

"Miniwatt" UCH 42

TRIODE-HEXODE for use as frequency changer and phase inverter

TRIODE-HEXODE pour l'utilisation comme changeuse de fréquence et comme tube inverseur de phase

TRIODE-HEXODE zur Verwendung als Mischröhre und Phasenumkehrrohre

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;
Serienspeisung

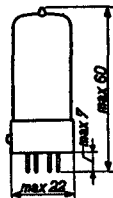
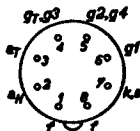
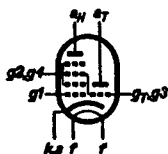
$V_f = 14 \text{ V}$

$I_f = 0,1 \text{ A}$

Dimensions in mm

Dimensions en mm

Abmessungen in mm



Capacities
Capacités
Kapazitäten

Hexode section
Partie hexode
Hexodenteil

Triode section
Partie triode
Triodenteil

$C_{g1} = 3,8 \text{ pF}$

$C_a = 9,2 \text{ pF}$

$C_{ag1} < 0,1 \text{ pF}$

$C_{g1f} < 0,15 \text{ pF}$

$C(gT+g3) = 5,5 \text{ pF}$

$C_a = 2,3 \text{ pF}$

$C_a(gT+g3) = 1,2 \text{ pF}$

Between hexode and triode sections
Entre les parties hexode et triode
Zwischen Hexoden- und Triodenteil

$C(gT+g3)g_{LH} < 0,35 \text{ pF}$

$C(gT+g3)a_H < 0,2 \text{ pF}$

TRIODE-HEXODE for use as frequency changer and phase inverter

TRIODE-HEXODE pour utilisation en changeuse de fréquence et comme tube inverseur de phase

TRIODE-HEXODE zur Verwendung als Mischröhre und Phasenumkehrrohre

Heating : indirect; series supply

$V_f = 14 \text{ V}$

Chauffage: indirect; alimentation- série

Heizung : indirekt; Serienspeisung

$I_f = 100 \text{ mA}$

Base, culot, Sockel: RIMLOCK

Overall length: 60 mm

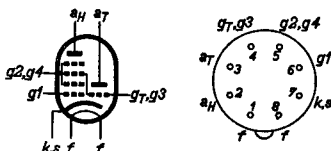
See pages 203 and 252

Hauteur totale: 60 mm

Voir pages 203 et 252

Gesamthöhe : 60 mm

Siehe S.203 und 252



Capacitances $C_{g1} = 4,0 \text{ pF}$

$C_{gT, g3} = 5,9 \text{ pF}$

Capacités $C_a = 9,4 \text{ pF}$

$C_{aT} = 2,4 \text{ pF}$

Kapazitäten $C_{aH-g1} < 0,1 \text{ pF}$

$C_{aT-gT, g3} = 1,3 \text{ pF}$

$C_{g1f} < 0,15 \text{ pF}$

$C_{g1-gT, g3} < 0,35 \text{ pF}$

$C_{aH-gT, g3} < 0,2 \text{ pF}$

Triode section; Partie triode; Triodenteil

Typical characteristics

$V_a = 100 \text{ V}$

Caractéristiques types

$V_g = 0 \text{ V}$

Kenndaten

$I_a = 10 \text{ mA}$

$S = 2,8 \text{ mA/V}$

$\mu = 16$

Operating characteristics as oscillator

Caractéristiques d'utilisation en oscillatrice

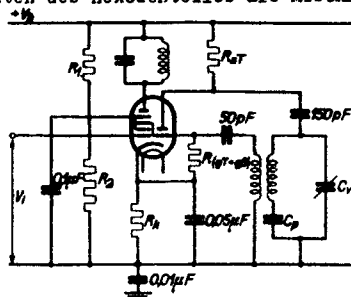
Betriebsdaten als Oszillator

V_b	=	100	170	200	V
R_a	=	10	10	22	$k\Omega$
V_{osc}	=	4	8	8	V_{eff}
$R_{gT, g3}$	=	22	47	22	47
$I_{gT, g3}$	=	175	100	350	200
I_a	=	3,4	3,1	6,5	5,7
S_{eff}	=	0,7	0,6	0,75	0,65
					0,65
					0,55
					mA/V

Operating characteristics of the hexode section as frequency changer

Caractéristiques d'utilisation de la partie hexode comme changeuse de fréquence

Betriebsdaten des Hexodenteiles als Mischröhre



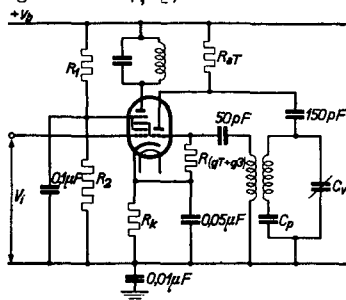
$V_a = V_b =$	100	170	200	V
$R_1 =$	18	18	18	k Ω
$R_2 =$	27	27	27	k Ω
$R_k =$	180	180	180	Ω
$R_{gT+g3} =$	22	22	22	k Ω
$I_{gT+g3} =$	175 ¹⁾	350 ¹⁾	350 ¹⁾	μA
$V_{g1} =$	-1,0 -13,5	-1,85 -25	-2 -27,5	V
$V_{g2+g4} =$	43	57	70	100
$I_a =$	1,2	2,1	3,0	mA
$I_{g2+g4} =$	1,46	2,6	3,0	mA
$S_c =$	530	5,3	670	6,7
$R_i =$	>1	>5	>1	>5
$R_{eq} =$	60	65	75	k Ω

¹⁾ If R_{gT+g3} is chosen to 47 k Ω , I_{gT+g3} has to be adjusted to 200 μA at $V_a = 200$ V or 170 V and to 100 μA at $V_a = 100$ V

Si R_{gT+g3} est choisie 47 k Ω , I_{gT+g3} doit être réglé à 200 μA avec $V_a = 200$ V ou 170 V et à 100 μA avec $V_a = 100$ V.

Wenn R_{gT+g3} zu 47 k Ω gewählt wird, soll I_{gT+g3} auf 200 μA eingestellt werden wenn $V_a = 200$ V oder 170 V und auf 100 μA wenn $V_a = 100$ V

Betriebsdaten als Mischröhre (Schirmgitterspannung über einen Spannungsteiler R_1, R_2)



$V_a=V_b =$	100	170	200	V			
$R_1 =$	18	18	18	$k\Omega$			
$R_2 =$	27	27	27	$k\Omega$			
$R_k =$	180	180	180	Ω			
$R_{gT, g3}=$	22	22	22	$k\Omega$			
$I_{gT, g3}=$	$175^{1)}$	$350^{1)}$	$350^{1)}$	μA			
$V_{g1} =$	$-1,0$	$-13,5$	$-1,85$	-25	-2	$-27,5$	V
$V_{g2, g4}=$	43	57	70	100	85	119	V
$I_a =$	1,2	-	2,1	-	3,0	-	mA
$I_{g2, g4}=$	1,46	-	2,6	-	3,0	-	mA
$S_c =$	530	5,3	670	6,7	750	7,5	$\mu A/V$
$R_i =$	>1	>5	>1	>5	>1	>5	$M\Omega$
$R_{eq} =$	60	-	65	-	75	-	$k\Omega$

Für $R_{GT, g3} = 47 \text{ k}\Omega$, ist $I_{GT, g3}$ auf $200 \mu\text{A}$ einzustellen wenn $V_a = 200\text{V}$ oder 170V und auf $100 \mu\text{A}$ wenn $V_a = 100 \text{ V}$

