The 6GK6 is a general-purpose power pentode that may be used either in audio output amplifier or video power output amplifier stages of television receivers.

**GENERAL**

**ELECTRICAL**
- Cathode - Coated Unipotential
- Heater Characteristics and Ratings
  - Voltage, AC or DC: 6.3 ± 0.6 Volts
  - Current: 0.76 Amperes
- Direct Interelectrode Capacitances, approximate:
  - Grid Number 1 to Plate: (g1 to p), maximum: 0.14 pf
  - Input: g1 to (h + k + g2 + g3 + i.s.): 10 pf
  - Output: p to (h + k + g2 + g3 + i.s.): 7.0 pf

**MECHANICAL**
- Operating Position - Any
- Envelope - T-6½, Glass
- Base - E9-1, Small Button 9-Pin
- Outline Drawing - EIA 6-4
  - Maximum Diameter: 0.875 Inches
  - Minimum Diameter: 0.750 Inches
  - Maximum Over-all Length: 3.062 Inches
  - Maximum Seated Height: 2.812 Inches

**MAXIMUM RATINGS**

**DESIGN-MAXIMUM VALUES**
- Plate Voltage: 330 Volts
- Screen Voltage: 330 Volts
- Negative DC Grid-Number 1 Voltage: 100 Volts
- Plate Dissipation: 13.2 Watts
- Screen Dissipation, Average: 2.0 Watts
- Screen Dissipation, Peak: 4.0 Watts
- DC Cathode Current: 0.65 Milliamperes
- Heater-Cathode Voltage
  - Heater Positive with respect to Cathode: 100 Volts
  - Heater Negative with respect to Cathode: 100 Volts
- Grid-Number 1 Circuit Resistance
  - With Fixed Bias: 0.3 Megohms
  - With Cathode Bias: 1.0 Megohms

**PHYSICAL DIMENSIONS**

**TERMINAL CONNECTIONS**
- Pin 1 - Cathode
- Pin 2 - Grid Number 1
- Pin 3 - Internal Shield and Grid Number 3 (Suppressor)
- Pin 4 - Heater
- Pin 5 - Heater
- Pin 6 - No Connection
- Pin 7 - Plate
- Pin 8 - Grid Number 2 (Screen)
- Pin 9 - Internal Shield and Grid Number 3 (Suppressor)

**BASING DIAGRAM**

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.
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

CLASS A1 AMPLIFIER
Plate Voltage .................................................. 250 Volts
Screen Voltage .................................................. 250 Volts
Grid-Number 1 Voltage ...................................... -7.3 Volts
Plate Resistance, approximate ............................. 38000 Ohms
Transconductance ............................................ 11300 Microhmhos
Zero-Signal Plate Current .................................. 48 Milliamperes
Zero-Signal Screen Current ................................ 5.5 Milliamperes
Load Resistance .............................................. 5200 Ohms
Total Harmonic Distortion, approximate ............... 10 Percent
Maximum-Signal Power Output ............................ 5.7 Watts
Amplification Factor of Grid Number 2 with respect to Grid Number 1, zero signal .................. 19

PUSH-PULL AMPLIFIER, VALUES FOR TWO TUBES

<table>
<thead>
<tr>
<th></th>
<th>Class A</th>
<th>Class B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>250</td>
<td>300</td>
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<tr>
<td>Screen Voltage</td>
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<td>300</td>
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<tr>
<td>Cathode-Bias Resistor</td>
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<td>130</td>
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<tr>
<td>Grid-Number 1 Voltage</td>
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<tr>
<td>Peak AF Grid-to-Grid Voltage</td>
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<td>Zero-Signal Plate Current</td>
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<td>Maximum-Signal Plate Current</td>
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<td>75</td>
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<tr>
<td>Zero-Signal Screen Current</td>
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<td>2.2</td>
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<tr>
<td>Maximum-Signal Screen Current</td>
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<tr>
<td>Effective Load Resistance, Plate-to-Plate</td>
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<tr>
<td>Total Harmonic Distortion, Plate-to-Plate</td>
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<td>4.0</td>
</tr>
<tr>
<td>Maximum-Signal Power Output</td>
<td>11</td>
<td>17</td>
</tr>
</tbody>
</table>

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 Ef = 6.3 volts.

- Without external shield.

- When the heater and positive voltage are obtained from a storage battery by means of a vibrator, the maximum values of plate and screen voltages are 275 volts and the plate dissipation is 8.9 watts.
AVERAGE TRANSFER CHARACTERISTICS

E1 = RATED VALUE
Eb = 250 VOLTS
Ec3 = 0 VOLTS

GRID-NUMBER 1 VOLTAGE IN VOLTS

PLATE CURRENT IN MILLIAMPERES

MARCH 7, 1968

AVERAGE TRANSFER CHARACTERISTICS

E1 = RATED VALUE
Eb = 250 VOLTS
Ec3 = 0 VOLTS

SCREEN CURRENT IN MILLIAMPERES

MARCH 7, 1968
OPERATION CHARACTERISTICS

TOTAL HARMONIC DISTORTION IN PERCENT

SCREEN DISSIPATION RATING

SCREEN DISSIPATION RATING (PEAKS OF SPEECH AND MUSIC)

PLATE DISSIPATION

SCREEN DISSIPATION RATING (CONTINUOUS)

POWER OUTPUT IN WATTS

PEAK INPUT SIGNAL, GRID-TO-GRID

PLATE DISSIPATION IN WATTS/PER TUBE

SCREEN DISSIPATION IN WATTS/PER TUBE

TWO TUBES PUSH-PULL
CLASS AB1

E1 = RATED VALUE
E1c = -13 VOLTS
E2b = 300 VOLTS
E2c = 0 VOLTS
E2c = 300 VOLTS
RL = 6600 OHMS

MARCH 7, 1968

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