The BRIMAR 12AD6 is a miniature frequency changer for use in car radio receivers to operate directly from the 12-volt battery without the use of a vibrator H.T. system. It is designed to operate over the range of voltage variations normally encountered with car batteries.

**RATINGS**

- **Heater Voltage**: 12.6 volts
- **Heater Current**: 0.15 amp.
- **Anode Voltage**: 30 volts max.
- **Screen Grid (gs) Voltage**: 30 volts max.
- **Screen Grid Supply Voltage**: 30 volts max.
- **Negative Control Grid (g2) Voltage**: -30 volts max.
- **Positive Control Grid Voltage**: 0 volts max.
- **Control Grid Circuit Resistance**: 10 megohms max.
- **Cathode Current**: 20 mA max.
- **Heater-Cathode Voltage**: ± 30 volts max.

**STATIC CHARACTERISTICS—OSCILLATOR SECTION**

Measured with grids 2 and 4 connected to anode:

- **Anode, g1, and g3 Voltage**: 12.6 volts
- **Control Grid (g2) Voltage**: 0 volts
- **Oscillator Grid (g3) Voltage**: 0 volts
- **Mutual Conductance (g1 to g2 + g3 + a)**: 3.8 mA/V
- **Amplification Factor (g1 to g2 + g3 + a)**: 9
- **Cathode Current**: 5 mA
- **Control Grid Voltage for I_k = 10 µA**: -4 volts

**OPERATING CHARACTERISTICS AS A SELF EXCITED MIXER**

- **Anode Voltage**: 12.6 volts
- **Screen Grid (gs, g3) Voltage**: 0 volts
- **Control Grid (g2) Voltage**: 2.2 megohms
- **Control Grid Resistance**: 33 kilohms
- **Oscillator Grid (g3) Resistance**: 1.6 volts r.m.s.
- **Oscillatory Voltage on Oscillator Grid**: 50 µA
- **Oscillator Grid Current**: 450 µA
- **Anode Current**: 1.5 mA
- **Screen Grid Current**: 2 mA
- **Cathode Current**: 260 µA/V
- **Conversion Conductance**: -2.2 volts approx.
- **Control Grid Voltage for ge = 5 µA/V**: -1.8 volts approx.
- **Control Grid Voltage for ge = 20 µA/V**: -1.8 volts approx.

**INTER-ELECTRODE CAPACITANCES**

<table>
<thead>
<tr>
<th>Capacitance Type</th>
<th>With external screen</th>
<th>Without external screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Grid to Anode (gs to a)</td>
<td>0.25</td>
<td>0.30 µF max.</td>
</tr>
<tr>
<td>Control Grid to Oscillator Grid (g3 to g2)</td>
<td>0.15</td>
<td>0.15 µF max.</td>
</tr>
<tr>
<td>R.F. Input (g1 to all)</td>
<td>8.0</td>
<td>8.0 µF</td>
</tr>
<tr>
<td>Oscillator Input (g3 to all)</td>
<td>5.5</td>
<td>5.5 µF</td>
</tr>
<tr>
<td>Mixer Output (a to all)</td>
<td>13.0</td>
<td>8.0 µF</td>
</tr>
<tr>
<td>Oscillator Grid to Cathode (g3 to k -- g2)</td>
<td>3.0</td>
<td>3.0 µF</td>
</tr>
<tr>
<td>Oscillator Output (k to all except g1)</td>
<td>20.0</td>
<td>15.0 µF</td>
</tr>
<tr>
<td>Oscillator Grid to Anode (g1 to a)</td>
<td>0.05</td>
<td>0.1 µF</td>
</tr>
</tbody>
</table>