

MINISTRY OF SUPPLY--D.L.R.D.(A)/R.A.E.

Specification MOSA/CV.797 Issue 4, Dated 29.5.1953 To be read in conjunction with K.1001 excluding clauses: 5.2; 5.8	<u>SECURITY</u>	
	<u>Specification</u>	<u>Valve</u>
	UNCLASSIFIED	UNCLASSIFIED

—————> Indicates a change

TYPE OF VALVE - Gas-filled Tetrode CATHODE - Indirectly Heated ENVELOPE - Glass, unmetallised PROTOTYPE - ZD21		<u>MARKING</u>		
		See K.1001/4		
		<u>BASE</u>		
		B7G		
<u>RATINGS</u>		<u>CONNECTIONS</u>		
		Note	Pin	Electrode
Heater Voltage	(V) 6.3		1	Control Grid
Heater Current	(A) 0.6		2	Cathode
Max. Peak Anode Voltage	(V) 650		3	Heater
Max. Working P.I.V.	(kV) 1.3		4	Heater
Max. Screen Grid Voltage	(V) -100		5	Auxiliary Grid
Max. Control Grid Voltage	(V) -100		6	Anode
Max. Peak Cathode Current	(mA) 500		7	Auxiliary Grid
Max. Mean Cathode current	(mA) 100			
Max. Surge Cathode Current	(A) 10	3		
Max. Average Control Grid Current	(mA) 10			
Max. Average Screen Grid Current	(mA) 10			
Max. Heater/Cathode Voltage	(V) 100	2		
Max. Control Grid Circuit Resistance	(MΩ) 10			
Ambient Temperature Range	(°C) -75 to +90			
		<u>DIMENSIONS</u>		
		See K.1001/A1/D4.		
		Dimension	Min.	Max.
		A mm	-	54.01
		B mm	-	19.05

NOTES

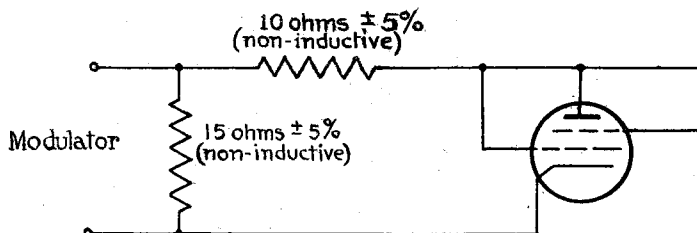
1. Minimum cathode heating time = 10 seconds.
2. Heater negative with respect to cathode.
3. For 0.1 second max. duration.

To be performed in addition to those applicable in K.1001

	Test Conditions				Test	Limits		No. Tested	Note
	Vh	Vht	Vg2	Vg1		Min.	Max.		
a	6.3	0	0	0	Ih (A)	0.54	0.66	100%	
b	6.3	460 A.C. 50 c/s R.M.S.	0	Sufficiently negative to prevent conduction	Vg1 (V)	-2.9	-4.5	100%	1 and 5
c	6.3	460 A.C. 50 c/s R.M.S.	0	As in test (b)	Vg1 (V)	-	-7.0	100%	2,5
d	6.3	D.C. Voltage increa- sed until Valve conducts	0		Va (V)	-	30	100%	3,5
e	6.3	180	-	-	Voltage drop across valve (V)	-	76	100%	4,6

NOTES

1. Rg1 = 0.1 Megohms; R load = 3 kilohms; Vg1 increased in positive direction until valve conducts.
2. Rg1 = 10 Megohms; R load = 3 kilohms; Vg1 as in test "b".
3. Rg1 = 0.1 Megohms; R load = 1 kilohm.
4. Anode, g1, and g2 strapped.
5. Pins 5 and 7 connected to Pin 2.
6. A pulse of length = $5 + 0.25 \mu\text{sec.}$, and repetition rate of $100 \pm 5\%$ per sec., shall be applied as indicated in the test circuit shown below. Time of rise of pulse to within 85% of average amplitude = $0.5 \mu\text{sec.}$ (max.); time of fall from 85% of average amplitude to zero = $1.0 \mu\text{sec.}$



DATA SHEET

Valve Electronic Type CV 797

Maximum Ratings

Peak Anode Voltage - Forward	650	Volts
" " " - Inverse	1,300	Volts
Grid 2 Voltage		
Max. peak before anode conduction	-100	Volts
⊗ Max. average during anode conduction	-10	Volts
⊗ Max. average G2 Current	10.0	mA
Grid 1 Voltage		
Max. peak before anode conduction	-100	Volts
⊗ Max. average during anode conduction	-10	Volts
⊗ Max. average G1 current	10.0	mA
Cathode current		
Max. peak value	0.5	Amps
⊗ Max. average value	100	mA
Max. Surge for 0.1 sec.	10	Amps
Peak H/K voltage - Heater -ve	100	Volts
Peak H/K voltage - Heater +ve	25	Volts
Max. Grid (G1) Resistance	10.0	Megohms
Ambient Temperature Range	-75 to +90	°C

⊗ These are averaged over any 30 sec. period.

