

MINISTRY OF SUPPLY (D.C.D.)

Specification MAP/CV452 Issue 3. Dated 23.7.51 To be read in conjunction with K1001	<u>SECURITY</u>	
	<u>Specification</u> UNCLASSIFIED	<u>Valve</u> UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Double Diode Triode CATHODE - Indirectly Heated ENVELOPE - Glass, unmetallised PROTOTYPE - 6AT6			<u>MARKING</u> See K1001/4		
<u>RATING</u>		Notes	<u>BASE</u> B7G		
Heater Voltage (V) 6.3 Heater Current (A) 0.3 Max. Anode Voltage (V) 330 Max. Diode Anode Current (mA) 1.0 Mutual Conductance (mA/V) 1.2 Amplification Factor 70 Anode Impedance (ohms) 58000			<u>CONNECTIONS</u>		
			Pin	Electrode	
			1	G	
			2	G	
			3	H	
			4	H	
			5	Ad(b)	
			6	Ad(a)	
			7	A	
<u>CAPACITANCES (pF)</u>			<u>DIMENSIONS</u> See K1001/AI/D4		
Ca-g 2.1		B	Dimension	Min.	Max.
Cg-c+h 2.3		B	Ann	-	54.01
Ca-c+h 1.1		B	Bnn	-	19.05
Cad-g (max) 0.025		B	Lnn		47.75
			Pnn	34.04	42.16
<u>NOTES</u>					
A. Measured at; $V_a = 250V$. $V_{g1} = -3V$. $I_a = 1.0mA$. $V_{ad}(a) = 0$. $V_{ad}(b) = 0$.					
B. Measured without metal screen					

TESTS

To be performed in addition to those detailed in K1001

	Test Conditions					Test	Limits		No. Tested	Note
	Vh (V)	Va (V)	Vgl (V)	Vad(a) (V)	Vad(b) (V)		Min.	Max.		
a	6.3	0	0	0	0	Ih (A)	.275	.325	100% or 3	
b	6.3	250	-3	0	0	Ia (mA)	0.5	1.8	100%	
c	6.3	250	-3	0	0	Reverse Igl (μ A)	0	0.5	100%	
d	6.3	250	-3	0	0	gm (mA/V)	0.9	1.7	100%	
e	6.3	250	-3	0	0	μ	57	83	20 per week	
f	6.3	30	30 (max)	0	0	Emission (mA)	25	-	100%	1
g	6.3	-	-	10	-	Iad (mA)	0.8	-	100%	
h	6.3	-	-	-	10	Iad (mA)	0.8	-	100%	
j	6.3	250	-6	0	0	Ia tail (μ A)	-	100	100%	
k	6.3	Resistance between cathode and anode = 1000 ohms				Diode current (μ A)	5	-	100% or 3	2

NOTES

1. Test voltages to be applied only for sufficient time to obtain steady reading.
2. Test each Diode separately.

DATA SHEET

Page 1.

Valve Electronic Type **CV 452**

(Number of pages - 4)

TYPICAL OPERATING CONDITIONS

As Class A1 amplifier

Heater	6.3	6.3	Volts
Anode	100	250	Volts
Grid	-1	-3	Volts
Amplification factor (μ)	70	70	
Anode impedance	54,000	58,000	Ohms
Mutual conductance	1.3	1.2	mA/V
Anode current	0.8	1.0	mA

As Resistance coupled amplifier

The valve is very suitable for use as a resistance coupled amplifier and below is a table giving a summary of useful values and two different supply voltages for a distortion of approximately 4%:-

Anode supply voltage = 100 volts

Anode load (Ra megohms)	0.10		0.22		0.47	
Grid leak (succeeding valve megohms)	0.22	0.47	0.22	0.47	0.47	1.0
Cathode resistance (ohms)	4700	4800	7000	7800	12000	14000
Output voltage (peak)	7.5	9.1	7.3	10	10	14
Voltage gain	27	30	30	34	36	39

Anode supply voltage = 250 volts

Anode load (Ra megohms)	0.10		0.22		0.47	
Grid leak (succeeding valve megohms)	0.22	0.47	0.22	0.47	0.47	1.0
Cathode resistance (ohms)	1800	2100	2600	3300	5200	6000
Output voltage (peak)	4.0	4.7	3.8	4.9	4.5	5.6
Voltage gain	3.6	4.0	4.0	4.5	4.6	4.8

