The 6GK5 is a frame-grid, gain-controlled triode designed for use as a VHF RF amplifier.

**GENERAL**

**ELECTRICAL**

Cathode—Coated Unipotential  
Heater Characteristics and Ratings  
Heater Voltage, AC or DC*: 6.3 ± 0.6 Volts  
Heater Current†: 0.18 Amperes  
Direct Interelectrode Capacitances‡:  
  Grid to Plate: (g to p) 0.52 pf  
  Input: g to (h+k+i.s.) 5.0 pf  
  Output: p to (h+k+i.s.) 3.5 pf  
  Heater to Cathode: (h to k) 2.5 pf

**MECHANICAL**

Mounting Position—Any  
Envelope—T-5½, Glass  
Base—E7-1, Miniature Button 7-Pin  
Outline Drawing—EIA 5-2  
  Maximum Diameter: 0.375 Inches  
  Maximum Over-all Length: 2½ Inches  
  Maximum Seated Height: 1½ Inches

**MAXIMUM RATINGS**

**DESIGN-MAXIMUM VALUES**

Plate Voltage: 200 Volts  
Negative DC Grid Voltage: 50 Volts  
Plate Dissipation: 2.5 Watts  
DC Cathode Current: 22 Milliamperes  
  Heater-Cathode Voltage  
  Heater Positive with Respect to  
    Cathode: 100 Volts  
  Heater Negative with Respect to  
    Cathode: 100 Volts  
  Grid Circuit Resistance  
    With Cathode Bias: 1.0 Megohms

**PHYSICAL DIMENSIONS**

**TERMINAL CONNECTIONS**

Pin 1—Cathode  
Pin 2—Grid  
Pin 3—Heater  
Pin 4—Heater  
Pin 5—Plate  
Pin 6—Internal Shield  
Pin 7—Cathode

**BASING DIAGRAM**

EIA 7FP
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

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>135 Volts</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>-1.0 Volts</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>78</td>
</tr>
<tr>
<td>Plate Resistance, approximate</td>
<td>5400 Ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>15000 Micromhos</td>
</tr>
<tr>
<td>Plate Current</td>
<td>11.5 Milliamperes</td>
</tr>
<tr>
<td>Grid Voltage, approximate</td>
<td>Gm = 150 Micromhos</td>
</tr>
<tr>
<td>Grid Voltage, approximate</td>
<td>Gm = 1500 Micromhos</td>
</tr>
<tr>
<td>Hot Input Resistance (200 MC)§</td>
<td>275 Ohms</td>
</tr>
<tr>
<td>Hot Input Capacitance (200 MC)§</td>
<td>11.2 pf</td>
</tr>
<tr>
<td>Noise Figure (200 MC)†</td>
<td>4.7 db</td>
</tr>
</tbody>
</table>

* 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.

‡ With external shield (EIA 316) connected to cathode.

§ Measured under grounded-plate conditions.

¶ Optimized neutralized triode RF amplifier stage, noise matched.

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