

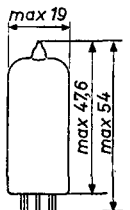
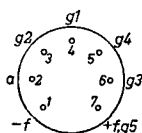
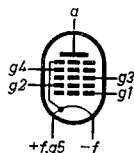
HEPTODE for use as frequency changer in battery sets
 HEPTODE pour utilisation en changeuse de fréquence
 dans des appareils batterie
 HEPTODE zur Verwendung als Mischröhre in Batterie-
 geräten

Heating :direct by D.C.;
 parallel or series supply
 Chauffage:direct par C.C.;
 alimentation parallèle ou série
 Heizung :direkt durch Gleichstrom;
 Parallel- oder Serienspeisung

Parallel supply $V_f = 1,4 \text{ V}$
 Alimentation parallèle $I_f = 25 \text{ mA}$
 Parallelspeisung

Series supply $V_f = 1,3 \text{ V}$
 Alimentation série
 Serienspeisung

Dimensions in mm
 Dimensions en mm
 Abmessungen in mm



Base, culot, Sockel: MINIATURE

Capacitances	$C_{g1} = 3,9 \text{ pF}$	$C_{ag2} < 0,3 \text{ pF}$
Capacités	$C_{g2} = 4,8 \text{ pF}$	$C_{ag3} < 0,36 \text{ pF}$
Kapazitäten	$C_{g3} = 7,4 \text{ pF}$	$C_{g1g2} = 3 \text{ pF}$
	$C_a = 8,1 \text{ pF}$	$C_{g1g3} < 0,2 \text{ pF}$
	$C_{ag1} < 0,11 \text{ pF}$	$C_{g2g3} = 1,6 \text{ pF}$

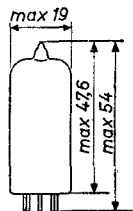
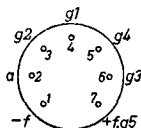
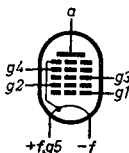
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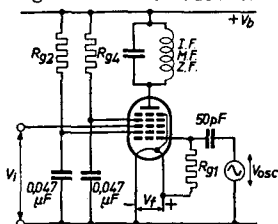
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	$C_{ag1} < 0,11 \text{ pF}$	$C_{g2g3} = 1,6 \text{ pF}$

Operating characteristics with separate oscillator
 Caractéristiques d'utilisation avec oscillateur séparé
 Betriebsdaten mit getrenntem Oszillator



$V_b^1) = V_a$	=	64	85 V
R_{g4}	=	0	120 kΩ
V_{g4}	=	64	68 V
V_{g3}	=	0	0 V
R_{g2}	=	18	33 kΩ
V_{g2}	=	35	35 V
R_{g1}	=	27	27 kΩ
V_{osc}	=	4	4 V _{eff}
I_a	=	0,55	0,6 mA
I_{g4}	=	0,12	0,14 mA
I_{g2}	=	1,6	1,5 mA
I_{g1}	=	85	85 μA
$S_c^2)$	=	275	300 μA/V
$S_c (V_{g3} = -4,5V)$	=	2,75	- μA/V
$S_c (V_{g3} = -6,5V)$	=	-	3,0 μA/V
R_i	=	0,75	0,8 MΩ
R_{eq}	=	110	100 kΩ

¹⁾ Based on a battery voltage of 67.5 or 90 V, reduced by the negative bias for the output valve.

Se basant sur une tension de batterie de 67,5 ou 90 V, diminuée avec la polarisation négative du tube de sortie.

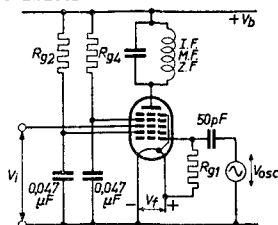
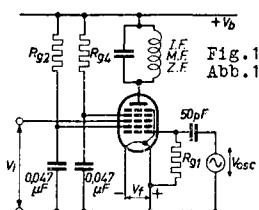
Basiert auf einer Batteriespannung von 67,5 oder 90 V, verringert mit der negativen Vorspannung der Endröhre.

²⁾ With self-oscillation S_c will be a few percent lower

Avec auto-oscillation S_c sera plus petit de quelques pourcents

Bei einer selbstschwingenden Röhre wird S_c um einige Prozente niedriger sein

Operating characteristics with separate oscillator
 Caractéristiques d'utilisation avec oscillateur séparé
 Betriebsdaten mit getrenntem Oszillator



$V_b = V_a$	$45^{1)}$	$64^{2)}$	$85^{2)})$	V
R_{g4}	≈ 0	0	120	kΩ
V_{g4}	≈ 45	64	68	V
V_{g3}	≈ 0	0	0	V
R_{g2}	≈ 12	18	33	kΩ
V_{g2}	$\approx 29,5$	35	35	V
R_{g1}	≈ 27	27	27	kΩ
V_{osc}	≈ 4	4	4	V_{eff}
I_a	$\approx 0,56$	0,55	0,6	mA
I_{g4}	$\approx 0,15$	0,12	0,14	mA
I_{g2}	$\approx 1,3$	1,6	1,5	mA
I_{g1}	≈ 85	85	85	μA
I_k	$\approx 2,1$	2,36	2,33	mA
S_c ($V_{g3} = -4,5$ V)	-	2,75	-	μA/V
S_c ($V_{g3} = -6,5$ V)	-	-	3,0	μA/V
S_c	$\approx 325^{3)4)}$	$275^{3)}$	$300^{3)}$	μA/V
R_1	$\approx 0,55$	0,75	0,8	MΩ
R_{eq}	$\approx -$	110	100	kΩ