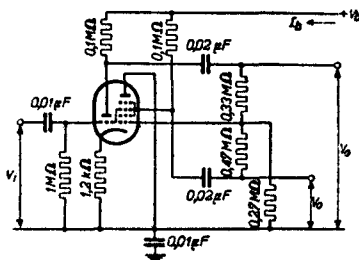
Typical characteristics of the triode section
 Caractéristiques typiques de la partie triode
 Kenndaten des Triodenteiles

V_a	=	100 V
V_g	=	0 V
I_a	=	10 mA
S	=	2,8 mA/V
μ	=	22

Operating characteristics of the triode section as
 oscillator
 Caractéristiques d'utilisation de la partie triode
 comme oscillatrice
 Betriebsdaten des Triodenteiles als Oszillator

V_b	=	100	170	200	V
R_a	=	10	10	22	k Ω
V_{osc}	=	4	8	8	V _{eff}
R_{gT+g3}	=	22 47	22 47	22 47	k Ω
I_{gT+g3}	=	175 100	350 200	350 200	μ A
I_a	=	3,4 3,1	6,5 5,7	5,5 5,2	mA
S_{eff}	=	0,7 0,6	0,75 0,65	0,65 0,55	mA/V

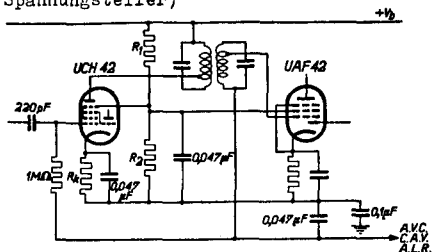
Operating characteristics as phase inverter
 Caractéristiques d'utilisation comme tube inverseur
 de phase
 Betriebsdaten als Phasenumkehröhre



Operating characteristics as frequency changer (screen grids of UCH 42 and UAF 42 fed from a common potentiometer)

Caractéristiques d'utilisation changeuse de fréquence (grilles-écran des tubes UCH 42 et UAF 42 connectées à un potentiomètre commun)

Betriebsdaten als Mischröhre (die Schirmgitter der Röhren UCH 42 und UAF 42 verbunden mit einem gemeinsamen Spannungsteiler)



$V_a = V_b =$	170	100	V
$R_1 =$	15	15	kΩ
$R_2 =$	22	22	kΩ
$R_k =$	180	180	Ω
$R_{gT, g3} =$	22	22	kΩ
$I_{gT, g3} =$	350 ¹⁾	175 ¹⁾	μA
$V_{g1} =$	-1,8 -15,5	-1 -9,6	V
$V_{g2, g4} =$	70 99	43 58	V
$I_a =$	2,1 -	1,2 -	mA
$I_{g2, g4} =$	2,6 -	1,46 -	mA
$S_c =$	670 20	530 14	μA/V
$R_i =$	>1 >4	>1 >2	MΩ
$R_{eq} =$	66 -	60 -	kΩ

¹⁾ For $R_{gT, g3} = 47$ kΩ, $I_{gT, g3}$ should be adjusted to 200 μA at $V_a = 200$ V or 170 V and to 100 μA at $V_a = 100$ V

Pour $R_{gT, g3} = 47$ kΩ, $I_{gT, g3}$ sera réglé à 200 μA avec $V_a = 200$ V ou 170 V et à 100 μA avec $V_a = 100$ V

Für $R_{gT, g3} = 47$ kΩ, ist $I_{gT, g3}$ auf 200 μA einzustellen wenn $V_a = 200$ V oder 170 V und auf 100 μA wenn $V_a = 100$ V

Limiting values of the hexode section
Caractéristiques limites de la partie hexode
Grenzdaten des Hexodenteiles

V_{a0}	= max. 550 V
V_a	= max. 250 V
W_a	= max. 1,5 W
$V_{g2,g40}$	= max. 550 V
$V_{g2,g4} (I_a = 3 \text{ mA})$	= max. 125 V
$V_{g2,g4} (I_a < 1 \text{ mA})$	= max. 250 V
$W_{g2,g4}$	= max. 0,3 W
$V_{g1} (I_{g1} = +0,3 \text{ } \mu\text{A})$	= max. -1,3 V
I_k	= max. 10 mA
R_{g1}	= max. 3 M Ω
R_{g3}	= max. 3 M Ω
R_{kf}	= max. 20 k Ω
V_{kf}	= max. 150 V

Limiting values of the triode section
Caractéristiques limites de la triode
Grenzdaten des Triodenteiles

V_{a0}	= max. 550 V
V_a	= max. 175 V
W_a	= max. 0,8 W
$V_g (I_g = +0,3 \text{ } \mu\text{A})$	= max. -1,3 V
I_k	= max. 6 mA
R_g	= max. 3 M Ω

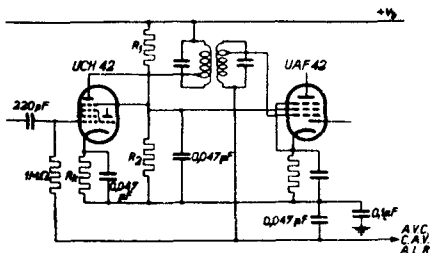
UCH 42 "Miniwatt"

V _b (V)	I _b (mA)	V _o V _i	d _{tot} (%) (V _o =5V _{eff})	d _{tot} (%) (V _o =10V _{eff})
100	1,4	11	1,9	
165	2,4	11	1,5	1,6

Operating characteristics of the hexode section as frequency changer (screen grids of UCH 42 and UAF 42 fed from a common potentiometer)

Caractéristiques d'utilisation de la partie hexode comme changeuse de fréquence (grilles-écran des tubes UCH42 et UAF42 connectées à un potentiomètre commun)

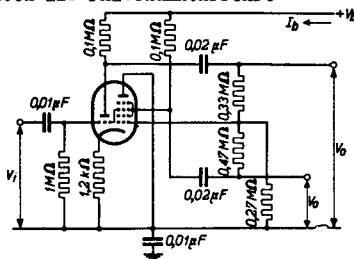
Betriebsdaten des Hexodenteiles als Mischröhre (die Schirmgitter der Röhren UCH 42 und UAF 42 verbunden mit einem gemeinsamen Spannungsteiler)



$V_a = V_b =$	170		100	V	
$R_1 =$	15		15	kΩ	
$R_2 =$	22		22	kΩ	
$R_k =$	180		180	Ω	
$R_{gT+g3} =$	22		22	kΩ	
$I_{gT+g3} =$	350 ²⁾		175 ²⁾	μA	
$V_{g1} =$	$\overbrace{-1,8 \quad -15,5}$		$\overbrace{-1 \quad -9,6}$	V	
$V_{g2+g4} =$	70	99	43	58	V
$I_a =$	2,1	-	1,2	-	mA
$I_{g2+g4} =$	2,6	-	1,46	-	mA
$S_c =$	670	20	530	14	μA/V
$R_i =$	>1	>4	>1	>2	MΩ
$R_{eq} =$	66	-	60	-	kΩ

²⁾ See note ¹⁾ on page 2; voir la note ¹⁾ feuille 2; siehe Fussnote ¹⁾ Seite 2

Operating characteristics as phase inverter
Caractéristiques d'utilisation comme tube inverseur
Betriebsdaten als Phasenumkehröhre



V_b (V)	I_b (mA)	V_o V_1	d_{tot} (%) ($V_o=5V_{eff}$)	d_{tot} (%) ($V_o=10V_{eff}$)
100	1,4	11	1,9	
165	2,4	11	1,5	1,6

Limiting values of the hexode section
Caractéristiques limites de la partie hexode
Grenzdaten des Hexodenteiles

