

TRIODE HEPTODE

UCH8I

Triode heptode with 100mA heater primarily intended for use as a frequency changer.

HEATER

Suitable for series operation, a.c. or d.c.

I_h	100	mA
V_h	19	V

CAPACITANCES

C_{ah-at}	200	mpF
C_{ah-gt}	< 90	mpF
$C_{ah-g3+gt}$	< 350	mpF
C_{g1-at}	< 60	mpF
C_{g1-gt}	< 170	mpF
$C_{g1-g3+gt}$	< 450	mpF

Heptode section

$C_{in(g1)}$	4.8	pF
$C_{in(g3)}$	6.0	pF
C_{out}	7.9	pF
C_{a-g1}	< 6.0	mpF
C_{g1-g3}	< 300	mpF
C_{g1-h}	< 170	mpF
C_{g3-h}	< 60	mpF

Triode section

C_{in}	2.6	pF
C_{out}	2.1	pF
C_{a-g}	1.0	pF
C_{g-h}	< 20	mpF

OPERATING CONDITIONS FOR HEPTODE SECTION AS R.F. OR I.F. AMPLIFIER

$V_a = V_b$	170	200	V
V_{g3}	0	0	V
R_{g2+g4}	18	18	kΩ
V_{g1}	-2.2	-2.6	V
R_k	220	220	Ω
V_{g2+g4}	102	123	V
I_a	6.2	7.6	mA
I_{g2+g4}	3.8	4.3	mA
g_m	2.3	2.4	mA/V
r_a	600	600	kΩ
$\mu_{g1-(g2+g4)}$	20	20	
R_{eq}	8.8	9.7	kΩ
V_{g1} (for 100 : 1 reduction in g_m)	-28	-33	V
V_{g1} max. ($I_{g1} = +0.3\mu A$)		-1.3	V
V_{g3} max. ($I_{g3} = +0.3\mu A$)		-1.3	V

OPERATING CONDITIONS OF HEPTODE SECTION AS A.M. FREQUENCY CHANGER

$V_a = V_b$	170	200	V
R_{g2+g4}	10	10	k Ω
R_{g3+gt}	47	47	k Ω
V_{g1}	-2.2	-2.6	V
V_{g2+g4}	102	119	V
I_a	3.2	3.7	mA
I_{g2+g4}	6.8	8.1	mA
I_{g3+gt}	200	230	μ A
g_c	750	775	μ A/V
r_a	0.9	1.0	M Ω
R_{eq}	70	75	k Ω
V_{g1} (for 100 : 1 reduction in g_c)	-24	-28	V

CHARACTERISTICS

Triode section

V_a	100	V
I_a	13.5	mA
V_g	0	V
g_m	3.7	mA/V
μ	22	
V_g max. ($I_g = +0.3\mu$ A)	-1.3	V

OPERATING CONDITIONS OF TRIODE SECTION AS R.F. OSCILLATOR

V_b	170	200	V
R_{at}	15	15	k Ω
R_{gt+g3}	47	47	k Ω
I_{g3+gt}	200	240	μ A
I_{at}	4.5	5.4	mA
g_m (eff)	580	580	μ A/V

LIMITING VALUES

Heptode section

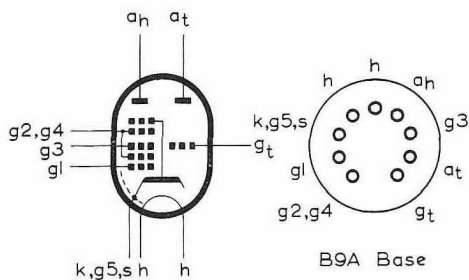
$V_{a(b)}$ max.	550	V
V_a max.	250	V
p_a max.	1.7	W
$V_{g2+g4(b)}$ max.	550	V
V_{g2+g4} max. ($I_a = 7.6$ mA)	125	V
V_{g2+g4} max. ($I_a < 1$ mA)	250	V
p_{g2+g4} max.	1.0	W
I_k max.	12.5	mA
R_{g1-k} max.	3.0	M Ω
* R_{g3-k} max.	3.0	M Ω
R_{h-k} max.	20	k Ω
V_{h-k} max.	100	V

*If the two sections of the valve are switched during operation so that there is no direct connection between g_3 and g_t , as may occur in f.m./a.m. receivers, then R_{g3-k} max. = 20k Ω .

Triode section

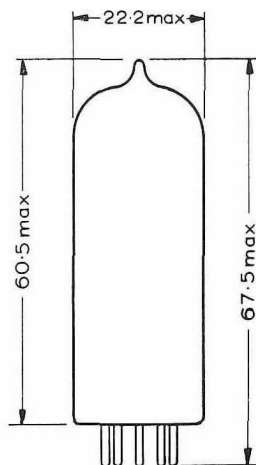
$V_{a(b)}$ max.	550	V
V_a max.	250	V
p_a max.	800	mW
I_k max.	6.5	mA
R_{g-k} max.	3.0	MΩ
V_{h-k} max.	100	V
R_{h-k} max.	20	kΩ

The heptode section of this valve can be used without special precautions against microphony in circuits in which the input voltage is not less than 50mV for an output of 50mW from the output stage. The corresponding figure for the triode section is 25mV.