- 1) Voltages with respect to +f, g_5 (see fig. 1)
 Tension par rapport à +f, g_5 (voir la fig. 1)
 Spannungen in Bezug auf +f, g_5 (siehe Abb. 1)
- 2) Based on a battery voltage of 90 or 67.5 V reduced by the negative bias for the output tube
 Se basant sur une tension de batterie de 90 ou 67,5 V diminuée de la polarisation négative du tube de sortie
 Basiert auf einer Batteriespannung von 90 oder 67,5 V verringert um die negative Vorspannung der Endröhre
- 3) See page 3; voir page 3; siehe Seite 3

Typical characteristics of the oscillator section
(g_1 connected to +f)

Caractéristiques types de la partie oscillatrice
(g_1 connecté à +f)

Kennndaten des Oszillatorteiles (g_1 verbunden mit +f)

V_a	=	64	85 V
V_{g4}	=	64	64 V
V_{g3}	=	0	0 V
V_{g2}	=	35	35 V
I_{g2}	=	1,7	1,7 mA
S_{g2g1}	=	0,6	0,6 mA/V
μ_{g2g1}	=	7,5	7,5

Limiting values

Caractéristiques limites

Grenzdaten

V_b	= max.	90 V
V_b	= max.	110 V ¹⁾
V_a	= max.	90 V
W_a	= max.	0,15 W
V_{g4}	= max.	90 V
W_{g4}	= max.	0,03 W
V_{g2}	= max.	60 V
W_{g2}	= max.	0,1 W
I_k	= max.	2,6 mA
R_{g1}	= max.	100 k Ω
R_{g3}	= max.	3 M Ω
V_{g3} ($I_{g3}=+0,3 \mu A$)	= min.	+0,75 V

¹⁾ Absolute value; valeur absolue; Absolutwert.

Typical characteristics of the oscillator section (g_1 connected to +f)

Caractéristiques types de la partie oscillatrice (g_1 relié à +f)

Kenndaten des Oszillatorteiles (g_1 verbunden mit +f)

V_a	=	64	85 V
V_{g4}	=	64	64 V
V_{g3}	=	0	0 V
V_{g2}	=	35	35 V
I_{g2}	=	1,7	1,7 mA
S_{g2g1}	=	0,6	0,6 mA/V
μ_{g2g1}	=	7,5	7,5

Limiting values

Caractéristiques limites

Grenzdaten

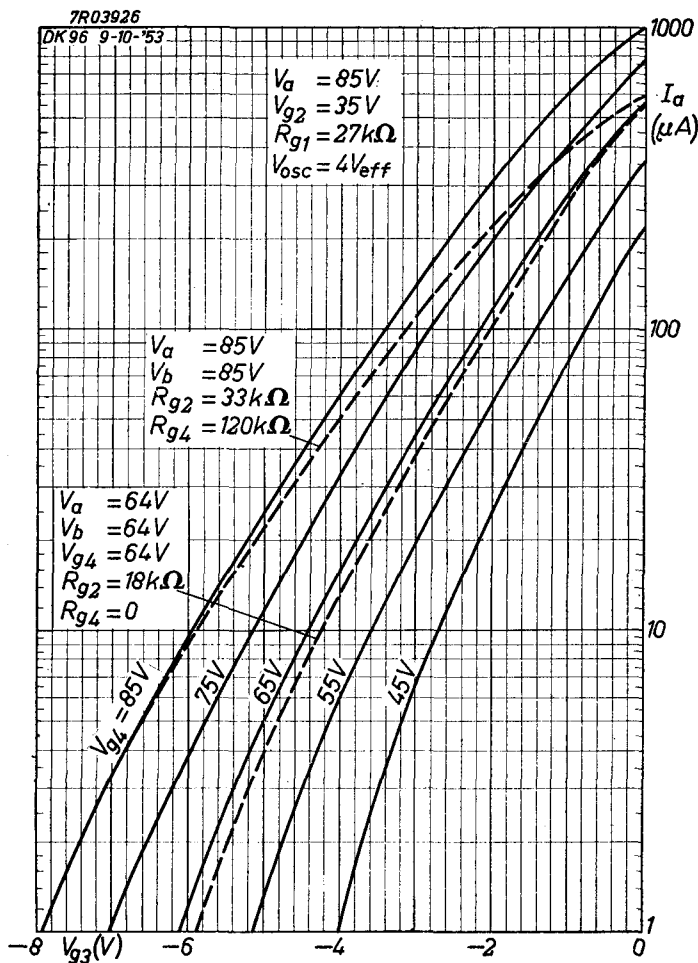
V_b	= max.	90 V
V_b	= max.	110 V ⁵⁾
V_a	= max.	90 V
W_a	= max.	0,15 W
V_{g4}	= max.	90 V
W_{g4}	= max.	0,03 W
V_{g2}	= max.	60 V
W_{g2}	= max.	0,1 W
I_k	= max.	2,6 mA
R_{g1}	= max.	100 k Ω
R_{g3}	= max.	3 M Ω
V_{g3} ($I_{g3} = +0,3 \mu A$)	= min.	+0,75 V

3) With self-oscillation S_c will be a few percent lower
Avec auto-oscillation S_c sera plus petit de quelques pour cents

Bei einer selbstschwingenden Röhre wird S_c um einige Prozente niedriger sein

4) V_{g3} for 1/100 $S_c = -4,4$ V
 V_{g3} pour 1/100 $S_c = -4,4$ V
 V_{g3} für 1/100 $S_c = -4,4$ V

5) Absolute value
Valeur absolue
Absolutwert



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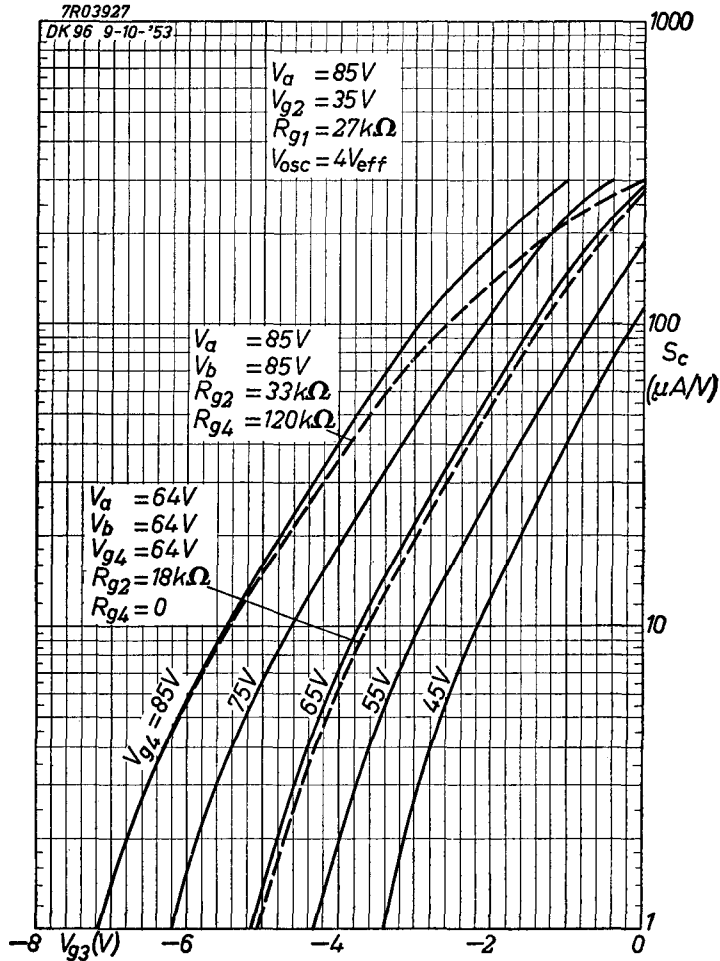
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$V_a = 85V$
 $V_{g2} = 35V$
 $R_{g1} = 27k\Omega$
 $V_{osc} = 4V_{eff}$

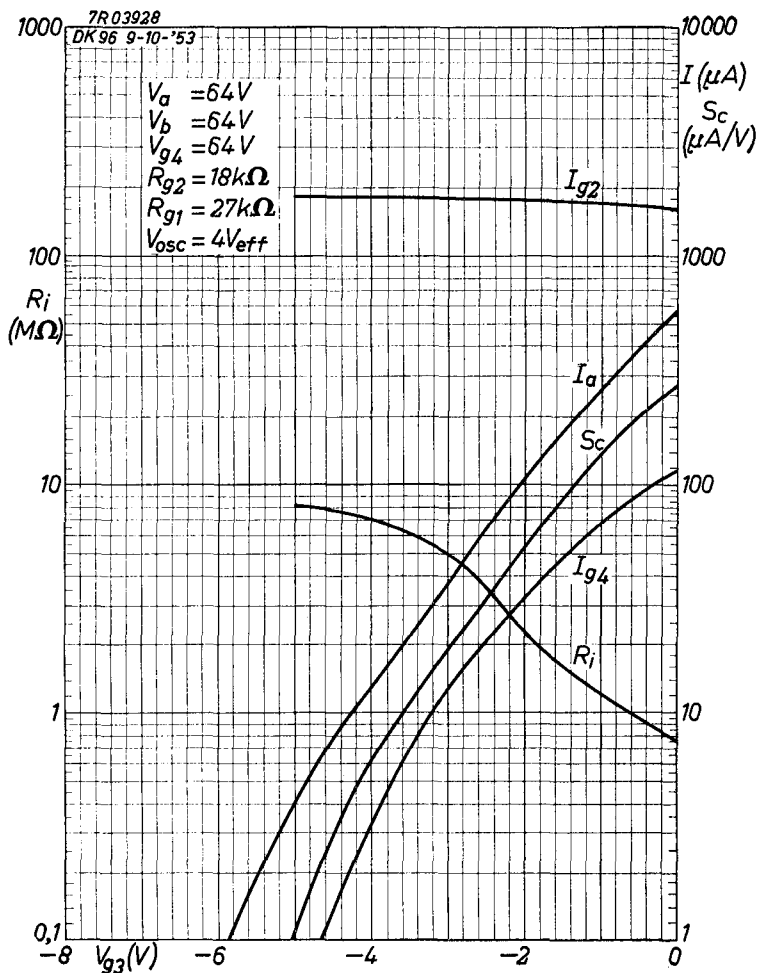
$V_a = 85V$
 $V_b = 85V$
 $R_{g2} = 33k\Omega$
 $R_{g4} = 120k\Omega$

$V_a = 64V$
 $V_b = 64V$
 $V_{g4} = 64V$
 $R_{g2} = 18k\Omega$
 $R_{g4} = 0$



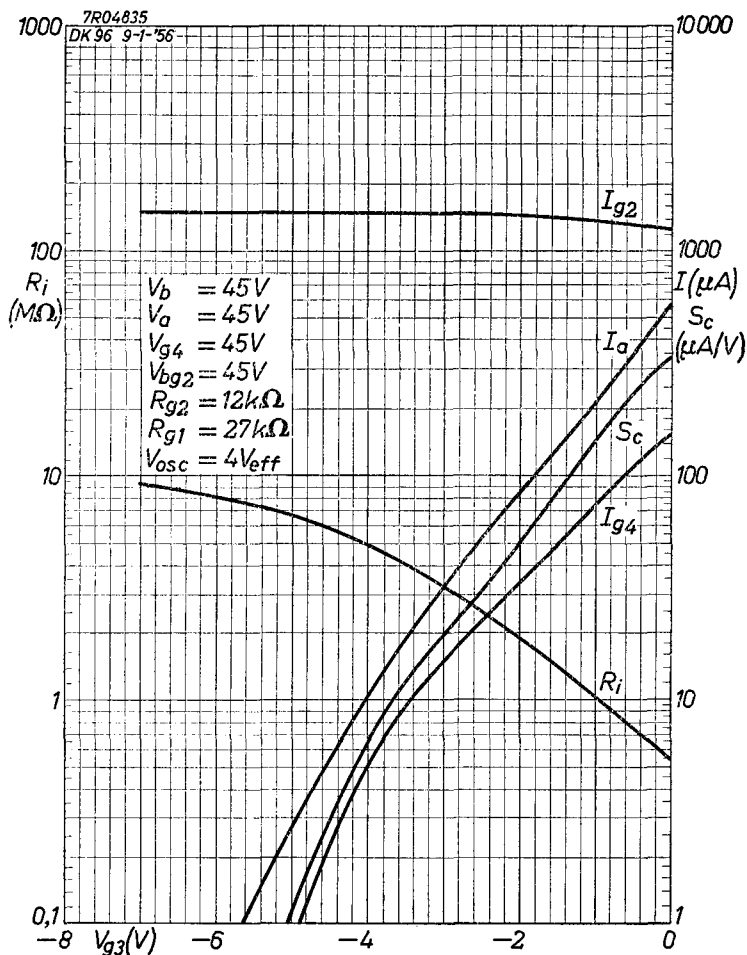
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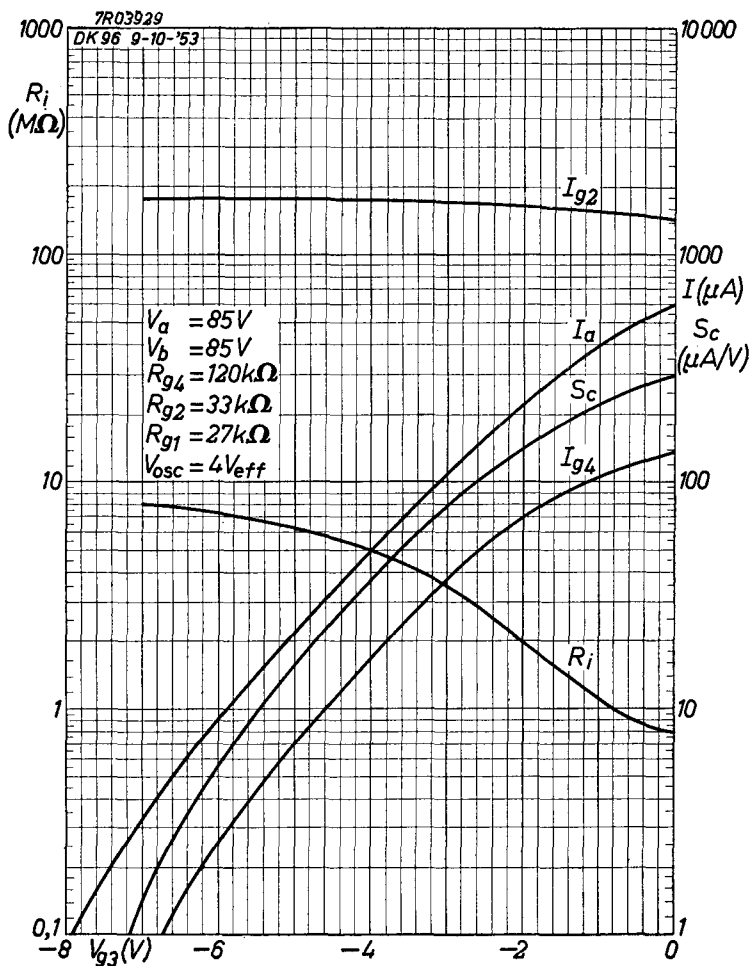
