

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.;
parallel supply

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

Heizung: indirekt durch Wechsel-
oder Gleichstrom;
Parallelspeisung

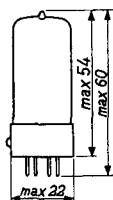
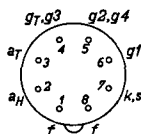
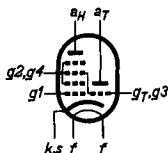
$V_f = 6,3 \text{ V}$

$I_f = 0,23 \text{ A}$

Dimensions in mm

Dimensions en mm

Abmessungen in mm



Base, culot, Sockel: Rimlock

Capacitances
Capacités
Kapazitäten

Hexode section
Partie hexode
Hexodenteil

Triode section
Partie triode
Triodenteil

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

$C_a = 9,4 \text{ pF}$

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

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

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

$C_a = 2,4 \text{ pF}$

$C_{(gT+g3)a} = 1,3 \text{ pF}$

Between hexode and triode sections

Entre les parties hexode et triode

Zwischen Hexoden- und Triodenteil

$C_{(gT+g3)-g1H} < 0,35 \text{ pF}$

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

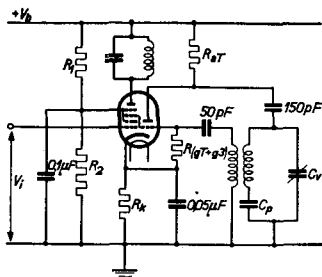
$C_{aT-g1H} < 0,06 \text{ pF}$

$C_{aT-aH} < 0,5 \text{ pF}$

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



$V_a = V_b$	=	250	V
R_1	=	27	k Ω
R_2	=	27	k Ω
R_k	=	180	Ω
R_{gT+g3}	=	22	k Ω
I_{gT+g3}	=	350 ¹⁾	μA
V_{g1}	=	-2	V
V_{g2+g4}	=	85	V
I_a	=	3,0	mA
I_{g2+g4}	=	3,0	mA
S_c	=	750	$\mu A/V$
R_i	=	>1	M Ω
R_{eq}	=	100	k Ω

¹⁾ If R_{gT+g3} is chosen to 47 k Ω , I_{gT+g3} has to be adjusted to 200 μA
 Si R_{gT+g3} est choisie 47 k Ω , I_{gT+g3} doit être réglé à 200 μA
 Wenn R_{gT+g3} zu 47 k Ω gewählt wird, soll I_{gT+g3} auf 200 μA eingestellt werden

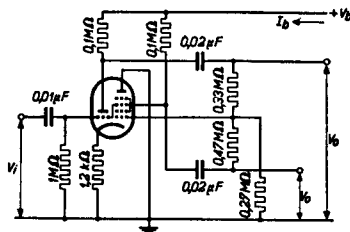
Typical characteristics of the triode section
 Caractéristiques typiques de la partie triode
 Kenndaten des Triodenteiles

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	=	250	250	V
R_a	=	33	33	k Ω
R_{gT+g3}	=	47	22	k Ω
I_{gT+g3}	=	200	350	μ A
I_a	=	4,8	5,1	mA
V_{osc}	=	8,0	8,0	V _{eff}
S_{eff}	=	0,55	0,6	mA/V

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



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

$V_a = 100 \text{ V}$
 $V_g = 0 \text{ V}$
 $I_a = 10 \text{ mA}$
 $S = 2,8 \text{ mA/V}$
 $\mu = 22$

Operating characteristics of the triode section as oscillator
 Caractéristiques d'utilisation de la partie triode comme oscillatrice

Betriebsdaten des Triodenteiles als Oszillator

V_b	=	250	250	V
R_a	=	33	33	k Ω
R_{gT+g3}	=	47	22	k Ω
I_{gT+g3}	=	200	350	μA
I_a	=	4,8	5,1	mA
V_{osc}	=	8,0	8,0	V _{eff}
S_{eff}		0,55	0,6	mA/V