V_{a0}	= max.	550 V
V_a	= max.	250 V
W_a	= max.	1,5 W
$V_{g2, g40}$	= max.	550 V
$V_{g2, g4}(I_a=3mA)$	= max.	125 V
$V_{g2, g4}(I_a<1mA)$	= max.	250 V
$W_{g2, g4}$	= max.	0,3 W
$V_{g1}(I_{g1}=+0,3\mu A)$	= max.	-1,3 V
I_k	= max.	10 mA
R_{g1}	= max.	3 M Ω
R_{g3}	= max.	3 M Ω
R_{kf}	= max.	20 k Ω
V_{kf}	= max.	150 V

Limiting values of the triode section
Caractéristiques limites de la partie triode
Grenzdaten des Triodenteiles

V_{a0}	= max.	550 V	$V_g(I_g=+0,3\mu A)$	= max.	-1,3 V
V_a	= max.	175 V	I_k	= max.	6 mA
W_a	= max.	0,8 W	R_g	= max.	3 M Ω

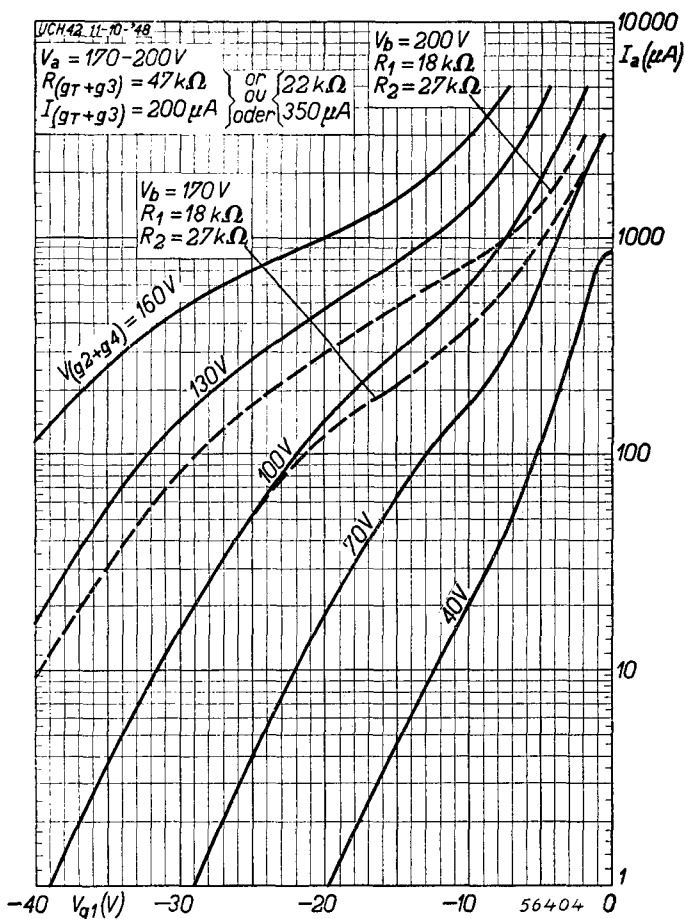
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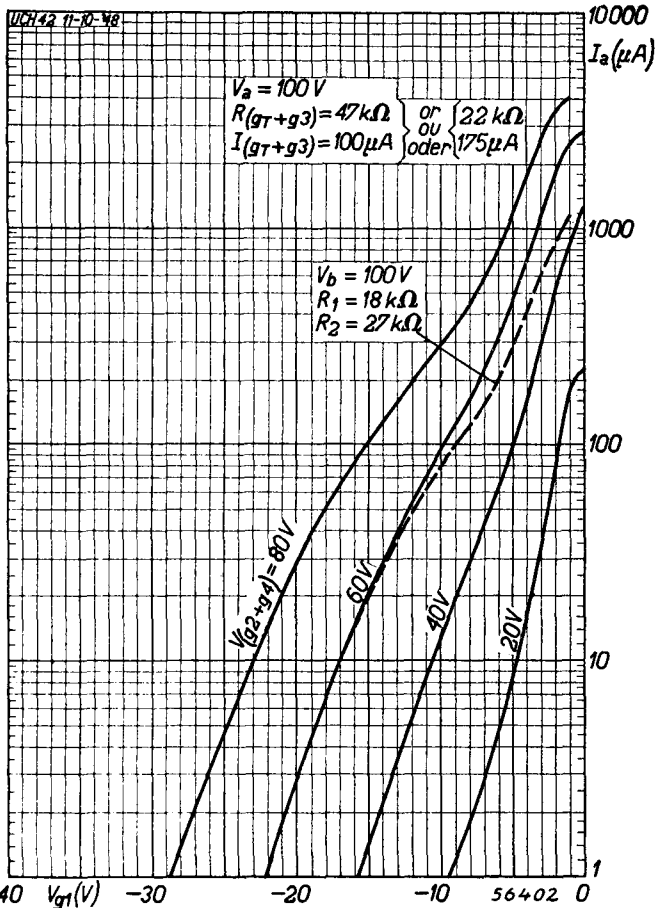
Limiting values of the hexode section
 Caractéristiques limites de la partie hexode
 Grenzdaten des Hexodenteiles

V_{a_0}	= max.	550 V
V_a	= max.	250 V
W_a	= max.	1,5 W
$V(g_2+g_4)_0$	= max.	550 V
$V_{g_2+g_4} (I_a = 3 \text{ mA})$	= max.	125 V
$V_{g_2+g_4} (I_a < 1 \text{ mA})$	= max.	250 V
$W_{g_2+g_4}$	= max.	0,3 W
$V_{g_1} (I_{g_1} = +0,3 \text{ } \mu\text{A})$	= max.	-1,3 V
I_k	= max.	7 mA
R_{g_1}	= max.	3 M Ω
R_{g_3}	= max.	3 M Ω
R_{fk}	= max.	20 k Ω
V_{fk}	= max.	150 V

Limiting values of the triode section
 Caractéristiques limites de la partie triode
 Grenzdaten des Triodenteiles

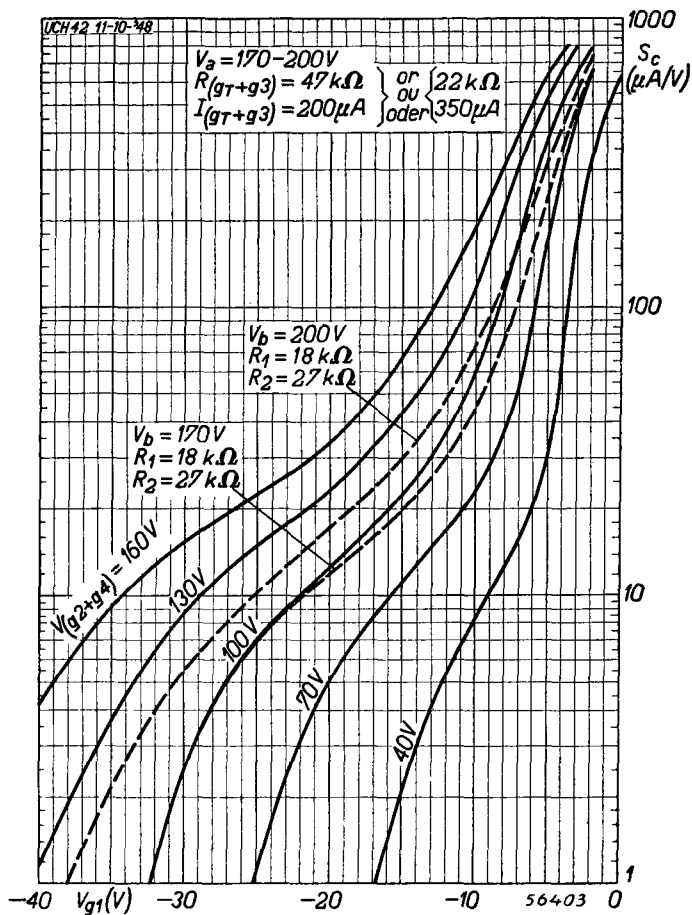
V_{a_0}	= max.	550 V
V_a	= max.	175 V
W_a	= max.	0,8 W
$V_g (I_g = +0,3 \text{ } \mu\text{A})$	= max.	-1,3 V
I_k	= max.	6 mA
R_g	= max.	3 M Ω
R_{fk}	= max.	20 k Ω
V_{fk}	= max.	150 V





