



COMPACTRON BEAM PENTODE

FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6GE5 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).... 0.34 pf
 Input: g1 to (h+k+g2+b.p.)..... 16 pf
 Output: p to (h+k+g2+b.p.)..... 7.0 pf

MECHANICAL

Mounting Position—Any
 Envelope—T-12, Glass
 Base—E12-74, Button 12-Pin
 Outline Drawing—EIA 12-56
 Maximum Diameter..... 1.563 Inches
 Maximum Over-all Length..... 2.875 Inches
 Maximum Seated Height..... 2.500 Inches

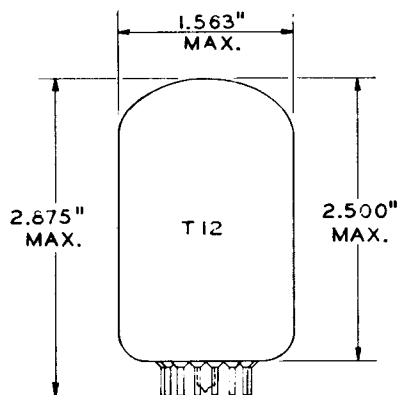
MAXIMUM RATINGS

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

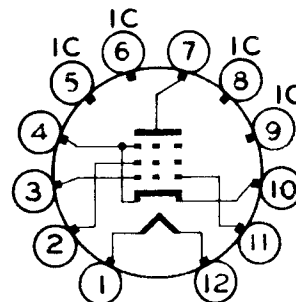


EIA 12-56

TERMINAL CONNECTIONS

Pin 1—Heater
 Pin 2—Grid Number 2 (Screen)
 Pin 3—Grid Number 1
 Pin 4—Cathode and Beam Plates
 Pin 5—Internal Connection—Do Not Use
 Pin 6—Internal Connection—Do Not Use
 Pin 7—Plate
 Pin 8—Internal Connection—Do Not Use
 Pin 9—Internal Connection—Do Not Use
 Pin 10—Cathode and Beam Plates
 Pin 11—Grid Number 1
 Pin 12—Heater

BASING DIAGRAM



EIA 12BJ

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 Δ	-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				
$I_b = 1.0$ Milliamperes.....	-100		-42	Volts
Triode Amplification Factor**.....			4.4	

† 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.

¶ 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.

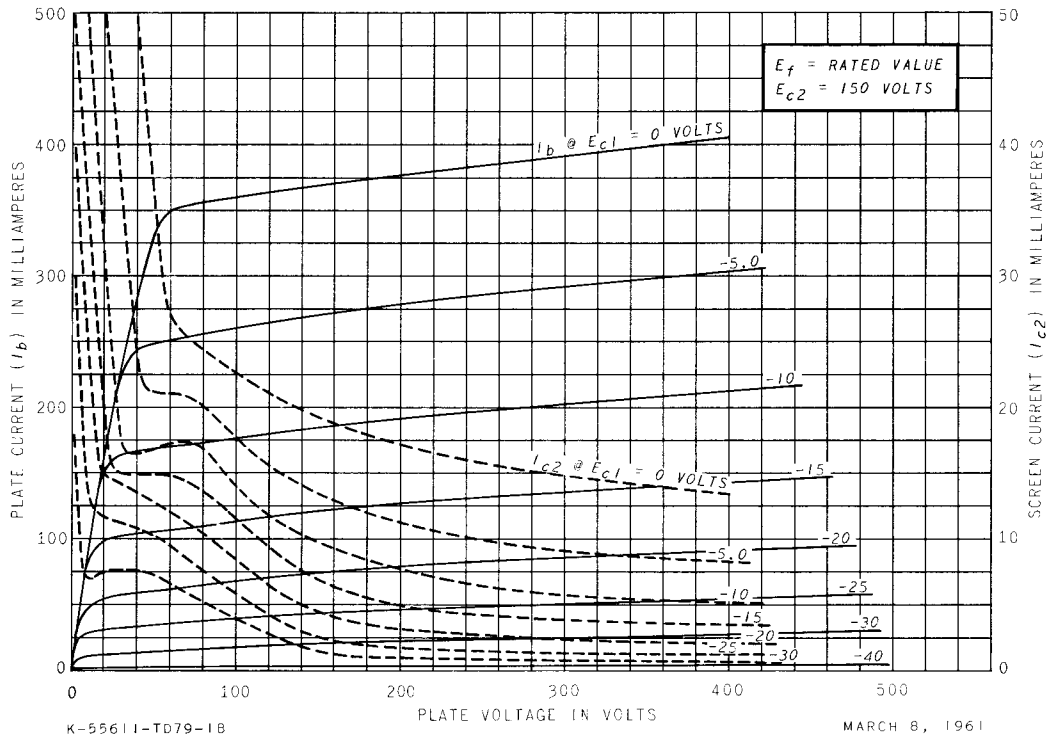
Δ Applied for short interval (two seconds maximum) so as not to damage tube.

