

ADMIRALTY SIGNAL & RADAR ESTABLISHMENT

Specification AD/CV2209/Issue 3.	<u>SECURITY</u>	
Dated 12.1.52.	<u>Specn.</u>	<u>Valve</u>
To be read in conjunction with K1001.	Unclassified	Unclassified

→ indicates a change

<u>TYPE OF VALVE:-</u> Miniature H.F. Pentode (See Note A).			<u>MARKING</u> See K1001/4.			
<u>CATHODE:-</u> Indirectly Heated.			<u>BASE</u> B7G See K1001/AIV/D9.			
<u>ENVELOPE:-</u> Glass - unmetallised.						
<u>PROTOTYPE:-</u> CV1116 (Mod.)						
<u>RATING</u>			Note	Pin	Electrode	
Heater Voltage (V)	6.3	B	C	1	Control Grid	
Heater Current (A)	.35			2	Cathode	
Max. Anode Voltage (V)	300			3	Heater	
Max. Anode Voltage at $I_c = 0$ (V)	550			4	Heater	
Max. Screen Voltage (V)	300			5	Anode	
Max. Screen Voltage at $I_c = 0$ (V)	400			6	Suppressor Grid and diode	
Max. Anode Dissipation (W)	3.0			7	Screen Grid	
Max. Screen Dissipation (W)	1.5					
Mutual Conductance (mA/V)	4.0					
<u>CAPACITANCES</u>					<u>DIMENSIONS</u> See K1001/A1/D4.	
C_{ag} (pF)	0.01			Dimension	Min.	Max.
C_{ac} (pF)	4.5			A mm	-	54.01
C_{ge} (pF)	7.5			B mm	-	19.05
				L mm	-	47.75
				F mm	34.04	42.16

NOTES

- A. This valve has a limiting diode internally connected to the suppressor grid.
- B. At $V_a = V_{g2} = 200$ V, $V_{g3} = 0$ V, $I_c = 12$ mA.
- C. Measured with close fitting metal can.

TESTS

To be performed in addition to those applicable in K1001.

	Test Conditions						Test	Limits		No. Tested
								Min.	Max.	
a	In Adaptor Type 124 See K1001/AIII						<u>Capacitances</u> (pf)			6 per week T.A.
	5	2,3,4,6, 7,8,9.	1,10,TC1, TC2.							
	1	2,3,4,6, 7,8,9.	5,10,TC1, TC2.							
							Cac	3.9	5.2	
						Cge	6.5	8.6		
						Cag	-	.015		
b	Vh	Va	Vg2	Vg3	Vg1	Ic (mA)	Ih (A)	0.31	0.39	100% or S
	6.3	0	0	0	0	0				
c	6.3	200	200	0	-	12	Vg1 (V)	2.45	4.45	100%
d	6.3	200	200	0	-	12	Ig2 (mA)	3.6	5.5	100% or S
e	6.3	200	200	0	-	12	Reverse Ig (μA)	-	0.5	100%
f	6.3	200	200	0	-	12	gm (mA/V)	3.2	5.3	100%
g	6.3	200	100	to give Ia = 100 μA	to give Ic = 10mA when Vg3= 0	-	Vg3 (V)	5.0	11.5	100%
h	6.3	200	200	+20	-30	-	Ig3 (mA)	2.5	-	100%
j	6.3	200	200	0	to give Ia = 100 μA	-	Vg1 (V)	-	11.0	100% or S
k	6.3	200	200	0	-	12	Vg2 change (V)	34 30	50 46	20 per week
Reduce Vg1 by 1.0 volt and reduce Vg2 to maintain Ic = 12 mA.										

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV.2209 ISSUE 3 DATED 12.1.52

AMENDMENT NO. 1

Page 2 Test Clause (k)

In column headed 'Limits' delete Min.'34' and Max.'50' and substitute '30' and '46' respectively.

January, 1964.

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

N.213540

✓AMS
28/1/64

Data Sheet

Valve Electronic Type CV 2209

TYPICAL OPERATING CONDITIONS.