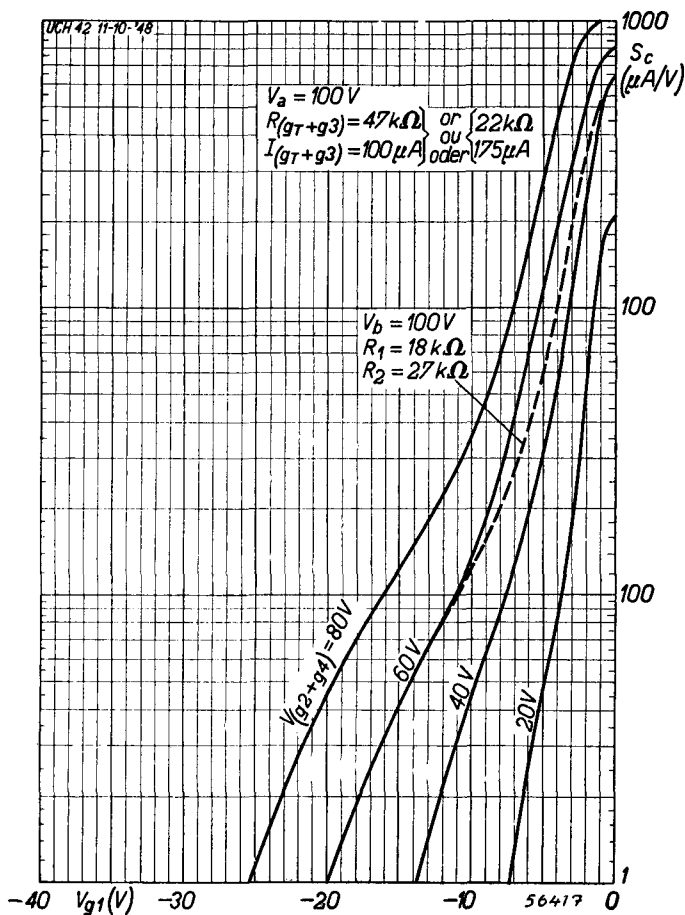
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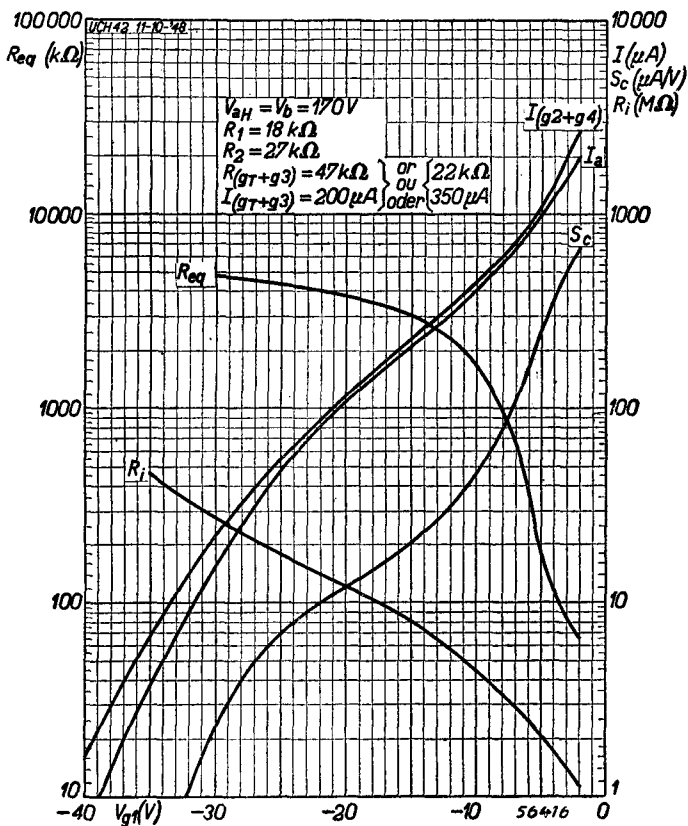
UCH 42



UCH 42

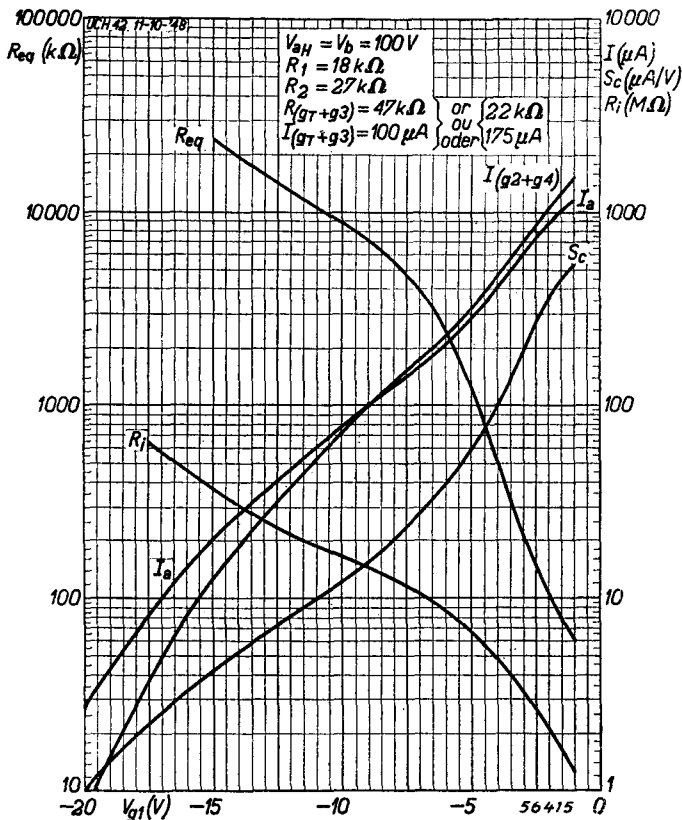
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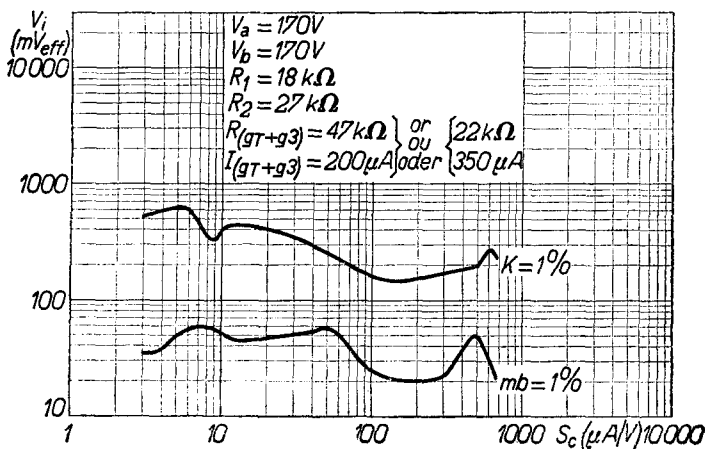
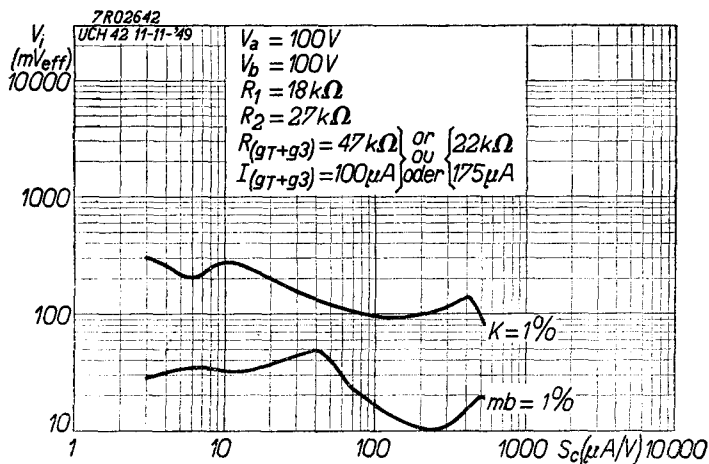




UCH 42

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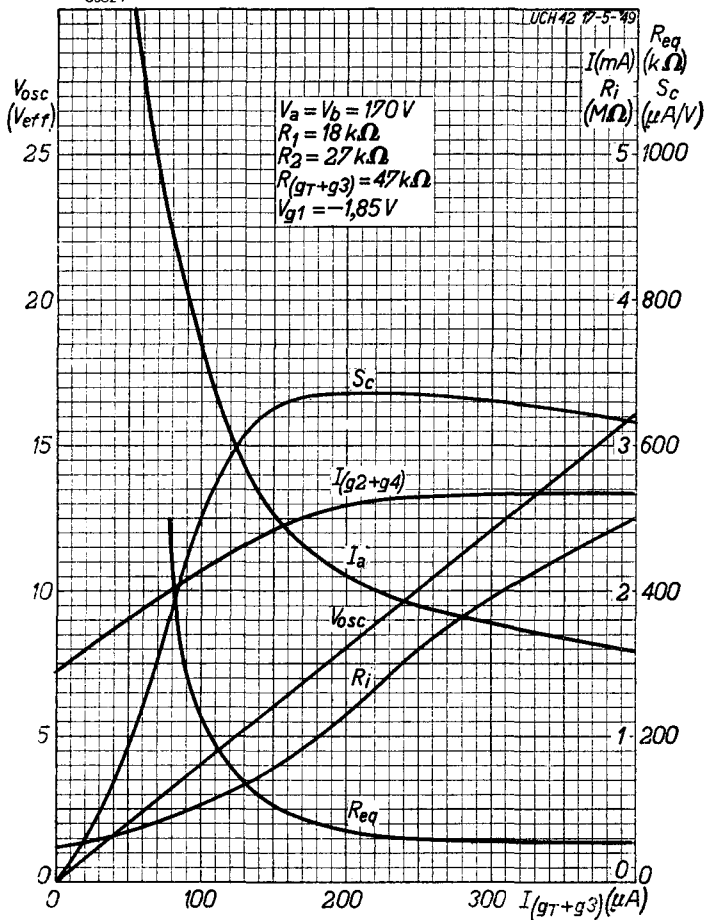


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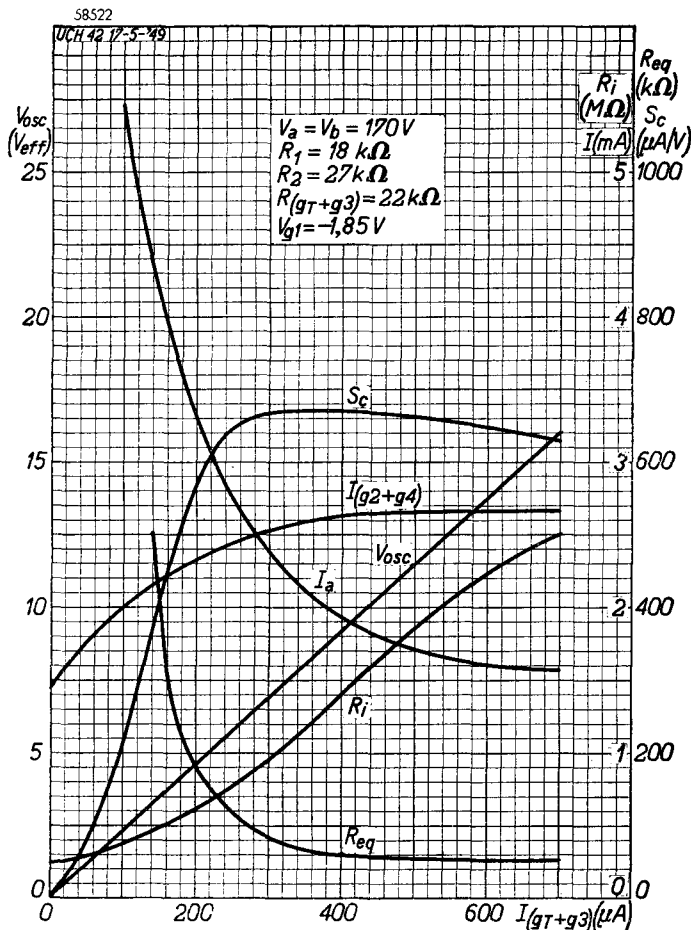
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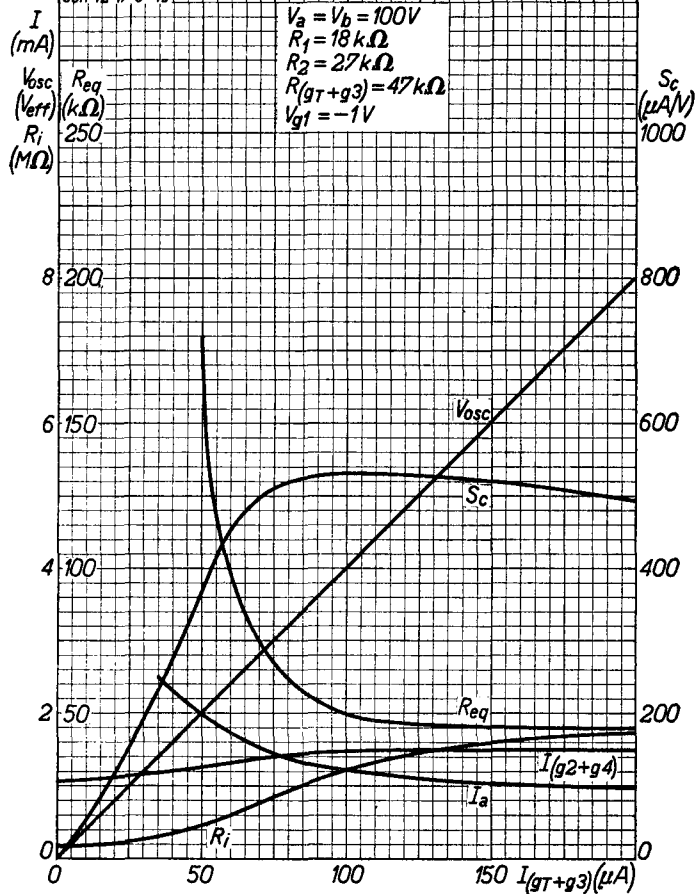


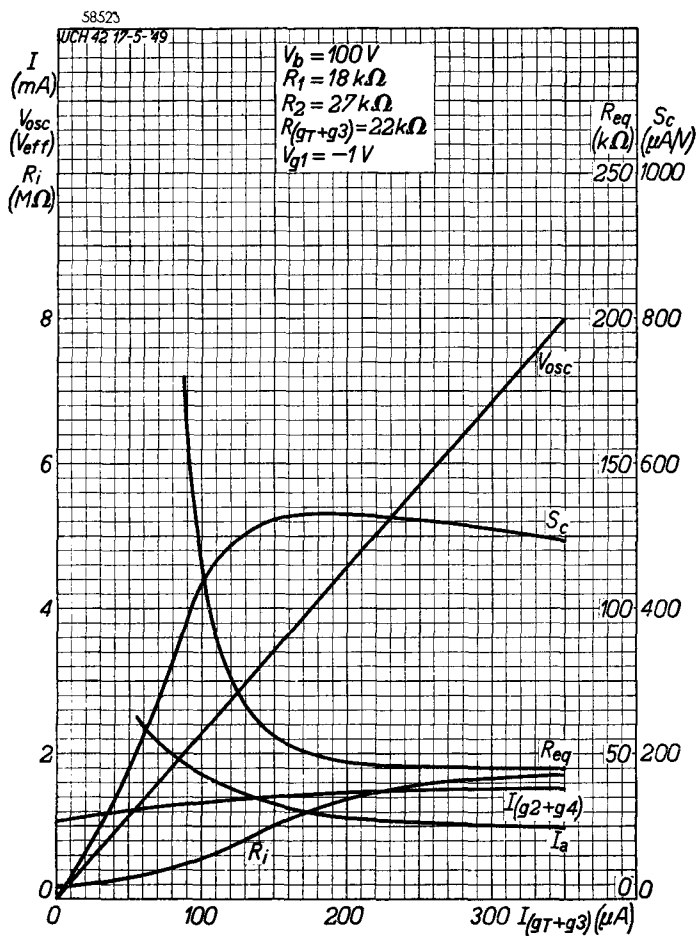
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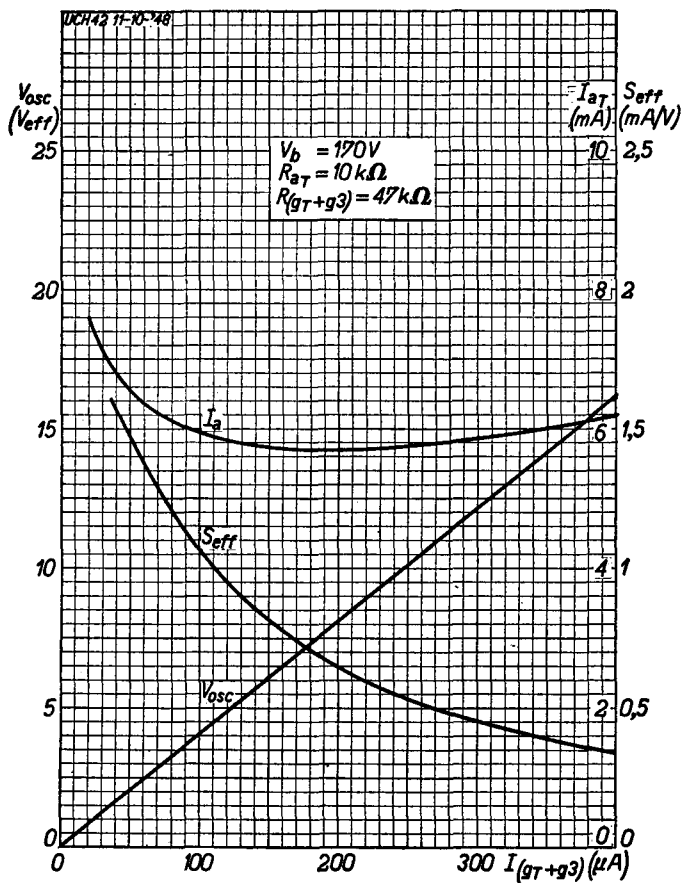
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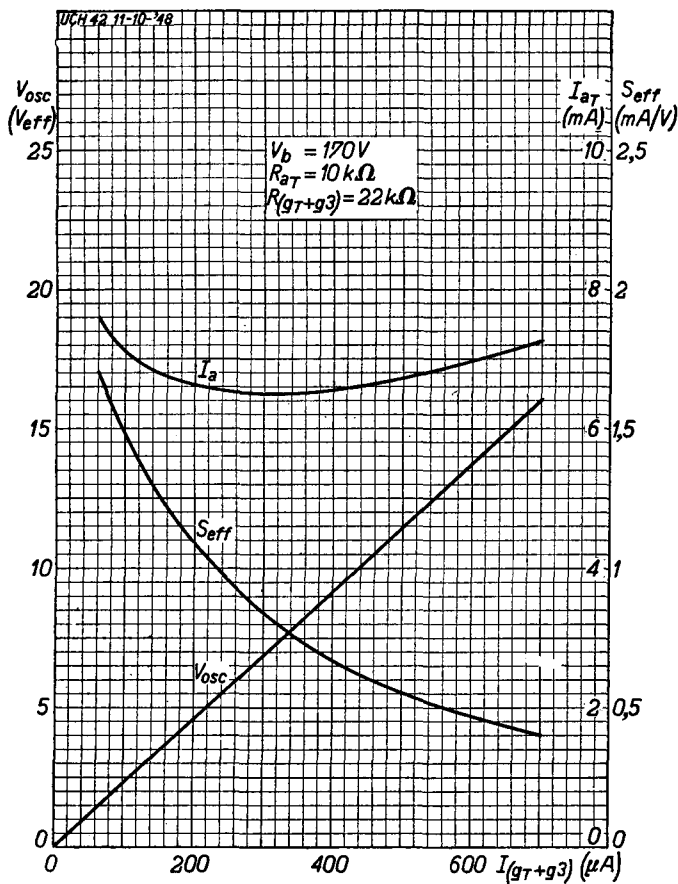


