VALVE ELECTRONIC **CV2209**

ADMIRALTY SIGNAL & RADAR ESTABLISHMENT

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

→ indicates a change

TYPE OF VALVE:- Miniature H.F. Pentode (See Note A).
CATHODE:- Indirectly Heated.
ENVELOPE:- Glass - unmetallised.
PROTOTYPE:- CV1116 (Mod.)

MARKING

See K1001/4.

BASE

B7G
See K1001/AIV/D9.

Pin	Electrode
1	Control Grid
2	Cathode
3	Heater
4	Heater
5	Anode
6	Suppressor Grid and diode
7	Screen Grid

RATING

			Note
Heater Voltage	(V)	6.3	
Heater Current	(A)	.35	
Max. Anode Voltage	(V)	300	
Max. Anode Voltage at Ic = 0	(V)	550	
Max. Screen Voltage	(V)	300	
Max. Screen Voltage at Ic = 0	(V)	400	
Max. Anode Dissipation	(W)	3.0	
Max. Screen Dissipation	(W)	1.5	
Mutual Conductance	(mA/V)	4.0	B

CAPACITANCES

Cag	(pF)	0.01	C
Cae	(pF)	4.5	
Cge	(pF)	7.5	

DIMENSIONS

See K1001/A1/D4.

Dimension	Min.	Max.
A mm	-	54.01
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 Va = Vg2 = 200 V, Vg3 = 0V, Ic = 12 mA.
C. Measured with close fitting metal can.

TESTS

To be performed in addition to those applicable in K1001.

	Test Conditions						Test		Limits Min.	Limits Max.	No. Tested
a	In Adaptor Type 124 See K1001/AIII						Capacitances (pf)				
	Links to HP		Links to LP		Links to E						
	5		2,3,4,6, 7,8,9.		1,10,TC1, TC2.		Cae		3.9	5.2	6 per week T.A.
	1		2,3,4,6, 7,8,9.		5,10,TC1, TC2.		Cge		6.5	8.6	
							Cag		-	.015	
	Vh	Va	Vg2	Vg3	Vg1	Ic (mA)					
b	6.3	0	0	0	0	0	Ih	(A)	0.31	0.39	100% or S
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 Reduce Vg1 by 1.0 volt and reduce Vg2 to maintain Ic = 12 mA.	200	200	0	-	12	Vg2 change	(V)	~~34~~ 30	~~50~~ 46	20 per week ←

Data Sheet

Valve Electronic Type CV 2209

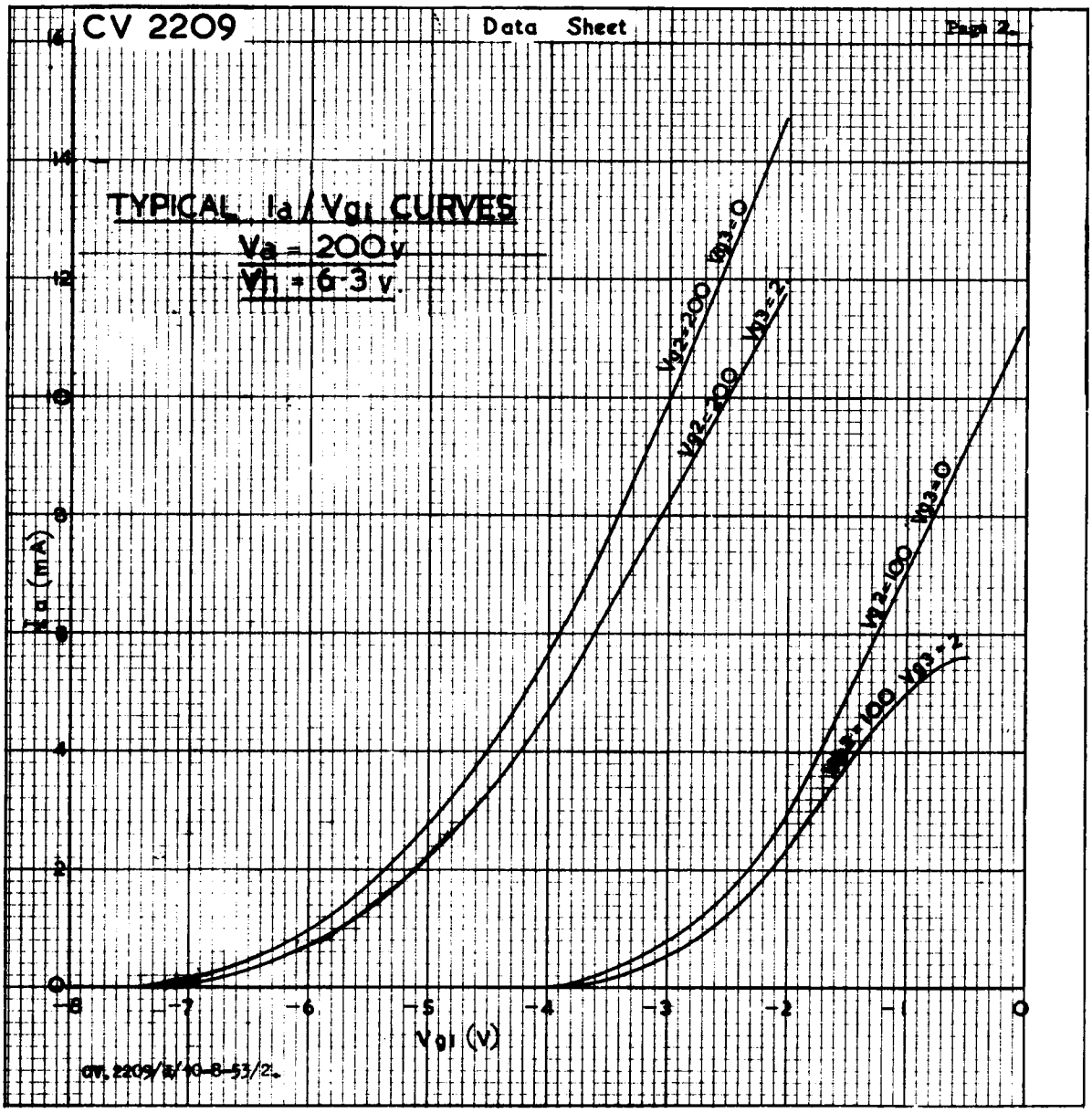
TYPICAL OPERATING CONDITIONS.

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.



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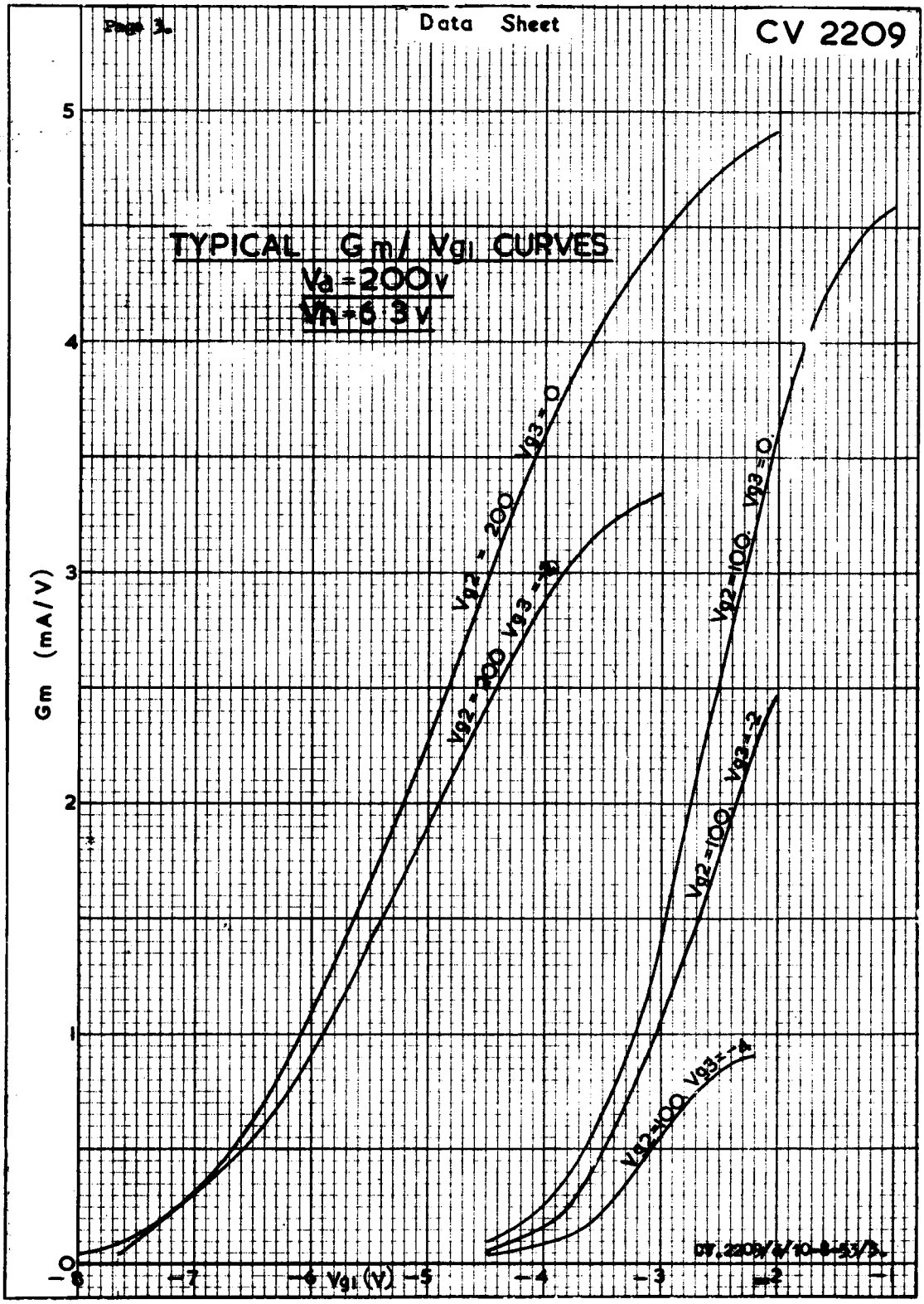
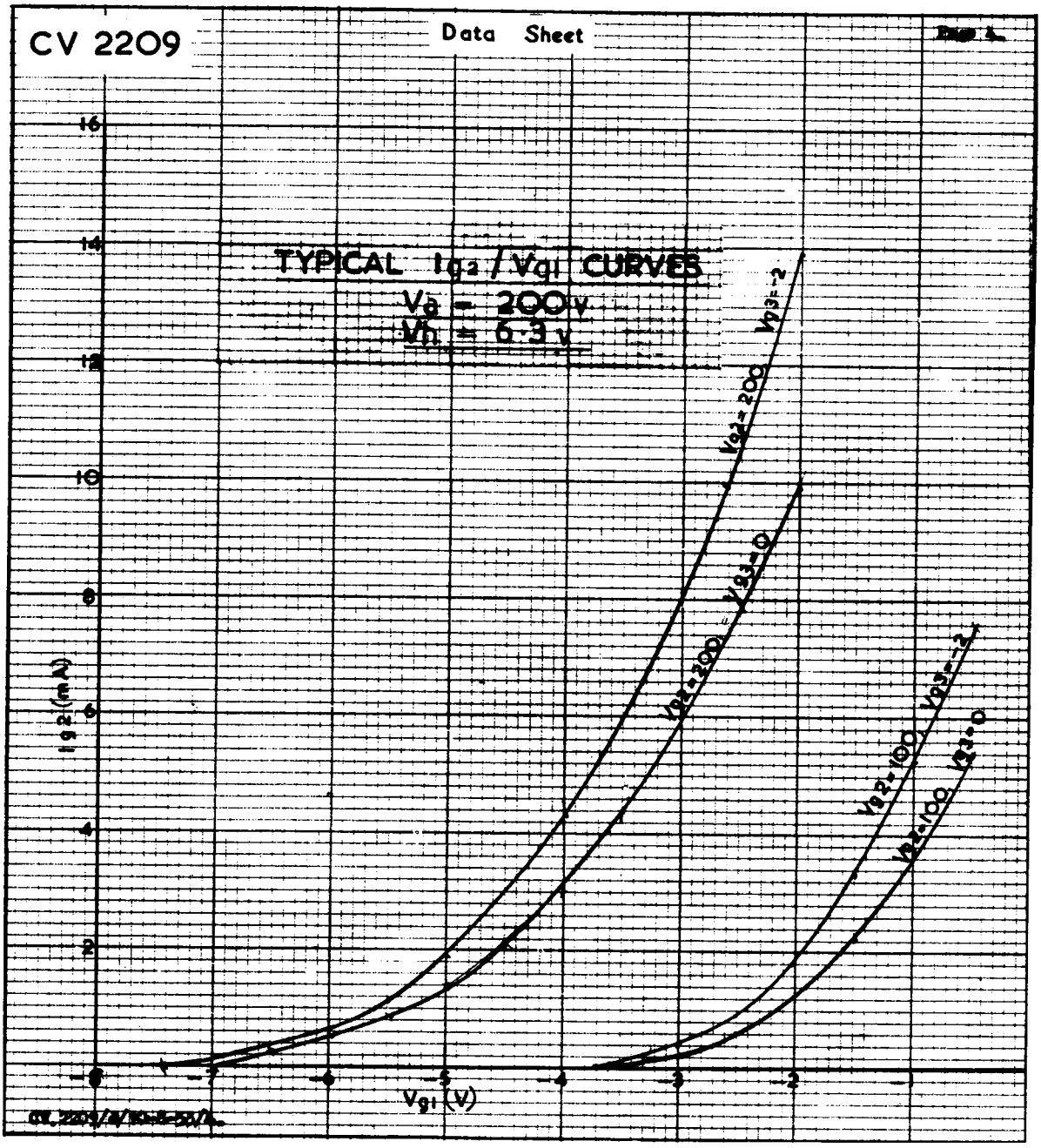