**Triode connection (screen tied to plate) with $E_b = E_{c2} = 150$ volts and $E_{c1} = -22.5$ volts.

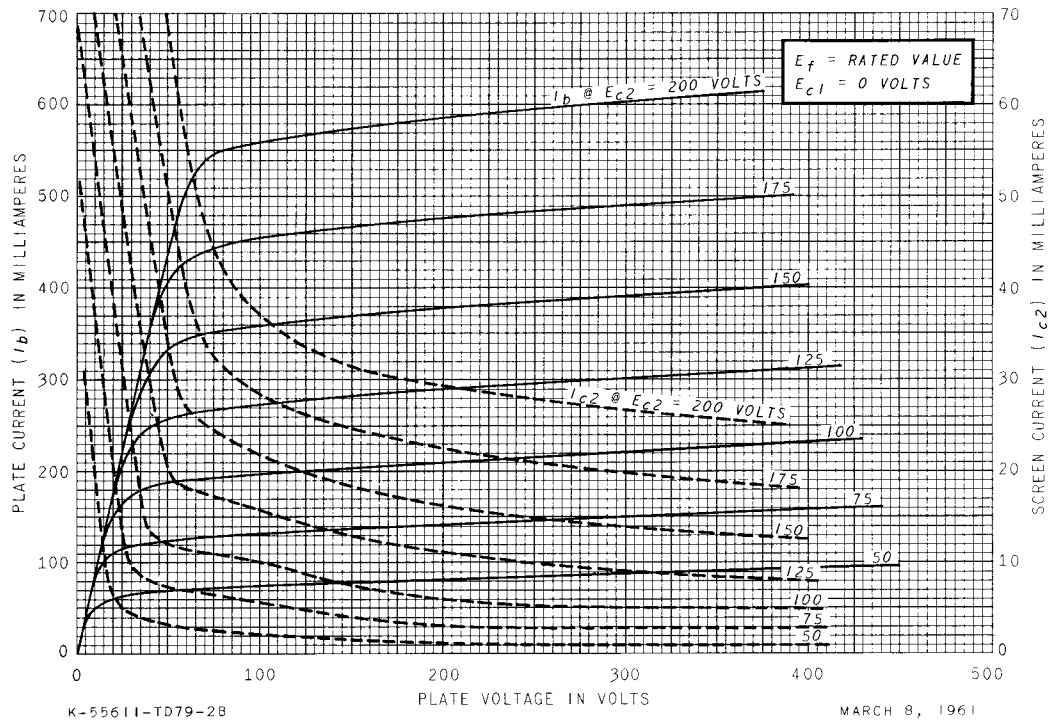
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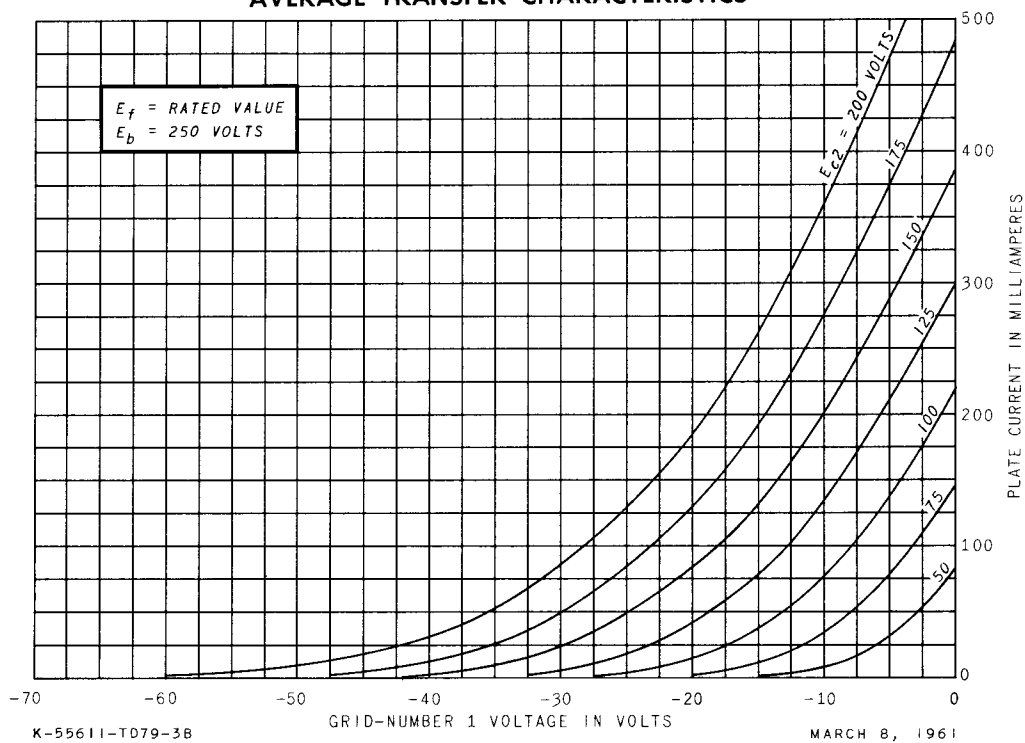
AVERAGE PLATE CHARACTERISTICS