Anode Voltage	200	Volts
Screen (G2) Voltage	200	Volts
Suppressor (G3) Voltage	0	Volts
Grid (G1) Voltage	-4.0	Volts
Anode Current	5.8	mA
Screen (G2) Current	3.1	mA
Mutual Conductance (G1)	3.5	mA/V
V_{g1} for I_a cut-off	-7.5	Volts
V_{g3} for I_a cut-off	-10.0	Volts
Amplification Factor (G1/G2)	38	-

Care must be taken to prevent over-dissipation of the screen grid when the valve is cut off by means of suppressor bias.

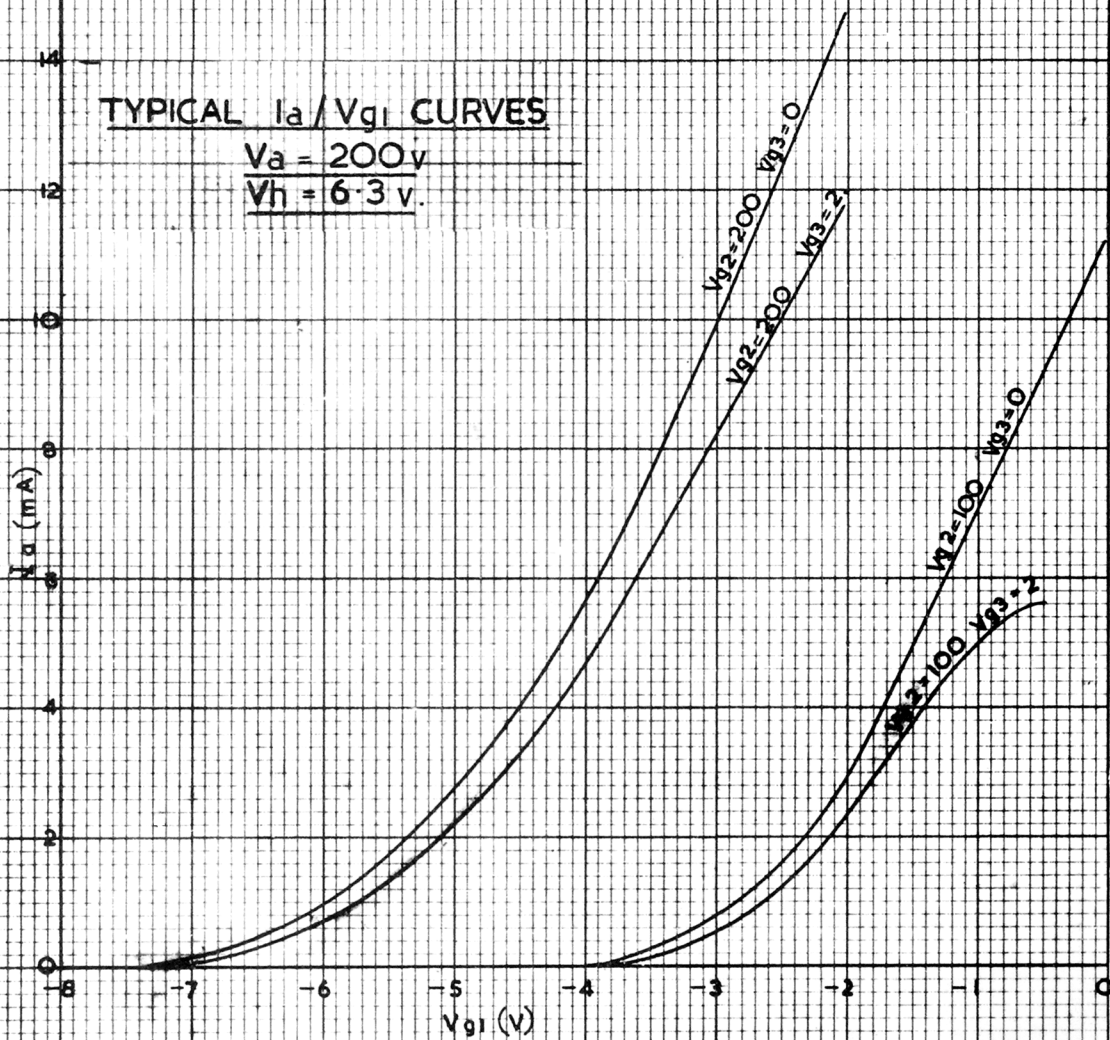
This valve is not suitable for use as a Triode with electrodes strapped.