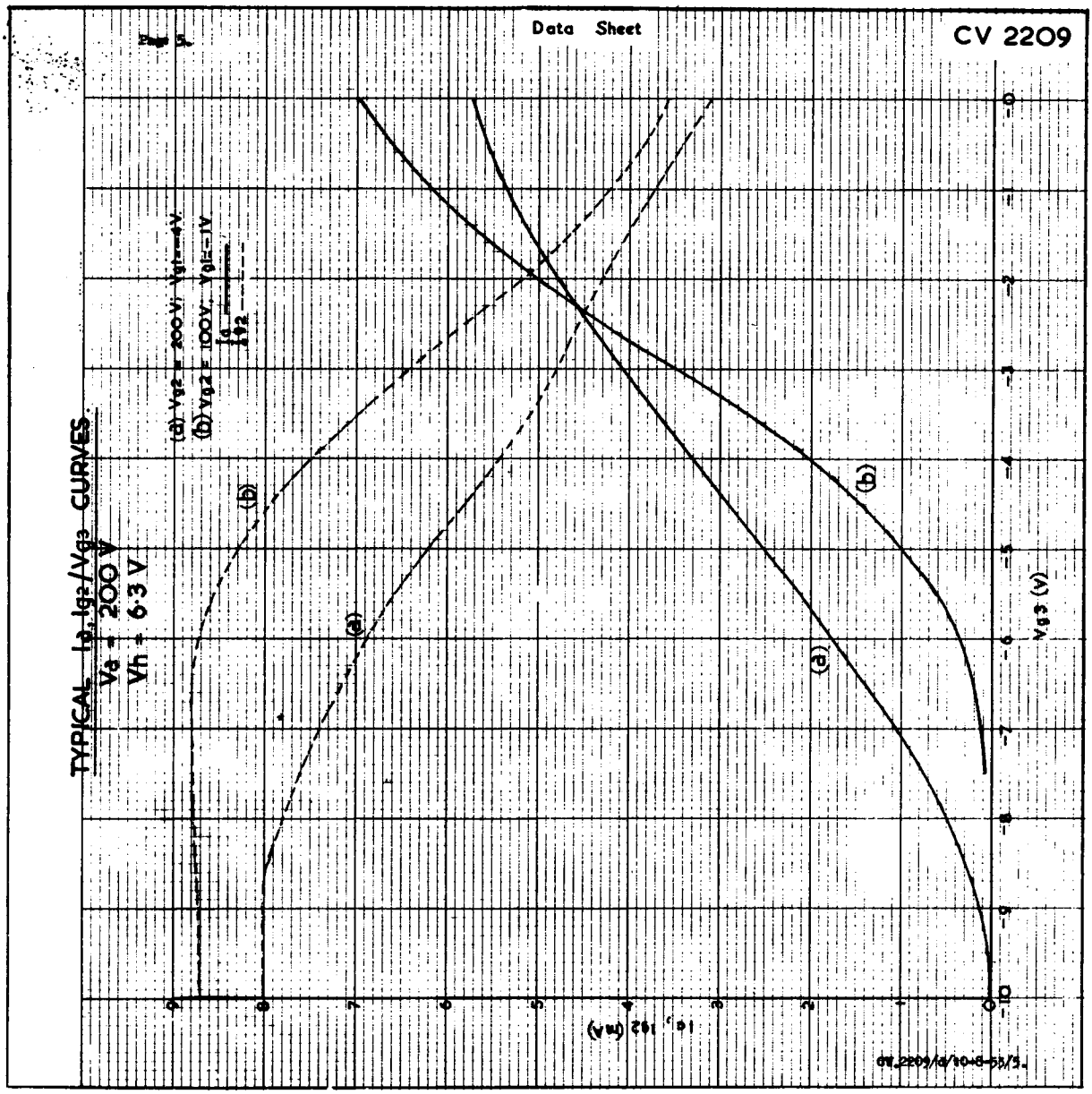
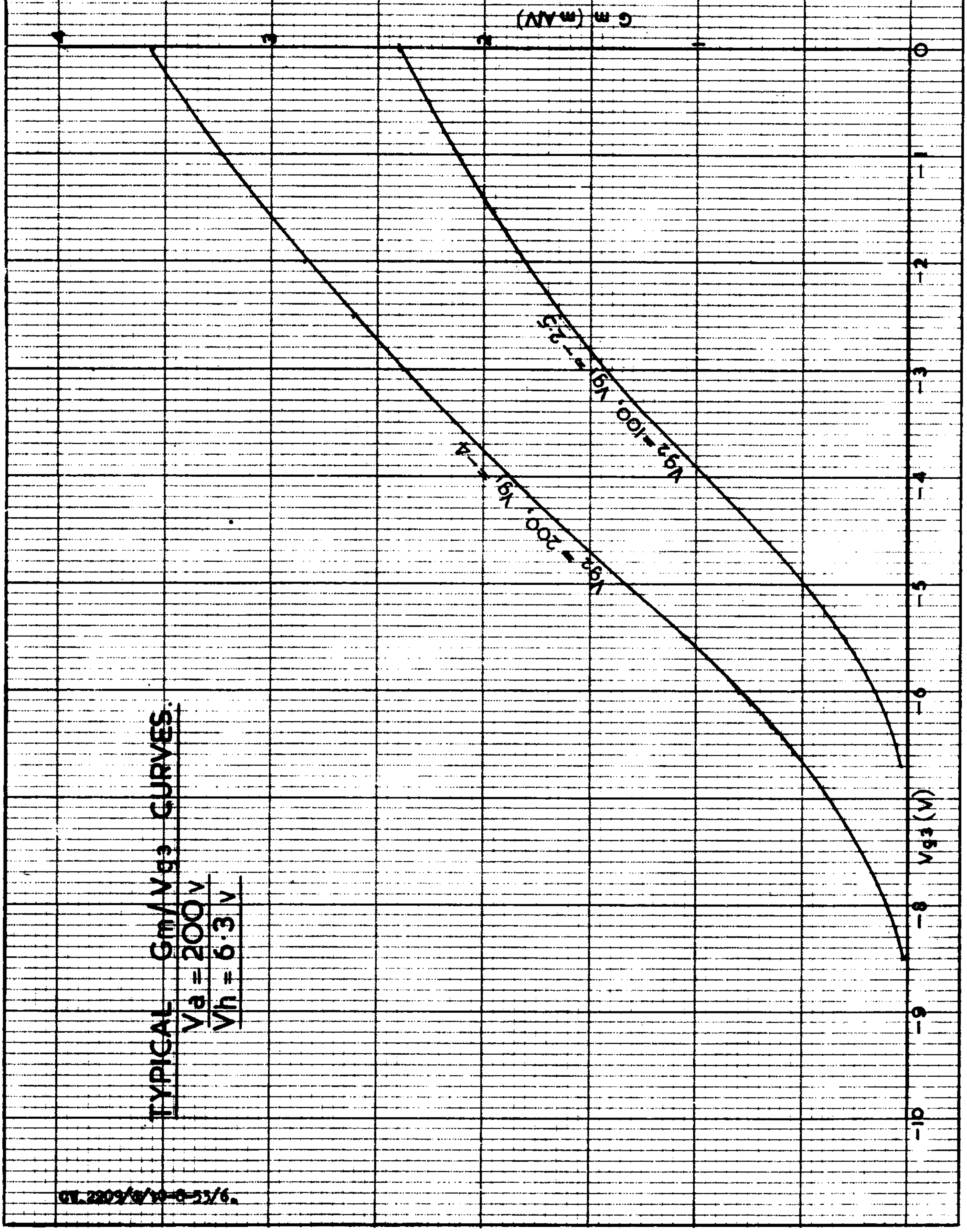
Data Sheet

