

Miniwatt

UCH 81

TRIODE-HEPTODE for various purposes in F.M., AM/FM, A.M. and television receivers
 TRIODE-HEPTODE pour applications diverses dans des récepteurs F.M., A.M./F.M., A.M. et de télévision
 TRIODE-HEPTODE für mehrere Anwendungen in F.M., A.M./F.M.-, A.M.- und Fernsehempfängern

Heating : Indirect by A.C. or D.C.;
 series supply

Chauffage: indirect par C.A. ou C.C.;
 alimentation en série

Heizung : indirekt durch Wechsel-
 oder Gleichstrom; Serien-
 speisung

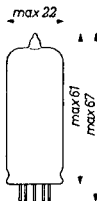
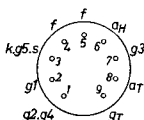
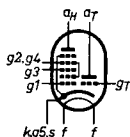
$I_f = 100 \text{ mA}$

$V_f = 19 \text{ V}$

Dimensions in mm

Dimensions en mm

Abmessungen in mm



Base, culot, Sockel: NOVAL

Capacitances; Capacités; Kapazitäten

Triode section

Partie triode

Triodenteil

Heptode section

Partie heptode

Heptodenteil

$C_g = 2,6 \text{ pF}$

$C_{g1} = 4,8 \text{ pF}$

$C_{g1g3} < 0,3 \text{ pF}$

$C_a = 2,1 \text{ pF}$

$C_a = 7,9 \text{ pF}$

$C_{g1f} < 0,017 \text{ pF}$

$C_{ag} = 1,0 \text{ pF}$

$C_{ag1} < 0,006 \text{ pF}$

$C_{g3f} < 0,06 \text{ pF}$

$C_{gf} < 0,02 \text{ pF}$

$C_{g3} = 6,0 \text{ pF}$

Between triode and heptode sections

Entre les parties triode et heptode

Zwischen Trioden- und Heptodenteil

$C_{aH-aT} = 0,20 \text{ pF}^1)$ $C_{g1H-gT} < 0,170 \text{ pF}$

$C_{aH-gT} < 0,090 \text{ pF}$ $C_{g1H-(gT+g3)} < 0,450 \text{ pF}$

$C_{g1H-aT} < 0,060 \text{ pF}$ $C_{aH-(gT+g3)} < 0,350 \text{ pF}$

¹⁾ See page 5; voir page 5; siehe Seite 5.

TRIODE-HEPTODE for use in A.M., F.M., AM/FM and television receivers

TRIODE-HEPTODE pour applications dans des récepteurs A.M., F.M., AM/FM et de télévision

TRIODE-HEPTODE zur Verwendung in AM-, FM-, AM/FM- und Fernsehempfängern

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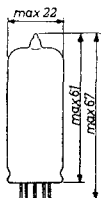
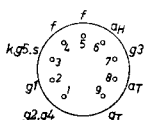
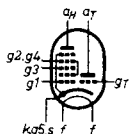
If = 100 mA

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Partie heptode

Heptodenteil

$C_g = 2,6 \text{ pF}$

$C_a = 2,1 \text{ pF}$

$C_{ag} = 1,0 \text{ pF}$

$C_{gf} < 0,02 \text{ pF}$

$C_{g1} = 4,8 \text{ pF}$

$C_a = 7,9 \text{ pF}$

$C_{ag1} < 0,06 \text{ pF}$

$C_{g3} = 6,0 \text{ pF}$

$C_{g1g3} < 0,3 \text{ pF}$

$C_{g1f} < 0,17 \text{ pF}$

$C_{g3f} < 0,06 \text{ pF}$

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$C_{aH-aT} = 0,20 \text{ pF}^1)$ $C_{g1H-gT} < 0,170 \text{ pF}$

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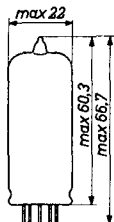
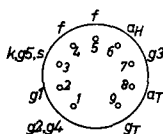
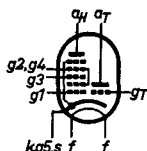
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¹⁾ See page 5; voir page 5; siehe Seite 5

Operating characteristics of the heptode section for use as mixer

Caractéristiques d'utilisation de la partie heptode comme tube mélangeur

Betriebsdaten des Heptodenteiles als Mischröhre

$V_a = V_b$	=	200		V
R_{g2+g4}	=	10		k Ω
R_{g1+g3}	=	47		k Ω
I_{g1+g3}	=	230		μ A
R_k	=	150		Ω
V_{g1}	=	-2,6	-28	V
V_{g2+g4}	=	119	250	V
I_a	=	3,7	-	mA
I_{g2+g4}	=	8,1	-	mA
S_c	=	775	7,75	μ A/V
R_i	=	1	> 3	M Ω
R_{eq}	=	75	-	k Ω

$V_a = V_b$	=	170		100	V	
R_{g2+g4}	=	10		10	k Ω	
R_{g1+g3}	=	47		47	k Ω	
I_{g1+g3}	=	200		115	μ A	
R_k	=	150		150	Ω	
V_{g1}	=	-2,2	-24	-1,2	-14,5	V
V_{g2+g4}	=	102	-	63	-	V
I_a	=	3,2	-	1,7	-	mA
I_{g2+g4}	=	6,8	-	3,7	-	mA
S_c	=	750	7,5	620	6,2	μ A/V
R_i	=	0,9	3	0,8	> 3	M Ω
R_{eq}	=	70	-	62	-	k Ω

Operating characteristics of the heptode section for use as mixer

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Betriebsdaten des Heptodenteiles als Mischröhre

$V_a = V_b$	=	200		V
R_{g2+g4}	=	10		k Ω
R_{gT+g3}	=	47		k Ω
I_{gT+g3}	=	230		μ A
R_k	=	150		Ω
V_{g1}	=	-2,6	-28	V
V_{g2+g4}	=	119	250	V
I_a	=	3,7	-	mA
I_{g2+g4}	=	8,1	-	mA
S_c	=	775	7,75	μ A/V
R_i	=	1	> 3	M Ω
R_{eq}	=	75	-	k Ω

$V_a = V_b$	=	170		100		V
R_{g2+g4}	=	10		10		k Ω
R_{gT+g3}	=	47		47		k Ω
I_{gT+g3}	=	200		115		μ A
R_k	=	150		150		Ω
V_{g1}	=	-2,2	-24	-1,2	-14,5	V
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I_{gT+g3}	=	230		μ A
R_k	=	150		Ω
V_{g1}	=	-2,6	-28	V
V_{g2+g4}	=	119	250	V
I_a	=	3,7	-	mA
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S_c	=	775	7,75	μ A/V
R_i	=	1	> 3	M Ω
R_{eq}	=	75	-	k Ω

$V_a = V_b$	=	170		100	V	
R_{g2+g4}	=	10		10	k Ω	
R_{gT+g3}	=	47		47	k Ω	
I_{gT+g3}	=	200		115	μ A	
R_k	=	150		150	Ω	
V_{g1}	=	-2,2	-24	-1,2	-14,5	V
V_{g2+g4}	=	102	-	63	-	V
I_a	=	3,2	-	1,7	-	mA
I_{g2+g4}	=	6,8	-	3,7	-	mA
S_c	=	750	7,5	620	6,2	μ A/V
R_i	=	0,9	> 3	0,8	> 3	M Ω
R_{eq}	=	70	-	62	-	k Ω

Operating characteristics of the heptode section as R.F. or I.F. amplifier

Caractéristiques d'utilisation de la partie heptode en amplificatrice H.F. ou M.F.

Betriebsdaten des Heptodenteiles als H.F.-oder Z.F. Verstärker

$V_a = V_b$	=	200		V
V_{g3}	=	0		V
R_{g2+g4}	=	18		k Ω
R_k	=	220		Ω
V_{g1}	=	-2,6	-33	V
V_{g2+g4}	=	123	-	V
I_a	=	7,6	-	mA
I_{g2+g4}	=	4,3	-	mA
S	=	2,4	0,024	mA/V
R_1	=	0,6	> 10	M Ω
u_{g2g1}	=	20	-	
R_{eq}	=	9,7	-	k Ω

$V_a = V_b$	=	170		100	V	
V_{g3}	=	0		0	V	
R_{g2+g4}	=	18		18	k Ω	
R_k	=	220		220	Ω	
V_{g1}	=	-2,2	-28	-1,2	-16,5	V
V_{g2+g4}	=	102	-	60	-	V
I_a	=	6,2	-	3,4	-	mA
I_{g2+g4}	=	3,8	-	2,2	-	mA
S	=	2,3	0,023	2,0	0,020	mA/V
R_1	=	0,6	> 10	0,5	> 10	M Ω
u_{g2g1}	=	20	-	20	-	-
R_{eq}	=	8,8	-	5,8	-	k Ω

Typical characteristics of the triode section

Caractéristiques limites de la partie triode

Kenndaten des Triodenteiles

V_a	=	100	V
V_g	=	0	V
I_a	=	13,5	mA
S	=	3,7	mA/V
μ	=	22	

Operating characteristics of the triode section as oscillator

Caractéristiques d'utilisation de la partie triode en oscillatrice

Betriebsdaten des Triodenteiles als Oszillator

V_b	=	200	170	100	V
R_a	=	15	15	15	k Ω
R_{gT+g3}	=	47	47	47	k Ω
I_{gT+g3}	=	240	200	120	μ A
I_a	=	5,4	4,5	2,5	mA
S_{eff}	=	0,58	0,58	0,53	mA/V

Operating characteristics for use as A.F. amplifier

Caractéristiques d'utilisation en amplificatrice B.F.

Betriebsdaten als N.F. Verstärker

The heptode section of this valve can be used without special precautions against microphonic effect in circuits in which the input voltage $V_i \geq 50$ mV for an output of 50 mW of the output valve. For the triode section the corresponding value is 25 mV.

La partie heptode de ce tube peut être utilisée sans précautions spéciales contre l'effet microphonique dans des circuits dont la tension d'entrée $V_i \geq 50$ mV pour une puissance de 50 mW du tube de sortie. La valeur correspondante pour la partie triode est de 25 mV.

Der Heptodenteil dieser Röhre darf ohne spezielle Massnahmen gegen Mikrophonie verwendet werden in Schaltungen die für eine Eingangsspannung $V_i \geq 50$ mV eine Leistung von 50 mW ergeben. Der entsprechende Wert für den Triodenteil ist 25 mV.

Limiting values of the triode section

Caractéristiques limites de la partie triode

Grenzdaten des Triodenteiles

V_{ac}	= max.	550 V
V_a	= max.	250 V
W_a	= max.	0,8 W
I_k	= max.	6,5 mA
R_g	= max.	3 M Ω
R_{kf}	= max.	20 k Ω
V_{kf}	= max.	100 V
$V_g (I_g = +0,3 \mu A)$	= max.	-1,3 V

Limiting values of the heptode section
Caractéristiques limites de la partie heptode
Grenzdaten des Heptodenteiles

V_{ao}	= max.	550 V
V_a	= max.	250 V
W_a	= max.	1,7 W
$V(g_2+g_4)_o$	= max.	550 V
$V_{g_2+g_4}(I_a = 7,6 \text{ mA})$	= max.	125 V
$V_{g_2+g_4}(I_a < 1 \text{ mA})$	= max.	250 V
$W_{g_2+g_4}$	= max.	1 W
I_k	= max.	12,5 mA
R_{g_1}	= max.	3 M Ω
$R_{g_3}^{2)}$	= max.	3 M Ω
R_{kf}	= max.	20 k Ω
V_{kf}	= max.	100 V
$V_{g_1}(I_{g_1} = + 0,3 \text{ } \mu\text{A})$	= max.	-1,3 V
$V_{g_3}(I_{g_3} = + 0,3 \text{ } \mu\text{A})$	= max.	-1,3 V

- 2) When in AM/FM receivers the connections to the valve are switched over during operation and g_3 and g_T have not been connected by ohmic resistance, $R_{g_3} = \text{max. } 20 \text{ k}\Omega$.

En cas que dans des appareils AM/FM les connexions au tube soient commutées pendant l'opération et g_3 n'ait pas été connecté à g_T par l'intermédiaire d'une résistance ohmique, $R_{g_3} = \text{max. } 20 \text{ k}\Omega$.

Wenn in AM/FM-Empfängern die Verbindungen zu der Röhre während des Betriebs umgeschaltet werden und g_3 nicht mittels eines ohmischen Widerstandes mit g_T verbunden ist, ist $R_{g_3} = \text{max. } 20 \text{ k}\Omega$.

Page 1, Seite 1.

- ¹⁾ $G = 0.015$ which means that for 68% of a great number of valves $0.20 - 0.015 \text{ pF} < C_{aH-aT} < 0.20 + 0.015 \text{ pF}$ and for 94% $0.20 - 0.03 \text{ pF} < C_{aH-aT} < 0.20 + 0.03 \text{ pF}$.

