



Hot-Cathode Gas-Filled Miniature Thyatron

Code: 2D21 (CV797) ←

The 2D21 is a miniature tetrode-type, inert-gas-filled thyatron. It is directly equivalent to the U.S.A. 2D21 type.

CATHODE

Indirectly-heated, oxide-coated

Heater voltage	6.3	V
Nominal current	0.6	A
Cathode heating time, minimum	10	sec

DIRECT INTERELECTRODE CAPACITANCES

Grid to anode	0.026	pF
Input	2.4	pF
Output	1.6	pF

CHARACTERISTICS

Ionization time, approx.	$\left\{ \begin{array}{l} \text{Measured at} \\ V_a 100 \text{ V} : V_{g1} + 50 \text{ V} \dagger \\ I_a \text{ pk } 0.5 \text{ A} \end{array} \right\}$	0.5	μsec
Deionization time, approx.	$\left\{ \begin{array}{l} \text{Measured at} \\ V_a 125 \text{ V} : V_{g1} - 100 \text{ V} \\ R_{g1} 1000 \Omega : I_a 0.1 \text{ A} \end{array} \right\}$	35	μsec
	$\left\{ \begin{array}{l} \text{Measured at} \\ V_a 125 \text{ V} : V_{g1} - 10 \text{ V} \\ R_{g1} 1000 \Omega : I_a 0.1 \text{ A} \end{array} \right\}$	75	μsec
Critical grid current, max.	$\left\{ \begin{array}{l} \text{With } V_a 460 \text{ V r.m.s.} \\ I_a \text{ av } 0.1 \text{ A} \end{array} \right\}$	0.5	μA
Voltage drop, approx.	8	V	
Control grid			
Control Ratio, approx. ($R_{g1} = 0\Omega$)	250		
Screen grid			
Control Ratio, approx. ($R_{g2} = 0\Omega$)	1000		

MECHANICAL DATA

Maximum overall length	54	mm
Maximum seated height	47.6	mm
Maximum diameter	19.1	mm
Base	B7G	
Net weight	8	g
Mounting position	Unrestricted	

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MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Maximum Ratings

Maximum peak forward anode voltage	650	V
Maximum peak inverse voltage	1 300	V
Maximum peak screen grid voltage before conduction	—100	V
††Maximum average screen grid voltage during conduction	—10	V
Maximum peak control grid voltage before conduction	—100	V
††Maximum average control grid voltage during conduction	—10	V
Maximum peak cathode current	0.5	A
††Maximum average cathode current	0.1	A
Maximum fault current	10	A
Maximum duration of fault current	0.1	sec
††Maximum average screen current	0.01	A
††Maximum average control grid current	0.01	A
Maximum grid circuit resistance	10	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

Typical Operating Conditions

Relay Service

Anode voltage (r.m.s.)	117	400	V
Direct screen grid voltage	0	0	V
*Control grid voltage (r.m.s.)	5	—	V
Direct control grid voltage	—	—6	V
Peak control grid signal voltage	5	6	V
Control grid circuit resistance	1	1	MΩ
**Anode circuit resistance	1.2	2	kΩ

† Square pulse voltage.

†† Averaged over any interval of 30 seconds.

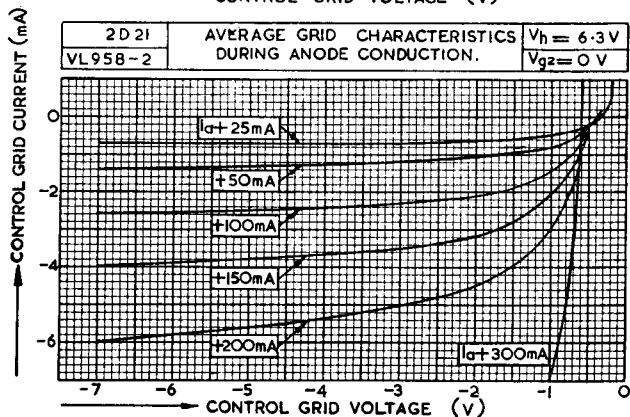
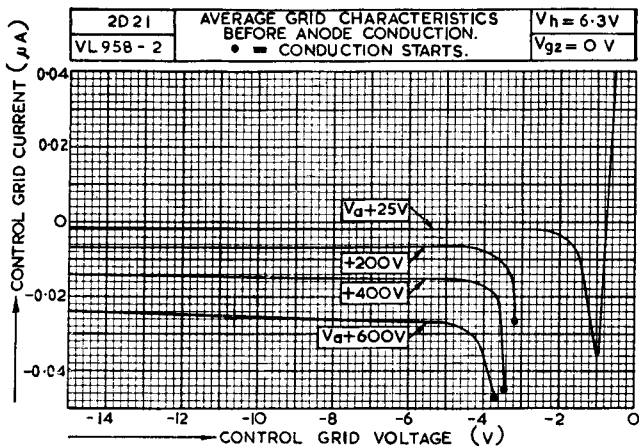
* Approximately 180° out of phase with respect to the anode voltage.