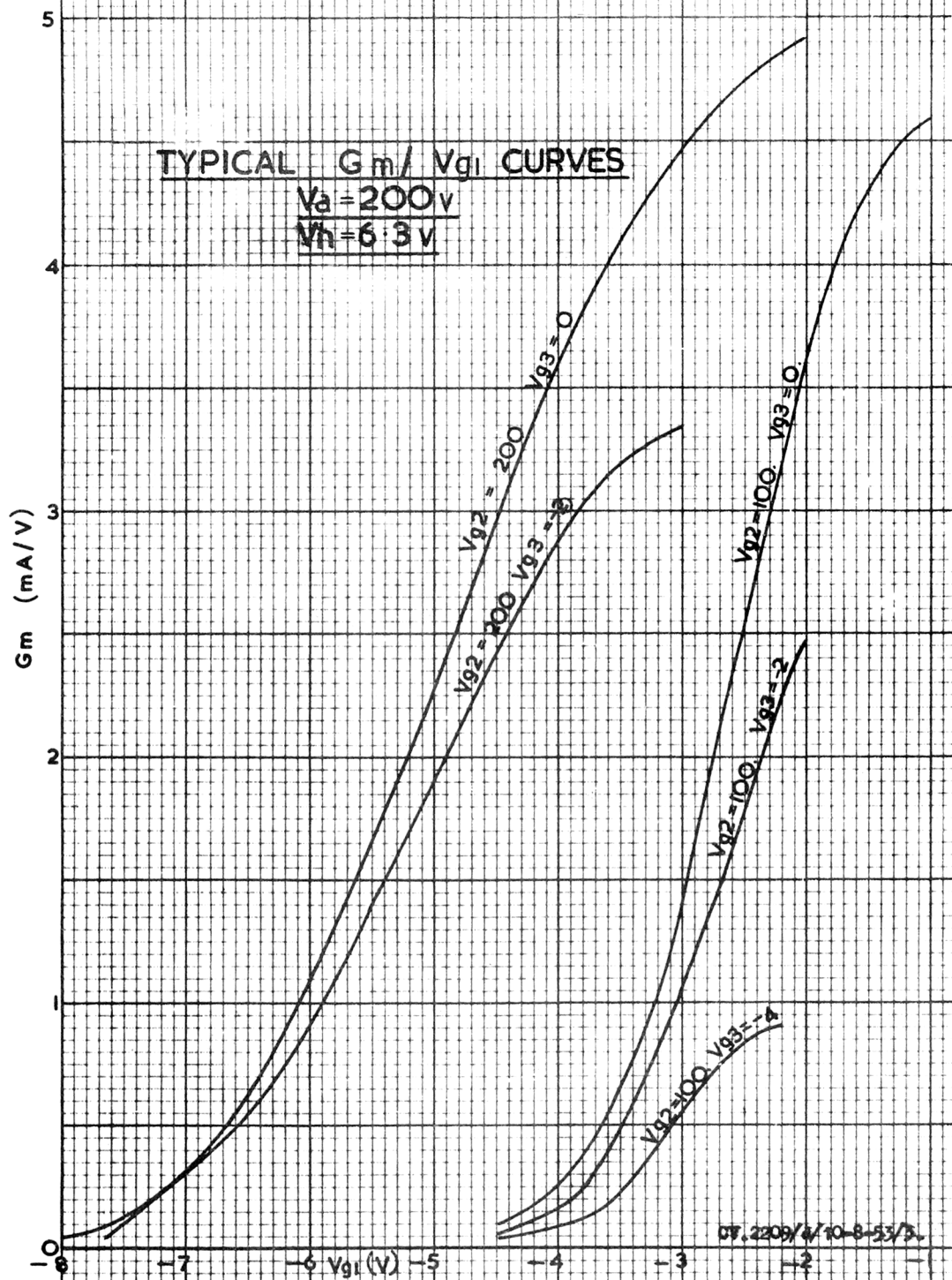
Mounting Position - Any.

