MINISTRY OF AVIATION - DLRD/SRDE VALVE ELECTRONIC **CV6122**

Specification - MOA/CV6122
Issue 1 dated 18th March 1963
To be read in conjunction with K1001, BS448 and BS1409.

SECURITY	
Specification	Valve
Unclassified	Unclassified

TYPE OF VALVE - Transmitting Tetrode
CATHODE - Thoriated Tungsten - Directly Heated
ENVELOPE - Glass - Unmetallised
PROTOTYPE - QY3-65

MARKING
See K1001/4

BASE
BS 448/B7A
See also drawing on Page 5

RATINGS

			NOTE
Filament Voltage	(V)	6.0	
Filament Current	(A)	3.5	
Max. Anode Voltage	(kV)	3.0	A
Max. Anode Current	(mA)	150	
Max. Screen Voltage	(V)	400	A
Max. Anode Dissipation	(W)	65	A
Max. Grid Dissipation	(W)	5.0	A
Max. Screen Dissipation	(W)	10	A
Mutual Conductance	(mA/V)	4.0	B
Inner μ (g1 - g2)		6.0	
Max. frequency for full rating	(Mc/s)	150	
Max. Bulb & Seal Temperature	(°C)	250	C

CONNECTIONS

PIN	ELECTRODE
1	Filament
2	Screen Grid
3	Pin Omitted
4	Control Grid
5	Pin Omitted
6	Screen Grid
7	Filament
T.C.	Anode

TOP CAP
BS.448/CT2

CAPACITANCES (pF)

Cag (max)	0.12
Cge (nom)	7.15
Cae (nom)	2.25

DIMENSIONS
See drawing on Page 5

MOUNTING POSITION
Upright or inverted

NOTES

A. Absolute maximum values.

B. Ia = 125 mA, Va = 500 V, Vg2 = 250 V.

C. The valve may be operated at full rating up to 50 Mc/s without cooling other than by normal radiation and convection. Above this frequency, or in poorly ventilated quarters, or with high ambient temperatures, it is necessary to keep the temperature within specified limits, e.g. by directing a flow of air at about 5 cu.ft./min on to the bulb.

D. Joint Services Catalogue Number: 5960/99/037/3328

TESTS

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

	Test Conditions					Test	AQL %	Insp. Level	Limits Min	Limits Max	Unit
a	See Note 1.					Holding Period		100%			
b	See K.1001/AIII Links to HP: 4; 4; 1,2,6&7 Links to LP: TC; 1,2,6&7; TC Links to E: 1,2,6&7; TC; 4 See Note 2.					Capacitances Cag Cge Cae	 6.5 6.5	 QA IC IC	 - 6.0 1.9	 0.12 8.3 2.6	 pF pF pF
c	No voltages. See Note 3.					Vibration	4.0	I			
d	No voltages. See Note 4.					Bump 1. Hammer angle = 20° 2. Hammer angle = 15°	6.5	IC			
	Vf (V)	Va (V)	Vg2 (V)	Vg1 (V)	Ia (mA)						
e	6.0	0	0	0	0	Filament Current	1.5	II	3.2	3.8	A
f	6.0	1000	400	Adjust	65	Reverse Grid Current		100%	-	10	µA
g	6.0	1000	400	Adjust	65	Screen Current		100%	-1.0	+1.0	mA
h	7.0	See Note 5.				Primary Control Grid Emission		100%	-	250	µA
j	7.0	See Note 6.				Primary Screen Grid Emission		100%	-	250	µA
k	6.0	2500	2500	2500		Peak Emission		100%	2.0	-	A
m	6.0	1000	400	Adjust	65	Negative Grid Voltage		100%	38	58	V
n	6.0	-	250	Adjust	-	Inner µ (g1 - g2) Note 7.	6.5	IC	5.0	7.0	
p	6.0	1500	250	Adjust	150	Power oscillation in load. Note 8.		QA	125	-	W

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Test Conditions						Test	AQL %	Insp. Level	Limits		Unit
	Vf (V)	Va (V)	Vg2 (V)	Vg1 (V)	Ia (mA)				Min	Max	
q	6.0	1500	250	Adjust	150	Life Note 8.		Not less than one per week	500	-	hrs
						Life Test End Point					
						1. Peak Emission			1.6	-	A
						2. Primary Control Grid Emission			-	250	μA
						3. Primary Screen Grid Emission			-	250	μA

NOTES

1. Valves will be held without operation for a minimum period of 72 hours after the completion of all manufacturing processes.

2. Measured without shields.

3. Each valve shall be rigidly mounted on a table vibrating with simple harmonic motion at a frequency of 25 ± 2 cps with an amplitude of 0.040 ± .0025 inch (total excursion = 0.08 ± .005 inch), for not less than one minute in each of two mutually perpendicular planes.

