6H1
HEXODE
Indirectly heated—for parallel operation

GENERAL
The 6H1 is a miniature based hexode intended for use as a frequency changer with a separate triode oscillator, and will operate up to a frequency of 20 Mc/s. It is also suitable for use as a gated amplifier, and may be used in equipment having AC or DC powered parallel connected heater chains.

RATING
Heater Voltage  (volts) \( V_h \)  6.3
Heater Current  (amps) \( I_h \)  0.2
Maximum Anode Voltage (volts) \( V_{a(b)\text{max}} \)  550†
Maximum Operating Anode Voltage (volts) \( V_{a(\text{max})} \)  300
Maximum Screen Voltage (volts) \( V_{g2,4(b)\text{max}} \)  400†
Maximum Operating Screen Voltage (volts) \( V_{g2,4(\text{max})} \)  300
Maximum Anode Dissipation (watts) \( P_a(\text{max}) \)  1.0
Maximum Screen Dissipation (watts) \( P_{g2+4(\text{max})} \)  0.7
Mutual Conductance (mA/V) \( g_m \)  2.1*

* Measured at \( V_a = 250 \text{ V} ; V_{g2+g4} = 100 \text{ V} ; V_{g1} = -1.8 \text{ V}. \)
† \( I_a = 0. \)

All Maximum Values quoted are absolute.

INTER-ELECTRODE CAPACITANCES (pF)
Anode/Grid 1 \( c_{a-g1} \)  0.06
Anode/Earth \( c_{a-E} \)  9.25
Grid 1/Earth \( c_{g1-E} \)  4.3
Grid 3/All \( c_{g3-all} \)  4.9

“Earth” denotes all earth potential electrodes, shields and heater connected to the cathode.
These capacities are measured cold with a metal screening can fitted to the valve.
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### DIMENSIONS
- Maximum Overall Length (mm) 54.5
- Maximum Diameter (mm) 19.0
- Maximum Seated Height (mm) 47.5
- Approximate Nett Weight (ozs) \( \frac{1}{2} \)
- Approximate Packed Weight (ozs) \( \frac{1}{2} \)

### MOUNTING POSITION
Unrestricted.

### TYPICAL OPERATION—Frequency Changer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anode Voltage</td>
<td>volts</td>
<td>250</td>
</tr>
<tr>
<td>Screen Voltage</td>
<td>volts</td>
<td>100</td>
</tr>
<tr>
<td>Grid 1 Bias Voltage</td>
<td>volts</td>
<td>(-2.2)</td>
</tr>
<tr>
<td>Anode Current (approx)</td>
<td>mA</td>
<td>2.3*</td>
</tr>
<tr>
<td>Screen Current (approx)</td>
<td>mA</td>
<td>2.7*</td>
</tr>
<tr>
<td>Conversion Conductance</td>
<td>(\mu A/V)</td>
<td>560†</td>
</tr>
<tr>
<td>Valve Anode Resistance (\delta V_a/\delta I_a)</td>
<td>(\Omega)</td>
<td>1.0</td>
</tr>
<tr>
<td>Peak Heterodyne Voltage</td>
<td>volts</td>
<td>12</td>
</tr>
<tr>
<td>Grid 3 Resistor</td>
<td>k(\Omega)</td>
<td>47*</td>
</tr>
</tbody>
</table>

* Grid 3 connected in parallel with the grid of the oscillator valve and biased by grid current through the Grid 3 resistor.

Measured with an anode circuit of low dynamic impedance.
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BASE—B7G

Viewed from free end of pins

**VALVE HOLDER**—Ediswan Clix VH337/7, VH437/7 and VH17/7 series.

**CONNECTIONS**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Grid</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>$g_1$</td>
</tr>
<tr>
<td>2</td>
<td>Cathode</td>
<td>k</td>
</tr>
<tr>
<td>3</td>
<td>Heater</td>
<td>h</td>
</tr>
<tr>
<td>4</td>
<td>Heater</td>
<td>h</td>
</tr>
<tr>
<td>5</td>
<td>Anode</td>
<td>a</td>
</tr>
<tr>
<td>6</td>
<td>Grid 3</td>
<td>$g_3$</td>
</tr>
<tr>
<td>7</td>
<td>Grid 2 and Grid 4</td>
<td>$g_2 + g_4$</td>
</tr>
</tbody>
</table>
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AVERAGE CHARACTERISTIC CURVES:
\( g_{c1}.l_a.l_g2.l_g3.l_g0/V_{het(pk)} \)
Heterodyne injected into g3

\[ V_a = 250V \quad V_{g2} = 100V \quad V_{g3} = \text{Self Bias} \]
\[ V_{g1} = -2.2V \quad Z_L = 49k\Omega \quad R_{g3} = 47k\Omega \]

Note: g3 is connected in parallel with the grid of an external oscillator and is biased by grid current.