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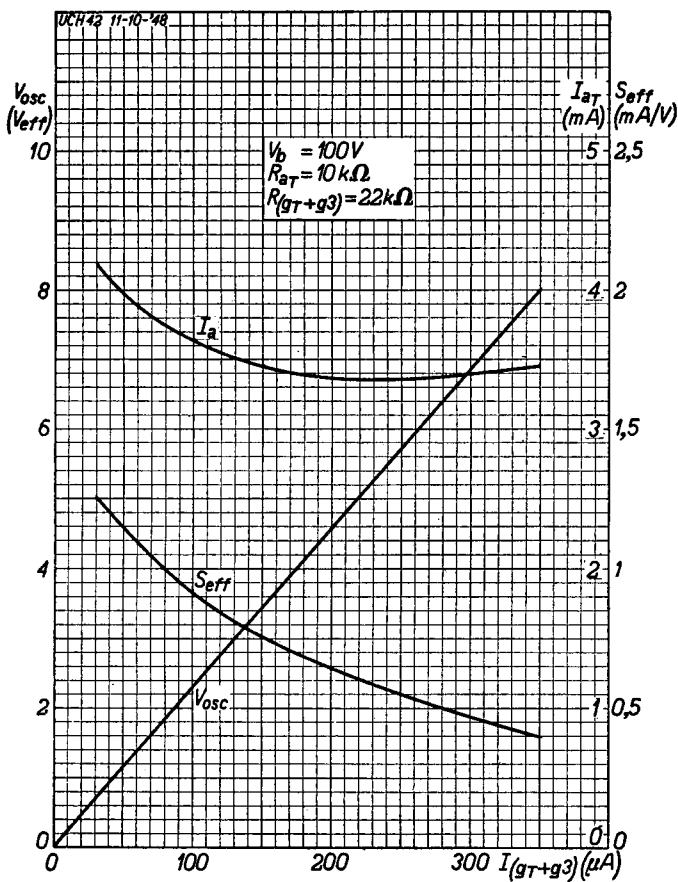
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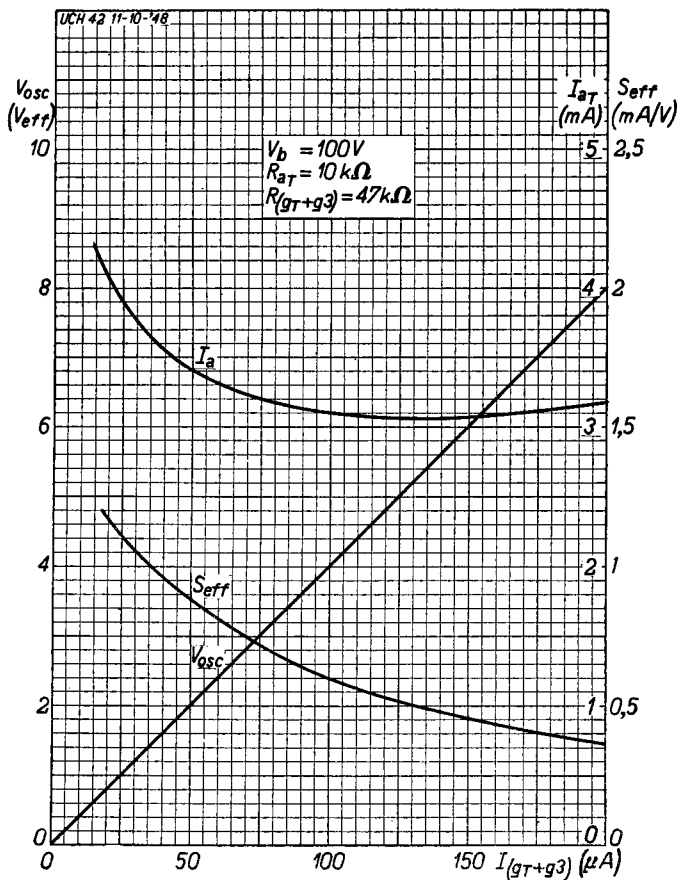
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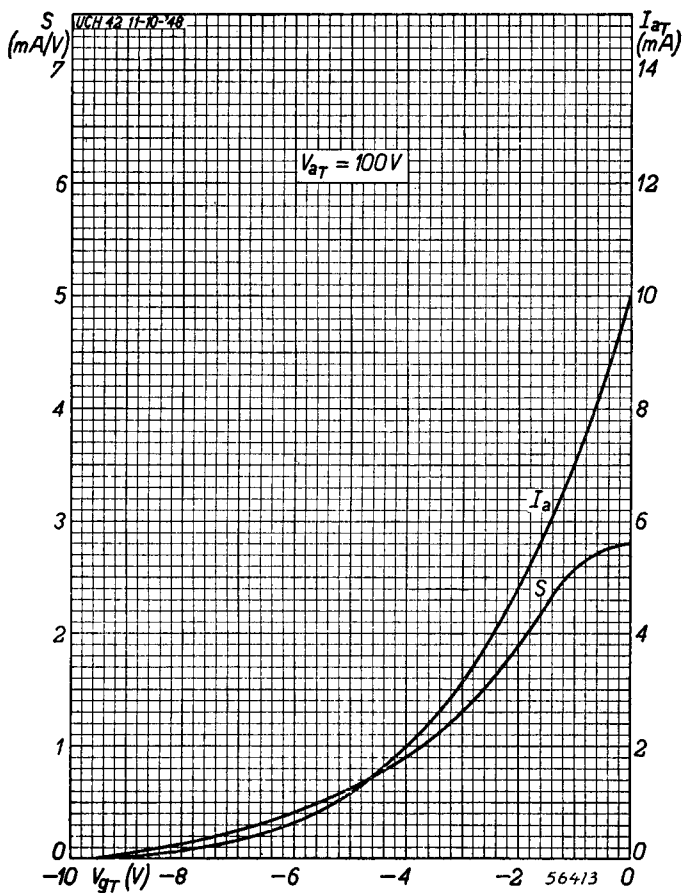
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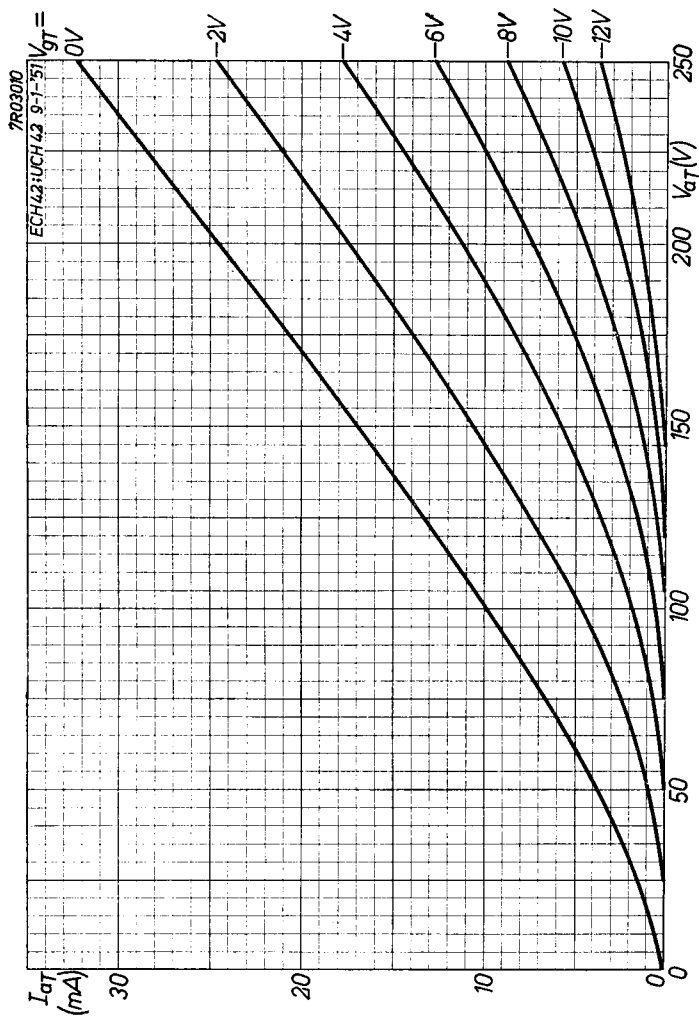


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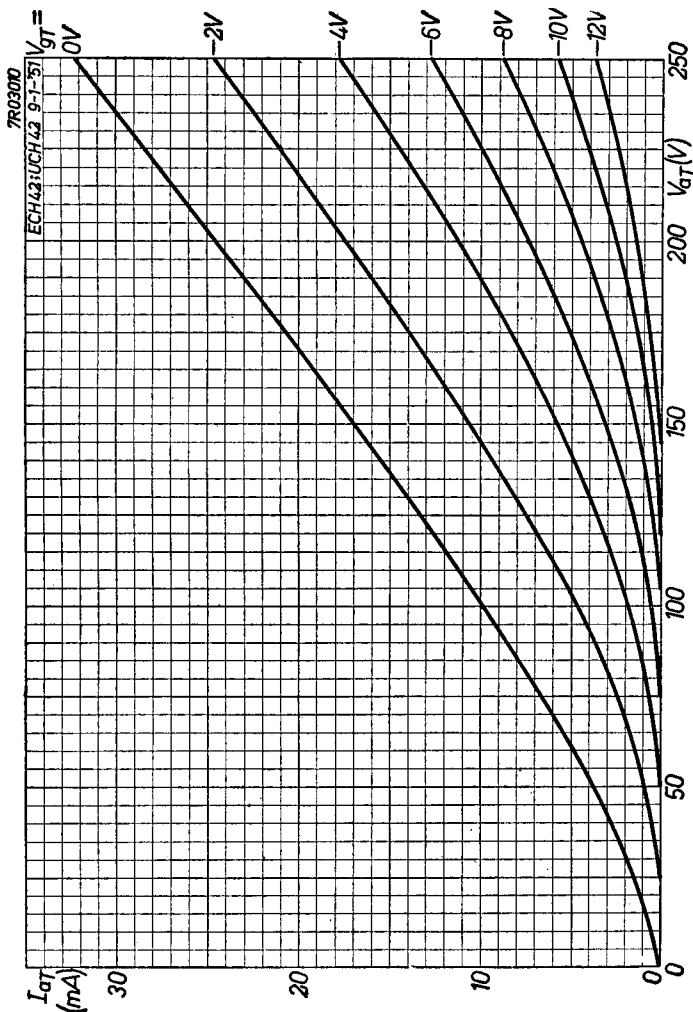