Typical Operating Conditions - Relay Service

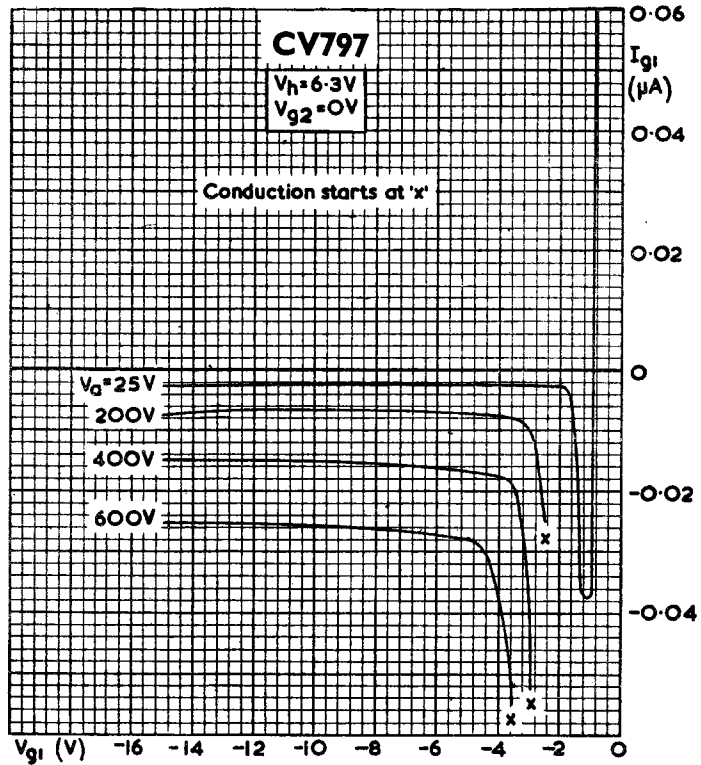
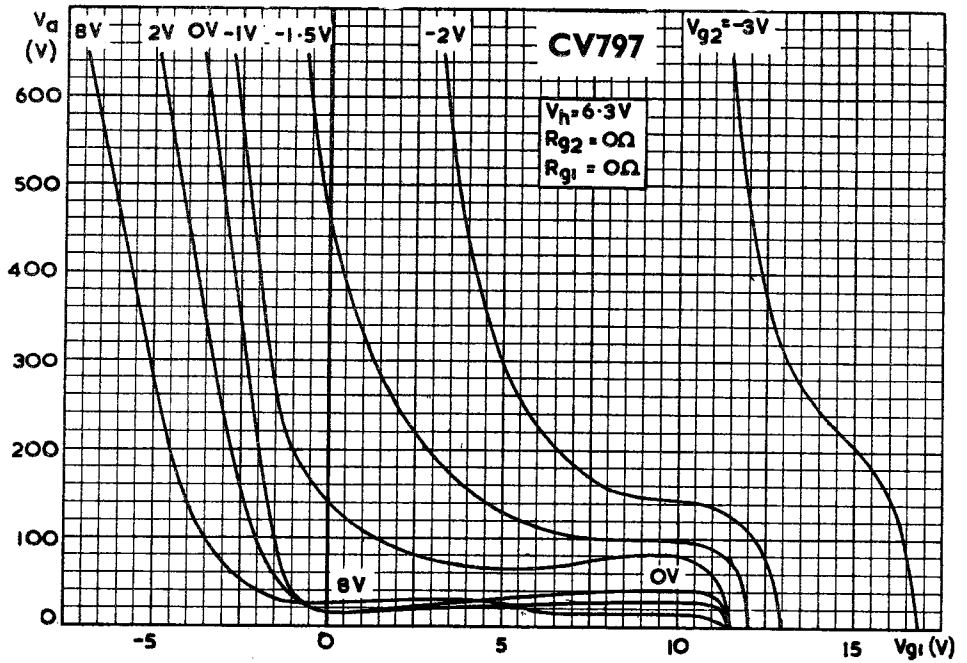
Anode Voltage (R.M.S.)	117	400	Volts
Grid 2 Voltage	0	0	Volts
* R.M.S. Grid 1 Bias Voltage	5	-	Volts
D.C. Grid 1 Bias Voltage	-	-6	Volts
Grid 1 Signal Voltage (Peak)	5	6.0	Volts
Grid 1 Circuit Resistance	1.0	1.0	Megohm
Anode Circuit Resistance	1,200	2,000	Ohms

