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¶

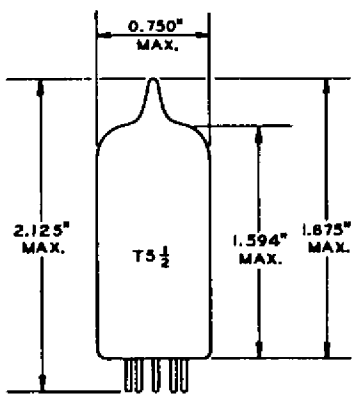
Grid-Number 1 to Plate: g1 to (p + g2 + g3 + i.s.).	2.5	pf
Input: g1 to (h + k).	3.6	pf
Output: (p + g2 + g3 + i.s.) to (h + k)	1.1	pf

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

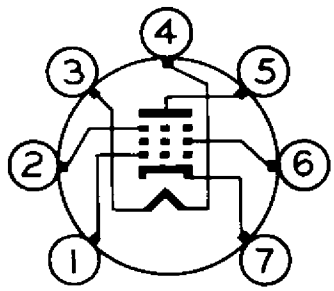


EIA 5-2

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

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 A_1 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					
Ib = 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 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 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.	95	Volts
Noise and Microphonics . . . . . 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).	500	Millivolts, RMS, Maximum

DEGRADATION RATE TESTS

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

SCREEN RATING CHART