OUTPUT PENTODE

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69W., or as drivers for large power triode push-pull output stage.

HEATER

\[
\begin{align*}
V_h & = 6.3 \text{ V} \\
I_h & = 1.4 \text{ A}
\end{align*}
\]

CAPACITANCES

\[
\begin{align*}
c_{a-k} & = 9.0 \text{ } \mu\text{F} \\
c_{g-k} & = 17.5 \text{ } \mu\text{F} \\
c_{a-g1} & = 1.0 \text{ } \mu\text{F}
\end{align*}
\]

OPERATING CONDITIONS AS PENTODE

\[
\begin{align*}
V_a & = 250 \text{ V} \\
V_{g2} & = 250 \text{ V} \\
V_{g1} & = -18.5 \text{ V} \\
I_a & = 100 \text{ mA} \\
I_{g2} & = 13.5 \text{ mA} \\
R_{k} & = 120 \text{ ohms} \\
S_{m} & = 11.0 \text{ mA/V} \\
\tau_{g1-g2} & = 10 \text{ ms} \\
R_{a} & = 2500 \text{ ohms} \\
V_{in(rms)} & = 0.45 \text{ V} \\
W_{out(D_{tot} = 10\%)} & = 10.5 \text{ W} \\
V_{in(rms)} & = 10.8 \text{ V} \\
D_{tot} & (\text{start of } I_{g1}) = 13.5 \% \\
W_{out} & (\text{start of } I_{g1}) = 11.5 \text{ W}
\end{align*}
\]

OPERATING CONDITIONS - TWO VALVES IN PUSH-PULL (Self Bias)

\[
\begin{align*}
V_a & = 250 \text{ V} \\
V_{g2} & = 250 \text{ V} \\
I_{ao} & = 2x59 \text{ mA} \\
I_{a} & = 2x77 \text{ mA} \\
I_{a} \text{ max.} & = 2x90 \text{ mA} \\
I_{g20} & = 2x7.5 \text{ mA} \\
I_{g2} & = 2x30 \text{ mA} \\
R_{k} & = 130 \text{ ohms} \\
R_{a-a} & = 4000 \text{ ohms} \\
W_{out} & = 35.0 \text{ W} \\
V_{in(rms)} & = 29.0 \text{ V} \\
D_{tot} & = 2.25 \text{ %}
\end{align*}
\]
OPERATING CONDITIONS - TWO VALVES IN PUSH-PULL (Fixed Bias)

\[
\begin{array}{llll}
V_a & 350 & 400 & V \\
V_{g2} & 350 & 400 & V \\
I_{a(o)} & 2x40 & 2x50 & mA \\
I_{a \text{ max}, \text{sig.}} & 2x118 & 2x138 & mA \\
I_{g2(o)} & 2x5 & 2x6 & mA \\
I_{g2 \text{ max}, \text{sig.}} & 2x29 & 2x36 & mA \\
V_{g1} & -31 & -36 & V \\
R_{a-a} & 3,250 & 3,250 & Ω \\
W_{out} & 46.0 & 69.0 & W \\
Vin_{(\text{rms})} & 43.4 & 49.0 & V \\
g_{1-g1} & & & \\
D_{tot} & 2.8 & 2.5 & % \\
\end{array}
\]

OPERATING CONDITIONS AS SINGLE VALVE, TRIODE CONNECTED.
(Grid 2 strapped to anode by 1kΩ resistor)

\[
\begin{array}{llll}
V_a & 300 & 400 & V \\
I_a & 50 & 37.5 & mA \\
V_{g1} & -23 & -36 & V \\
\beta & 6.5 & 4.5 & mA/V \\
\mu & 9 & 9 & - \\
R_a & 1400 & 2000 & Ω \\
\end{array}
\]

