The 8425-A is a miniature sharp-cutoff pentode intended for various industrial applications. It is unilaterally interchangeable with the 8425.

**GENERAL**

**ELECTRICAL**

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC* . . . 6.3±0.6 Volts

Heater Current† . . . . . . 0.3 Amperes

Direct Inter-electrode Capacitances§

**Pentode Connection**

Grid-Number 1 to Plate: (g1 to p), maximum . . . . . 0.003 pf

Input: g1 to (h + k + g2 + g3 + i.s.) . . . . . 5.9 pf

Output: p to (h + k + g2 + g3 + i.s.) . . . . . 5.1 pf

**Triode Connection¶

Grid-Number 1 to Plate: g1 to (p + g2 + g3 + i.s.), . . . 2.5 pf

Input: g1 to (h + k). . . . . . 3.6 pf

Output: (p + g2 + g3 + i.s.) to (h + k). . . . . . 1.1 pf

**MECHANICAL**

Operating Position - Any

Envelope - T-5 1/2, Glass

Base - E7-1, Miniature Button 7-Pin

Outline Drawing - EIA 5-2

Maximum Diameter . . . . . 0.750 Inches

Maximum Overall Length . . 2.125 Inches

Maximum Seated Height . . . 1.875 Inches

**PHYSICAL DIMENSIONS**

**TERMINAL CONNECTIONS**

Pin 1 - Grid Number 1
Pin 2 - Grid Number 3 (Suppressor) and Internal Shield
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Plate
Pin 6 - Grid Number 2 (Screen)
Pin 7 - Cathode

**BASE DIAGRAM**

EIA 7BK

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The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.
MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

<table>
<thead>
<tr>
<th></th>
<th>Pentode Connection</th>
<th>Triode Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>330</td>
<td>275</td>
</tr>
<tr>
<td>Screen-Supply Voltage</td>
<td>330</td>
<td>---</td>
</tr>
<tr>
<td>Screen Voltage - See Screen Rating Chart</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive DC Grid-Number 1 Voltage</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plate Dissipation</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Screen Dissipation</td>
<td>0.75</td>
<td>---</td>
</tr>
<tr>
<td>Heater-Cathode Voltage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heater Positive with Respect to Cathode</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>DC Component</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Total DC and Peak</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heater Negative with Respect to Cathode</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Total DC and Peak</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogy 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 bogy 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></th>
<th>Pentode Connection</th>
<th>Triode Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>100</td>
<td>250</td>
</tr>
<tr>
<td>Suppressor - Connected to Cathode at Socket</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Screen Voltage</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>Cathode-Bias Resistor</td>
<td>150</td>
<td>68</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>---</td>
<td>41</td>
</tr>
<tr>
<td>Plate Resistance, approximate</td>
<td>0.6</td>
<td>1.1</td>
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<tr>
<td>Transconductance</td>
<td>4500</td>
<td>5500</td>
</tr>
<tr>
<td>Plate Current</td>
<td>4.8</td>
<td>7.4</td>
</tr>
<tr>
<td>Screen Current</td>
<td>1.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Grid-Number 1 Voltage, approximate</td>
<td>-4.1</td>
<td>-4.9</td>
</tr>
</tbody>
</table>

Ib = 10 Microamperes

NOTES

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogy value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

* Heater current of a bogy tube at Ef = 6.3 volts.

§ Without external shield.

¶ With screen and suppressor connected to plate.
SPECIAL TESTS AND RATINGS

Screen Voltage for Zero Grid-Number 1 Current

\[ Ef = 6.3 \text{ volts, } E_b = 95 \text{ volts, } E_c = 0 \text{ volts, } \]
\[ C3 \text{ tied to cathode, cathode tied through } \]
\[ \text{variable } R_k \text{ to } -150 \text{ volts, } R_k \text{ varied for } I_k = \]
\[ 3.2 \text{ ma, } E_c2 \text{ varied for zero grid-number 1 } \]
\[ \text{current.} \]

Noise and Microphonics

\[ Ef = 6.3 \text{ volts, } E_{bb} = 300 \text{ volts, } E_c3 = 0 \text{ volts, } \]
\[ E_{cc2} = 300 \text{ volts, } E_c1 = 0 \text{ volts, } R_L = 0.22 \text{ meg, } \]
\[ R_{g2} = 0.5 \text{ meg, } R_k = 1000 \text{ ohms (bypassed).} \]

DEGRADATION RATE TESTS

Cathode-Interface Impedance

1000 Hour Life-Test End Point, maximum

\[ 5 \text{ Ohms} \]