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

$V_{a0} = \text{max. } 550 \text{ V}$	$V_{(g2+g4)0}$	= max. 550 V
$V_a = \text{max. } 300 \text{ V}$	$V_{g2+g4} (I_a = 3 \text{ mA})$	= max. 125 V
$W_a = \text{max. } 1,5 \text{ W}$	$V_{g2+g4} (I_a < 1 \text{ mA})$	= max. 300 V
$I_k = \text{max. } 10 \text{ mA}$	W_{g2+g4}	= max. 0,3 W
$R_{fk} = \text{max. } 20 \text{ k}\Omega$	$V_{g1} (I_{g1} = +0,3 \mu\text{A})$	= max. -1,3 V
$V_{fk} = \text{max. } 100 \text{ V}$	R_{g1}	= max. 3 M Ω
	R_{g3}	= max. 3 M Ω

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

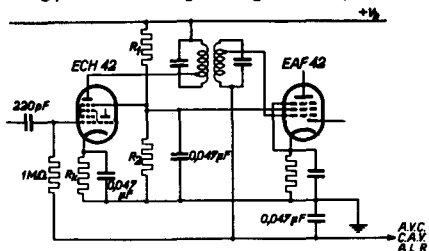
V_{a0}	= max. 550 V	I_k	= max. 6 mA
V_a	= max. 175 V	R_g	= max. 3 M Ω
W_a	= max. 0,8 W	R_{fk}	= max. 20 k Ω
$V_g (I_g = +0,3 \mu\text{A})$	= max. -1,3 V	V_{fk}	= max. 100 V

V _b (V)	I _b (mA)	V _o VI	d _{tot} (%) (V _o =5V _{eff})	d _{tot} (%) (V _o =10V _{eff})	d _{tot} (%) (V _o =15V _{eff})
250	.3,6	11	1,2	1,4	1,7
350	5,1	11	1,1	1,2	1,4

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

Caractéristiques d'utilisation de la partie hexode comme changeuse de fréquence (grilles-écran des tubes ECH42 et EAF42 connectées à un potentiomètre commun)

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



V _a =V _b	=	250	V
R ₁	=	22	kΩ
R ₂	=	27	kΩ
R _k	=	180	Ω
R _{gT} +g ₃	=	22	kΩ
I _{gT} +g ₃	=	350 ²⁾	μA
V _{g1}	=	-2 -20,5	V
V _{g2} +g ₄	=	85 135	V
I _a	=	3,0 -	mA
I _{g2} +g ₄	=	3,0 -	mA
Sc	=	750 24	μA/V
R _i	=	>1 >5	MΩ
Req	=	100 -	kΩ

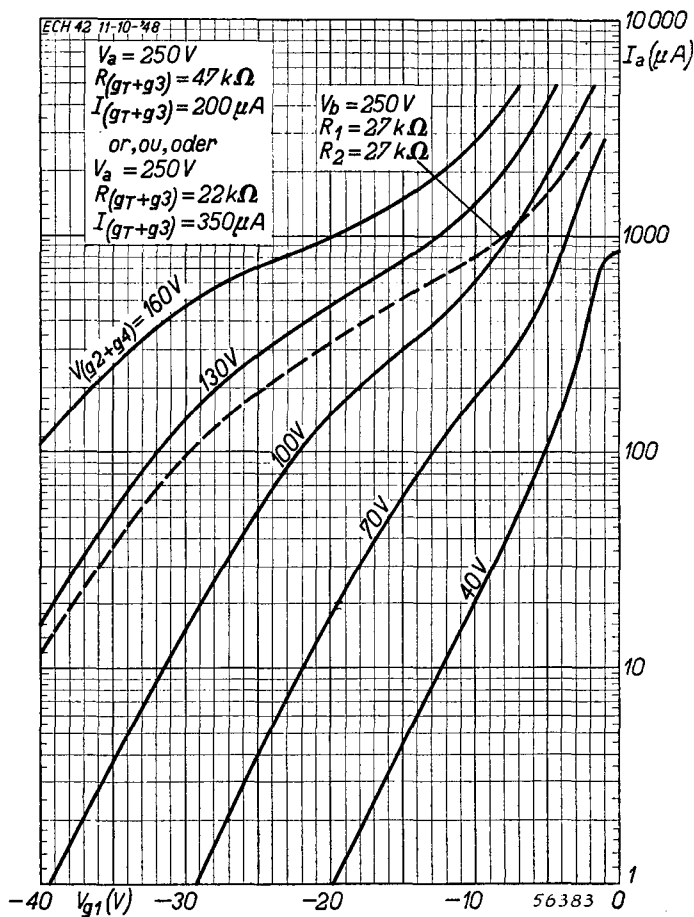
²⁾ See note ