VALVE ELECTRONIC

ADMIRALTY SURFACE WEAPONS ESTABLISHMENT

CV6097

Specification AD/CV6097 Issue 1 Dated 24.11.61. To be read in conjunction with K1001, BS.448 and BS.1409.	SECURITY Specification: Unclassified Valve: Unclassified

TYPE OF VALVE: Triode Shunt Stabiliser.

CATHODE: Indirectly heated.

ENVELOPE: Glass.

PROTOTYPE: E2792.

MARKING

See K100/4

BASE

B9A

See BS.448/B9A

RATINGS

(Not for inspection purposes)

(All limiting values are absolute)

			Note
Heater Voltage	(V)	6.3	
Heater Current	(A)	0.3	
Max. Anode Voltage	(kV)	5	
Max. Anode Dissipation	(W)	6	
Max. Cathode Current	(mA)	10	
Max. Grid Voltage(Negative)	(V)	100	
Max.Heater/Cathode Voltage	(V)	±150	
Amplification Factor		200	A
Mutual Conductance	(mA/V)	0.6	A
Max. Bulb Temperature	(°C)	200	B

CONNECTIONS

PIN	ELECTRODE	
1	IC	
2	Grid	g
3	IC	
4	Heater	h
5	Heater	h
6	IC	
7	Cathode	k
8	IC	
9	IC	
Top Cap	Anode	a

TOP CAP

CT1

See BS.448/CT1

Capacitances (Nom.)			
Cin.	(pF)	4.4	C
Cout.	(pF)	1.3	
Ca-g	(pF)	1.5	
Ch-k	(pF)	3.5	

DIMENSIONS

	MIN.	MAX.
A.Seated Height (mm.)	48	54
C.Diameter (mm)	-	22
D.Overall Length (mm)	54	60

MOUNTING POSITION

ANY

NOTES

A. Measured at V_a = 5 kV; I_a = 1 mA.

B. Caution to Electronic Equipment Design Engineers.

Special care should be given in design of equipments to ensure that the rated bulb temperature is not exceeded: life and reliability are functions of bulb temperature and designers are advised to keep this temperature as far below the rated value as possible.

Life and reliability are also dependent on operating voltages, currents and dissipation. To ensure the reliability necessary for Service requirements valves should, where possible, be operated conservatively and under no circumstances should the maximum ratings be exceeded. Anode dissipation, heater to cathode voltage and variation of heater supply voltage are particularly important in this connection.

C. Measured on an unshielded valve.

D. The Joint Services Catalogue No. is: 5960-99-037-2559.

CV6097

TESTS

To be performed in addition to those applicable in K1001

Tests are to be performed in the specified order unless otherwise agreed with the Inspecting Authority

Test conditions - unless otherwise stated:-

V_h (V)	V_a (kV)	I_k (mA)
6.3	5.0 (Note 4)	1.0

Amdt 2

Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits Min.	Limits Max.	Units
Group A							
Heater Current.	No voltages except V_h		100%	I_h	275	325	mA
Negative Grid Voltage (1).			100%	V_g	18	26	V
Reverse Grid Current. (Amdt 4)	~~Note 1~~		100%	~~I_g~~	-	~~3~~ 1	µA
~~Mutual Conductance.~~ (Amdt 4)			~~100%~~	~~gm~~	~~0.4~~	~~1~~	~~mA/V~~
Negative Grid Voltage (2).	I_k = ~~5~~ 50 µA (Amdt 1)		100%	V_g	22	36	V
~~Cathode Current~~ (Amdt 3)	~~(V_a = 500V, V_g = -1V)~~		~~100%~~	~~I_a~~	~~5~~	~~10~~	~~mA~~
Groups B and C omitted							
Group D Capacitances	Measured with an unshielded valve on a 1 Mc/s bridge.	Note 2	Code D				
Cin.					3.8	5.0	pF
Cout.					1.0	1.6	pF
Ca-g					1.2	1.8	pF
Ch-k.					-	5.0	pF
Group E omitted							
Group F Life Test (Amdt 4)	V_a = 5 kV, I_a = 1 mA Nominal, R_k = 22k ohms ~~(approx.)~~	Note 2	Code D				
Life Test End Point (500 hours)							
Heater current					275	325	mA
Reverse Grid Current.	Note 3					4	µA
~~Mutual Conductance~~ (Amdt 4)					~~0.4~~	-	~~mA/V.~~
					~~or 50% of initial value - whichever is the greater.~~		
Fall of Anode Current (Amdt 4)						20	%

NOTES

~~1. Not more than 1 µA of this total is to be gas current.~~ (Amdt 4)

2. The AQL limits for these tests will be included later when manufacturing experience has been gained.

3. Not more than 1.5 µA of this total is to be gas current.

4. A protective resistance of at least 50 K ohms shall be inserted in the output from the supply. (Amdt 2)

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV6097

ISSUE 1 DATED 24.11.61

AMENDMENT NO. 1

Page 2. Group A. Negative Grid.