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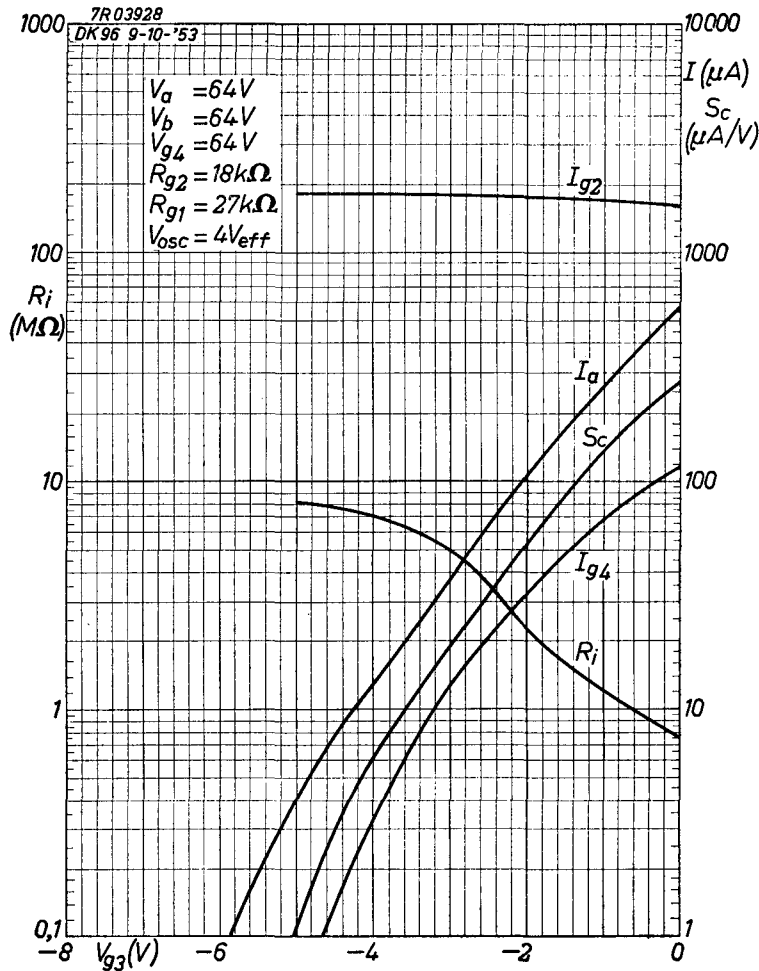
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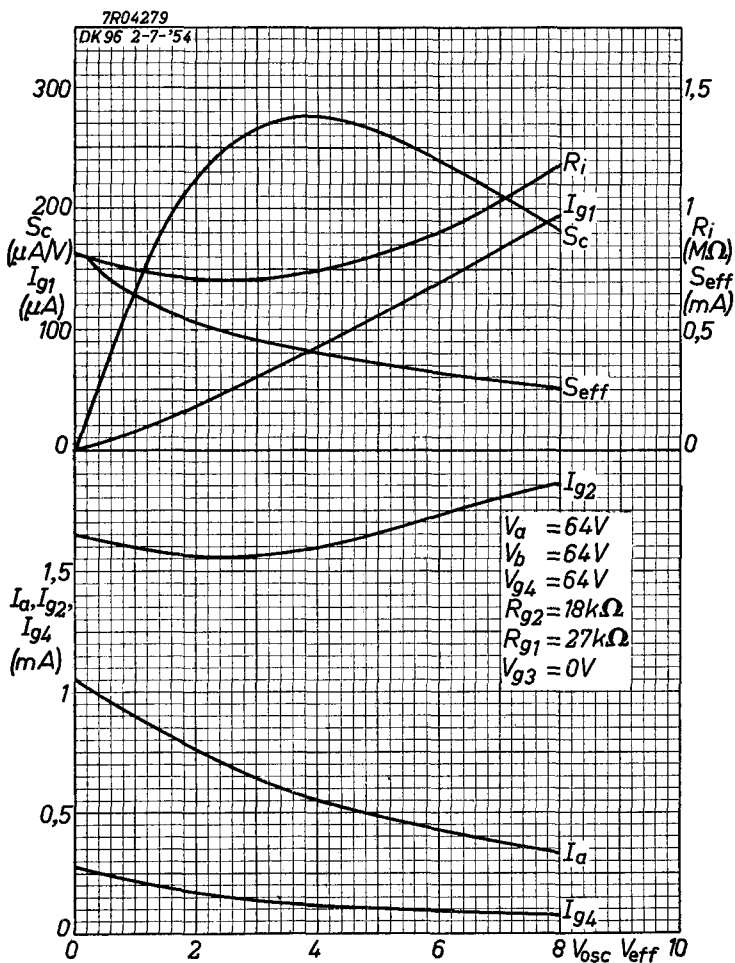