CV 2209



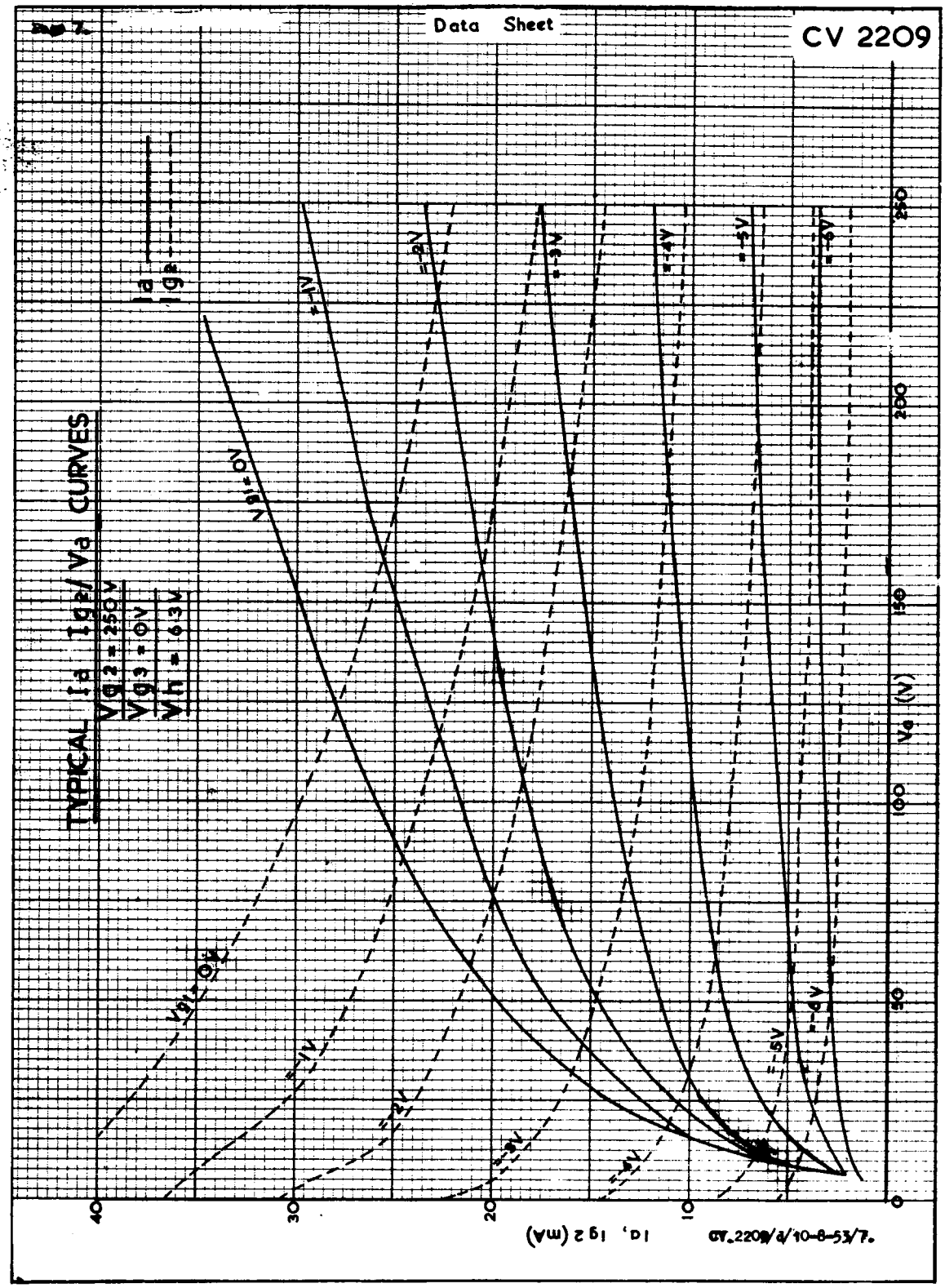

TYPICAL I_{g2} / V_{g1} CURVES
V_a = 200 V
V_h = 6·3 V
$-I_{g2}$ (mA)
V_{g1} (V)
V_{g2}=200 V_{g3}=2
V_{g2}=200 V_{g3}=0
V_{g2}=100 V_{g3}=2
V_{g2}=100 V_{g3}=0

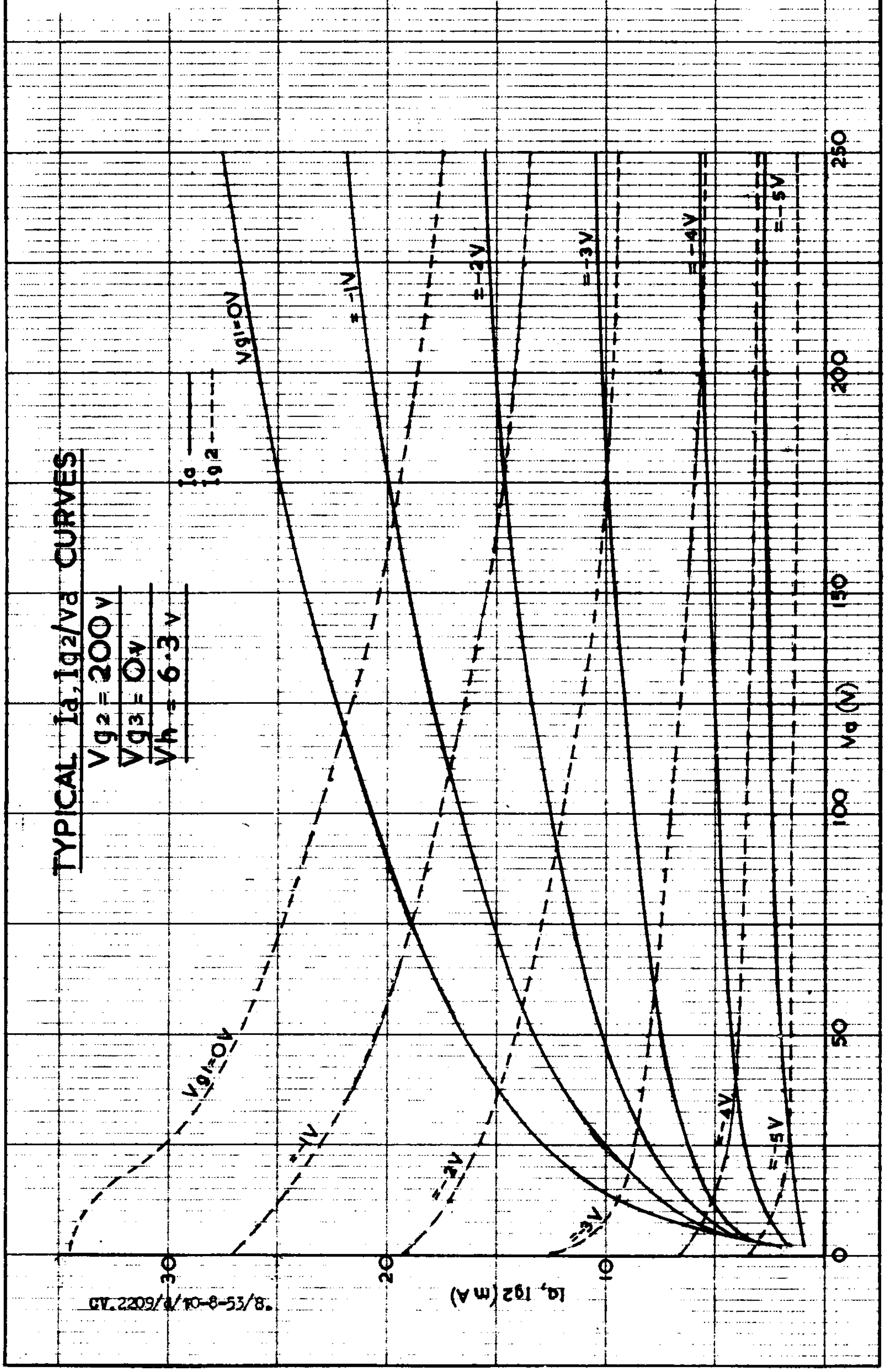

TYPICAL Ia, Ig2/Vg3 CURVES
Va = 200 V
Vh = 6.3 V
(a) Vg2 = 200 V; Vg1 = -1 V
(b) Vg2 = 100 V; Vg1 = -1 V
Ia
Ig2
(a)
(b)
(b)
(a)
Ia, Ig2 (mA)
Vg3 (V)
0
1
2
3
4
5
6
7
8
9
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
CV_2209/6/10-8-55/5.


G m (mA/V)
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-8
-9
-10
Vg3 (V)
Vg2 = 100, Vg1 = -2.5
