ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

VALVE ELECTRONIC **CV2797.**

Specification AD/CV2797 Issue No. 2 dated 24th May, 1957 To be read in conjunction with K1001 B.S.448 and B.S.1409	SECURITY Specification: Unclassified Valve: Unclassified

⟶ Indicates a change

TYPE OF VALVE:- R.F. Power, Double Beam-Tetrode.
CATHODE:- Indirectly heated.
ENVELOPE:- Glass, unmetallised.
PROTOTYPE:- QQV06 - 40 robust version

MARKING

See K1001/4

RATINGS

			Note
Vh	(V)	6.3	B
Ih	(A)	1.8	
Va (max)	(V)	600	
Vg^2 (max)	(V)	250	A
Vg^1 (max)	(V)	-175	A
Pa (max)	(W)	20	A,D
Pg^2 (max)	(W)	3.5	A,D
Pg^1 (max)	(W)	1.0	A,D
Vk,h (max)	(V)	100	A
Ik (mean) max	(mA)	120	A,D
Ik (pk) max	(mA)	700	A,D
Rg^1,k (max) (fixed bias)	(kΩ)	50	
Rg^1,k (max) (auto bias)	(kΩ)	30	
T anode pins (max)	(°C)	200	A,C
T base pins (max)	(°C)	180	A,C

BASE

B.S.448/B7A

CONNECTIONS

Pin	Electrode
1	h
2	g_1'
3	g_2
4	k
5	h centre tap
6	g_1'
7	h
T.C.1	a'
T.C.2	a''

TOP CAPS

See drawing on Page 4

CAPACITANCES (Nominal)

C in	(pF)	10.5	D
C out	(pF)	3.2	D
$C_{g_1' g_1''} + \frac{1}{2} C_{g_1 e}$	(pF)	6.6	
$C_{a' a''} + \frac{1}{2} C_{ae}$	(pF)	2.0	

DIMENSIONS

See drawing on Page 4

NOTES

A. Absolute Maximum Value.
B. Centre tapped 12.6V and 0.9A heater.
C. Temperature measured at the junction of glass and pins. The valve may be operated at full ratings up to 150 Mc/s without cooling other than by normal radiation and convection. Above this frequency or in poorly ventilated quarters it is necessary to direct a flow of air at about 5 cu. ft. per min. on to the top of the bulb to keep the temperature within the specified limits.
D. Each section.

Z 15294 P

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TESTS

To be performed in addition to those applicable in K1001

	Test Conditions					Test	Limits		No. Tested	Note
	Vh (V)	Va (V)	Vg2 (V)	Vg1 (V)	Ia (mA)		Min.	Max.		
a						CAPACITANCES (pF) $Ca'g_1' - Ca''g_1'$ $Ca''g_1' - Ca'g_1''$ $Ca'e$ $Ca''e$ $Ca'e - Ca''e$ $Cg_1'e$ $Cg_1''e$	 - - 2.8 2.8 - 9.5 9.5	 0.015 0.015 3.8 3.8 0.5 12.0 12.0	6 per week	
b	6.3	0	0	0	0	I_h (A)	1.6	2.0	100%	
c	6.3	600	250	-24	~~40~~	Ia (mA)	18	52	100%	1
d	6.3	600	250	Adjust	40	Ig2 (mA)	-	6	100%	1
e	6.3	600	250	-do-	40	Reverse Ig_1 (μA)	-	6	100%	1,2
f	6.3	600	~~250~~ 200	-do-	40	Change in Vg_1 (V)	5.2	7.5	100% or S	1,5
g	6.3	600	250	-40	~~5~~	Ia (mA)	-	5	100%	1
h	6.3	225	225	225	-	Emission (A)	1.8	-	100%	3,4
j	6.3	400	250	-60	100 each section	Power output in load at 300 Mc/s (W) Total Ig1 (mA) Total Ig2 (mA)	35 2 0	- 8 18	50%	6
k	6.3	250 through 2k Ω	250	Adjust	10	VIBRATION Peak "Noise" voltage (mV) P/P Vibration frequency = 50 c/s Amplitude = 0.02 inch P/P	-	800	5 per week	1,7
l	0	0	0	0	0	VIBRATION Vibration applied for 15 mins. Vibration frequency = 50 c/s Amplitude = 0.02 inch P/P			5 per week	8,10
m	0	0	0	0	0	SHOCK Angle of Beam 30°			5 per week	9,10

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TESTS

NOTES

1. Test each section separately with control grid of other section connected to - 100V. In tests (b) to (k) the two cathode heaters are connected in parallel.