All dimensions in mm

6397

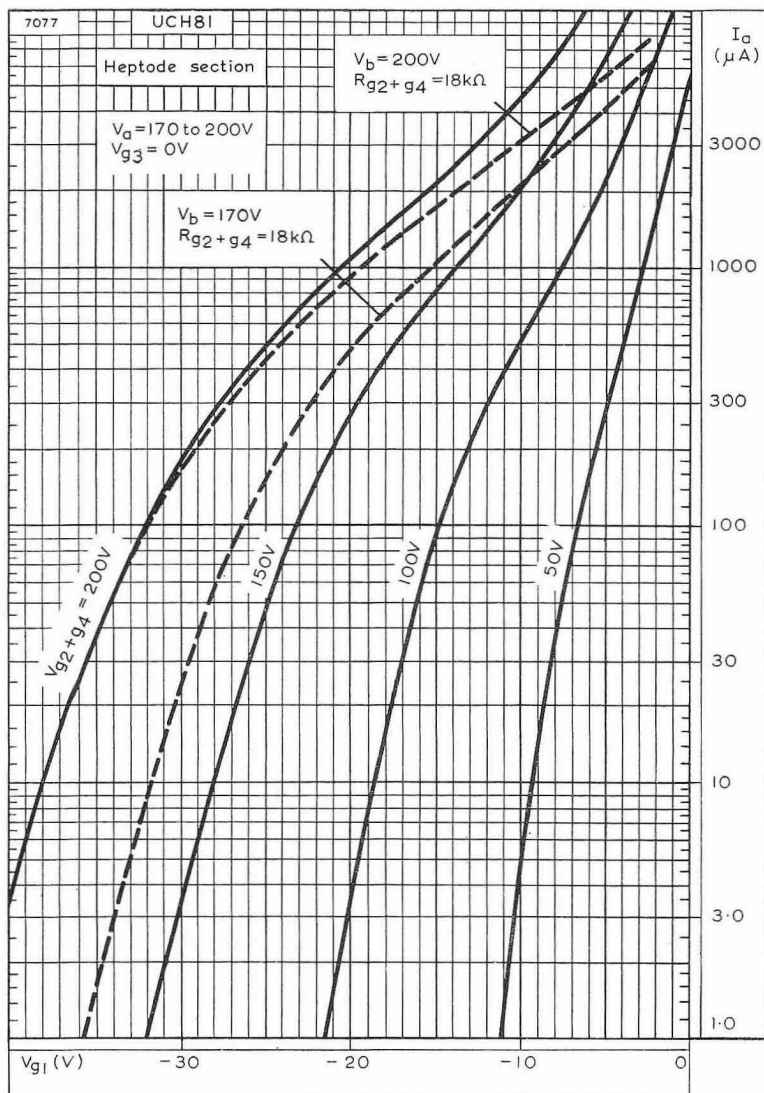


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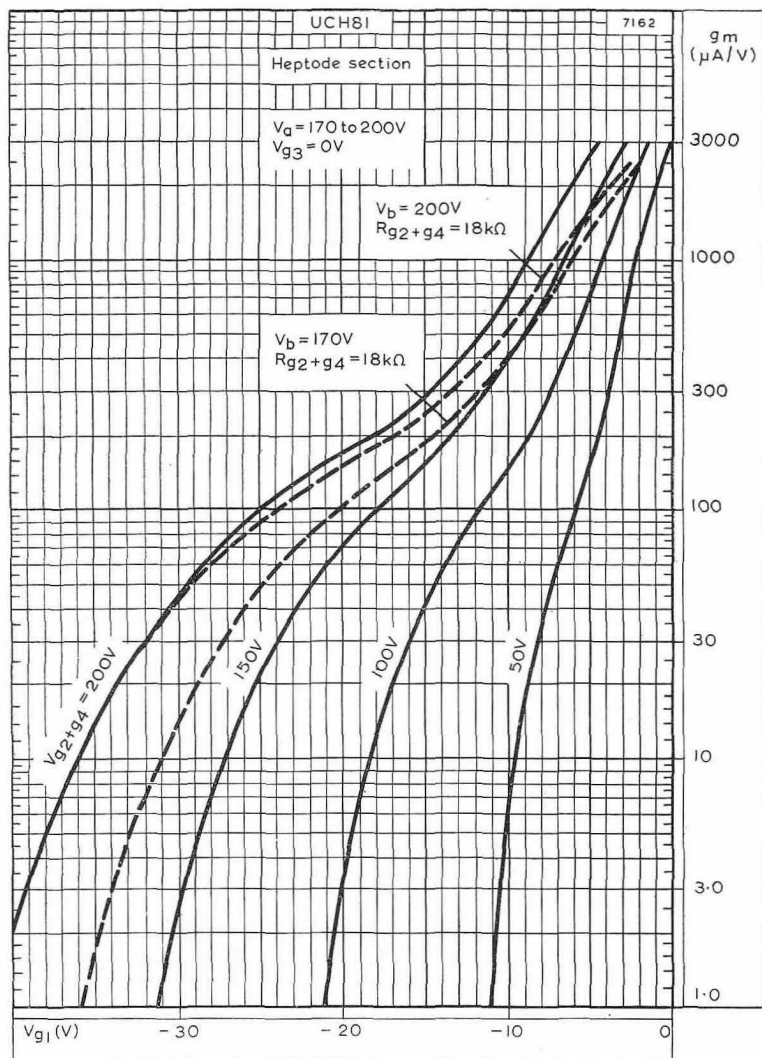
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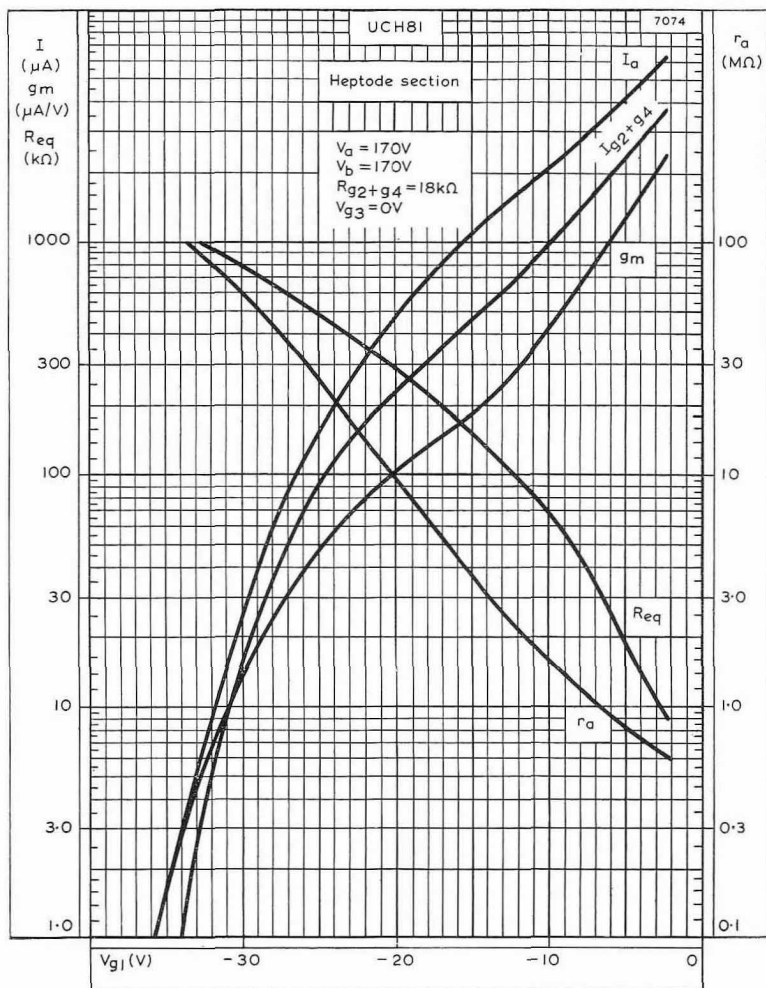
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ANODE CURRENT PLOTTED AGAINST CONTROL-GRID VOLTAGE FOR
HEPTODE SECTION