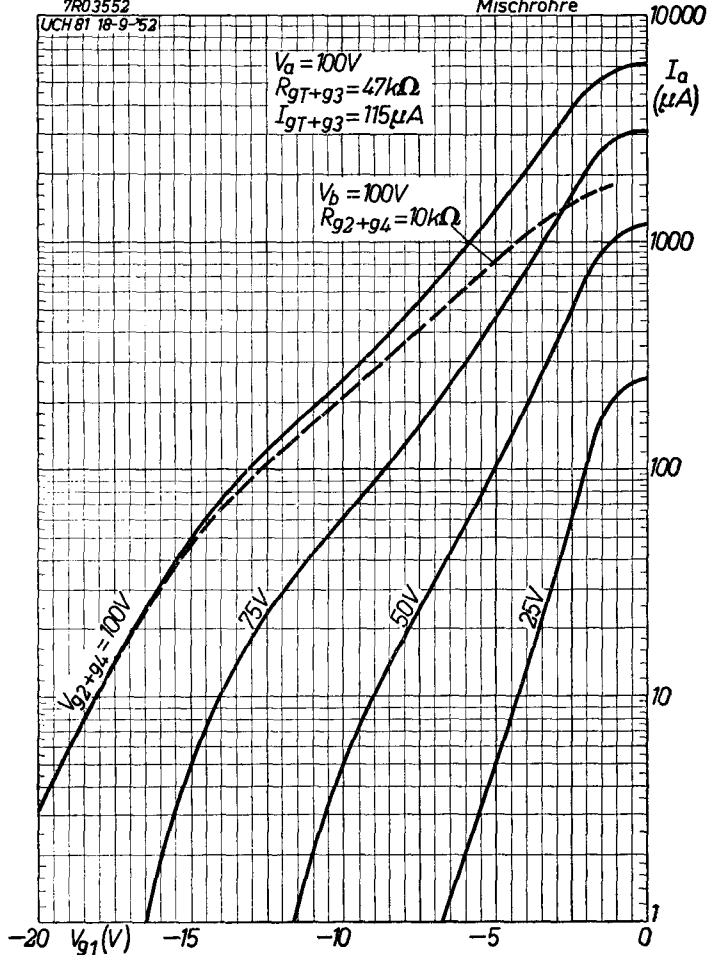
$G = 0,015$ ceci signifie que $0,20 - 0,015 \text{ pF} < C_{aH-aT} < 0,20 + 0,015 \text{ pF}$ pour 68% d'un grand nombre de tubes et $0,20 - 0,03 \text{ pF} < C_{aH-aT} < 0,20 + 0,03 \text{ pF}$ pour 94%

$G = 0,015$ was heisst dass für 68% einer grossen Anzahl Röhren $0,20 - 0,015 \text{ pF} < C_{aH-aT} < 0,20 + 0,015 \text{ pF}$ und für 94% $0,20 - 0,03 \text{ pF} < C_{aH-aT} < 0,20 + 0,03 \text{ pF}$.

Frequency changer; Tube mélangeur;
Mischröhre

7R03552

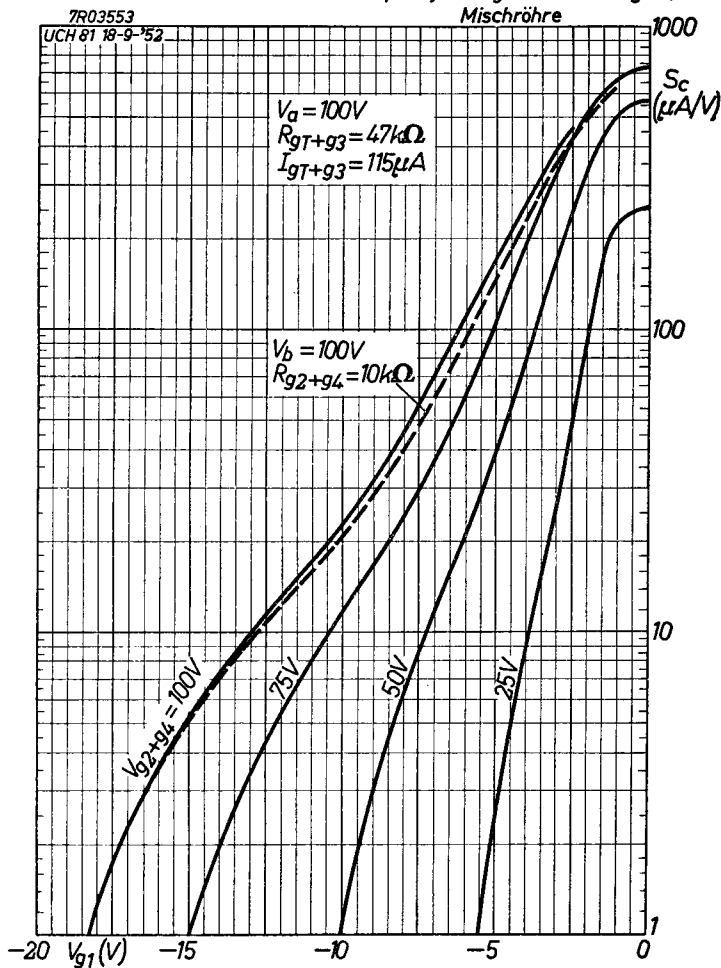
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Frequency changer; Tube mélangeurs;

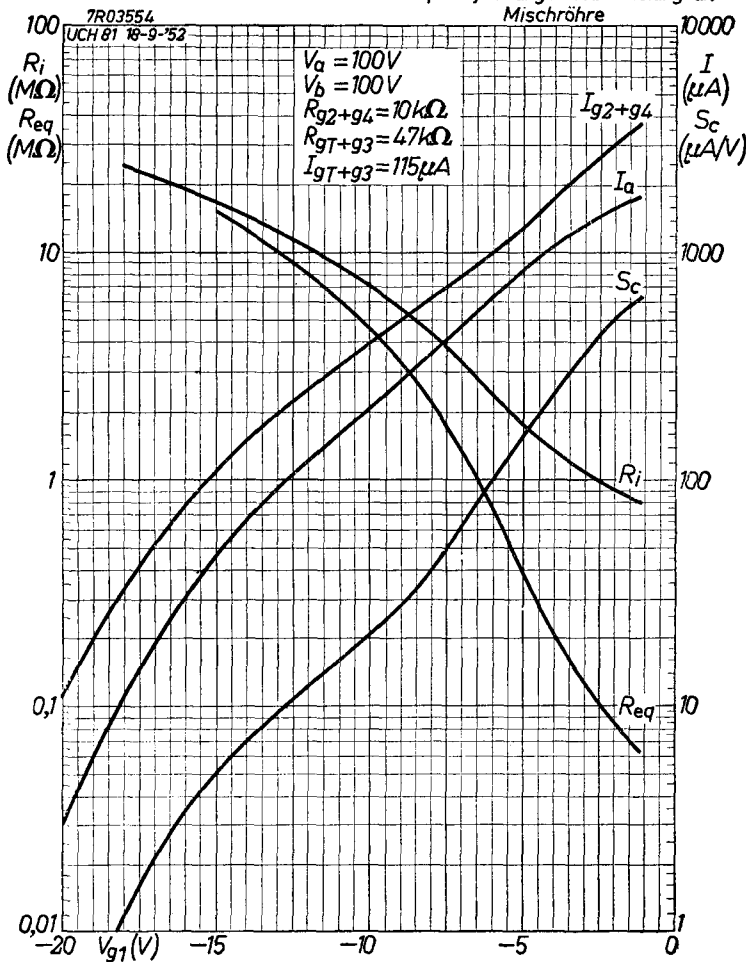
Mischröhre



PHILIPS

UCH 81

Frequency changer; Tube mélangeur;
Mischröhre



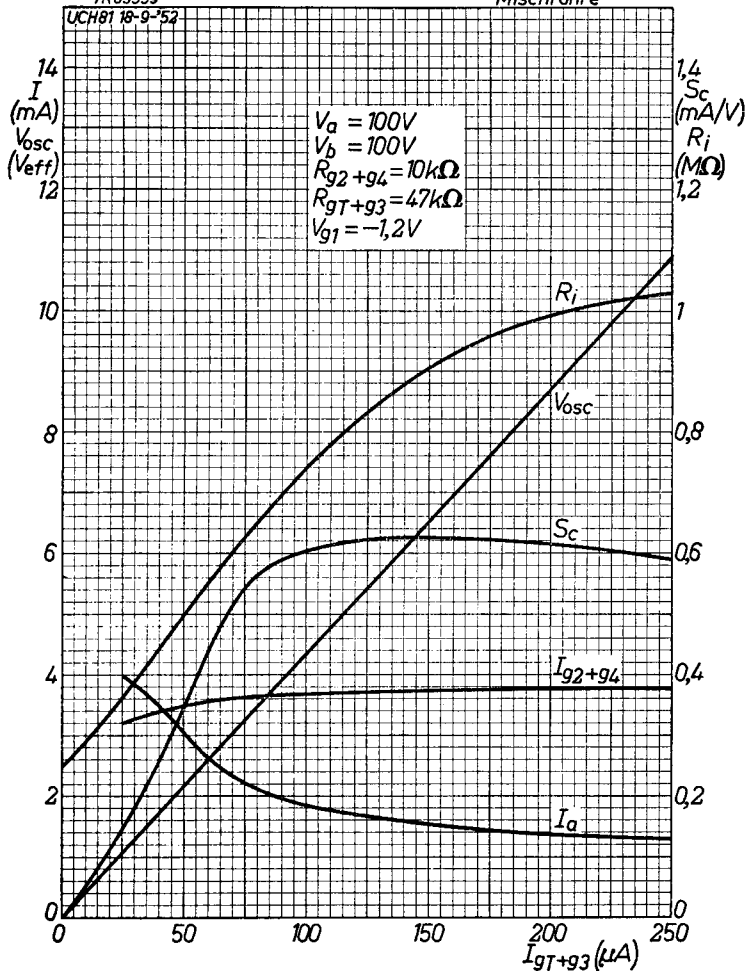
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C

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Mischröhre

7R03559

UCH81 18-9-52



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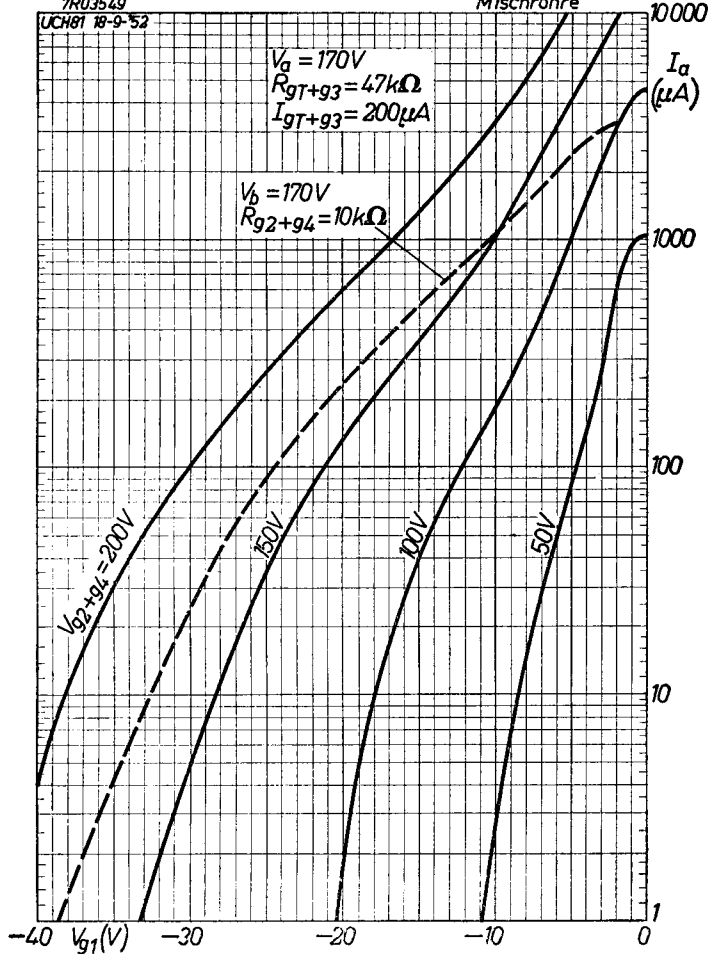
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UCH 81