Vg2 = 200, Vg1 = -4
TYPICAL Gm/Vg3 CURVES.
Va = 200 v
Vh = 6.3 v

Data Sheet

CV 2209




TYPICAL Ia, Ig2/Va CURVES
Vg2 = 200 V
Vg3 = 0 V
Vh = 6·3 V
Ia
Ig2
Vg1=0V
= -1V
= -2V
= -3V
= -4V
= -5V
0
50
100
150
200
250
Va (V)
10
20
30
Ia, Ig2 (mA)
CV.2209/a/10-8-53/8.

Data Sheet

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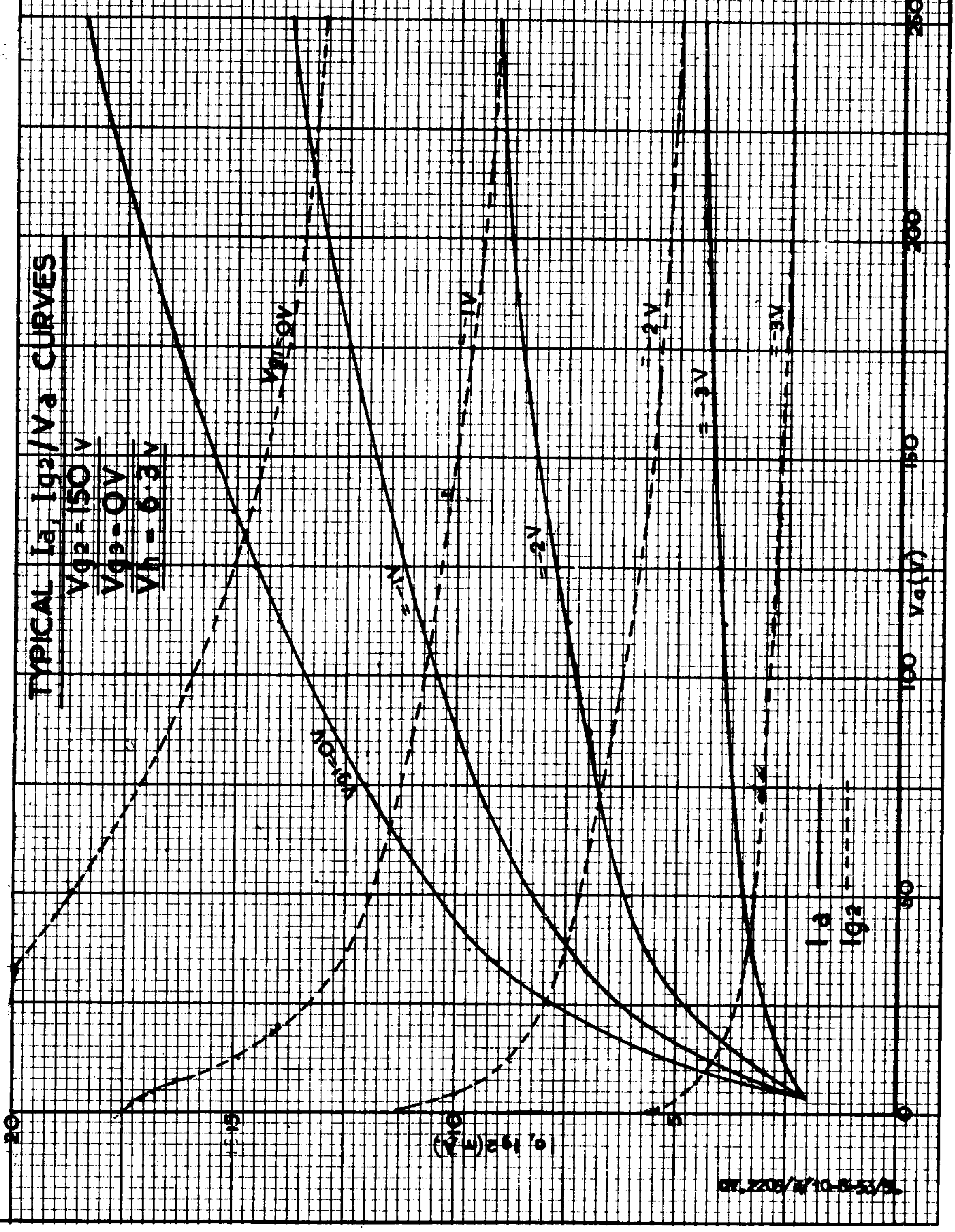