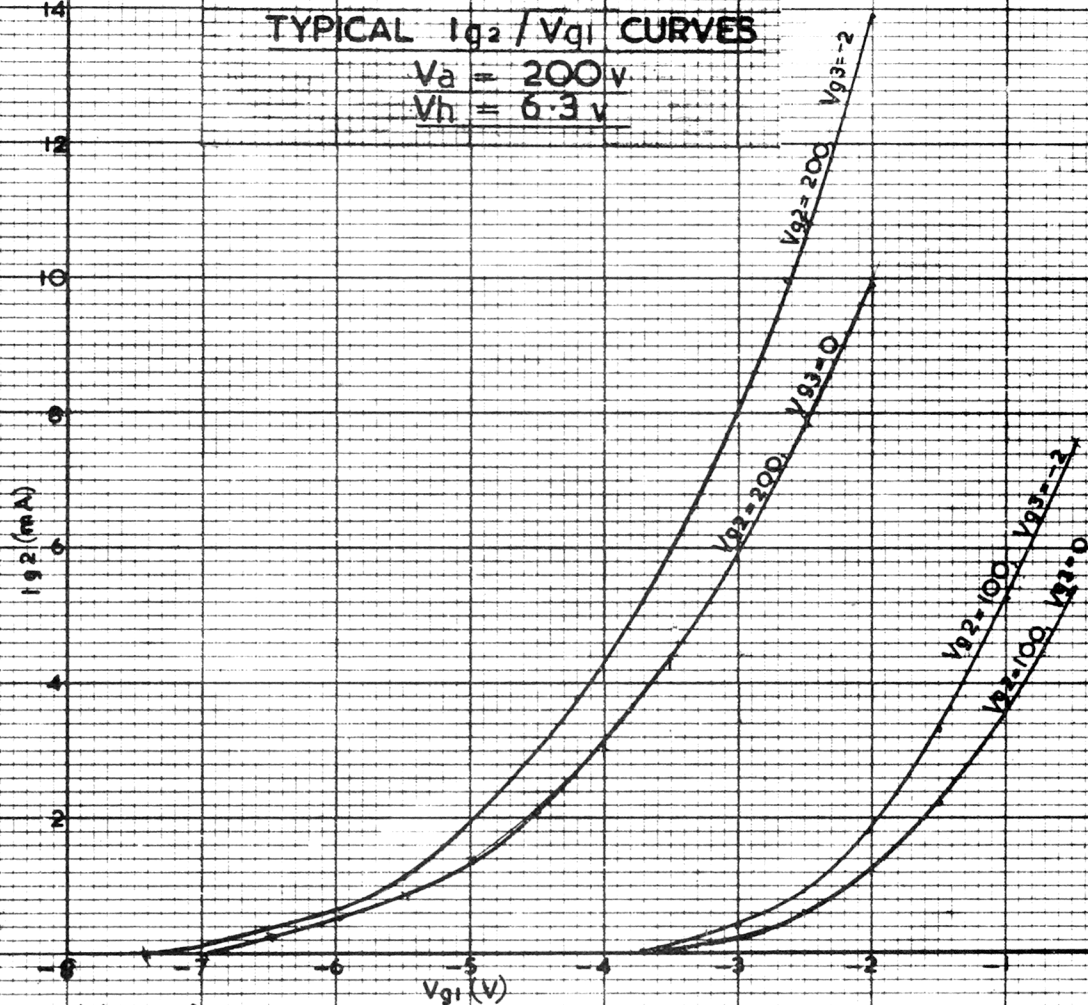
TYPICAL I_a/V_{g1} CURVES

$$V_a = 200 \text{ v}$$

$$V_h = 6.3 \text{ v.}$$





TYPICAL I_{g2} / V_{g1} CURVES $V_a = 200 \text{ v}$ $V_h = 6.3 \text{ v}$ 

TYPICAL $I_D, I_{G2}/V_{G3}$ CURVES