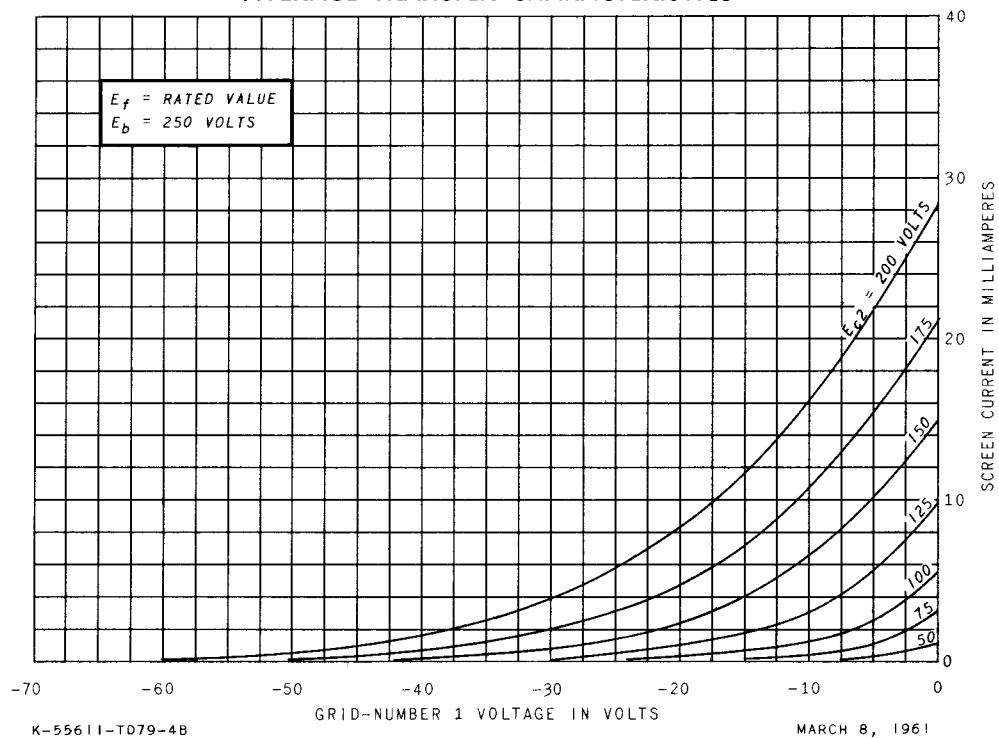
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



RECEIVING TUBE DEPARTMENT

GENERAL  **ELECTRIC**

Owensboro, Kentucky