



Hot-Cathode Gas-Filled Thyratron

Code: 3D22 (CV285I) ←

The 3D22 is a tetrode type inert-gas-filled thyratron with a negative control characteristic for use in industrial and other control devices. It is directly equivalent to the U.S.A. 3D22 type.

CATHODE

Indirectly-heated, oxide-coated

Heater voltage	6.3	V
Nominal current	2.6	A
Cathode heating time, minimum	30	sec

DIRECT INTERELECTRODE CAPACITANCES

Grid to anode	0.1	pF
Input	7	pF
Output	3.6	pF

CHARACTERISTICS

Ionization time, approx.	$\left\{ \begin{array}{l} \text{Measured at} \\ V_a 100 \text{ V} : V_{g1} + 50 \text{ V } \dagger \\ I_a \text{ pk } 8.0 \text{ A} \end{array} \right\}$	0.5	μsec
Deionization time, approx.	$\left\{ \begin{array}{l} \text{Measured at} \\ V_a 125 \text{ V} : V_{g1} - 200 \text{ V} \\ R_{g1} 1000 \Omega : I_a 0.8 \text{ A} \end{array} \right\}$	150	μsec
	$\left\{ \begin{array}{l} \text{Measured at} \\ V_a 125 \text{ V} : V_{g1} - 14.8 \text{ V} \\ R_{g1} 1000 \Omega : I_a 0.8 \text{ A} \end{array} \right\}$	400	μsec
Critical grid current, max.	$\left\{ \begin{array}{l} \text{With } V_a 460 \text{ V r.m.s.} \\ I_a 0.8 \text{ A} \end{array} \right\}$	0.8	μA
Voltage drop, approximately		10	V
Control grid control ratio, approx. ($R_{g1} = 0.1 \text{ M}\Omega$)		150	
Screen grid control ratio, approx. ($R_{g2} = 0.1 \text{ M}\Omega$)		650	

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MECHANICAL DATA

Maximum overall length	117.5	mm
Maximum seated height	101.6	mm
Maximum diameter	60	mm
Base	B7D	
Net weight	165	g
Mounting position		Unrestricted←

MAXIMUM RATINGS

Maximum peak forward voltage	650	V
Maximum peak inverse voltage	1 500	V
Maximum peak screen voltage before conduction	-100	V
††Maximum average screen grid voltage during conduction	-10	V
Maximum peak control grid voltage before conduction	-200	V
††Maximum average control grid voltage during conduction	-10	V
Maximum peak cathode current	8	A
††Maximum average cathode current	0.8	A
Maximum fault cathode current	30	A
Maximum duration of fault cathode current	0.1	sec
††Maximum average screen current	0.1	A
††Maximum average control grid current	0.05	A
Maximum control grid circuit resistance	2	MΩ
Maximum peak V_{hk} , heater negative to cathode	100	V
Maximum peak V_{hk} , heater positive to cathode	25	V
Ambient temperature range	-75 to +90	°C

Note.—Sufficient resistance, including the valve load, must be used to prevent the cathode current exceeding the valve ratings.

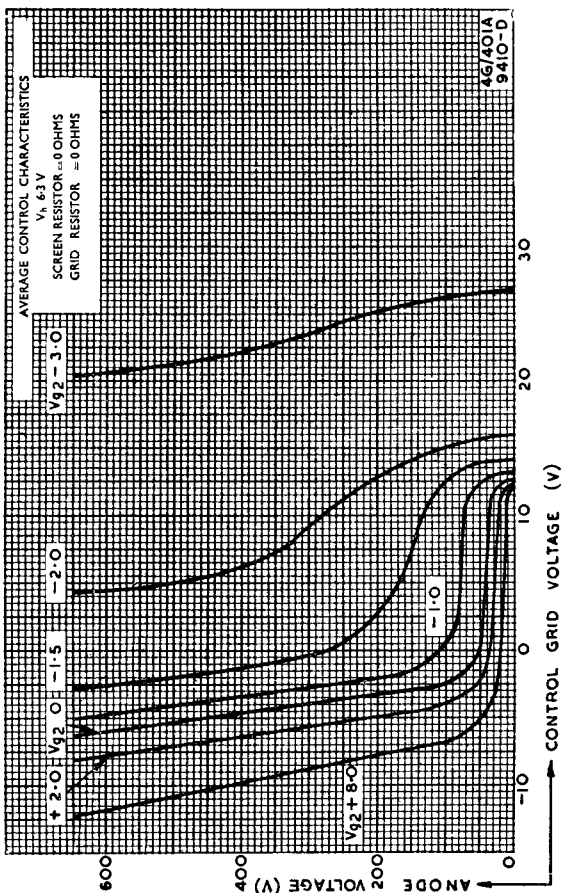
† Square pulse voltage.

†† Averaged over any interval of 30 seconds.