OPERATING CONDITIONS AS PUSH-PULL PAIR, TRIODE CONNECTED (SELF BIAS)

\[
\begin{array}{llll}
V_b & 350 & 435 & V \\
V_a & 320 & 400 & V \\
I_{a+g2(o)} & 2x56 & 2x70 & mA \\
I_{a+g2(\text{max}, \text{sig.})} & 2x64 & 2x80 & mA \\
W_{a+g2} & 2x18 & 2x28 & W \\
R_i & 245 & 245 & Ω \\
R_{a-a} & 4000 & 4000 & Ω \\
Vin & 2x21.5 & 2x27.2 & V_{\text{rms}} \\
W_{out} & 12.5 & 20.6 & W \\
D_{tot} & 4.1 & 4.3 & % \\
\end{array}
\]

LIMITING VALUES - PENTODE CONNECTED

\[
\begin{array}{llll}
V_{a(b), \text{max.}} & 800 & V \\
V_a \text{ max.} & 400 & V \\
V_{g2(b), \text{max.}} & 800 & V \\
V_{g2} \text{ max.} & 400 & V \\
V_{g1 \text{ max.}(I_{g1}=0.3\mu A)} & -1.3 & V \\
V_{N-k \text{ max.}} & 75 & V \\
R_{N-k \text{ max.}} & 5000 & Ω \\
\end{array}
\]
OUTPUT PENTODE

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69W., or as drivers for large power triode push-pull output stage.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rgl-k max.</td>
<td>0.5</td>
</tr>
<tr>
<td>(cathode bias)</td>
<td>µA</td>
</tr>
<tr>
<td>Rgl-k max.</td>
<td>0.1</td>
</tr>
<tr>
<td>(fixed bias)</td>
<td>µA</td>
</tr>
<tr>
<td>wa max.</td>
<td>25</td>
</tr>
<tr>
<td>wg2 max.</td>
<td>6</td>
</tr>
<tr>
<td>I&lt;sub&gt;k&lt;/sub&gt; max.</td>
<td>125 mA</td>
</tr>
</tbody>
</table>

LIMITING VALUES - TRIODE CONNECTED (NORMAL APPLICATIONS)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>V&lt;sub&gt;a+g2&lt;/sub&gt; max.</td>
<td>400 V</td>
</tr>
<tr>
<td>wa+g2 max.</td>
<td>28</td>
</tr>
</tbody>
</table>

LIMITING VALUES - TRIODE CONNECTED (IN CATHODE-COUPLED PUSH-PULL DRIVER STAGE FOR LARGE POWER TRIODES)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>V&lt;sub&gt;a+g2&lt;/sub&gt; max.</td>
<td>500 V</td>
</tr>
<tr>
<td>wa+g2 max.</td>
<td>12.5 W</td>
</tr>
</tbody>
</table>

ARRANGEMENT OF ELECTRODES AND BASE CONNECTIONS

DIMENSIONS

OCTAL BASE

ISSUE 3

EL37 1546/3
EL37 OUTPUT PENTODE

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69W., or as drivers for large power triode push-pull output stage.

[Graph showing Iₐ-Vₑ diagram for Vₑ = 250 V.]
OUTPUT PENTODE

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EL37

OUTPUT PENTODE

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69W, or as drivers for large power triode push-pull output stage.

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Diagram showing the characteristic curves for the EL37 pentode.
OUTPUT PENTODE

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69 W., or as drivers for large power triode push-pull output stage.
25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69W., or as drivers for large power triode push-pull output stage.

Distortion curve for single valve
at $V_a = V_{g2} = 250$ V.
 OUTPUT PENTODE

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69 W., or as drivers for large power triode push-pull output stage.

Operating conditions between 200 and 300 V. (single valve).
OUTPUT PENTODE

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69W, or as drivers for large power triode push-pull output stage.

Distortion curve for push-pull operation with self-bias at $V_a = V_{g2} = 325$ V.

Distortion curve for push-pull operation with self-bias at $V_a = V_{g2} = 280$ V.
OUTPUT PENTODE

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69W., or as drivers for large power triode push-pull output stage.

Self bias push-pull operating conditions between 250 and 350 V.
EL37

25-watt pentode, particularly suitable for use in push-pull combination for outputs up to 69W, or as drivers for large power triode push-pull output stage.

Distortion curve for push-pull operation with fixed bias at $V_a = V_{g2} = 400$ V.

Fixed bias push-pull operating conditions between 300 and 400 V.