VALVE ELECTRONIC

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

ASWE

C.V.4060.

Specification AD/CV4060 Issue No. 2 dated 12.10.56. 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:- Reliable Beam Tetrode, (for series regulator applications)

CATHODE:- Indirectly heated.

ENVELOPE: Glass

PROTOTYPE:- VX6114

MARKING
See K1001/4

BASE

B.S.448/B8 - 0
See K1001/1 AIV/D2
M Dimension (vii) applies

RATINGS

All limiting values are absolute

			Note
Heater Voltage	(V)	6.3	
Heater Current	(A)	1.6	
→ Max. Peak Anode Voltage	(V)	1500	A
Max. Anode Voltage	(V)	800	
Max. Screen Voltage	(V)	300	
Max. Control Grid Voltage	(V)	100	
Max. Anode Dissipation	(W)	28	
Max. Screen Dissipation	(W)	5	
Max. Heater-Cathode Voltage -			
(a) Cathode positive	(V)	350	
(b) Cathode negative	(V)	150	
Max. Cathode Current	(mA)	300	
Max. Resistance g^1 to Cathode -			
(a) Fixed bias	(k ohms)	100	
(b) Cathode follower	(M ohms)	1	
→ Max. Acceleration (continuous operation)	(g)	2.0	
Max. Shock (Short duration)	(g)	500	
Anode Current	(mA)	200	C
Screen Current	(mA)	12	C
Mutual Conductance	(mA/V)	12.5	C
Inner/u		5.2	

CONNECTIONS

Pin	Electrode
1	IC
2	h
3	a
4	g^2
5	g^1
6	bp
7	h
8	k

DIMENSIONS

See drawing on page 4.

CAPACITANCES (pF)

Ca, g1	1.8
C in	19.5
C out	16.5

MOUNTING POSITION

Any

NOTES

A. This voltage may be applied in pulses not exceeding 200 uS, the duty cycle being less than .04.
B. Pin 6 must be connected to cathode.
C. Measured at Va=Vg2= 150V, Vg1= -8.5

C.V.4060.

TESTS

To be performed in addition to those applicable in K1001, and in the specified order unless otherwise agreed with the Inspecting Authority.

Test conditions unless otherwise stated.

Vh (V)	Va (V)	Vg^2 (V)	Ia (mA)
6.3	150	150	200

K1001	Test	Test Condition	AQL %	Insp. Level	Symbol	Limits Min.	Limits Max.	Units
7.1	Glass strain	No voltages	6.5	1				
	GROUP A							
11.1	Noise and Microphony.	Frequency =50c/s Accel: =2g Va(b)=200V, Vg2= 100V, RL = 1.2 kΩ Ia = 100 mA		100%	Va (AC)	-	450	mV(rms)
5.2	Insulation.	Vg1-all= -100V Vg2-all= -500V Va-all = -500V No other voltages		100%	R	60 100 100	- - -	M ohms M ohms M ohms
	Reverse Grid Current.	Vg1= -60V		100%	Ig1	-	4.0	/uA
	Reverse Grid Current.			100%	Ig1	-	2.0	/uA
	GROUP B	Combined AQL	1.0					
	Heater Current.		0.65	II	Ih	1.5	1.8	A
	Heater Cathode Leakage.	Vhk=350V (k+ve) Vhk=150V (k-ve) R lim.= 1 Megohm Max.	0.65	II	Ihk	-	40	/uA
	Negative Grid Voltage.		0.65	II	Vg1	6.5	13.0	V
	Anode Current Rise.	Vg1 changed by 6V	0.65	II	Ia	70	95	mA
	Screen Current.	Va= 50V	0.65	II	Ig^2	-	40	mA
	Anode Current.	Va=Vg2=100V Vg1=0	0.65	II	Ia	164	-	mA
	GROUP C	Combined AQL	6.5					
	Anode Current Tail.	Vg1= -60V	2.5	II	Ia	-	5.0	mA
	Screen Current.		2.5	II	Ig2	-	19.5	mA
	Change in Vg2.	Reduce Vg1 by 6V Change Vg2 to maintain Ia=200mA	2.5	II	Vg2	27	43	V

TESTS (Contd.)

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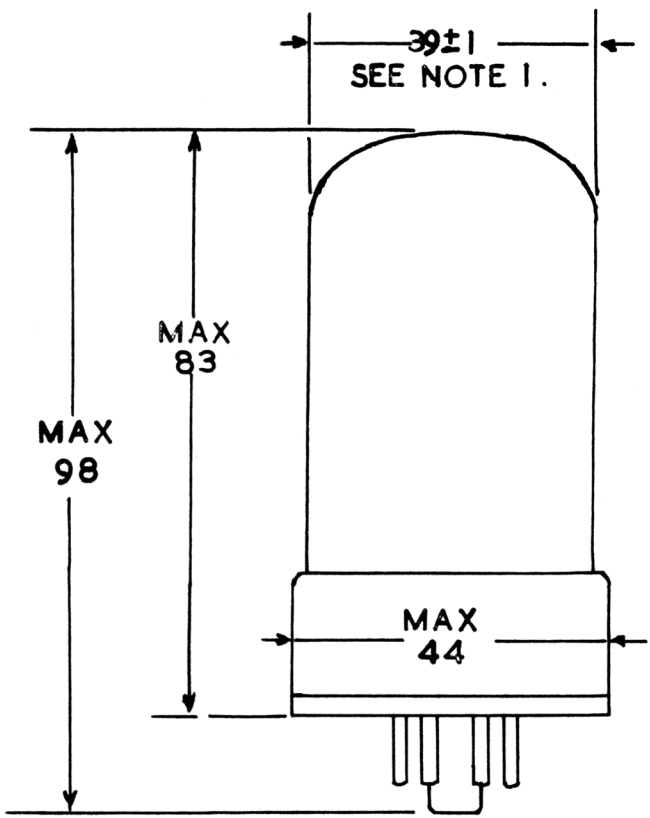
K1001	Test	Test Conditions	AQL %	Insp Level	Symbol	Limits Min.	Limits Max.	Units	
	GROUP D								
11.2	Resonance Search	Frequency Range = 25 to 500 c/s Accel: 2g min. Va(b) = 200V, Vg2 = 100V RL = 1.2 kΩ Ia = 100 mA Circuit as for noise and microphony.	2.5	IC	Va (AC)	-	300	mV(rms)	←
11.3	Fatigue	Frequency 170 c/s Accel: 2.0g min. Duration 100 hrs. divided in 30,30, 39 hrs. Vh 6.9V switched 1 min. on 3 mins. off.		IA					←
	Post Fatigue Tests								
	Noise and Microphony.	Frequency 50 c/s Accel: 2g min. Va(b) = 200V, Vg2 = 100V RL = 1.2 kΩ Ia = 100 mA	6.5		Va (AC)	-	1500	mV(rms)	←
	Heater Cathode Leakage.	Vhk= 350V (k+ve)	2.5		Ihk	-	80	µA	
	Reverse Grid Current.		2.5		Ig1	-	4.0	µA	
	Screen Current		2.5		Ig2	-	19.5	mA	
11.4	Shock	Hammer angle 30° 5 shocks in each of four directions			IA				
	Post Shock Tests								
	Noise and Microphony.	Frequency= 50 c/s Accel: 2g min. Va(b) = 200V, Vg2 = 100V RL = 1.2 kΩ Ia = 100 mA	2.5		Va (AC)	-	300	mV(rms)	←
	Heater-Cathode Leakage	Vhk=350V (k + ve)	2.5		Ihk	-	80	µA	
	Reverse Grid Current.		2.5		Ig1	-	4.0	µA	
	Screen Current.		2.5			-	19.5	mA	
	GROUP E								
A.IX/ 2.5	Electrical re-test after 28 days holding period.				100%				
A.V1/ 5.6	Inoperatives		0.5						
	Reverse Grid Current		0.5		Ig1	-	3.0	µA	←



1. THESE TOLERANCES TO INCLUDE VARIATIONS DUE TO OVALITY AND TAPER.

2. A PARALLEL SIDED BULB IS MANDATORY.

ALL DIMENSIONS ARE IN MILLIMETERS.

SPECIFICATION C.V. 4060 ISSUE 2.

AMENDMENT NO.1.

PAGE 2. GROUP B

Heater Current

Change minimum from 1.5A to 1.4A.

PAGE 3 GROUP D

Shock Test

Change IA from "Symbol" column to "Insp. Level" column.

Post Shock Test. Noise and Microphony.

Change AQL from 2.5 to 6.5 and max. from 300 to 1500.

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N.87416

T.V.C. Office
for A.S.R.E.