Zero bias operation

The triode unit may also be used with a high value grid resistor the bias being provided by contact potential. A summary of useful values employing a 10 megohm grid resistor and two different supply voltages for a distortion of 5% are given below:-

Anode supply voltage = 100 volts

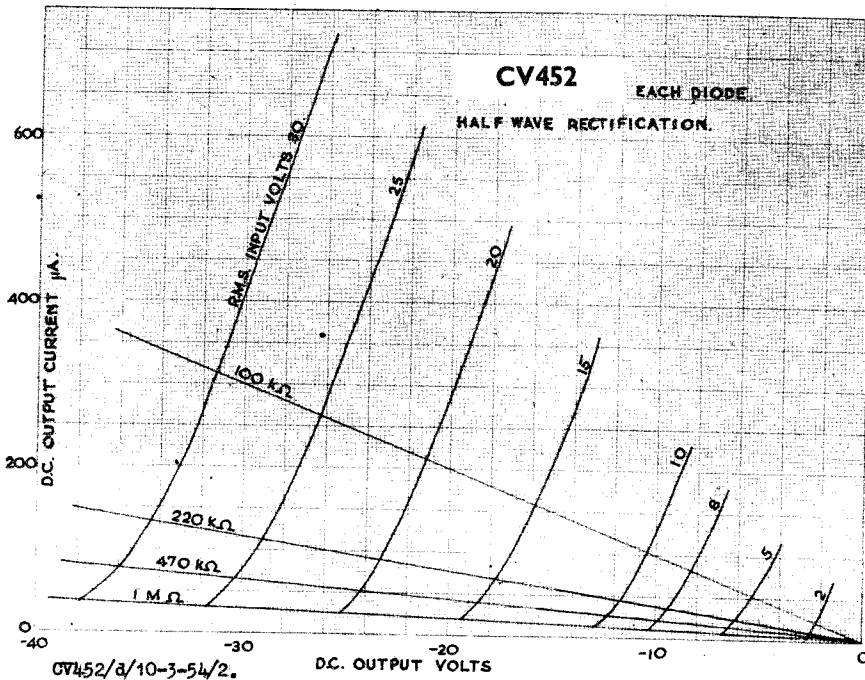
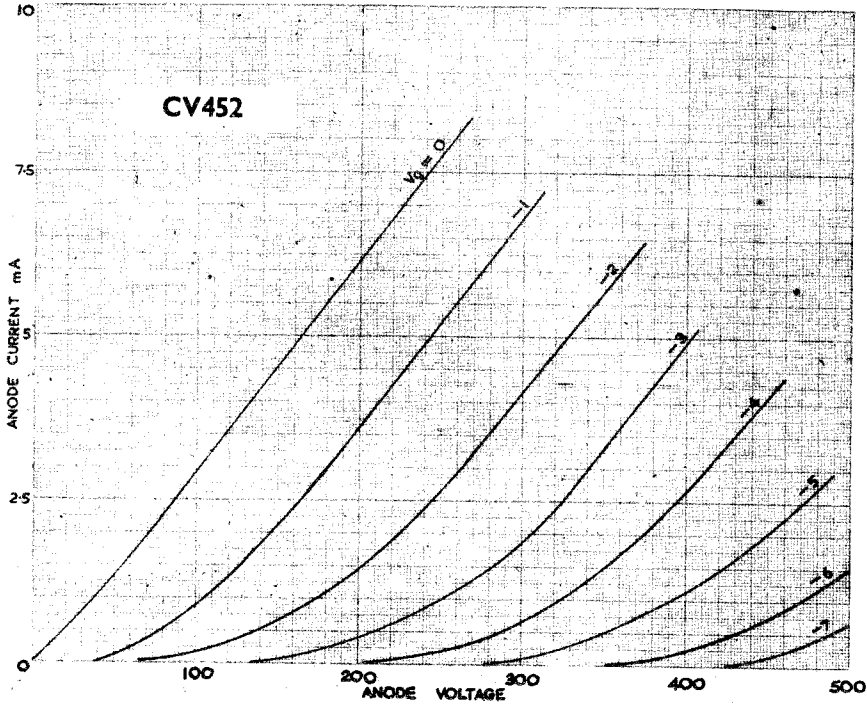
Anode load (Ra megohms)	0.22		0.47	
Grid leak (succeeding valve megohms)	0.22	0.47	0.47	1.0
Output voltage (peak)	7	10	10.5	14
Voltage gain	31	37	39	40