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



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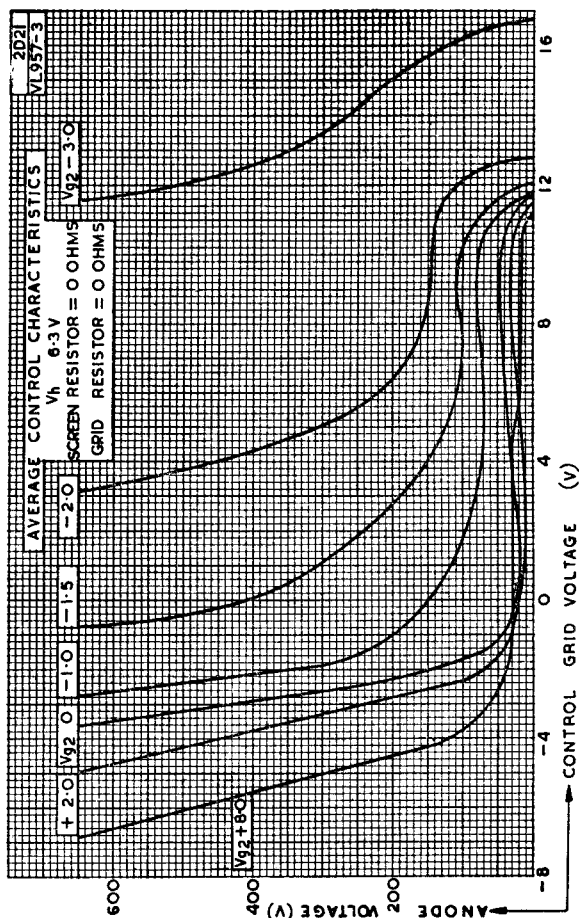
Code: 2D21 (CV797) ←



Hot-Cathode Gas-Filled Miniature Thyratron



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OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

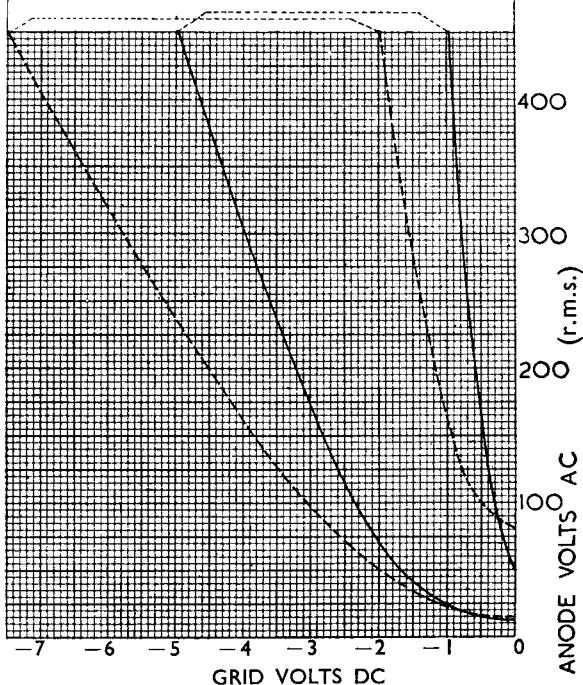
Grid No. 2 Voltage = 0

Ranges shown are for two values of grid resistor, 0.1 and 10.0 Megohms.

Spread takes into consideration differences between valves and subsequent changes during life for heater voltage range of 5.7 to 6.9 Volts.

Range for 10 MΩ

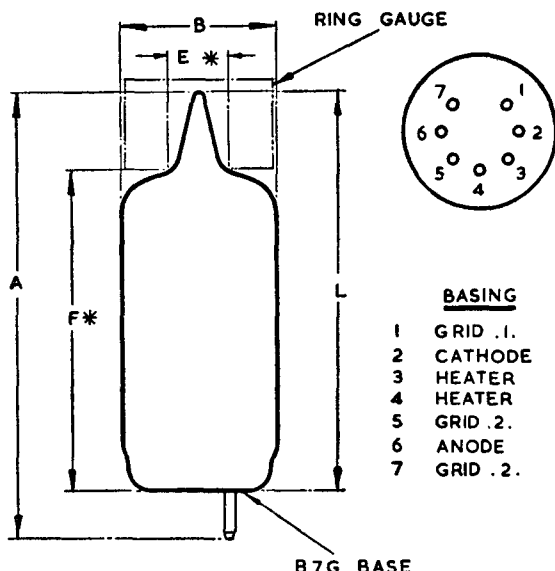
Range for 0.1 MΩ



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B7G BASE

* DENOTES:- MEASURED FROM BASE SEAT TO BULB TOP LINE, AS DETERMINED BY RING GAUGE OF 'E' INT. DIA.

DIM	MILLIMETRES	INCHES
A	54.0 MAX:	2 ¹ / ₈ MAX:
B	19.1 MAX:	³ / ₄ MAX:
* F	38.1 ± 2.4	1 ¹ / ₂ ± ³ / ₃₂
L	47.6 MAX:	1 ⁷ / ₈ MAX:
* E	11.1	⁷ / ₁₆

NOTE:- BASIC FIGURES ARE INCHES