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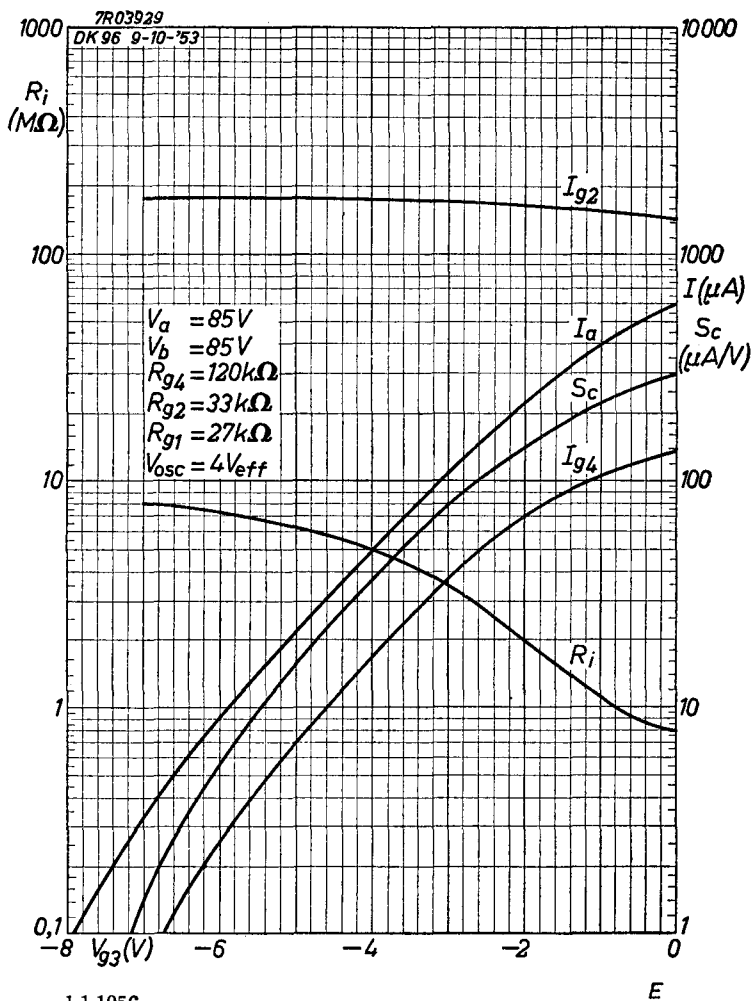
$V_a = 64V$
 $V_b = 64V$
 $V_{g4} = 64V$
 $R_{g2} = 18k\Omega$
 $R_{g1} = 27k\Omega$
 $V_{osc} = 4V_{eff}$