Frequency changer; Tube mélangeur;
Mischröhre

7R03549

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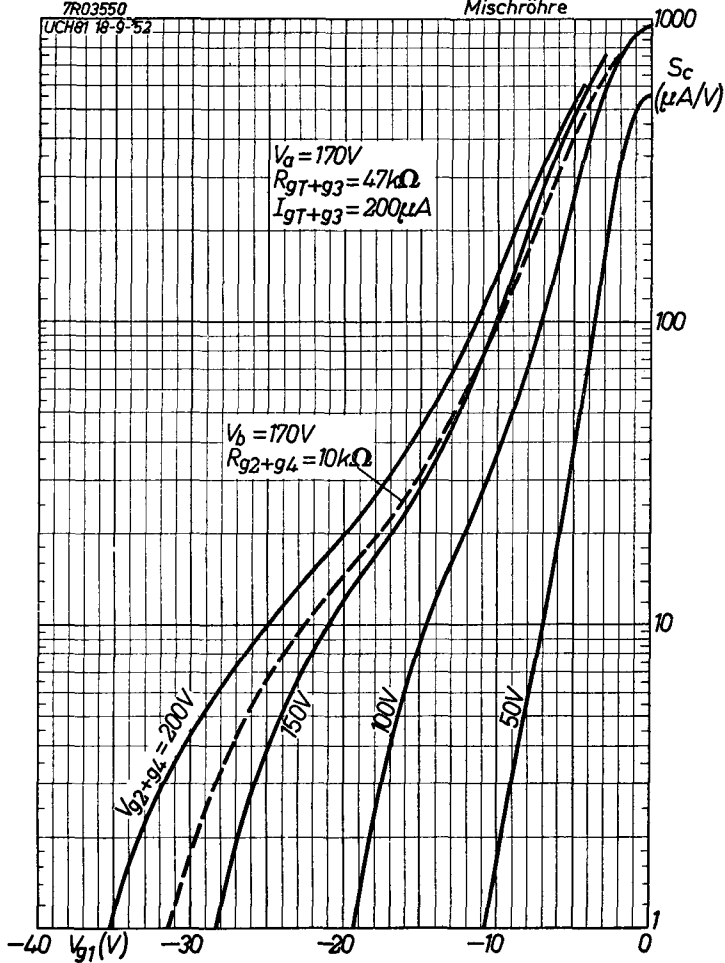
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E

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Mischröhre

7R03550

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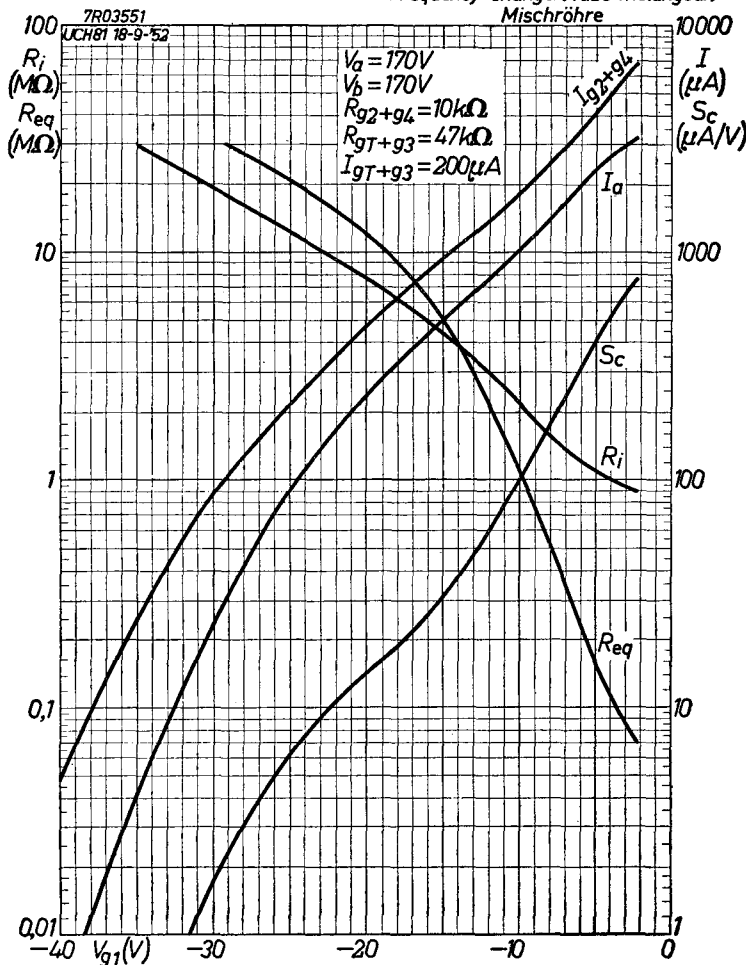


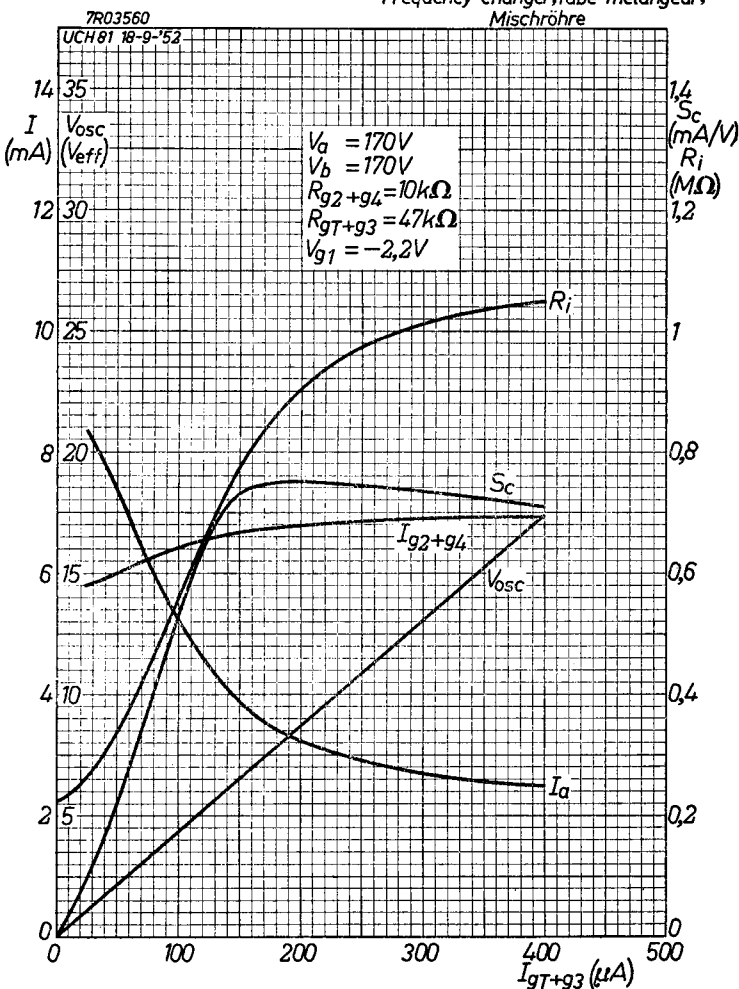
F

PHILIPS

UCH 81

Frequency changer; Tube mélangeur;
Mischröhre



UCH 81**PHILIPS**Frequency changer; Tube mélangeur;
Mischröhre

H

PHILIPS

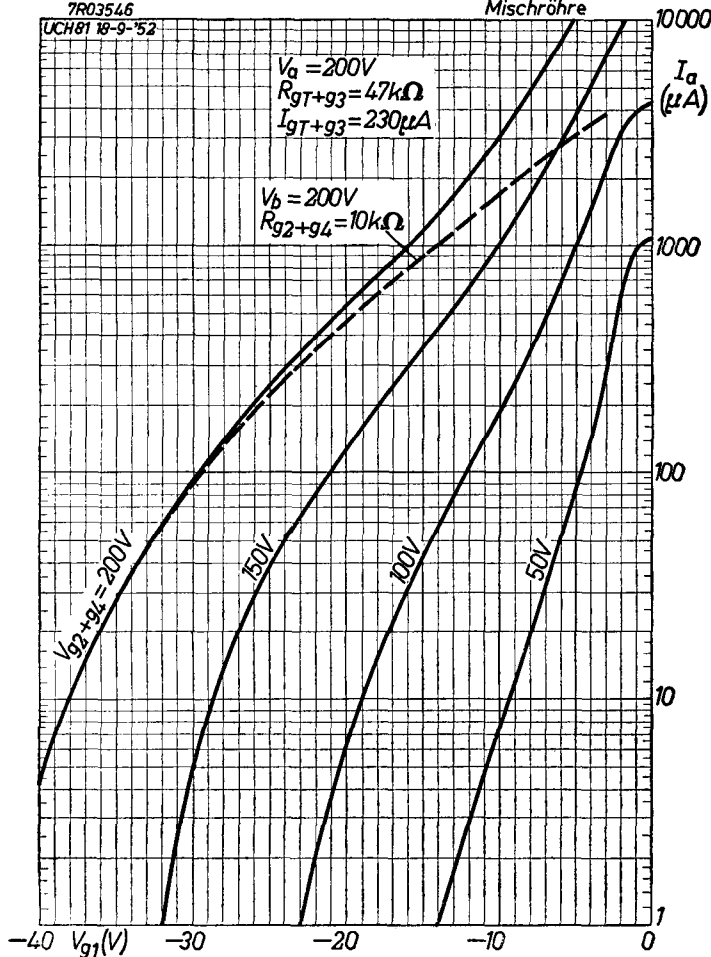
UCH 81

Frequency changer; Tube mélangeur;

Mischröhre

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UCH81 18-9-'52



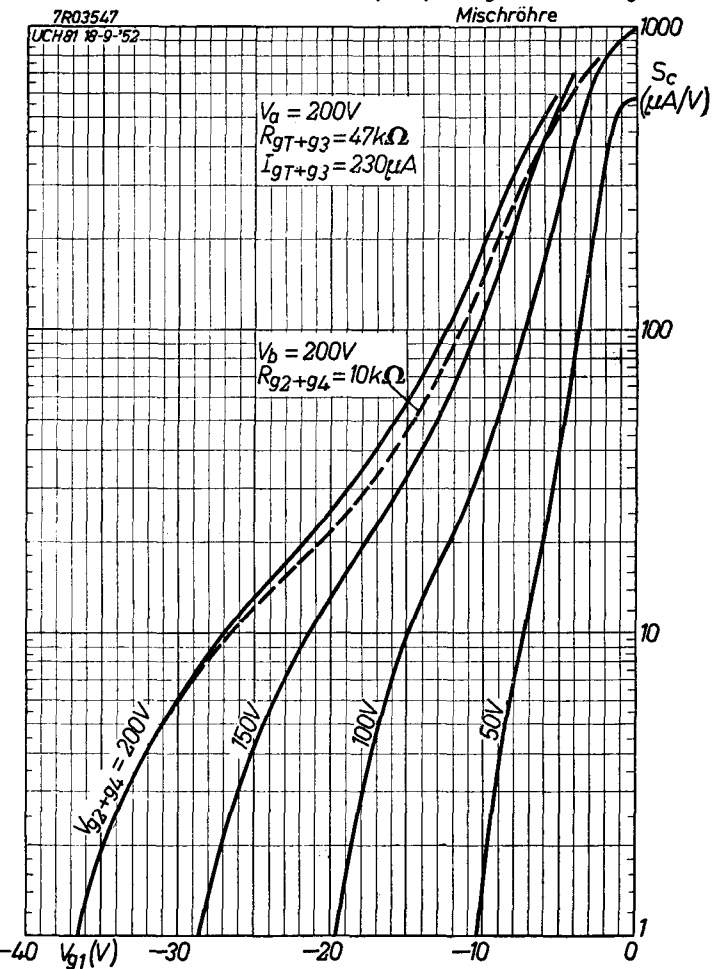
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I

UCH 81**PHILIPS**

Frequency changer; Tube mélangeur;