4. The Bump Test equipment shall be in accordance with Drawing 123-JAN, or another approved design. The valve shall be mounted in a vertical position and the hammer arm released from an angle of 20° and allowed to strike the glass envelope one blow at an angle of 45° to the plane of the press seal. The test shall be performed three times. The hammer shall strike the valve in such a position that free pendulum motion is obtained without excessive wobble. The valve shall meet the specification after this test.

   In the second part of the test, the hammer angle shall be 15° and the valves shall be subjected to a similar test except that suitable indicating potentials shall be applied to the electrodes through a short-indicating device. There shall be no shorts.

5. With anode and screen grid 'floating', the 50 c/s, AC voltage applied to the control grid through suitable rectifiers, shall be adjusted to heat the grid during the positive half-cycles and give a mean Ig1 = 90 mA DC. The grid emission shall be measured during the negative half-cycles. Minimum duration of test = 15 secs.

6. With anode 'floating', the 50 c/s, AC voltage applied to the screen grid through suitable rectifiers, shall be adjusted to heat the grid during the positive half-cycles and give a mean Ig2 = 50 mA DC. The grid emission shall be measured during the negative half-cycles. Minimum duration of test = 15 secs.

7. With anode 'floating'; DC grid voltage adjusted to make Ig2 = 40 mA.

8. Frequency = 60 Mc/s, Power dissipated in anode = 65 W.

DRAWING NOTES

W. The axis YY' is defined as the axis of the base pin gauge described in Note X.

NOTES (Cont'd)

X. The tube base should be capable of entering to a distance of 0.375 in. a flat-plate gauge having four holes 0.080 in. ± 0.0005 and one hole 0.145 in. ± 0.0005 all arranged on a 1.000 in. ± 0.0005 circle at specified angles on the outline. A 0.500 in. ± 0.010 hole at the centre of the pin circle is also required. The axis YY' is defined by the centre of this hole.

Y. Dimension C is measured by inserting the tube in the base pin gauge described in Note X and then lowering a gauge plate having a hole 2.063 ins. + 0.003 -0.000 in diameter until the plate rests on the seal flange at position XX'. The centre-line of the hole shall be coincident with the axis at YY' within 0.150 in. with the gauge plate parallel to the top surface of the base pin gauge, the dimension C is measured between the bottom surface of the gauge plate and the top surface of the base pin gauge.

Z. Minimum diameter of the tube-seal flange will be such that a ring gauge having I.D. of 2.125 in. minimum to 2.128 in. maximum and a thickness of 0.125 in. ± 0.010 will not pass the flange when tried at any angle.

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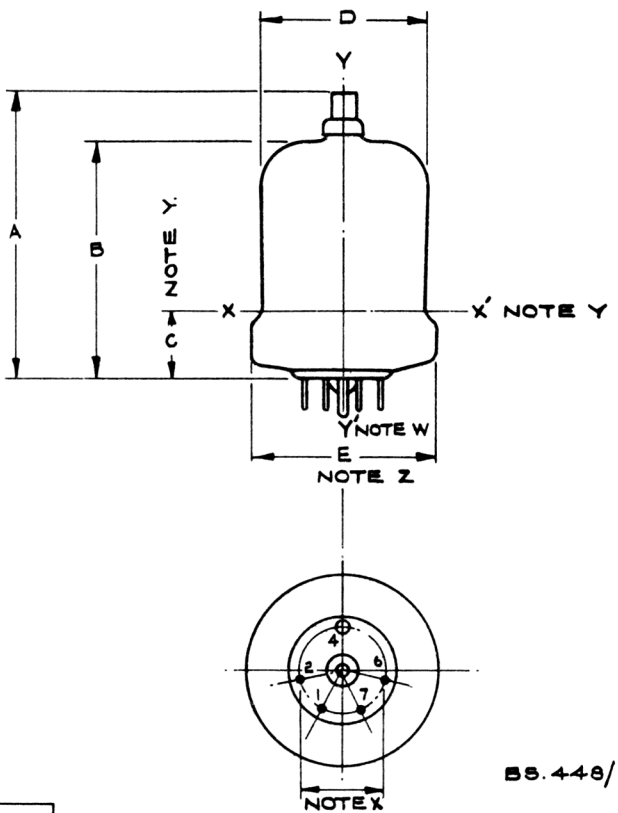
DIMENSIONAL DRAWING.



BS.448/57A

Ref	DIMENSION	
	MIN.	MAX.
A	3·562	3·813
B	2·937	3·313
C	0·844	1·219
D	1·95	2·06
E		2·375

ALL DIMENSIONS IN INCHES.