Voltage (2)

The value of I_k under Test Conditions should read 50 μA not 5 μA as shown.

April, 1962 Admiralty Surface Weapons Establishment

(11964)

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV.6097 ISSUE 1. DATED 24.11.61

AMENDMENT NO.2

Page 2.

(i) (Top of Page) Test Conditions - unless otherwise stated:-

Against 'Va (kV)5.0' insert '(Note 4)'

(ii) Notes. Following 'Note 3' add new Note 4 as follows:-

'4. A protective resistance of at least 50 K ohms shall be inserted in the output from the supply'.

February 1964. T.V.C. for A.S.W.E.

(222036)

28/2/64

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV6097 ISSUE 1 DATED 24.11.61

AMENDMENT NO.3

Page 2 Tests In Group **A** delete the Cathode Current test.

August, 1967
(445545)

T.V.C. for A.S.W.E.

JAHS 6/3/68

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV6097, ISSUE 1 DATED 24-11-61

AMENDMENT NO. 4

Page 2 Group A

1. Reverse Grid Current Test

Delete reference to Note 1 and delete the + sign before Ig in the Symbol column. Amend "3" to read "1" in the Limits Max. Column.

2. Mutual Conductance Test

Delete this test.

P.T.O.

Group F

1. Life Test

Under Test Conditions add "Nominal" after 1 mA and delete "(approx)" after 22k ohms.

2. Mutual Conductance

Delete this test and substitute the following test:-

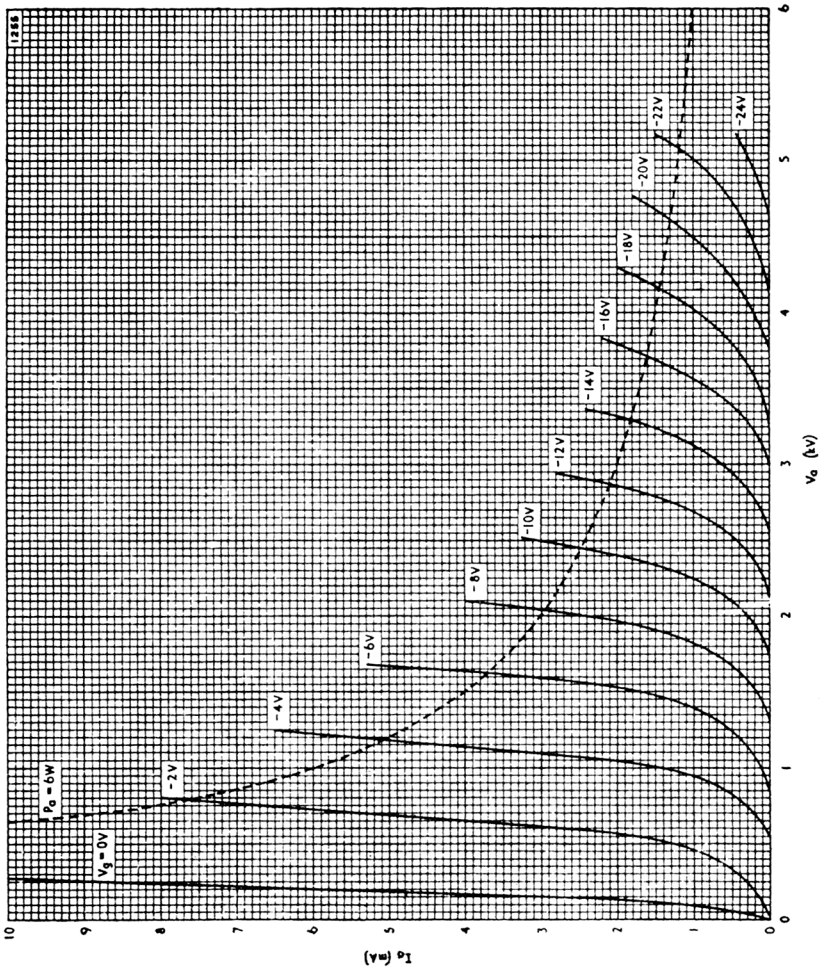
Test	Test Conditions	AQL %	Insp. Level	Sym-bol	Limits		Units
					Min	Max	
Fall of Anode Current						20%	