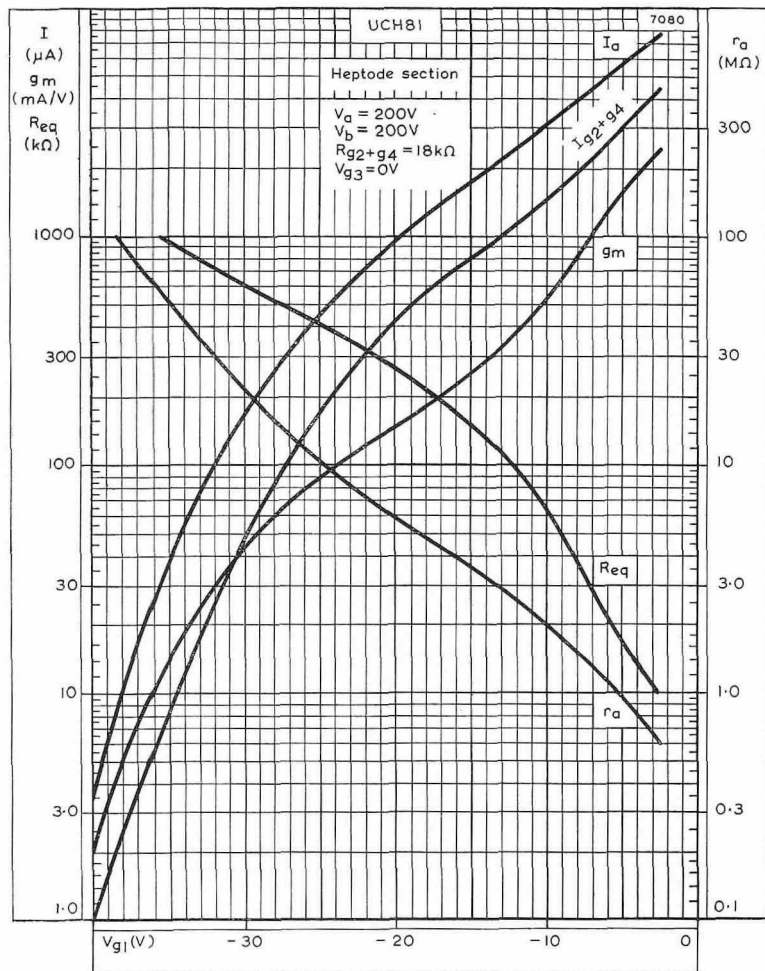


MUTUAL CONDUCTANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE
FOR HEPTODE SECTION

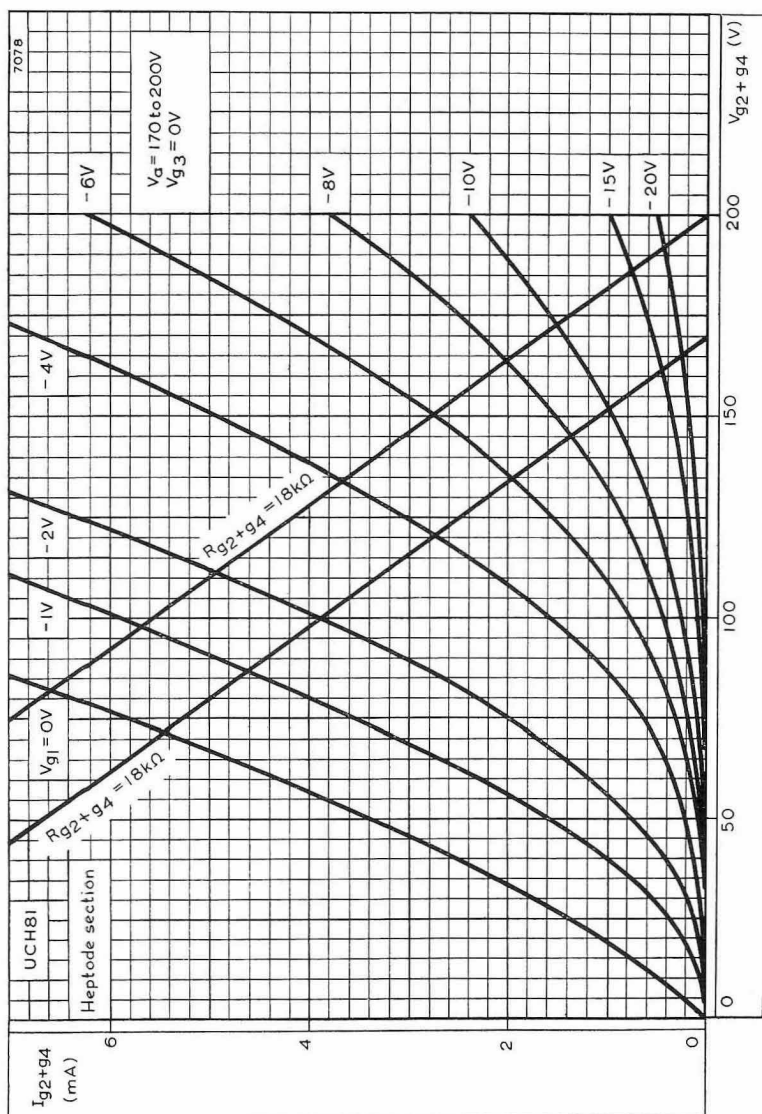


ANODE AND SCREEN-GRID CURRENTS, MUTUAL CONDUCTANCE, ANODE IMPEDANCE, AND EQUIVALENT NOISE RESISTANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE FOR HEPTODE SECTION.

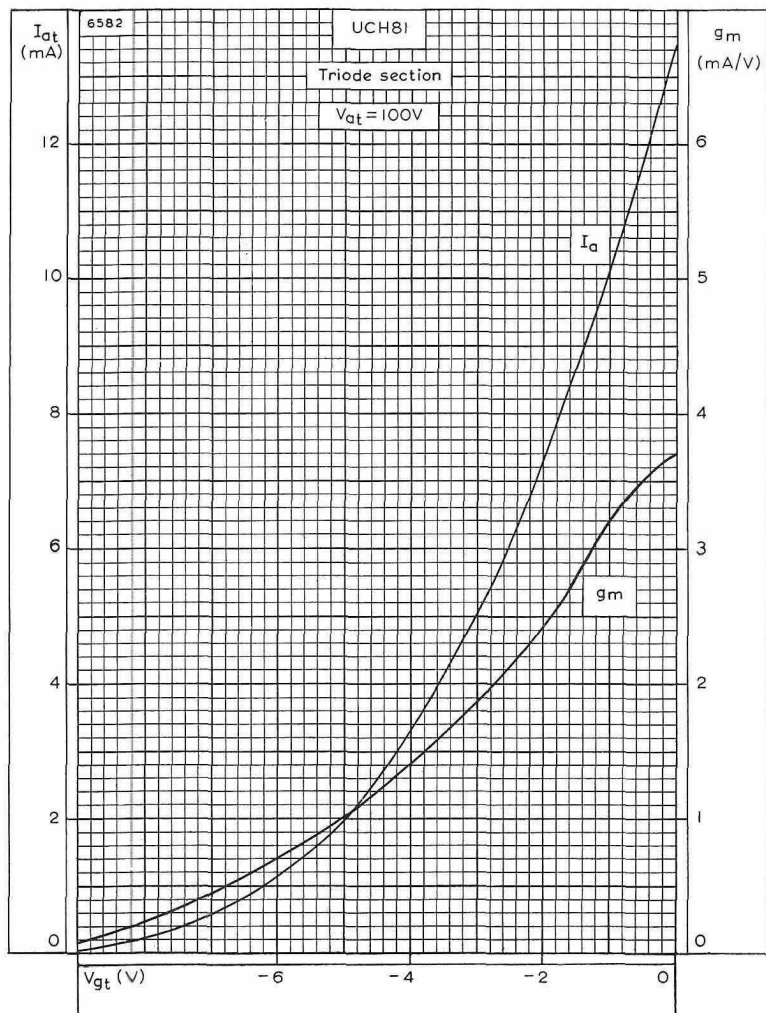
$V_a = 170V$



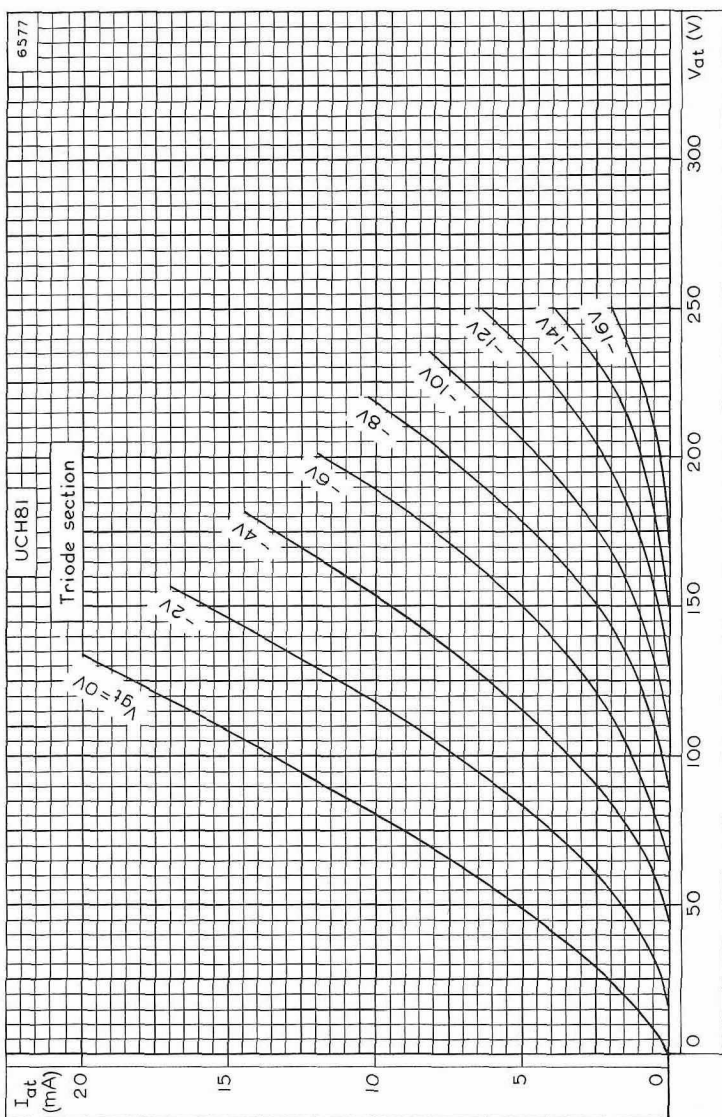
ANODE AND SCREEN-GRID CURRENTS, MUTUAL CONDUCTANCE, ANODE IMPEDANCE, AND EQUIVALENT NOISE RESISTANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE FOR HEPTODE SECTION
 $V_a = 200V$



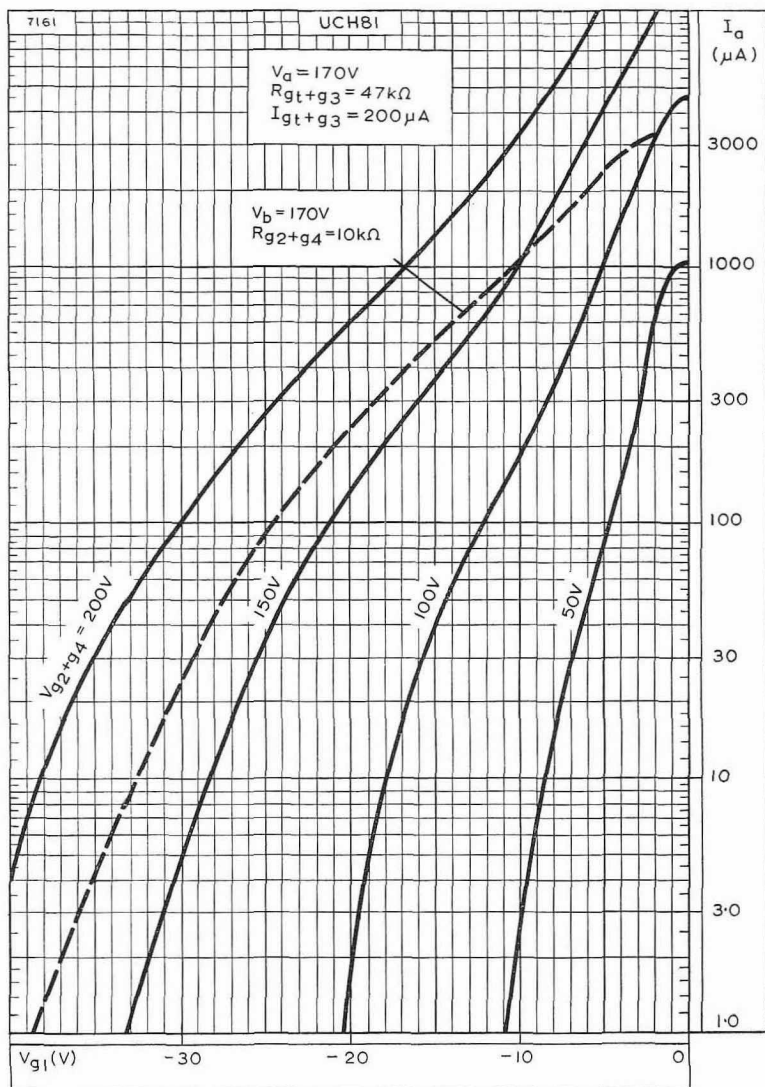
SCREEN-GRID CURRENT PLOTTED AGAINST SCREEN-GRID VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER FOR HEPTODE SECTION



ANODE CURRENT AND MUTUAL CONDUCTANCE PLOTTED AGAINST GRID VOLTAGE FOR TRIODE SECTION

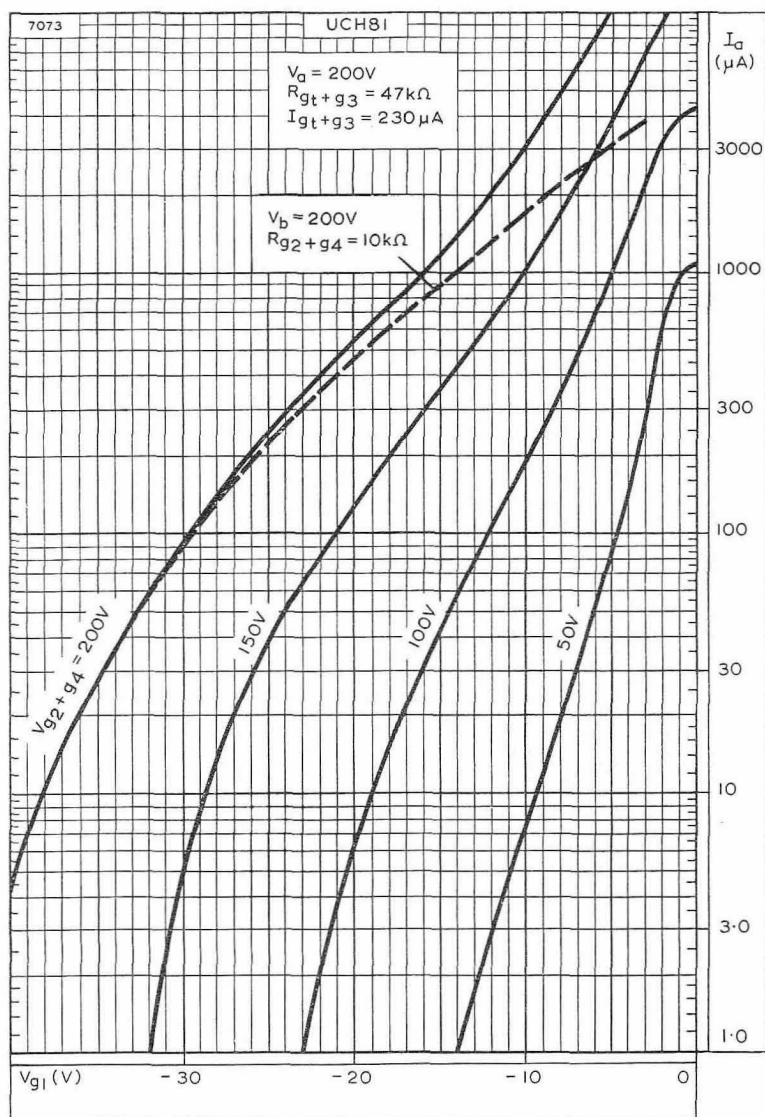


ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE FOR TRIODE SECTION



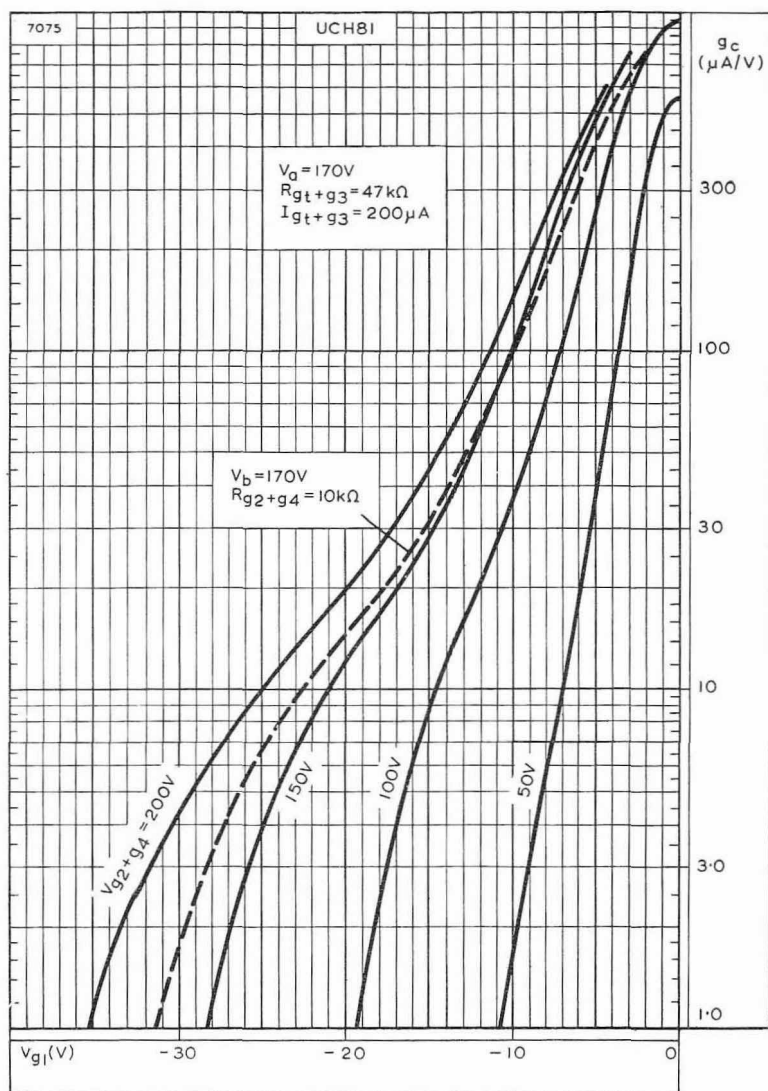
ANODE CURRENT PLOTTED AGAINST CONTROL-GRID VOLTAGE WHEN USED AS A FREQUENCY CHANGER.

$V_a = 170V$

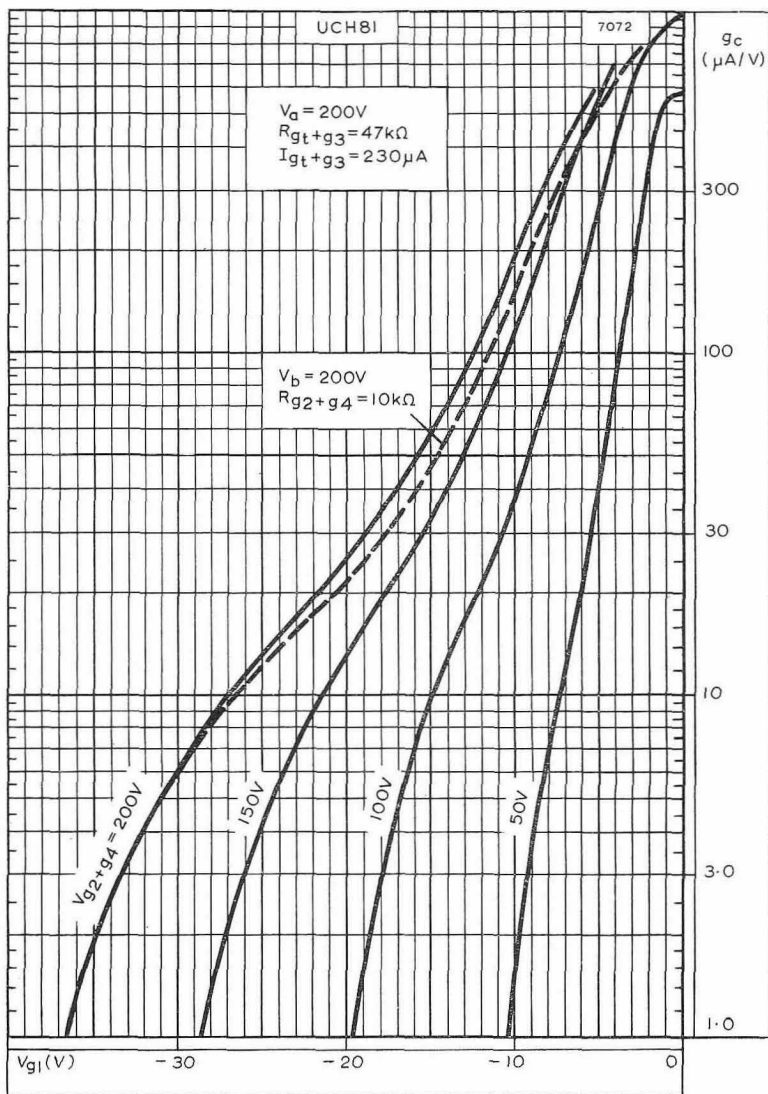


ANODE CURRENT PLOTTED AGAINST CONTROL-GRID VOLTAGE WHEN
USED AS FREQUENCY CHANGER.

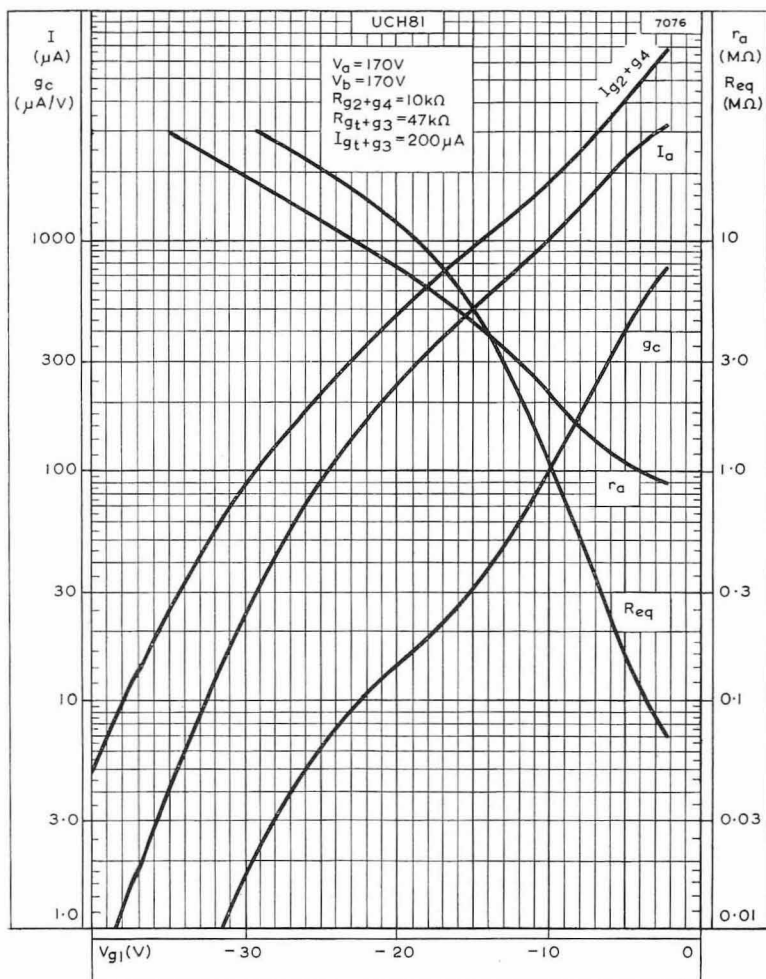
$V_a = 200V$



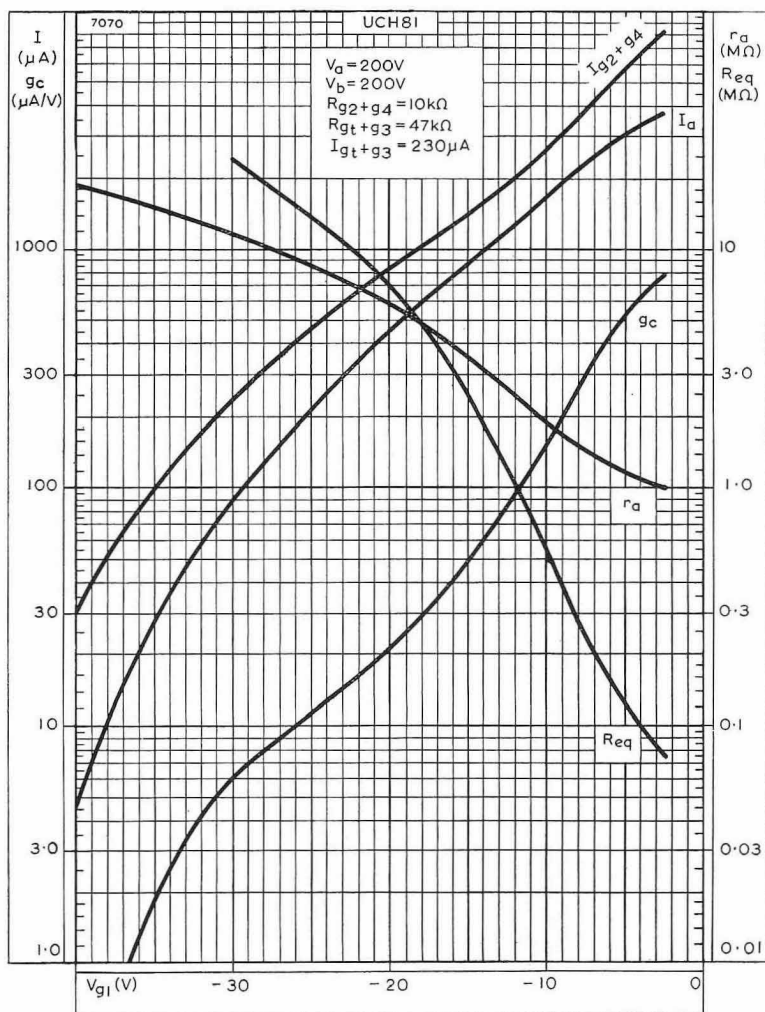
CONVERSION CONDUCTANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE WHEN USED AS A FREQUENCY CHANGER.
 $V_a = 170V$



