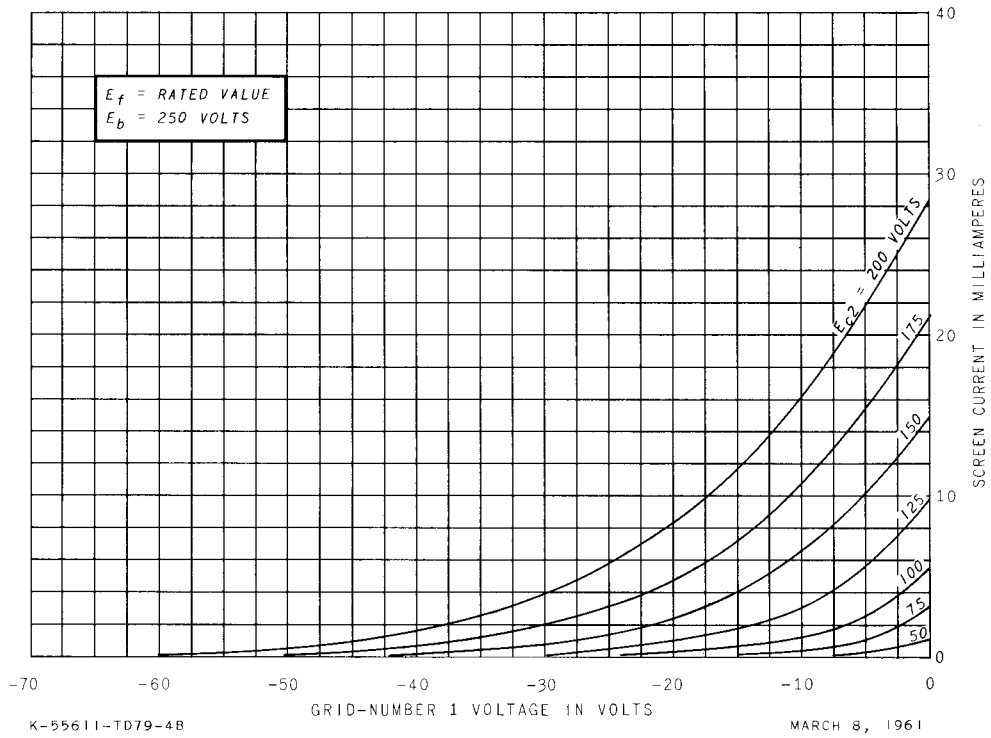
### AVERAGE PLATE CHARACTERISTICS



**AVERAGE TRANSFER CHARACTERISTICS**



**AVERAGE TRANSFER CHARACTERISTICS**



**RECEIVING TUBE DEPARTMENT**



**Owensboro, Kentucky**