PHILIPS

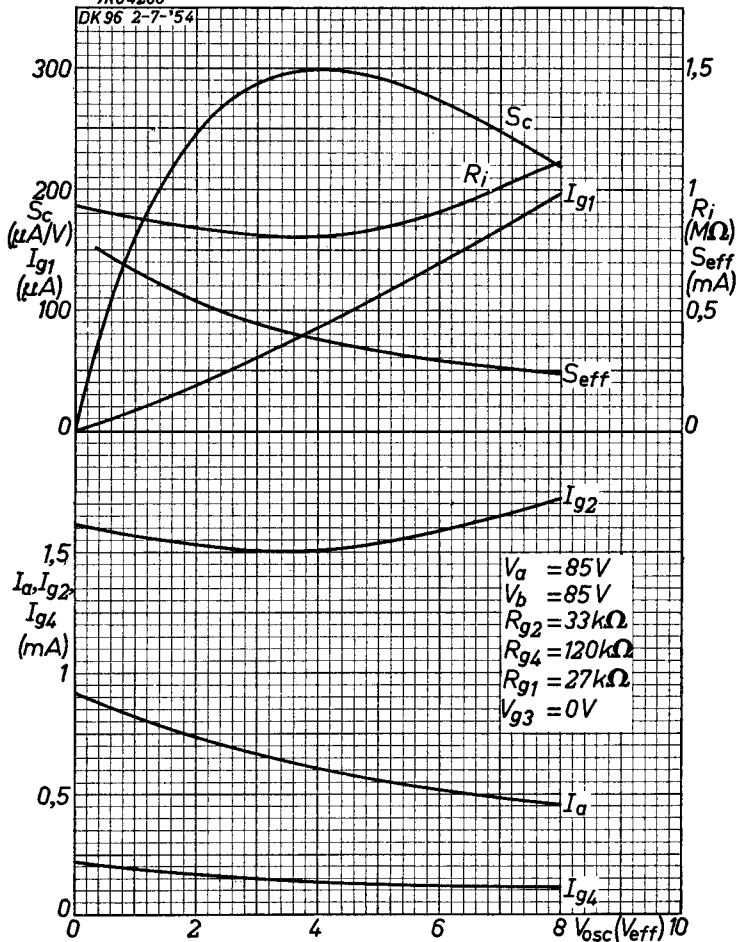
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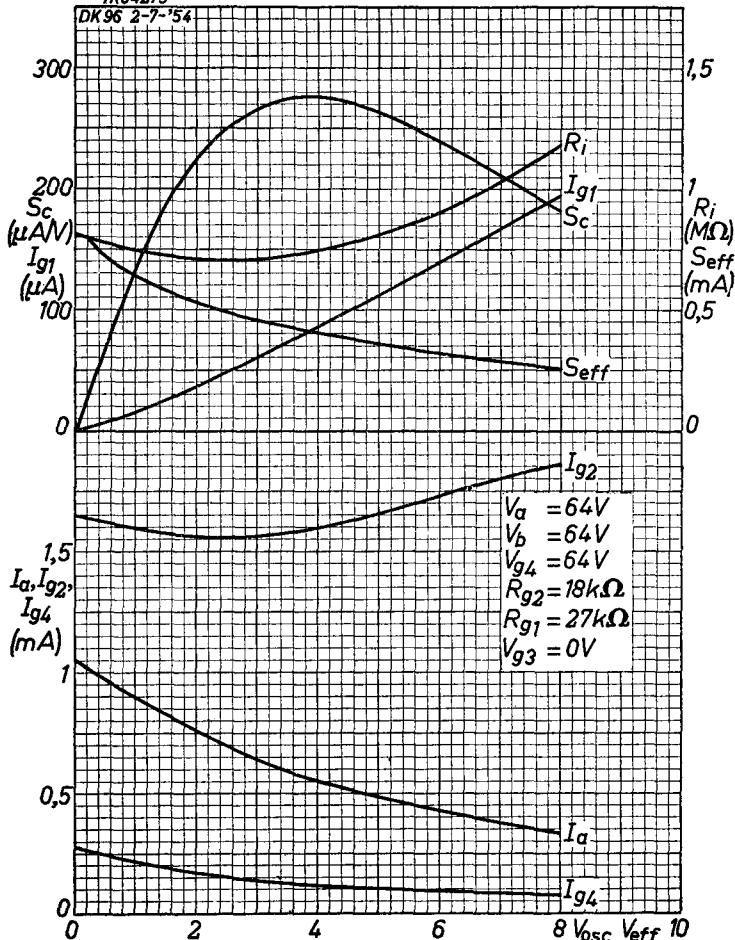
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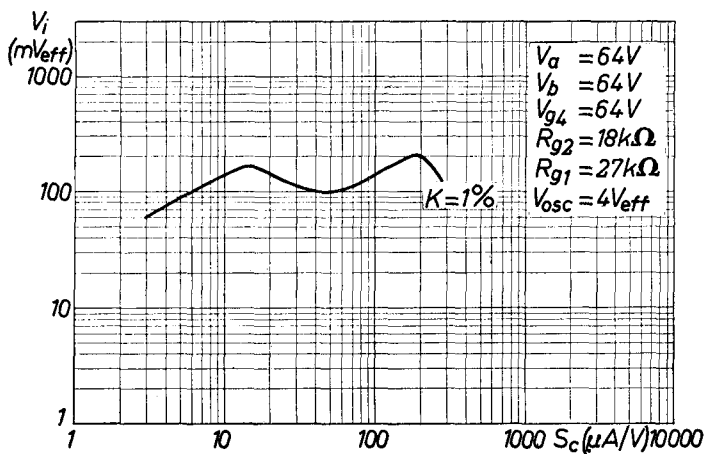
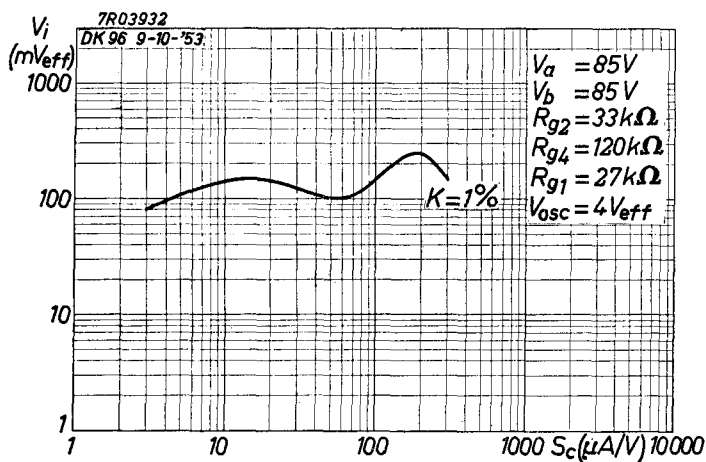