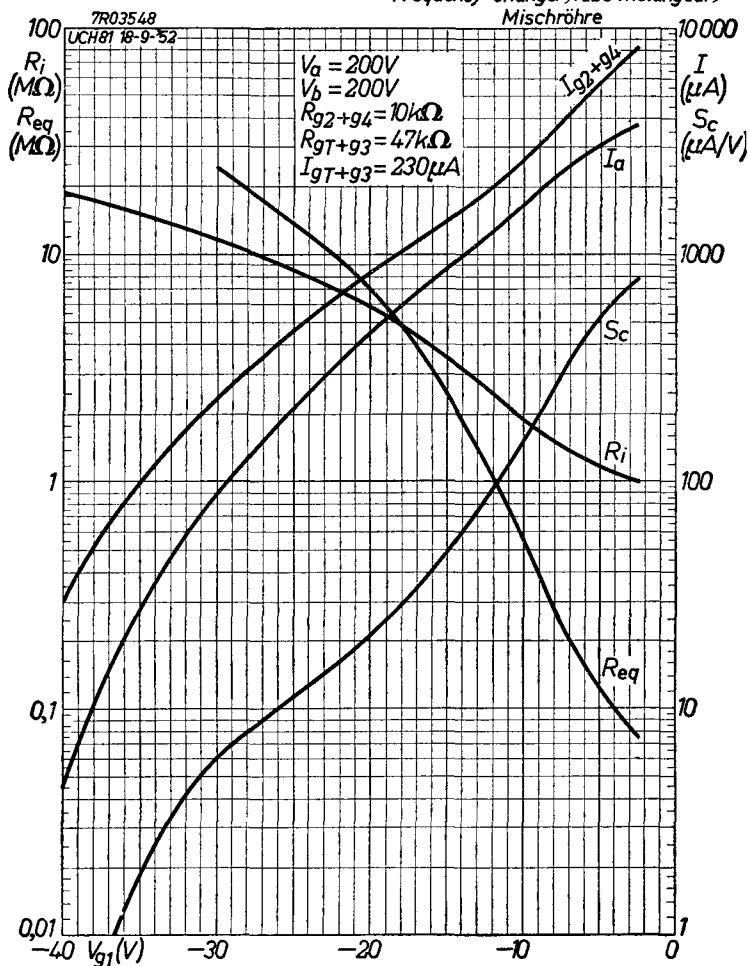
Mischröhre



PHILIPS

UCH 81

Frequency changer; Tube mélangeurs;
Mischröhre



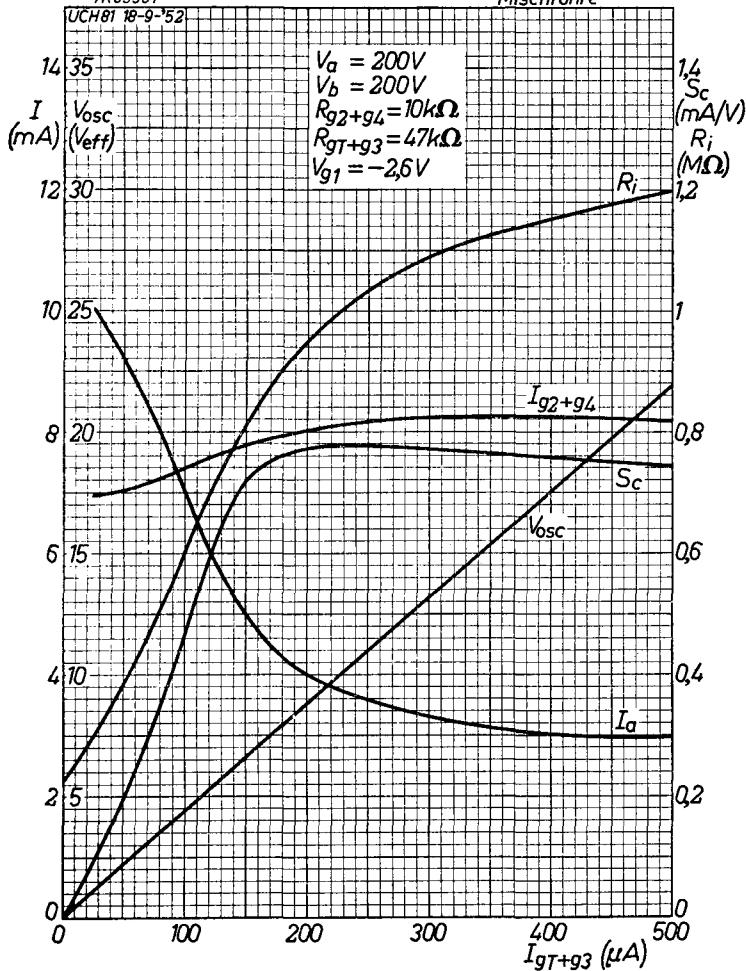
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K

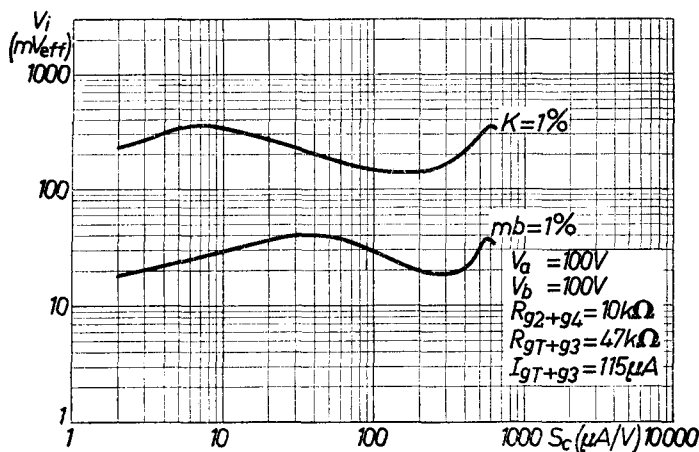
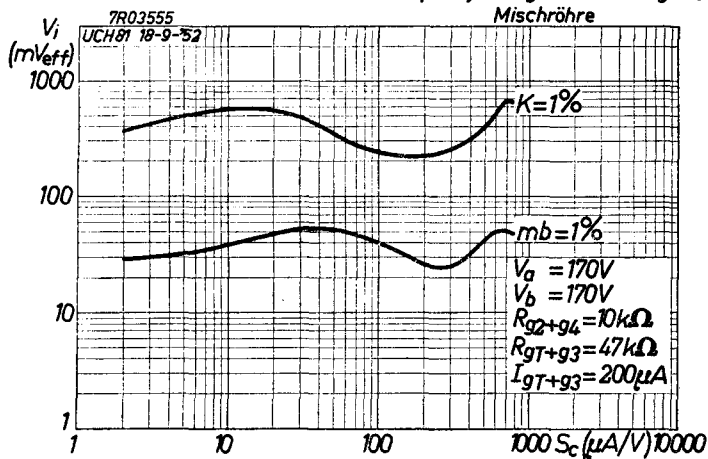
UCH 81**PHILIPS**Frequency changer; Tube mélangeur;
Mischröhre

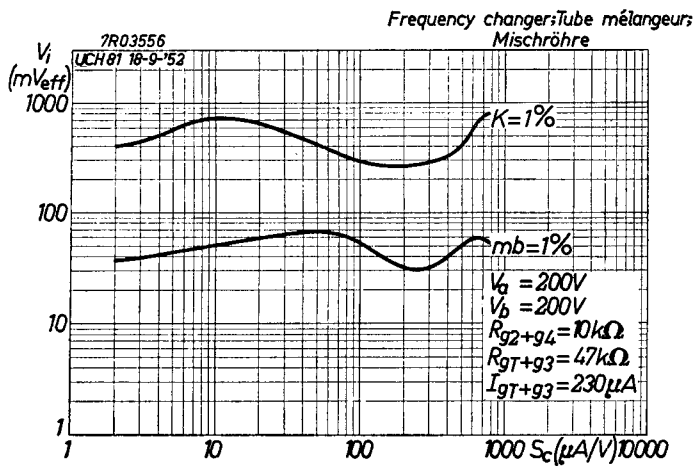
7R0356i

UCH81 18-9-52



Frequency changer; Tube mélangeur;
Mischröhre



UCH 81**PHILIPS**

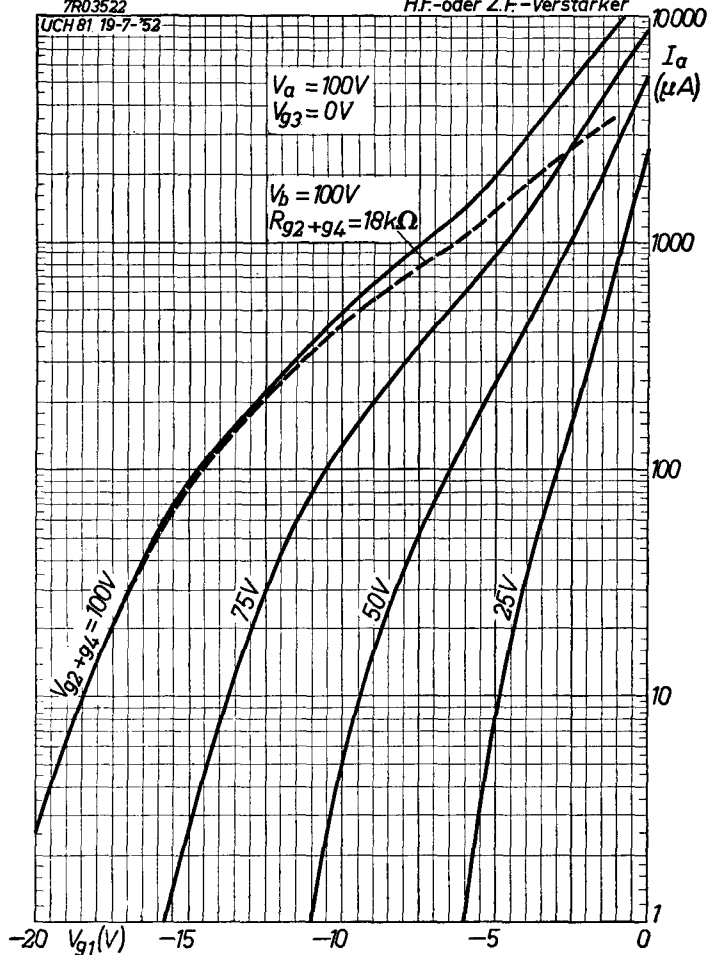
PHILIPS

UCH 81

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;
H.F.-oder Z.F.-Verstärker

7R03522

UCH 81 19-7-52



9.9.1952

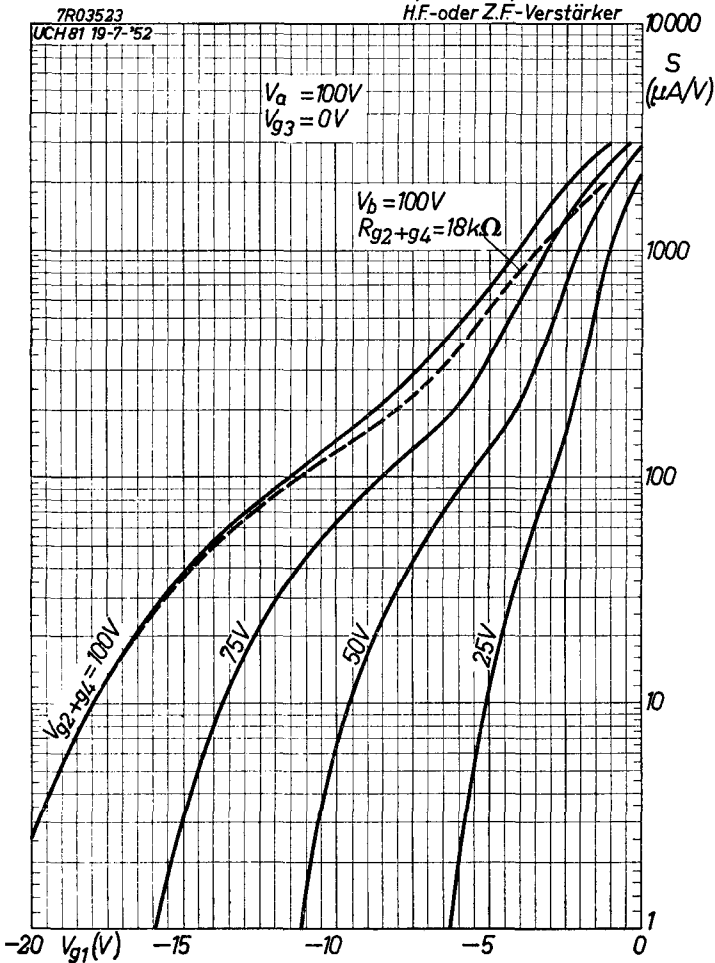
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UCH 81**PHILIPS**