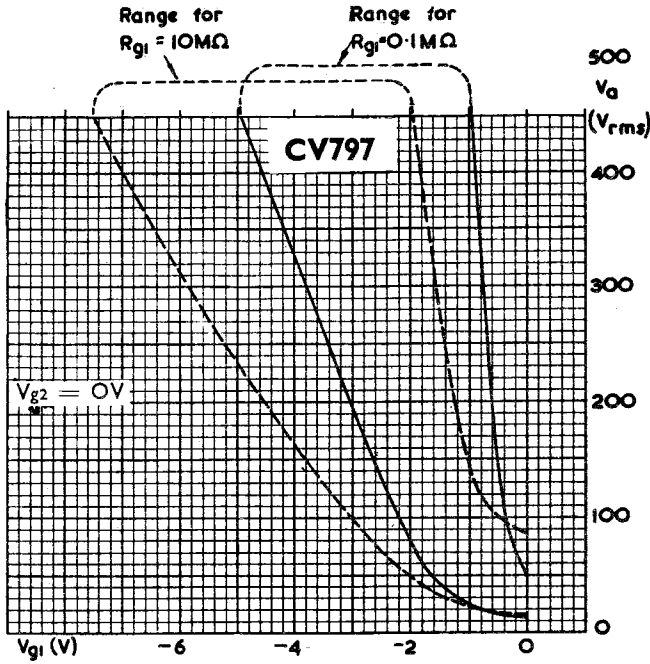
* This voltage must be approx. 180° out of phase with the Anode Voltage

Typical Characteristics

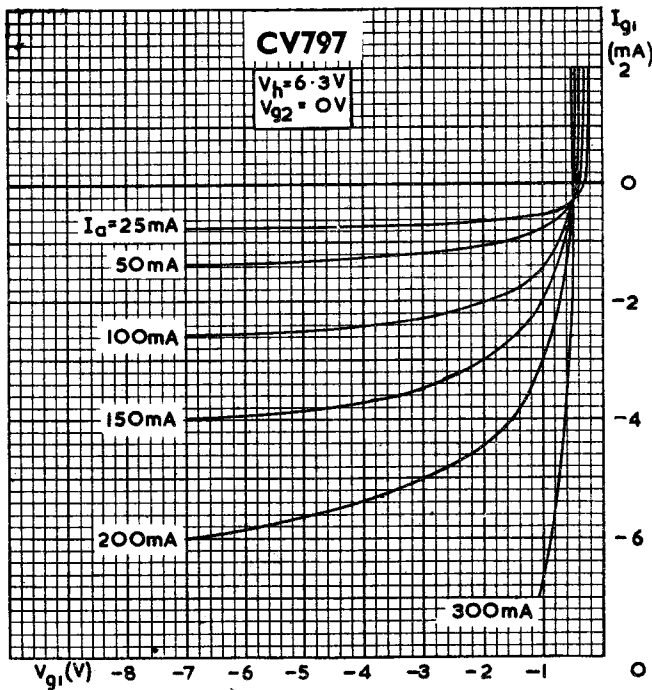
Ionisation time (at $V_a = 100$, $V_{g1} = 50$, I_a peak pulse = 0.5A)	0.5	μ secs
Deionisation time (at $V_a = 125$, $V_{g1} = -100$, $R_{g1} = 1,000 \Omega$, $I_a = 100$ mA)	35	μ secs
Deionisation time (at $V_a = 125$, $V_{g1} = -10$, $R_{g1} = 1,000 \Omega$, $I_a = 100$ mA)	75	μ secs
Max. critical grid current (at $V_a = 460$ (R.M.S.), $I_a = 100$ mA (average))	0.5	μ A
Anode/Cathode voltage drop	8.0	Volts
Grid 1 Control Ratio (with $V_{g2} = 0$, $R_{g1} = 0$)	250	-
Grid 2 Control Ratio (with $V_{g1} = 0$, $R_{g1} = 0$, $R_{g2} = 0$)	1,000	-

Mounting position - Any





OPERATING RANGE OF CRITICAL GRID VOLTAGE



AVERAGE GRID 1 CHARACTERISTICS

During Anode Conduction