Anode supply voltage = 250 volts

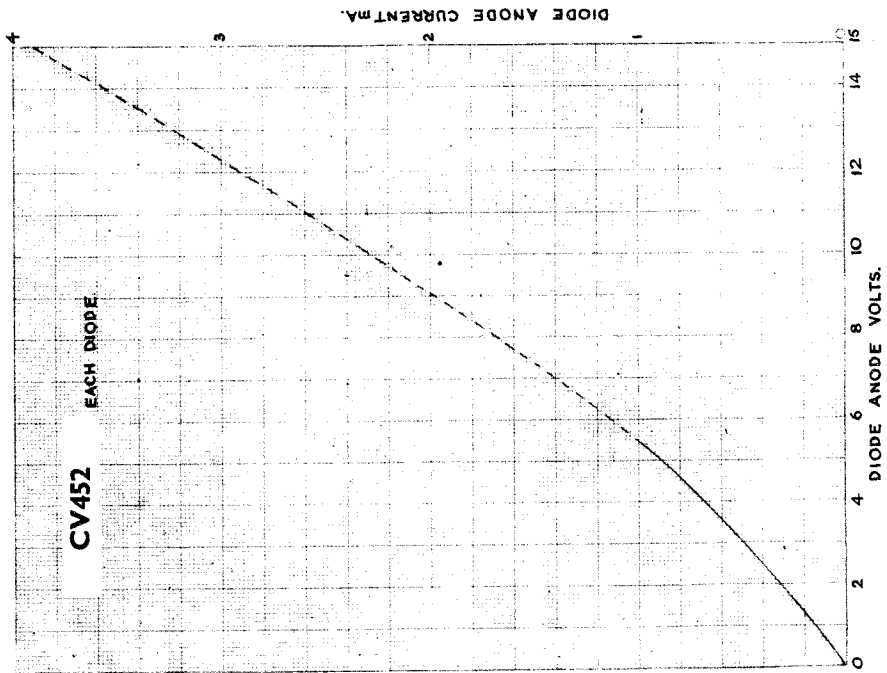
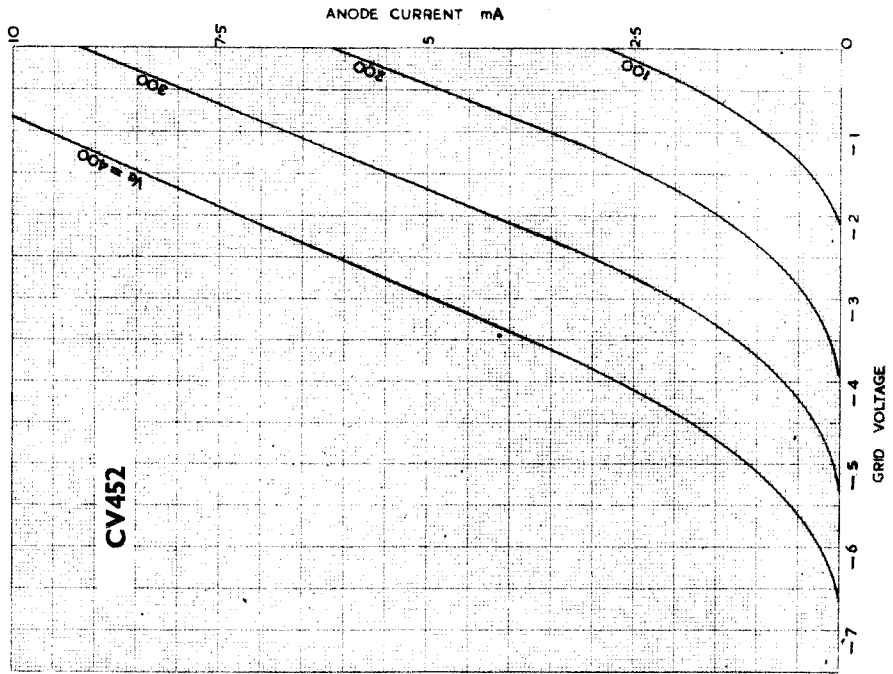
Anode load (Ra megohms)	0.22		0.47	
Grid leak (succeeding valve megohms)	0.22	0.47	0.47	1.0
Output voltage (peak)	4.2	5.4	4.7	6.0
Voltage gain	4.6	5.1	5.3	5.6

Mounting Position - Any.

DATA SHEET



DATA SHEET



DATA SHEET

