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 Inter-electrode Capacitance, 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 Overall 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

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 bogyey 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 bogyey 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

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Average Value</th>
<th>Minimum</th>
<th>Maximum</th>
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<tbody>
<tr>
<td>Plate Voltage</td>
<td>5000 Volts</td>
<td>60</td>
<td>250</td>
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<tr>
<td>Screen Voltage</td>
<td>150 Volts</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Grid-Number 1 Voltage</td>
<td>0 V</td>
<td>-22.5</td>
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<tr>
<td>Plate Resistance, approximate</td>
<td>18000 Ohms</td>
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<tr>
<td>Transconductance</td>
<td>7300 Micromhos</td>
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<tr>
<td>Plate Current</td>
<td>345 Milliamperes</td>
<td>65</td>
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</tr>
<tr>
<td>Screen Current</td>
<td>27 Milliamperes</td>
<td>1.8</td>
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<tr>
<td>Grid-Number 1 Voltage, approximate</td>
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<td>-42</td>
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<tr>
<td>Triode Amplification Factor △</td>
<td>4.4</td>
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</table>

#### NOTES

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogyey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

† Heater current of a bogyey tube at Ef = 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.

△ Triode connection (screen tied to plate) with Eb = Ec2 = 150 volts and Ec1 = -22.5 volts.

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