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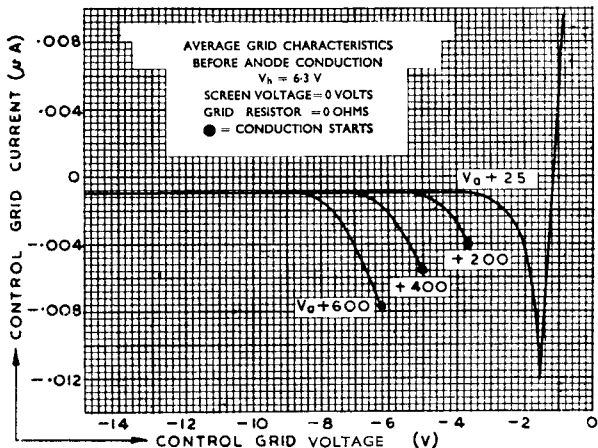
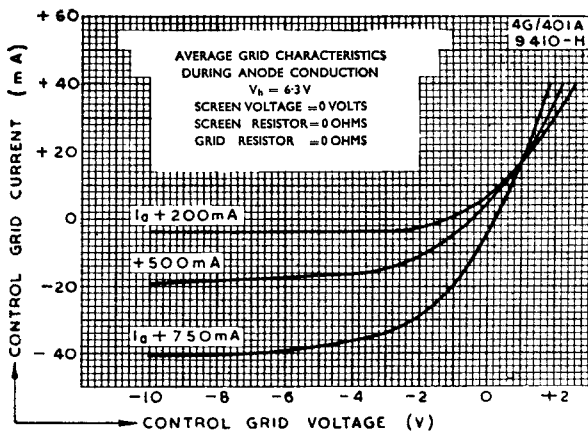
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OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

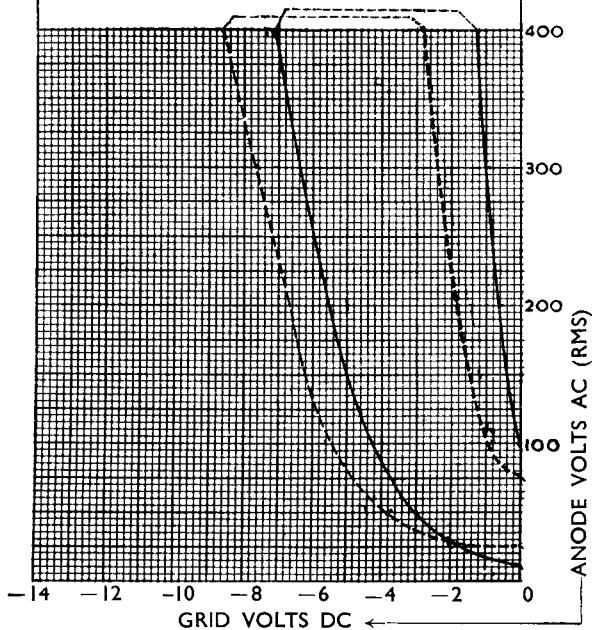
Grid No. 2 Voltage = 0

Ranges shown are for two values of grid resistor, 0.1 and 2.0 megohms.

Spread takes into consideration differences between valves and subsequent changes during life for heater voltage range of 5.7 to 6.9 Volts and ambient temperature range of -40 to $+90^{\circ}\text{C}$.

Range for 2 M Ω

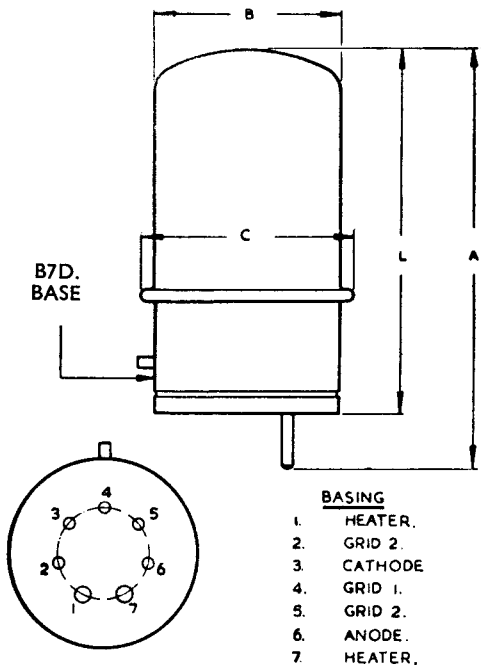
Range for 0.1 M Ω



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DIM.	MILLIMETERS	INCHES
A	117.5 MAX	4 ⁵ / ₈ MAX
B	52.4 MAX	2 ¹ / ₁₆ MAX
C	60 MAX	2 ³ / ₈ MAX
L	101.6 MAX.	4 MAX.

NOTE - BASIC FIGURES ARE INCHES.