2. Read after 3 minutes operation.

3. The two sections are connected in parallel.

4. Method 1 of Appendix V of K1001.

5. The screen-grid voltage is changed from 250V to 200V and the change required in control-grid voltage to maintain the anode current at 40 mA is measured.

6. This test limit assumes a circuit-to-load transfer efficiency of about 80%.

7. A 2000 ohms resistor is included in the anode circuit. The peak voltage developed across this resistor by vibration of the valve electrodes, i.e. the peak "noise" voltage, is measured. The vibration (sinusoidal) is applied to the valve:-

   (a) Along its major axis.

   (b) Transversely in the planes of the anodes.

   (c) Transversely perpendicular to the planes of the anodes.

8. The vibration (sinusoidal) is applied to the valve perpendicular to the planes of the anodes.

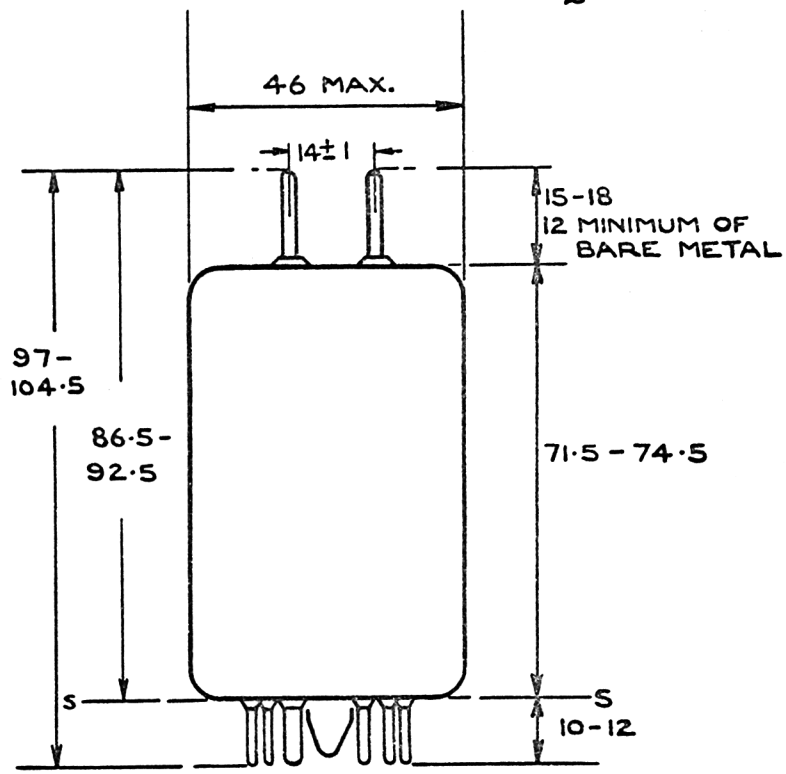
9. Shock Test ←

   Each valve shall be suspended in a vertical position in the shock test equipment shown in the appendix to this specification. No electrical potentials shall be applied to the valve during this test. The hammer arm shall be released from the specified angle and allowed to strike the glass envelope one blow at an angle of 45° to the plane of the press seal. The hammer shall strike the valve in such position that free pendulum motion is obtained without excessive wobble. This test shall be performed three times. Subsequent to this test, the valve shall comply with all applicable mechanical requirements and meet the limits of all tests specified on the valve specification sheet.

   N.B. A copy of the appendix giving details of the bump test equipment to be used for this test can be obtained on application to the specification authorities.

10. Tests (a) and (j) are to be repeated after tests (l) and (m)

POSITION OF ANODE PINS IN SPACE. THEY SHALL BE WITHIN TWO CIRCLES 6mm DIA., WHOSE CENTRES ARE EACH 7mm EITHER SIDE OF THE ℄ OF THE VALVE BASE ON A PLANE 90° ± 5' TO THE PLANE THROUGH THE CATHODE PIN AND ℄ OF THE VALVE.



NOTES.

1. SEALING-OFF PIP TO BE SHORTER THAN PIN LENGTH.
2. ANY GLASS ON THE PINS SHALL NOT EXTEND MORE THAN 3 mm FROM THE SOLE SS.
3. DIAMETER OF PINS 1,2,3,5,6 & 7 TO BE 1·33 TO 1·52 mm.
4. DIAMETER OF PIN 4 TO BE 3·10 TO 3·25.
5. DIAMETER OF ANODE PINS TO BE 2±·05mm.
6. THE PINS SHALL BE ACCEPTED BY THE PIN POSITION GAUGE IN B.S. 448, SECTION B7A TO WITHIN 1mm. OF THE SOLE SS.

ALL DIMENSIONS ARE IN MILLIMETRES.