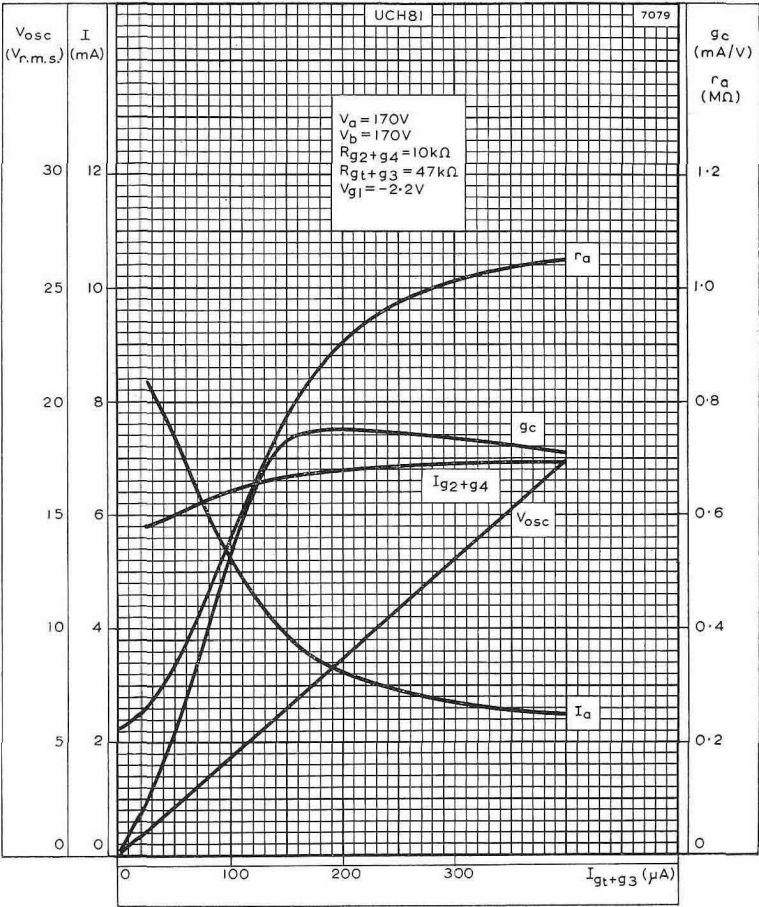
CONVERSION CONDUCTANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE WHEN USED AS A FREQUENCY CHANGER.
 $V_a = 200V$



ANODE AND SCREEN-GRID CURRENTS, CONVERSION CONDUCTANCE, ANODE IMPEDANCE AND EQUIVALENT NOISE RESISTANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE WHEN USED AS A FREQUENCY CHANGER. $V_b = 170V$

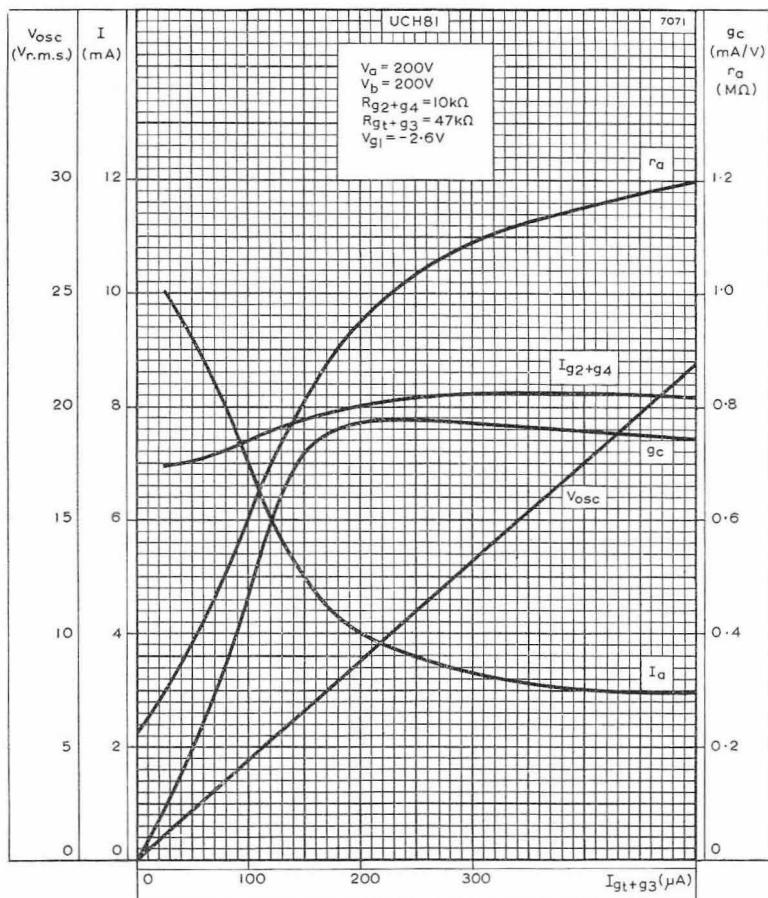


ANODE AND SCREEN-GRID CURRENTS, CONVERSION CONDUCTANCE, ANODE IMPEDANCE AND EQUIVALENT NOISE RESISTANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE WHEN USED AS A FREQUENCY CHANGER. $V_a = 200V$



ANODE AND SCREEN-GRID CURRENTS, CONVERSION CONDUCTANCE,
ANODE IMPEDANCE AND OSCILLATOR VOLTAGE PLOTTED AGAINST
OSCILLATOR-GRID CURRENT.

$V_a = 170V$



ANODE AND SCREEN-GRID CURRENTS, CONVERSION CONDUCTANCE, ANODE IMPEDANCE AND OSCILLATOR VOLTAGE PLOTTED AGAINST OSCILLATOR-GRID CURRENT.

$V_a = 200V$