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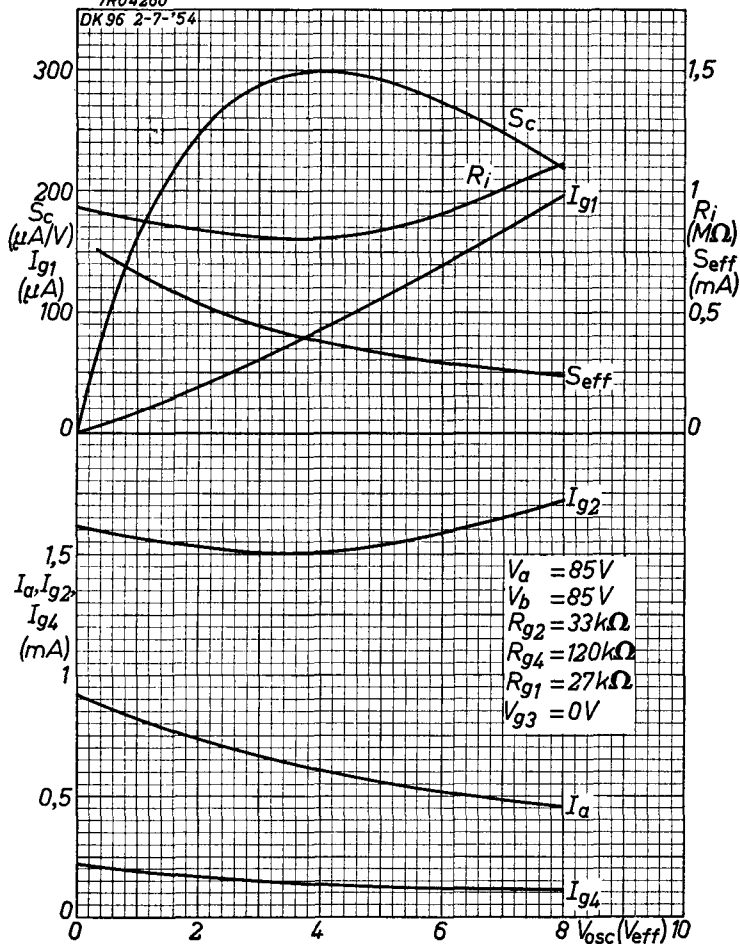
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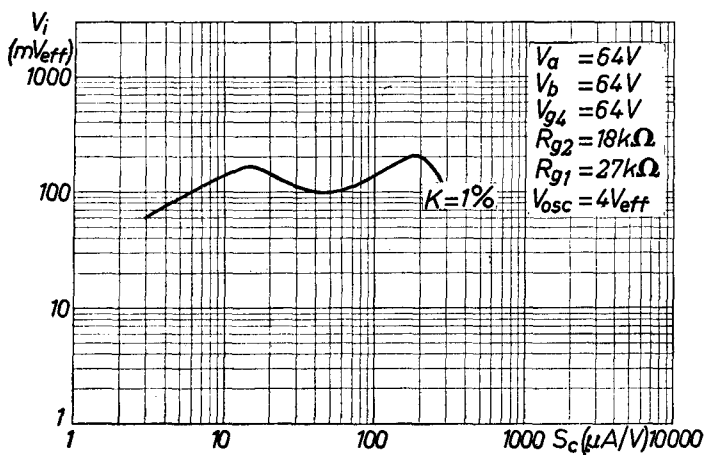
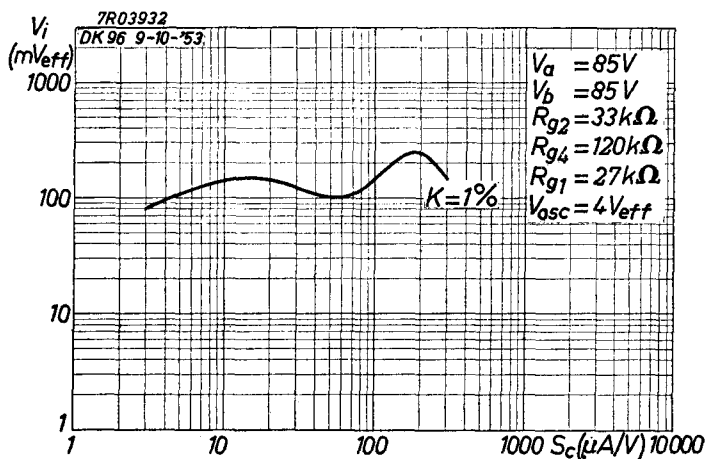




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5	3	1954.11.11
6	3	1955.12.12
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8	B	1953.10.10
9	C	1953.10.10
10	C	1956.01.01
11	D	1953.10.10
12	D	1956.01.01
13	E	1954.07.07
14	E	1956.01.01
15	F	1954.07.07
16	F	1956.01.01
17	G	1953.10.10
18	G	1956.01.01
19	H	1956.01.01

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