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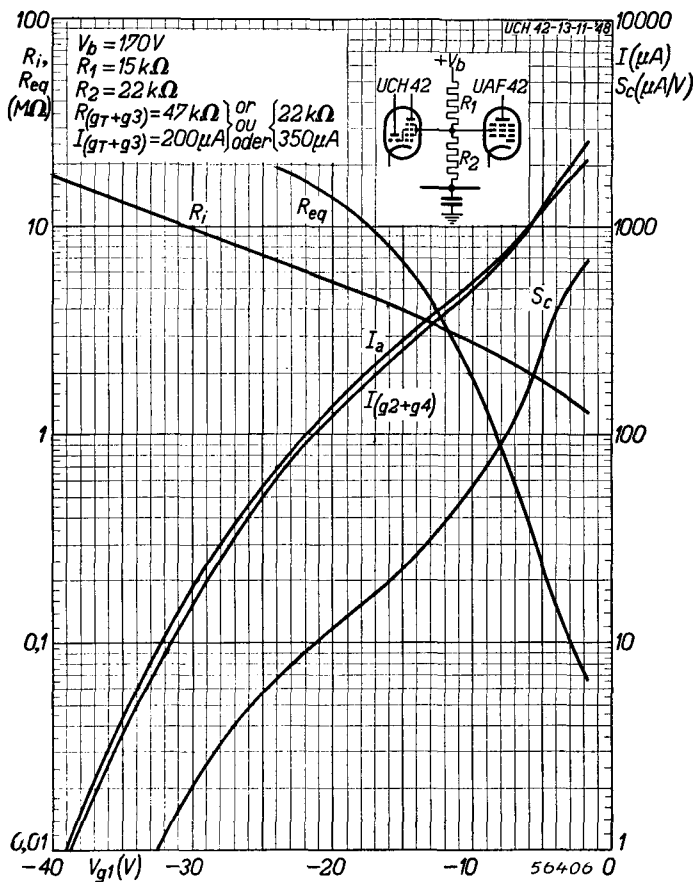


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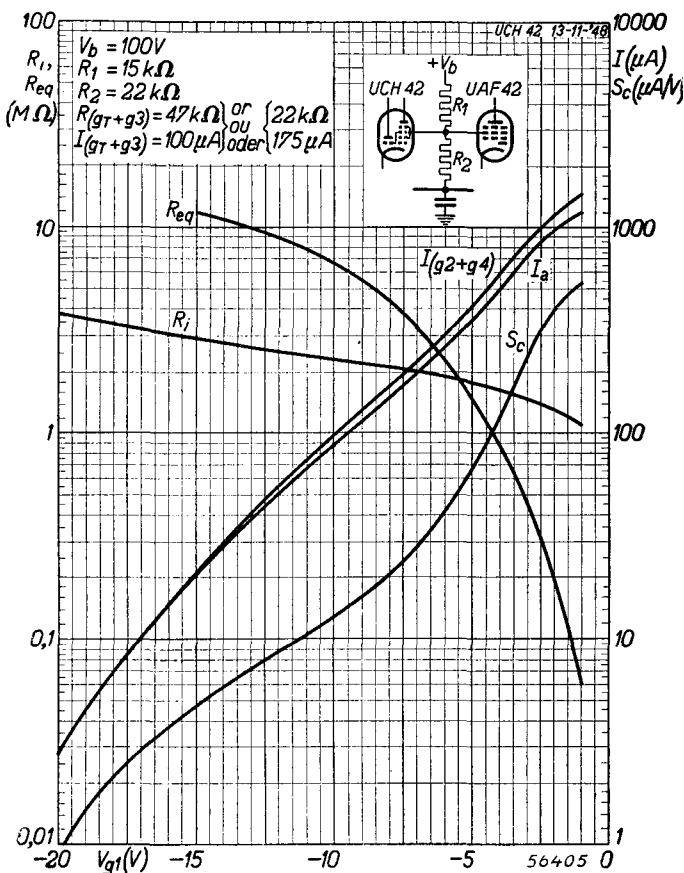
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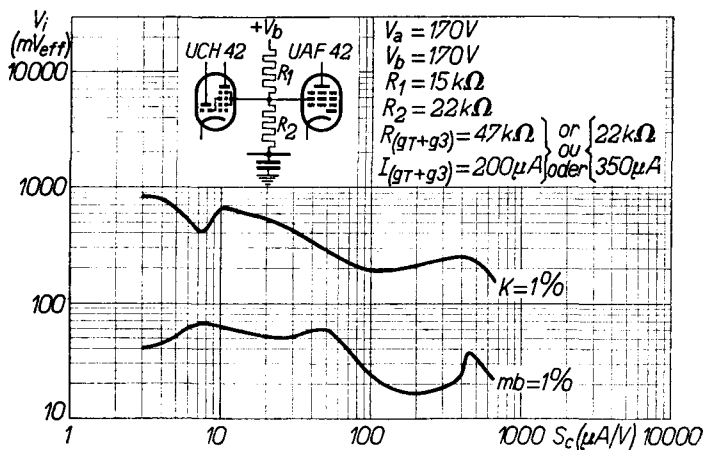
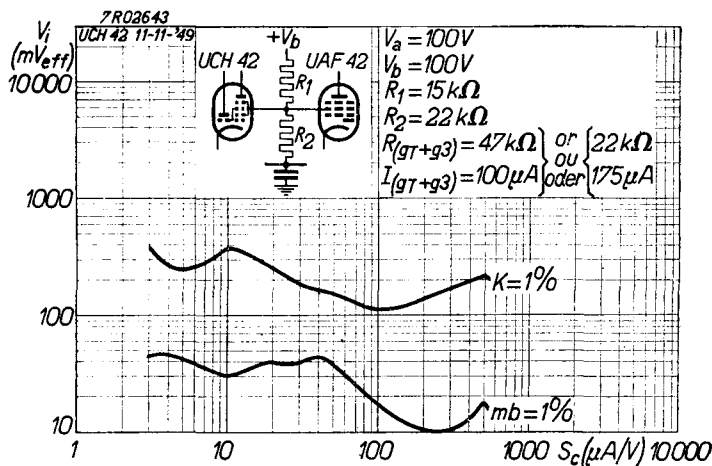
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15	E	1949.01.25
16	F	1949.01.25
17	G	1949.11.11
18	H	1949.11.11
19	I	1949.06.06

20	J	1949.06.06
21	K	1947.06.06
22	L	1947.06.06
23	M	1948.12.12
24	N	1948.12.12
25	O	1949.01.25
26	P	1949.01.25
27	Q	1951.02.02
28	Q	1957.10.10
29	R	1951.02.02
30	S	1951.02.02
31	T	1951.02.02
32, 33	FP	2000.06.18