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;
H.F.-oder Z.F.-Verstärker

7R03523

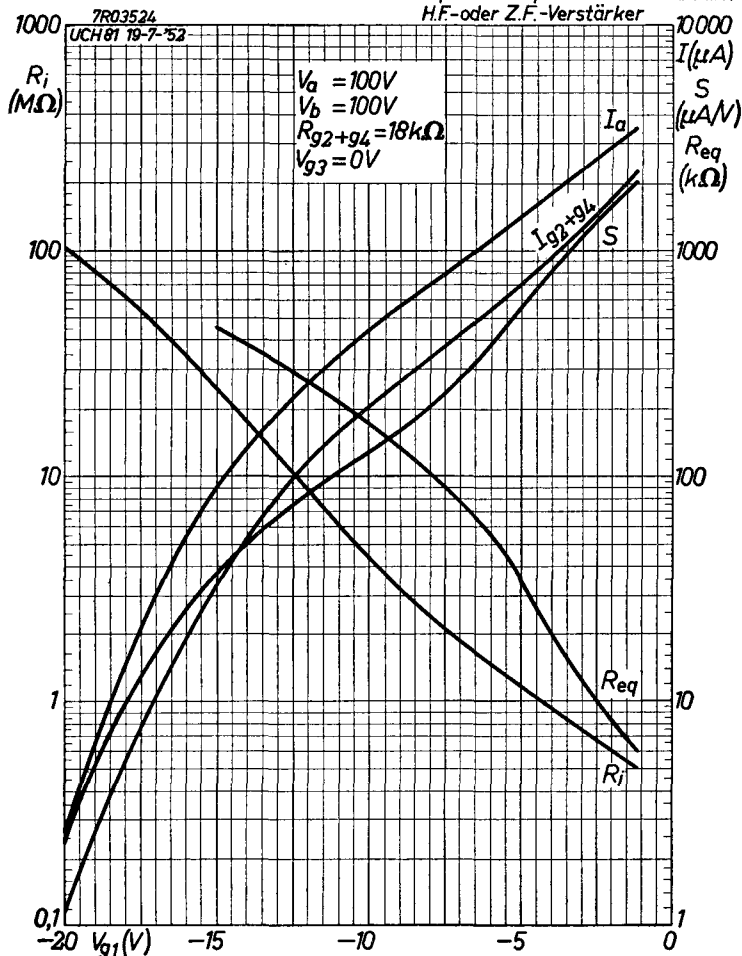
UCH 81 19-7-'52



PHILIPS

UCH 81

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;
H.F.-oder Z.F.-Verstärker

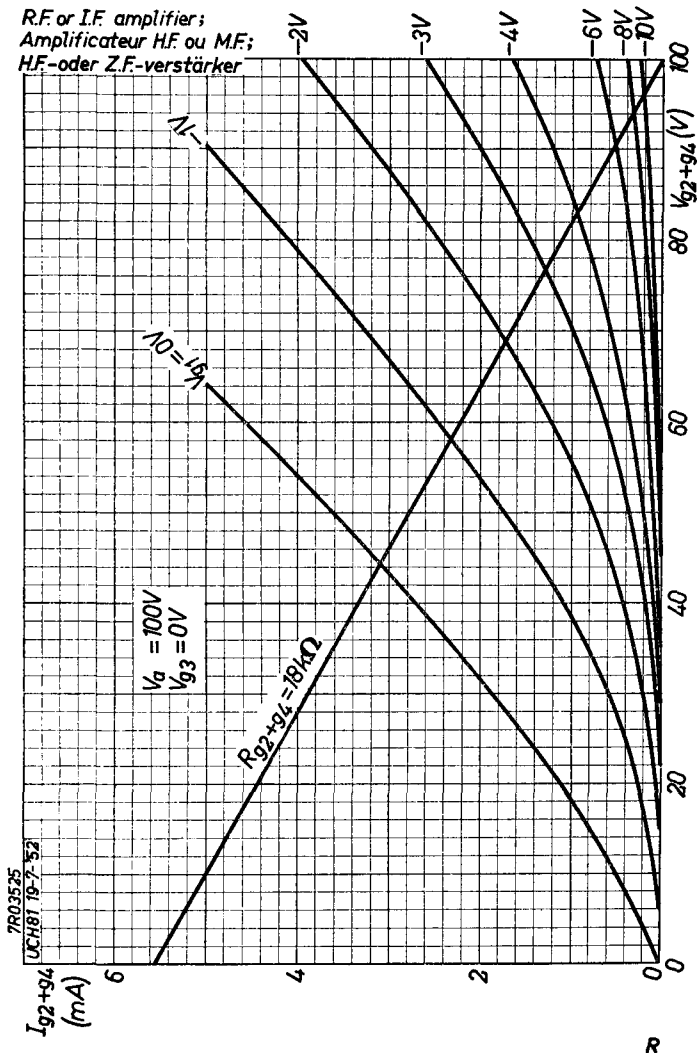


9.9.1952

Q

UCH 81**PHILIPS**

R.F. or I.F. amplifier;
Amplificateur H.F. ou M.F.;
H.F.-oder Z.F.-verstärker



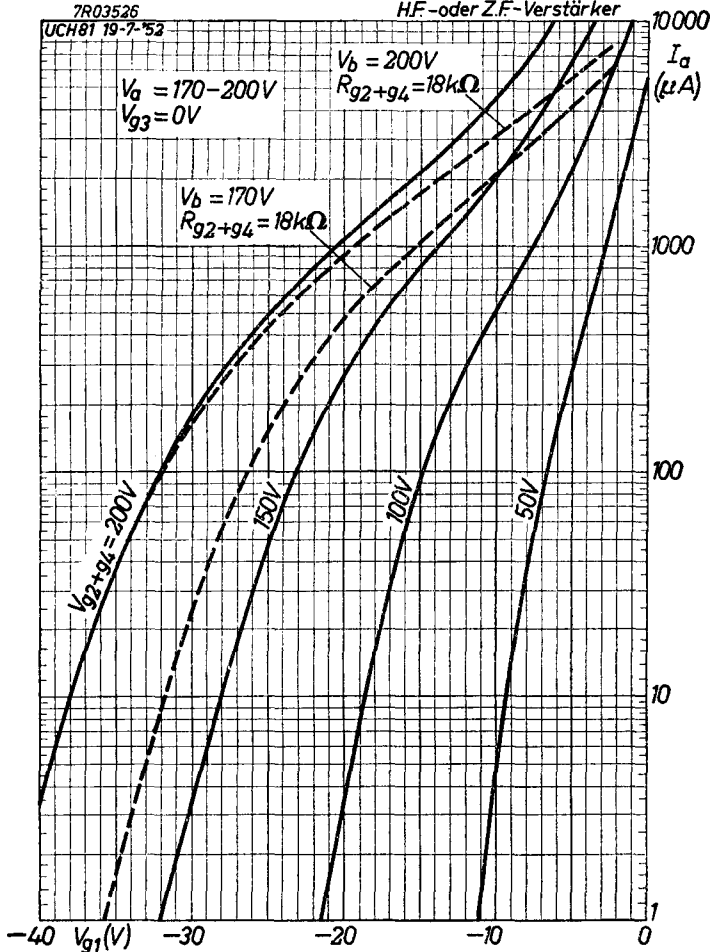
PHILIPS

UCH 81

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;
H.F.-oder Z.F.-Verstärker

7R03526

UCH81 19-7-52



9.9.1952

S

UCH 81**PHILIPS**

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;
HF- oder ZF-Verstärker

7R03527

UCH 81 19-7-'52

$V_a = 170-200V$
 $V_{g3} = 0V$

$V_b = 200V$
 $R_{g2+g4} = 18k\Omega$

$V_b = 170V$
 $R_{g2+g4} = 18k\Omega$

10000

 S
($\mu A/V$)

1000

100

10

1

 $V_{g1}(V)$

-40

-30

-20

-10

0

 $V_{g2+g4} = 200V$

150V

100V

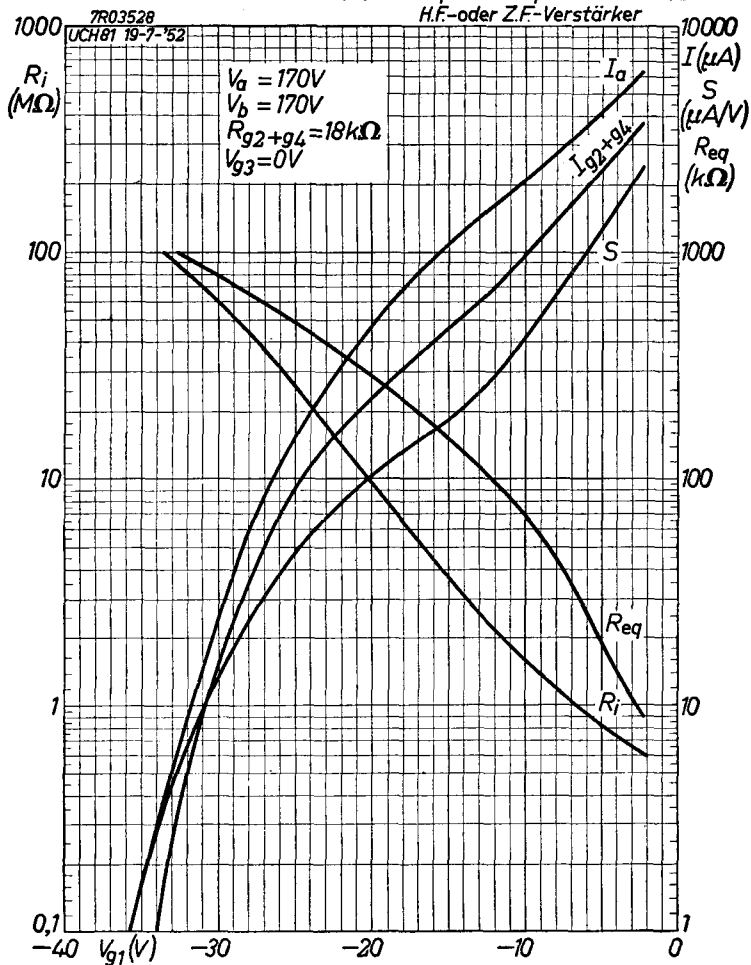
50V

T

PHILIPS

UCH 81

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.
H.F.-oder Z.F.-Verstärker



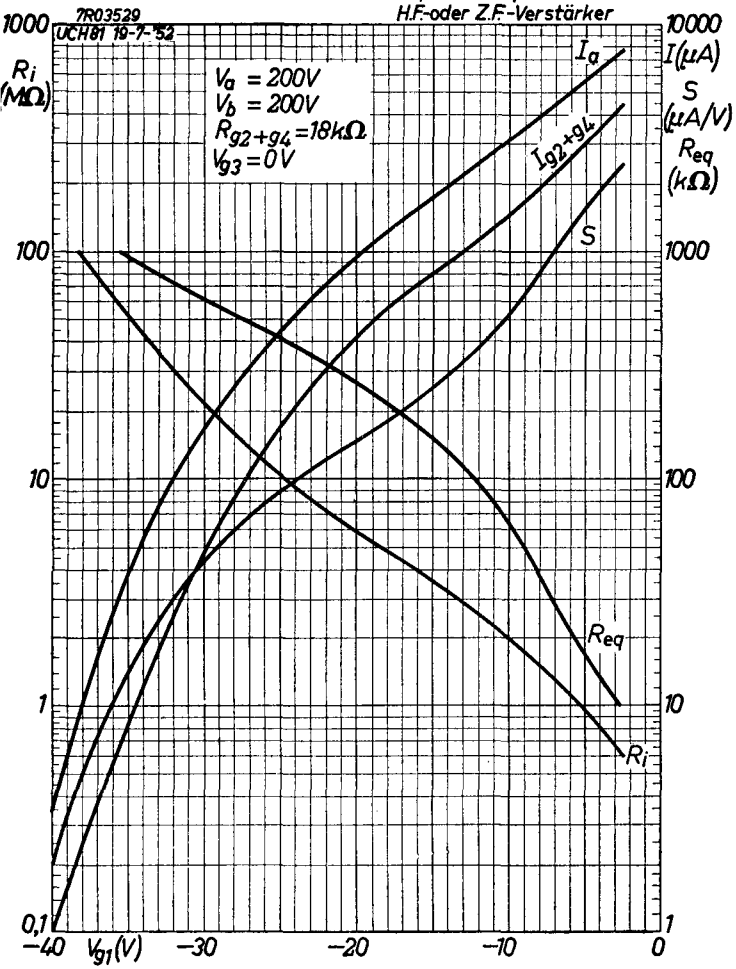
9.9.1952

U

UCH 81

PHILIPS

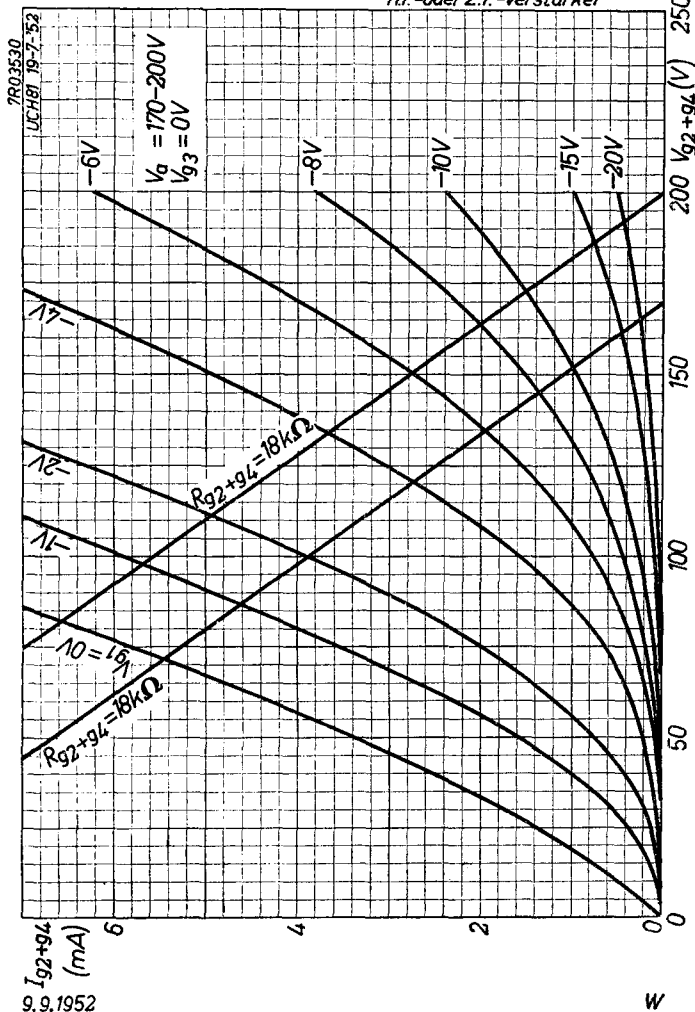
R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.
H.F.-oder Z.F.-Verstärker



