The 1U5 is a miniature diode sharp-cutoff pentode designed for use as a combined detector, audio-frequency amplifier, and automatic-volume-control tube in compact, battery-operated receivers. The diode section is effectively shielded from the pentode section to reduce feed-through effects.

**GENERAL**

Cathode - Coated Filament  
Filament Voltage, D-C  
Filament Current  
Envelope - T-5½, Glass  
Base - E7-1, Miniature Button 7-Pin  
Mounting Position - Any

Direct Interelectrode Capacitance  
Diode Plate to Grid-Number 1, maximum  
With Shield*  
Without Shield

**MAXIMUM RATINGS**

**DESIGN-CENTER VALUES**

Plate Voltage  
Screen Voltage  
Positive D-C Grid-Number 1 Voltage  
Negative D-C Grid-Number 1 Voltage  
D-C Cathode Current  
Diode Current for Continuous Operation

**CLASS A₁ AMPLIFIER**

Plate Voltage  
Screen Voltage  
Grid-Number 1 Voltage  
Plate Resistance, approximate  
Transconductance  
Plate Current  
Screen Current  
Grid-Number 1 Voltage, approximate,  
\( I_b = 10 \) Microamperes

Average Diode Current  
With 10 Volts D-C Applied

**PHYSICAL DIMENSIONS**

**TERMINAL CONNECTIONS**

Pin 1 - Negative Filament and Grid Number 3  
Pin 2 - Plate  
Pin 3 - Grid Number 2 (Screen)  
Pin 4 - Diode Plate*  
Pin 5 - No Connection  
Pin 6 - Grid Number 1  
Pin 7 - Positive Filament

* With external shield (RTWA 316) connected to pin 1.  
* The diode is located at the negative end of the filament.

Note: All voltages are referred to the negative terminal of the filament.
CLASS A RESISTANCE-COUPLED AMPLIFIER

<table>
<thead>
<tr>
<th>Rp</th>
<th>Rg</th>
<th>Rg1</th>
<th>Ebb = 45 Volts</th>
<th>Ebb = 90 Volts</th>
<th>Ebb = 135 Volts</th>
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<tbody>
<tr>
<td>0.24</td>
<td>0.24</td>
<td>10</td>
<td>0.5 18 6.4</td>
<td>0.8 29 13</td>
<td>1.0 38 20</td>
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<td>0.51</td>
<td>10</td>
<td>0.5 24 8.0</td>
<td>0.9 36 15</td>
<td>1.1 40 25</td>
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<tr>
<td>0.24</td>
<td>1.0</td>
<td>10</td>
<td>0.6 28 8.4</td>
<td>1.0 45 17</td>
<td>1.2 55 28</td>
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<tr>
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<td>0.51</td>
<td>10</td>
<td>1.1 25 5.9</td>
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<td>2.3 52 19</td>
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<tr>
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<td>0.75</td>
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<td>2.0 46 13</td>
<td>2.0 61 22</td>
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<td>10</td>
<td>2.7 31 4.3</td>
<td>3.9 50 9</td>
<td>4.6 66 15</td>
</tr>
</tbody>
</table>

Note: Coupling capacitors (C) should be adjusted to give desired frequency response. Rg1 should be adequately bypassed.

Notes:
1. $E_o$ is maximum RMS voltage output for five percent THD total harmonic distortion.
2. Gain measured at 2.0 volts RMS output.
3. For zero-bias data, generator impedance is negligible.

OPERATION CHARACTERISTICS
DIODE SECTION

$E_f = 1.4$ VOLTS D-C