

**ELECTRONICS****8425-A
PENTODE****DESCRIPTION AND RATING**

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 Interelectrode 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

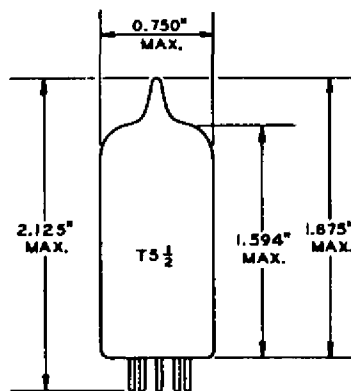
Base - E7-1, Miniature Button 7-Pin

Outline Drawing - EIA 5-2

Maximum Diameter 0.750 Inches

Maximum Over-all Length. 2.125 Inches

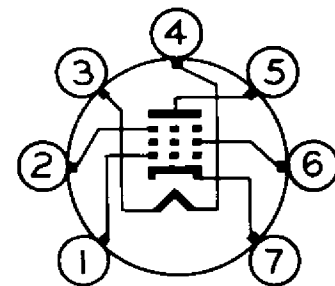
Maximum Seated Height 1.875 Inches

PHYSICAL DIMENSIONS

EIA 5-2

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

BASING DIAGRAM

EIA 7BK

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

	Pentode Connection	Triode Connection [¶]	
Plate Voltage	330	275	Volts
Screen-Supply Voltage	330	---	Volts
Screen Voltage - See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0	0	Volts
Plate Dissipation	3.5	3.5	Watts
Screen Dissipation	0.75	---	Watts
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	Volts

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey 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 bogey 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

	Pentode Connection			Triode Connection [¶]	
Plate Voltage	100	250	250	250	Volts
Suppressor - Connected to Cathode at Socket					
Screen Voltage	100	125	150	---	Volts
Cathode-Bias Resistor	150	100	68	330	Ohms
Amplification Factor	---	---	---	41	
Plate Resistance, approximate	0.6	1.3	1.1	---	Megohms
Transconductance	4500	5500	6200	6000	Micromhos
Plate Current	4.8	7.4	10.5	11.2	Milliamperes
Screen Current	1.9	2.8	4.1	---	Milliamperes
Grid-Number 1 Voltage, approximate					
I _b = 10 Microamperes	-4.1	-4.9	-5.8	---	Volts

NOTES

- * The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.
- † Heater current of a bogey tube at E_f = 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	95	Volts
Ef = 6.3 volts, Eb = 95 volts, Ec1 = 0 volts, G3 tied to cathode, cathode tied through variable Rk to -150 volts, Rk varied for Ik = 3.2 ma, Ec2 varied for zero grid-number 1 current.		
Noise and Microphonics	500	Millivolts, RMS, Maximum
Ef = 6.3 volts, Ebb = 300 volts, Ec3 = 0 volts, Ecc2 = 300 volts, Ec1 = 0 volts, R _L = 0.22 meg, Rg2 = 0.5 meg, Rk = 1000 ohms (bypassed).		

DEGRADATION RATE TESTS

Cathode-Interface Impedance		
1000 Hour Life-Test End Point, maximum.	5	Ohms