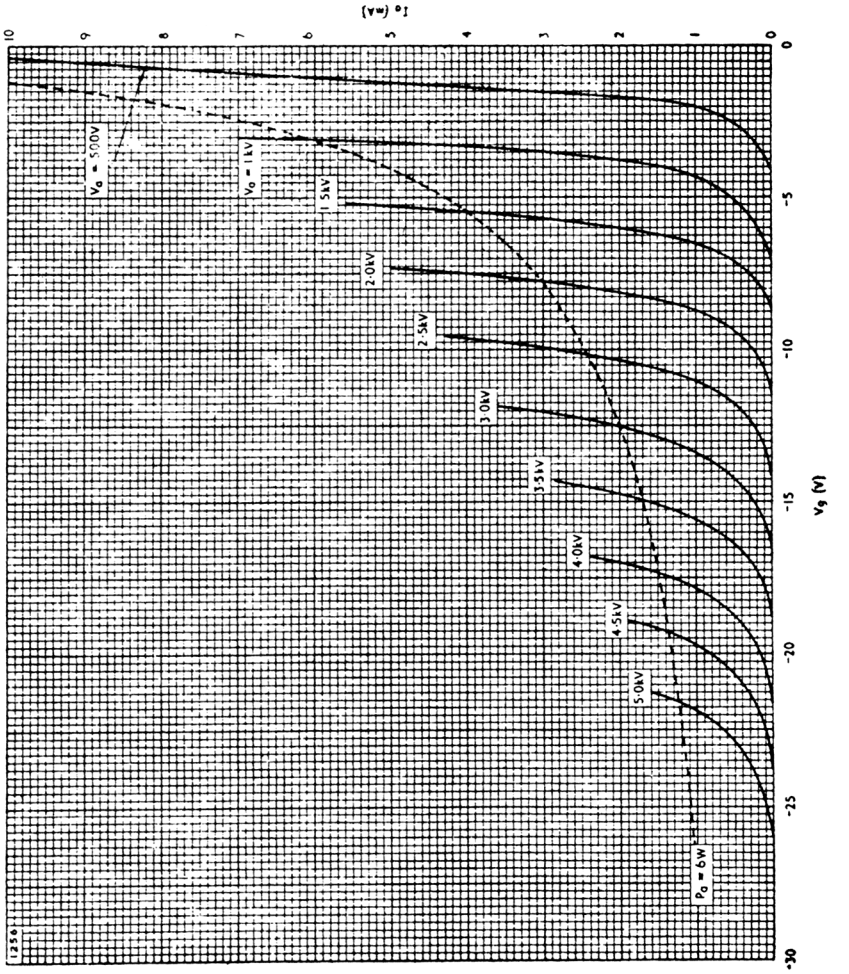
Notes Delete Note 1:

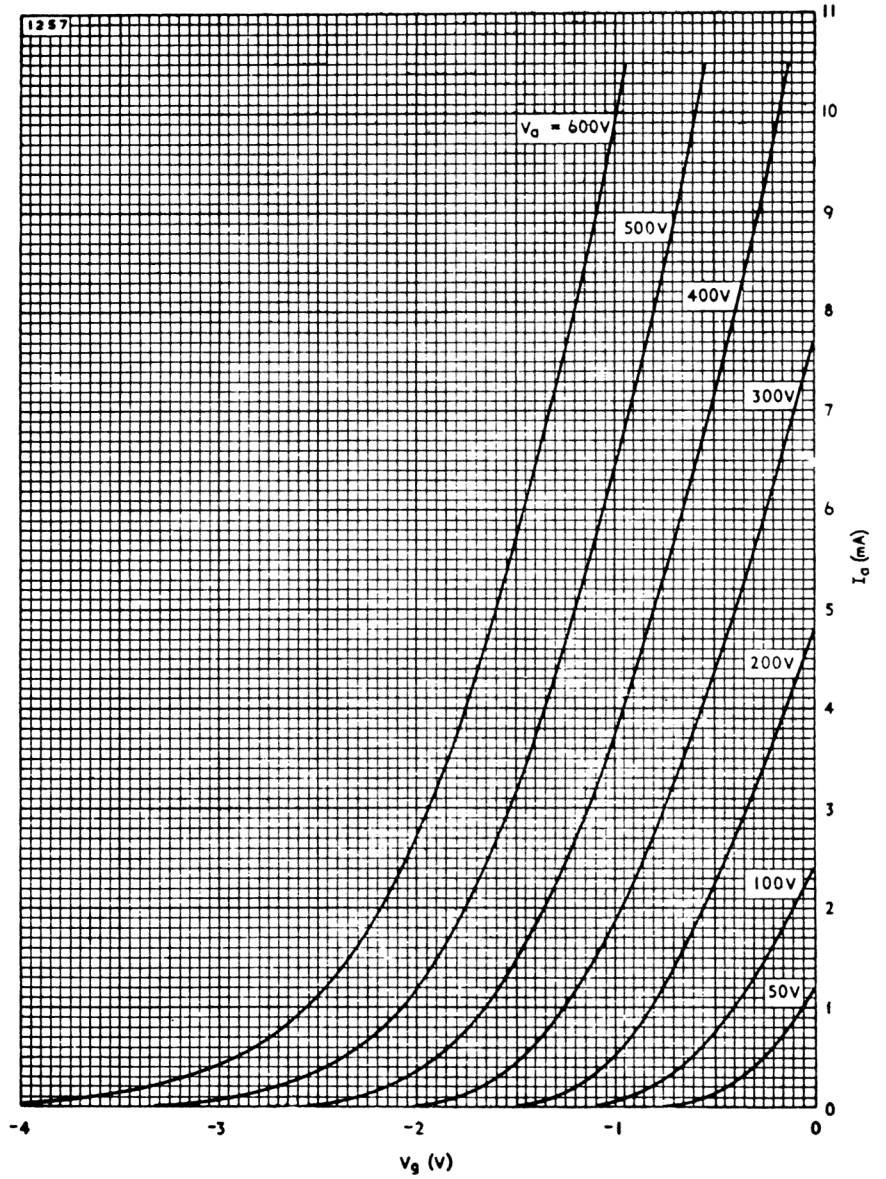
May, 1968

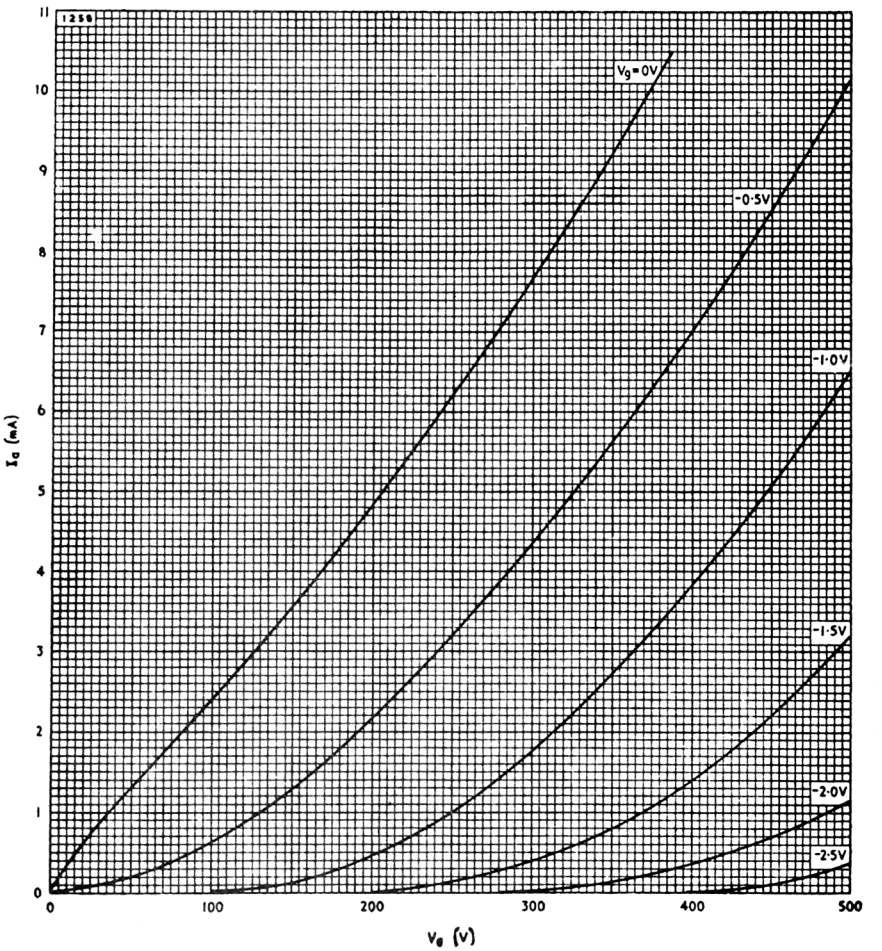
TVC for ASWP

20/11/68


1265
V_g = 0V
P_a = 6W
-2V
-4V
-6V
-8V
-10V
-12V
-14V
-16V
-18V
-20V
-22V
-24V
I_a (mA)
V_a (kV)
0
1
2
3
4
5
6
7
8
9
10


I_a (mA)
10
9
8
7
6
5
4
3
2
1
0
V_a = 500V
V_a = 1kV
1·5kV
2·0kV
2·5kV
3·0kV
3·5kV
4·0kV
4·5kV
5·0kV
P_a = 6W
-5
-10
-15
-20
-25
-30
V_g (V)
1250


1257
V_a = 600V
500V
400V
300V
200V
100V
50V
I_a (mA)
0
1
2
3
4
5
6
7
8
9
10
11
-4
-3
-2
-1
0
V_g (V)


1258
V_g=0V
-0·5V
-1·0V
-1·5V
-2·0V
-2·5V
I_a (mA)
V_a (V)
0
1
2
3
4
5
6
7
8
9
10
11
0
100
200
300
400
500