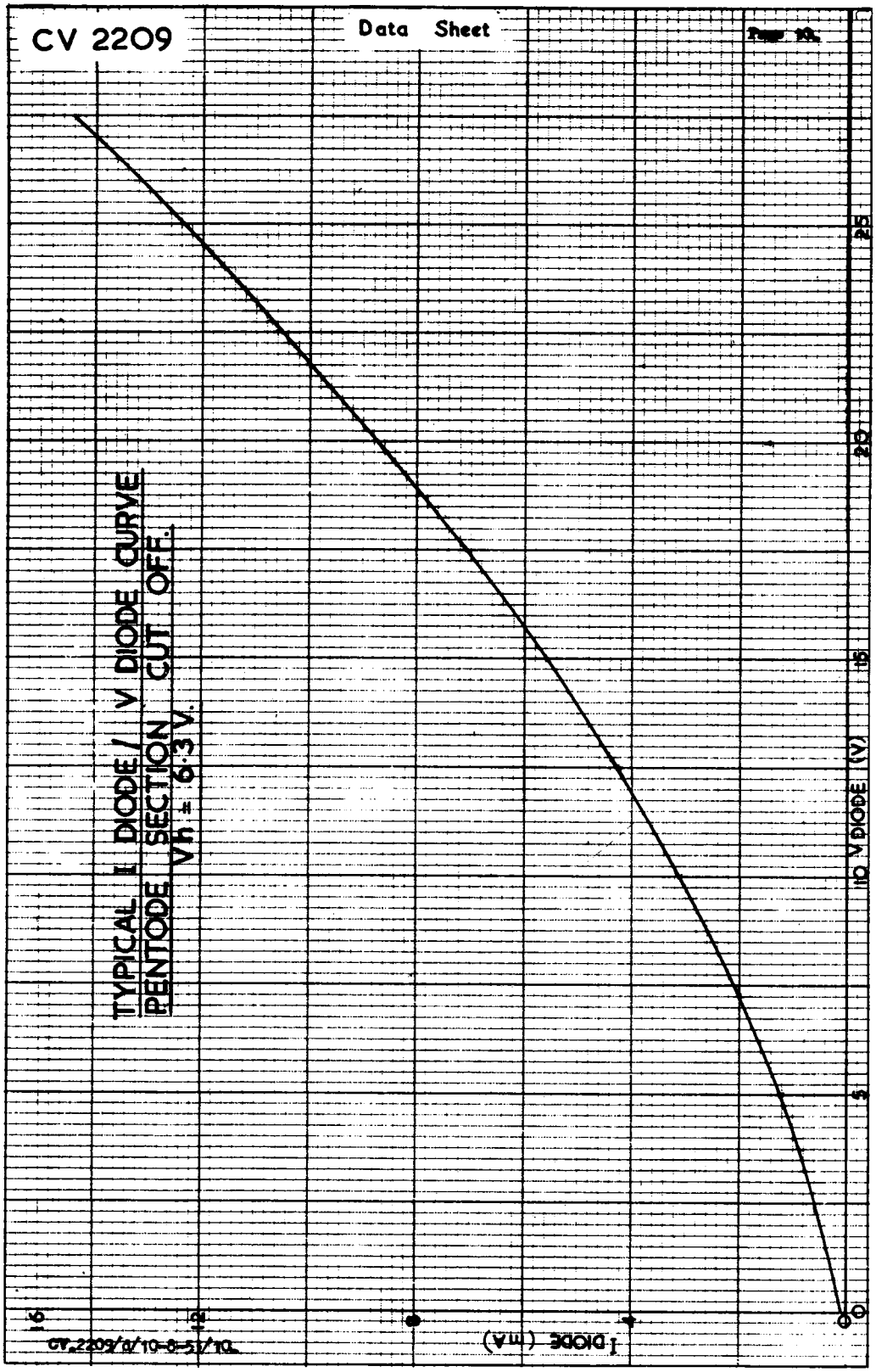
TYPICAL I DIODE / V DIODE CURVE
PENTODE SECTION CUT OFF.
Vh = 6·3 V.
I DIODE (mA)
V DIODE (V)
0
5
10
15
20
25
CV.2209/a/10-8-51/10.