PHILIPS

UCH 81

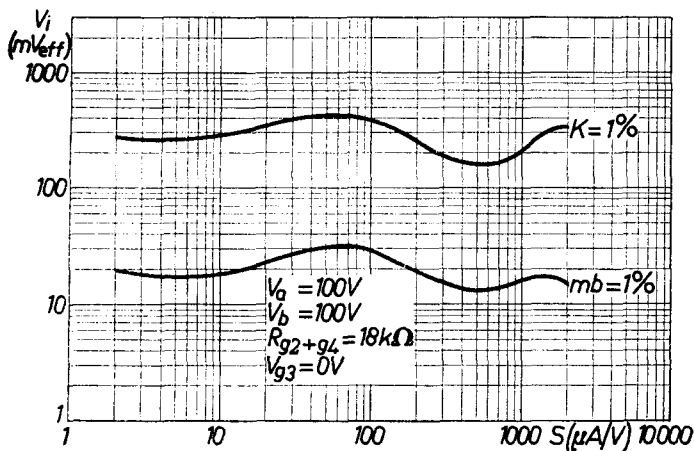
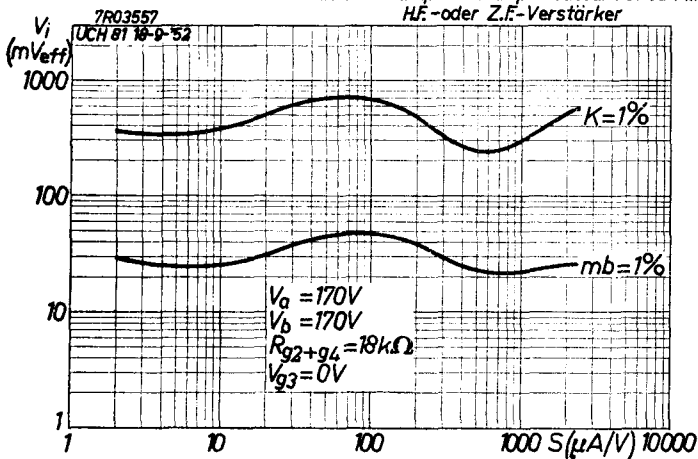
R.F. or I.F. amplifier; Amplificateur HF. ou MF;
H.F.-oder Z.F.-Verstärker



UCH 81

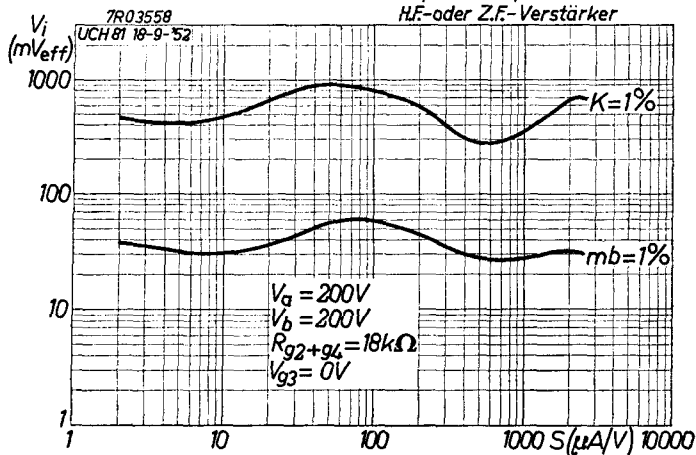
PHILIPS

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;
H.F.-oder Z.F.-Verstärker



x

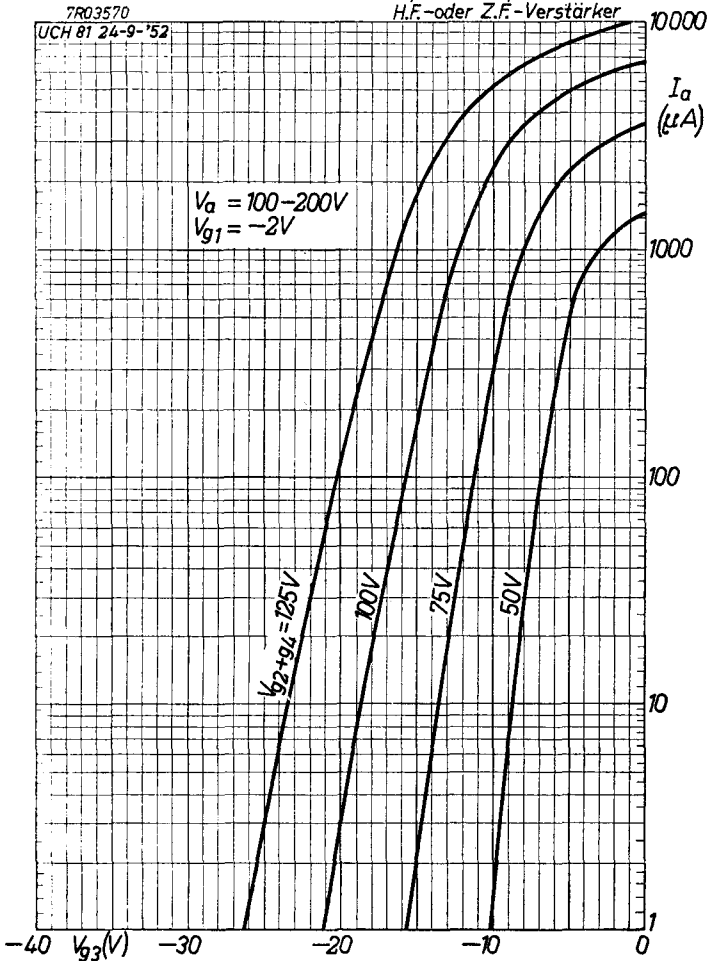
R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;
H.F.-oder Z.F.-Verstärker



UCH 81**PHILIPS**R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;
H.F.-oder Z.F.-Verstärker

7R03570

UCH 81 24-9-'52



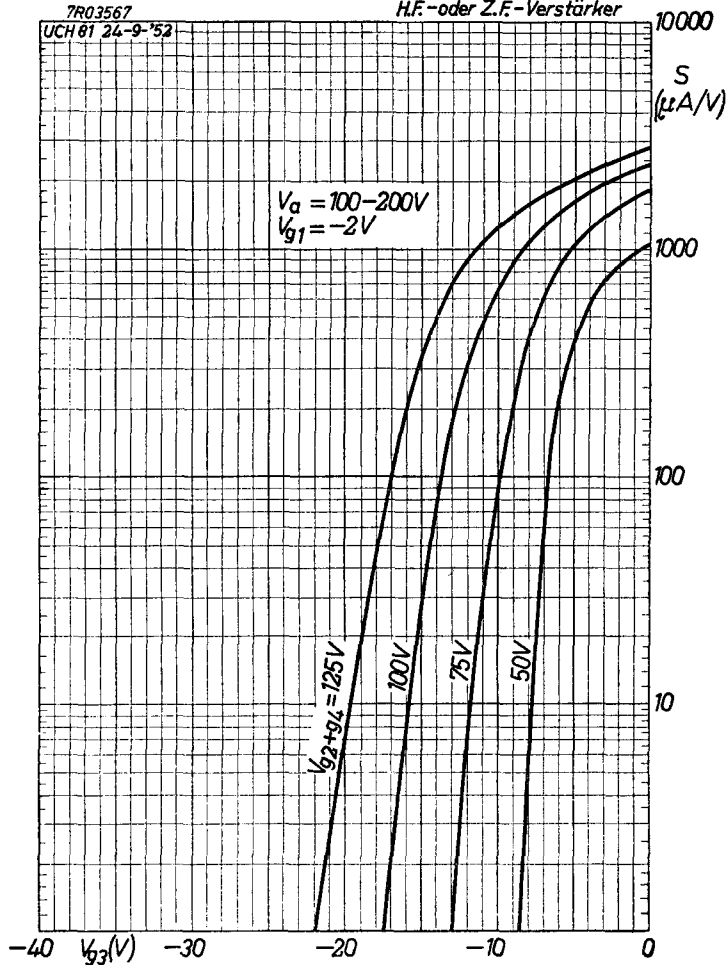
PHILIPS

UCH 81

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;
H.F.-oder Z.F.-Verstärker

7R03567

UCH 81 24-9-'52



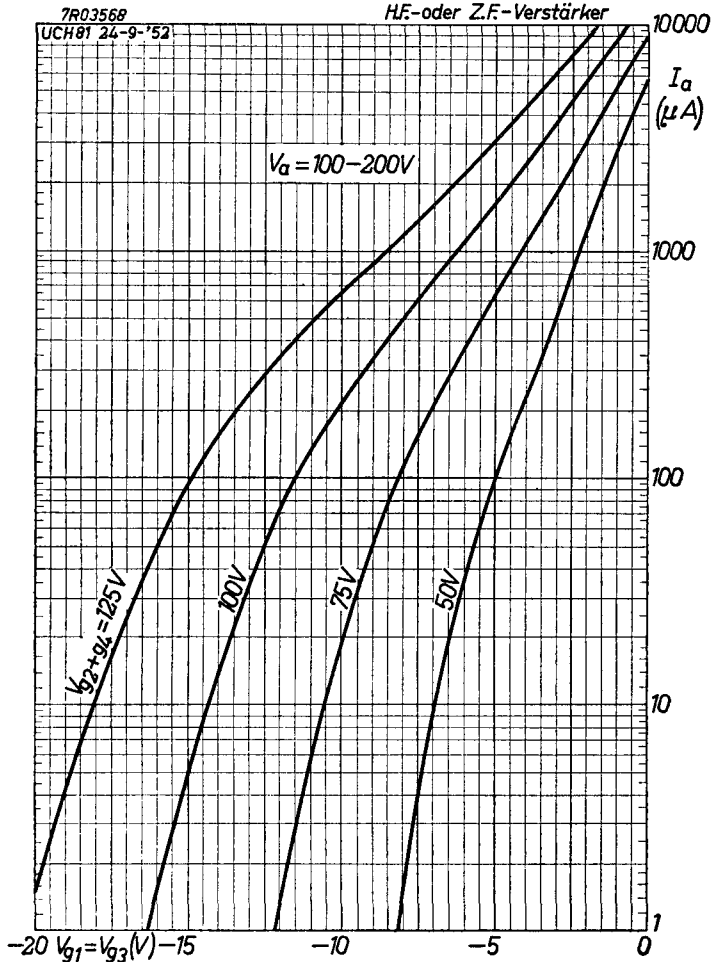
UCH 81**PHILIPS**

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.;