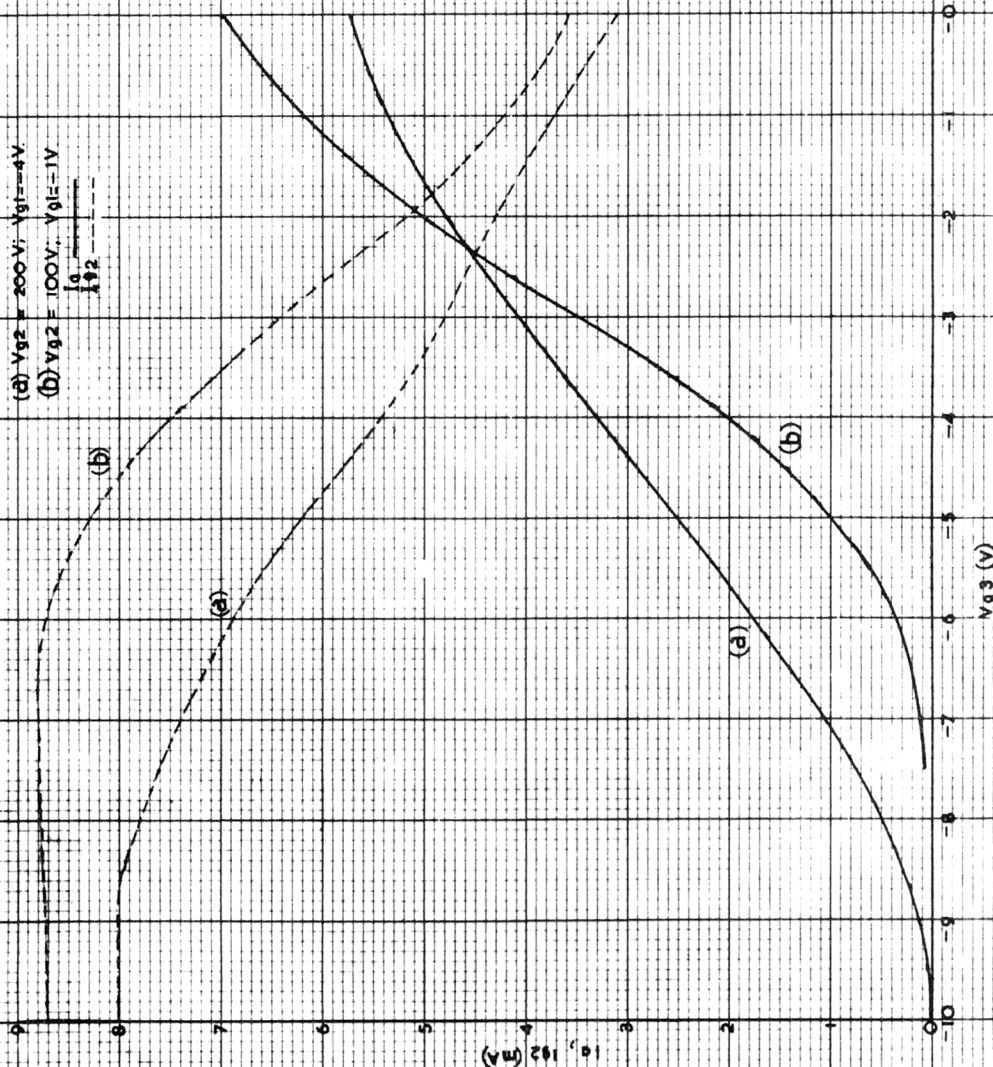
$V_G = 200\text{ V}$

$V_H = 6.3\text{ V}$

(a) $V_{G2} = 200\text{ V}; V_{G1} = -4\text{ V}$

(b) $V_{G2} = 100\text{ V}; V_{G1} = -1\text{ V}$

I_D ———
 I_{G2} - - -



TYPICAL G_m/V_{gs} CURVES:

$$V_a = 200 \text{ V}$$

$$V_h = 6.3 \text{ V}$$

$G_m (mA/V)$

$V_{gs} (V)$

$V_{g2} = 100, V_{g1} = -2.5$

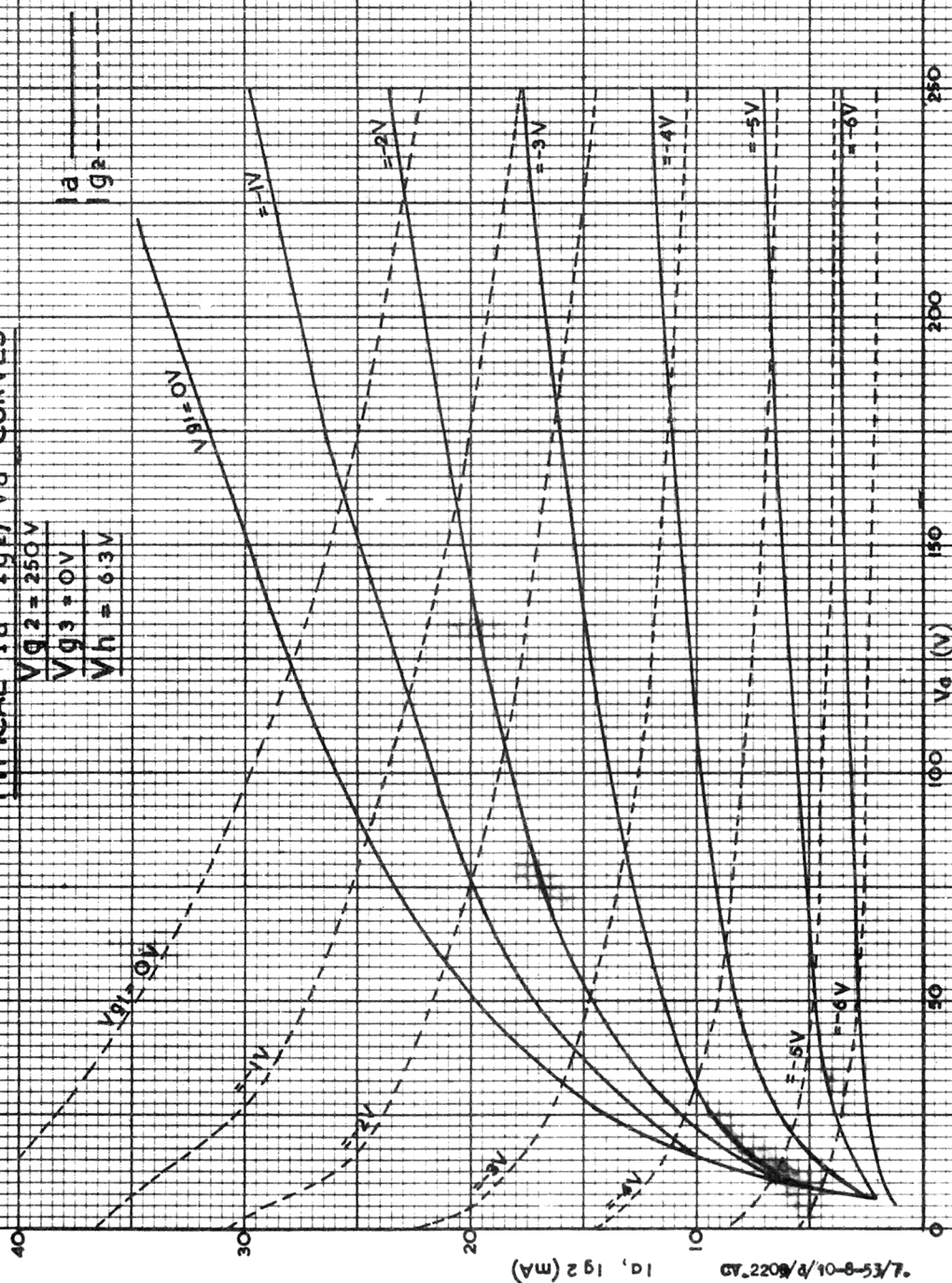
$V_{g2} = 200, V_{g1} = -4$

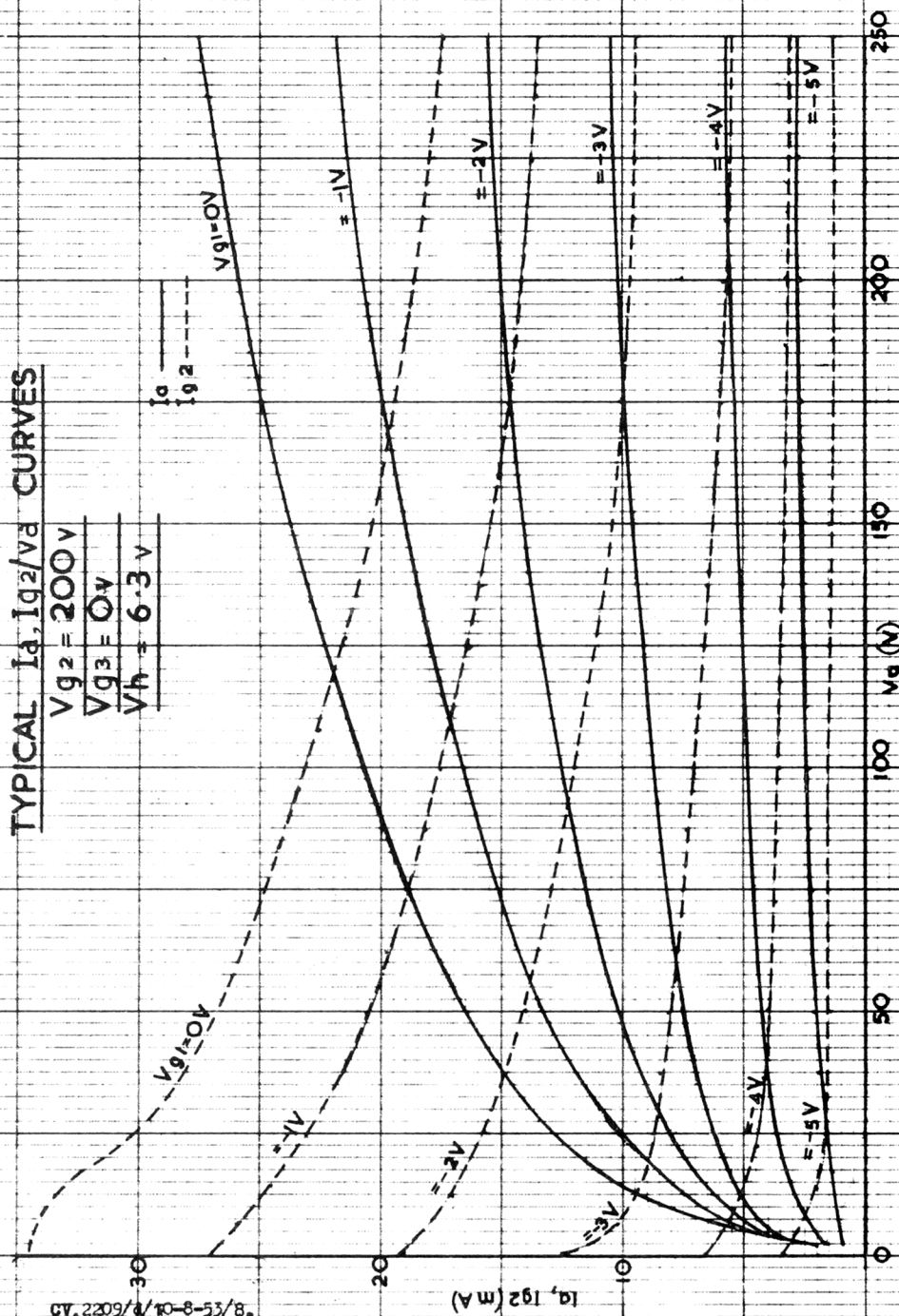
TYPICAL I_d , I_{g2} / V_a CURVES

$$V_{g2} = 250V$$

$$V_{g3} = 0V$$

$$V_h = 63V$$



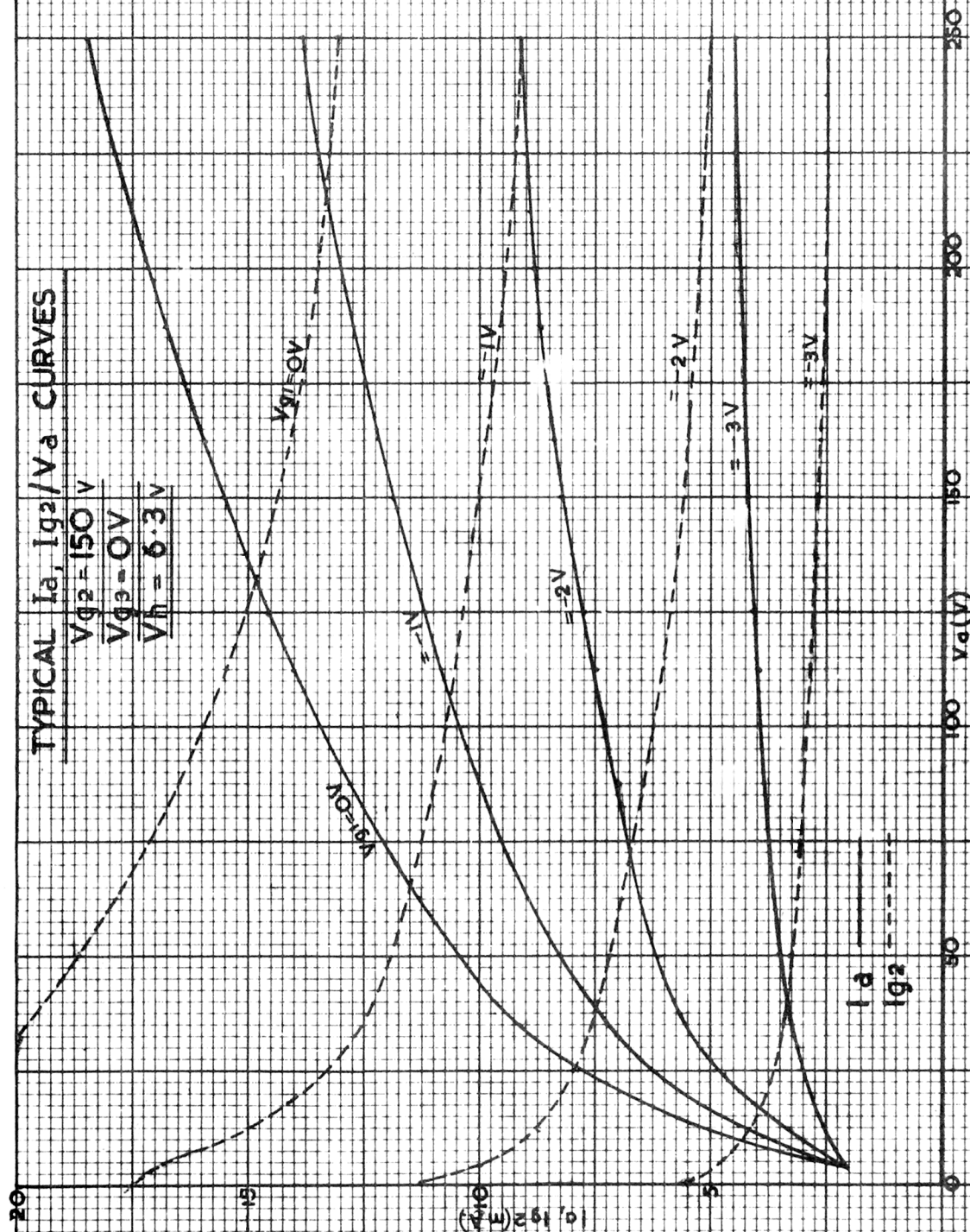
TYPICAL $I_a, I_{q2}/V_a$ CURVES $V_{g2} = 200\text{ V}$ $V_{g3} = 0\text{ V}$ $V_h = 6.3\text{ V}$ 

TYPICAL $I_a, I_{g2}/V_a$ CURVES

$$V_{g2} = 150 \text{ V}$$

$$V_{g3} = 0 \text{ V}$$

$$V_H = 6.3 \text{ V}$$



TYPICAL I DIODE / V DIODE CURVE
PENTODE SECTION CUT OFF.
 $V_h = 6.3 \text{ V.}$

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CV 2209/8/10-8-51/10

12

8

I DIODE (mA)

4

0

10 V DIODE (V)

15

20

25