H.F.-oder Z.F.-Verstärker

7R03568

UCH81 24-9-'52



AB

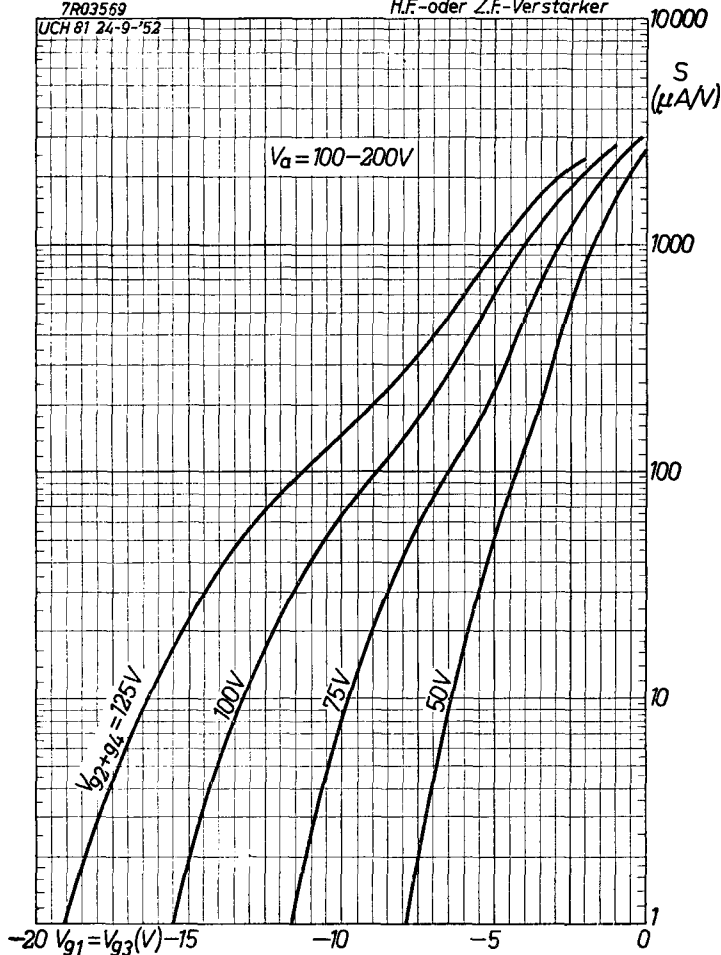
PHILIPS

UCH 81

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.
H.F.-oder Z.F.-Verstärker

7R03569

UCH 81 24-9-'52



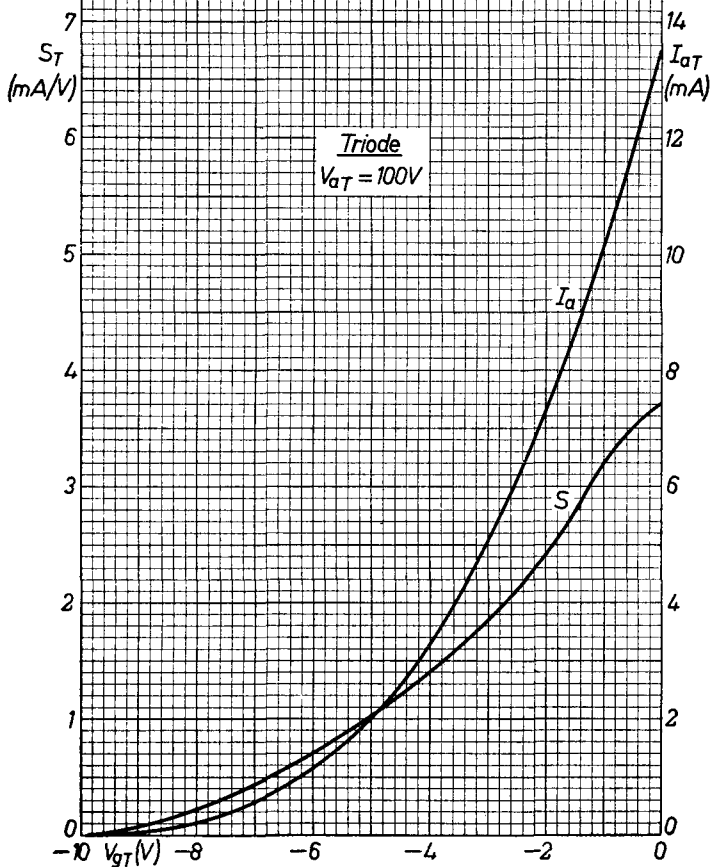
9.9.1952

AC

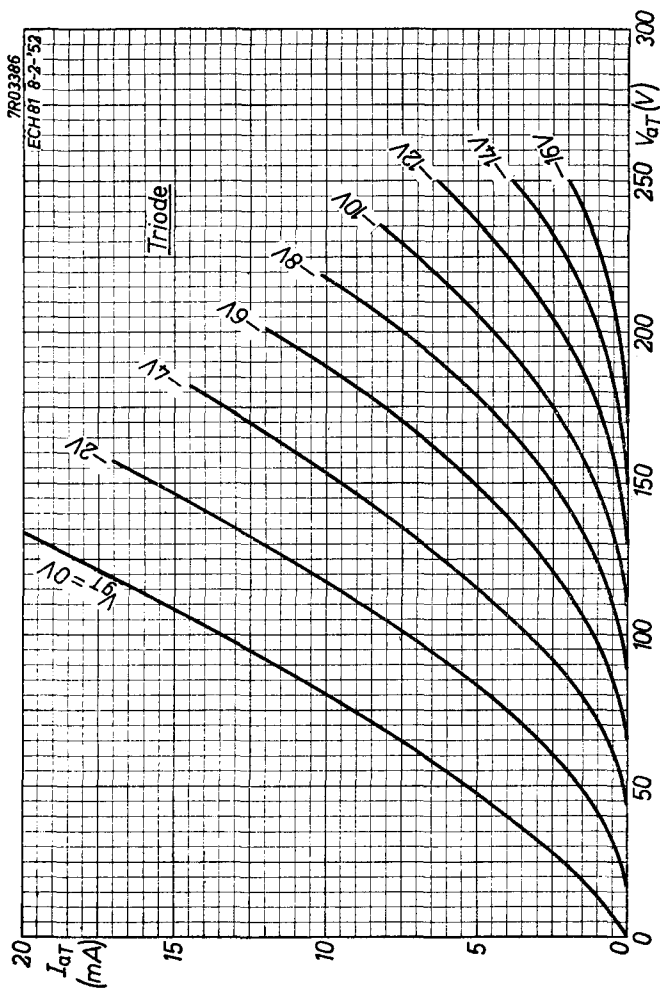
UCH 81**PHILIPS**

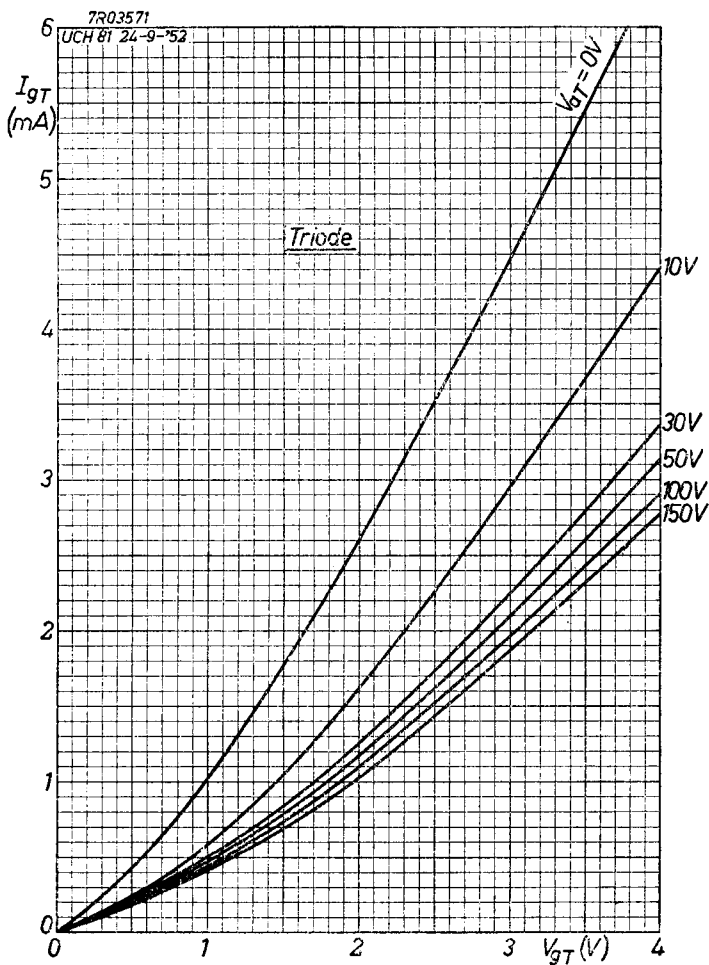
7R03396

ECH 81 8-2-'52

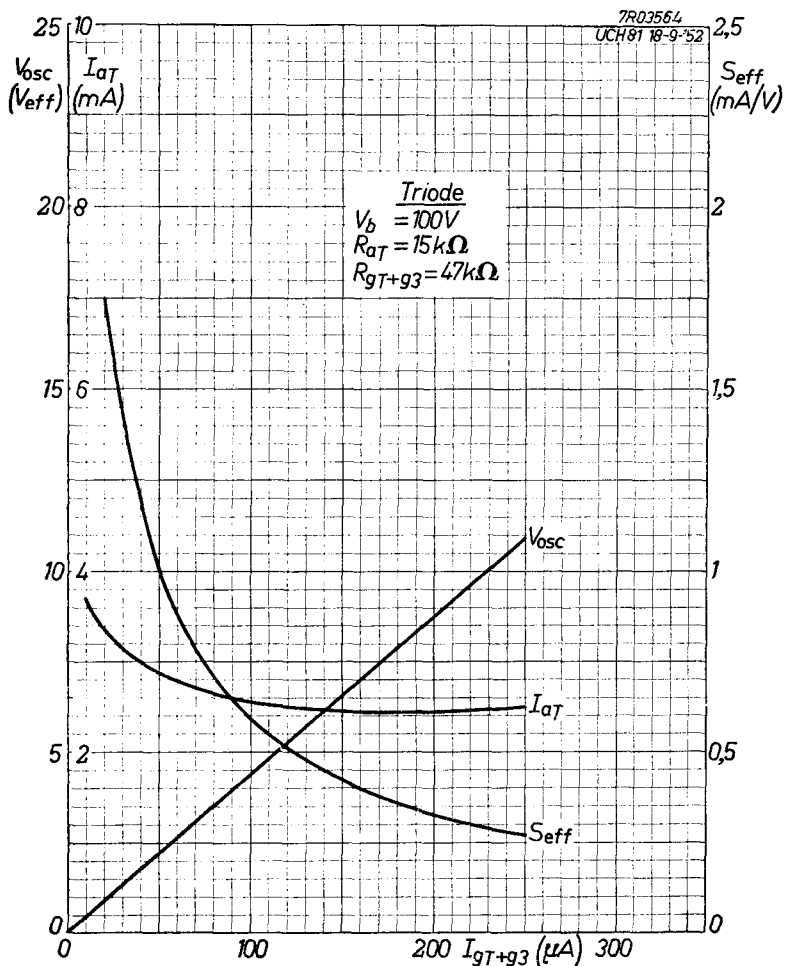


AD



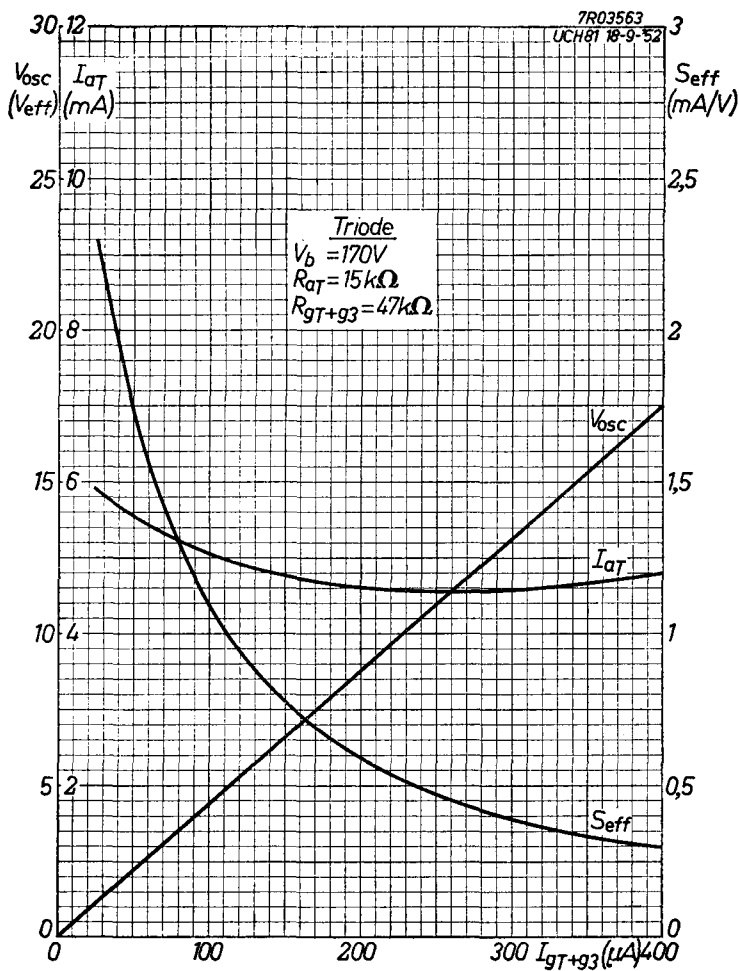
UCH 81**PHILIPS**

AF



UCH 81

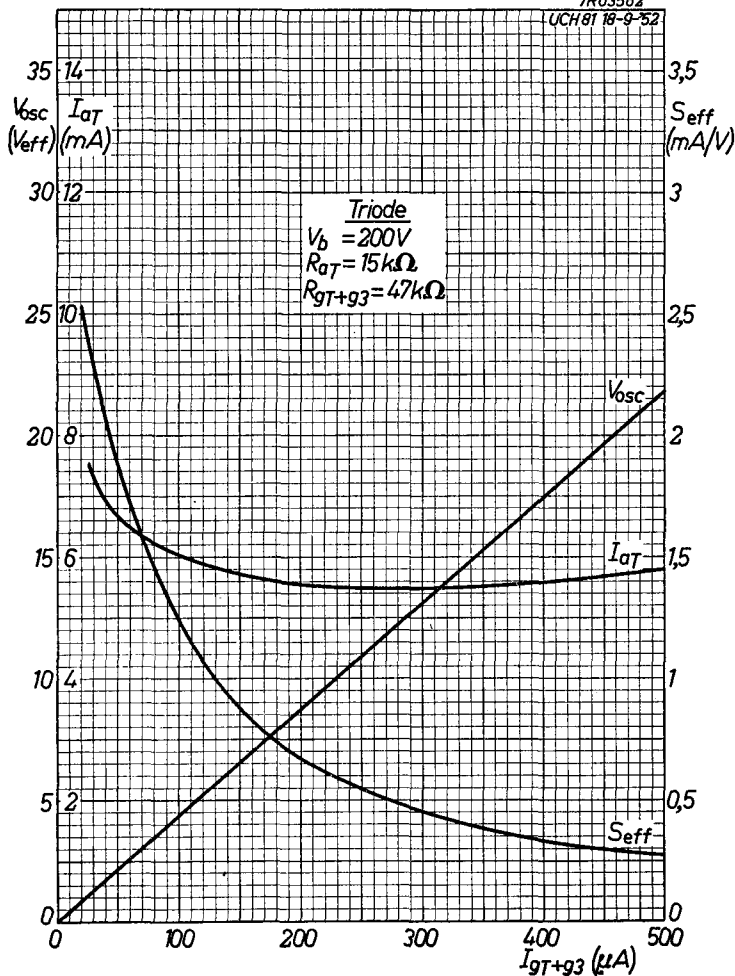
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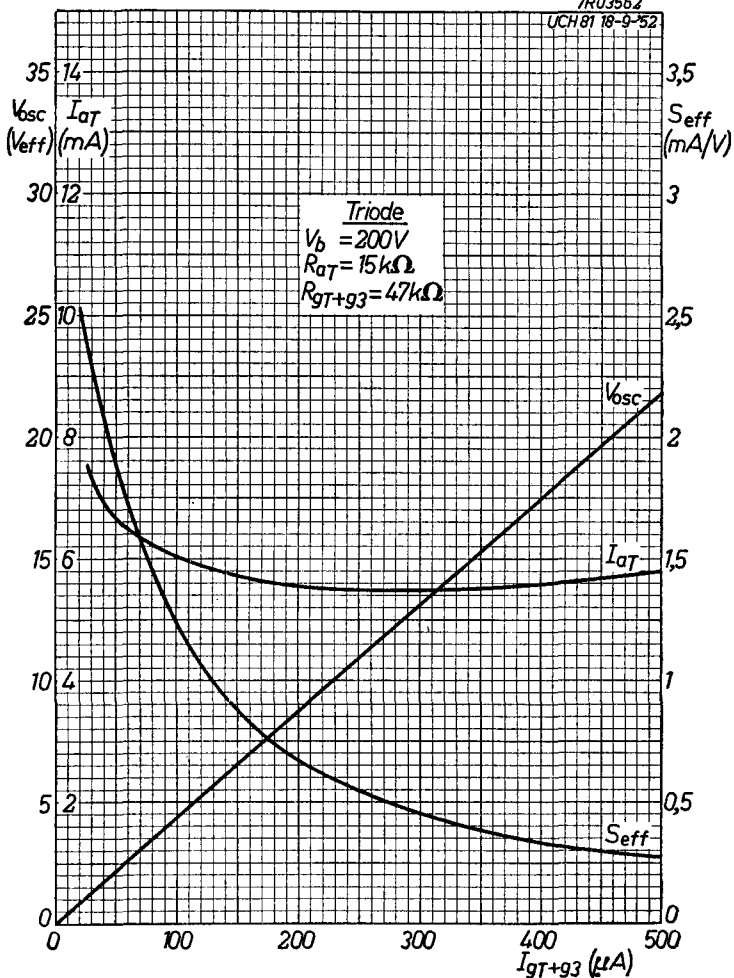
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7R03562

UCH 81 18-9-52



7R03562
UCH 81 18-9-52

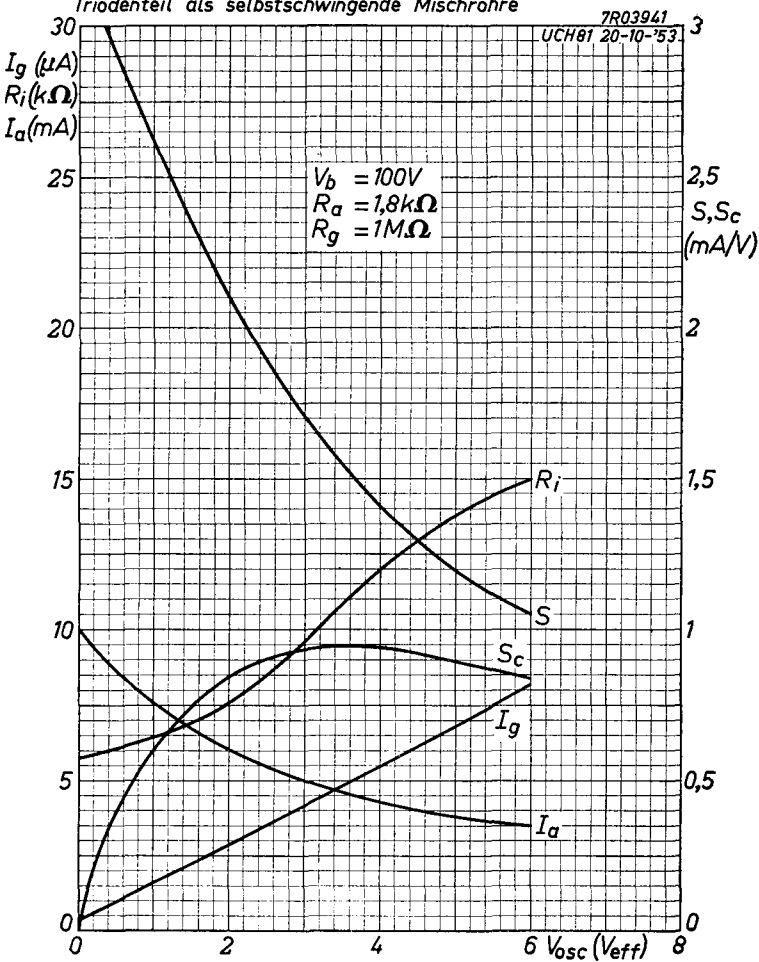


UCH 81**PHILIPS**

Triode section as self-oscillating frequency changer

Partie triode en montage changeuse de fréquence à auto-oscillation

Triodenteil als selbstschwingende Mischröhre



PHILIPS

UCH 81

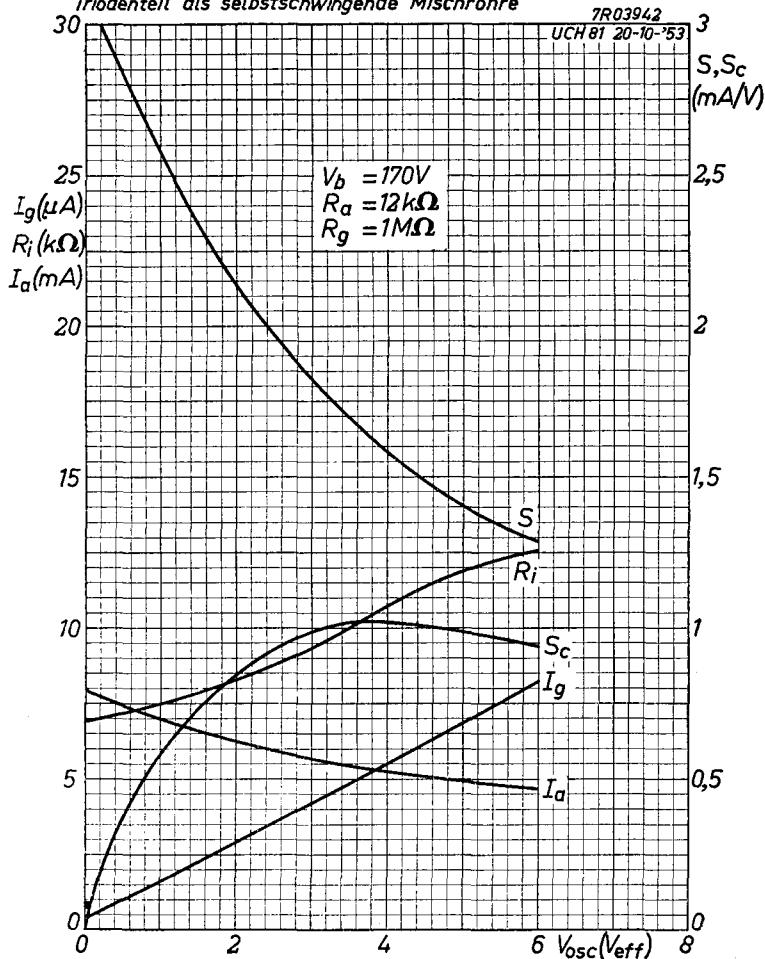
Triode section as self-oscillating frequency changer

Partie triode en montage changeuse de fréquence à auto-oscillation

Triodenteil als selbstschwingende Mischröhre

7R03942

UCH 81 20-10-'53



12.12.1953

AK

UCH 81**PHILIPS**

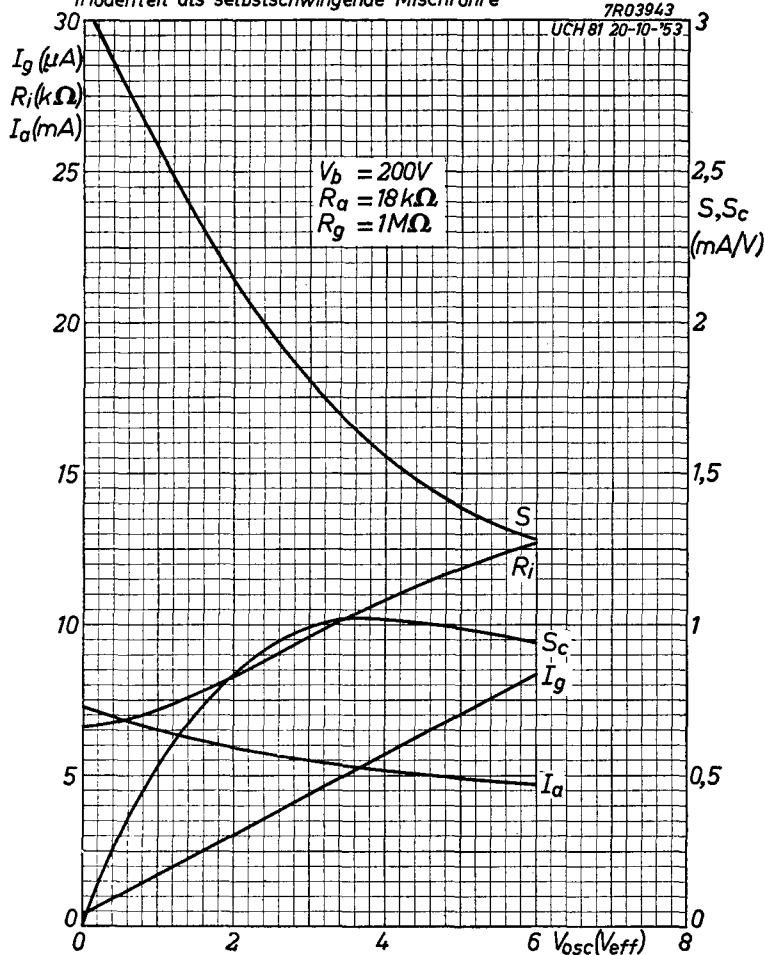
Triode section as self-oscillating frequency changer

Partie triode en montage changeuse de fréquence à auto-oscillation

Triodenteil als selbstschwingende Mischröhre

7R03943

UCH 81 20-10-53





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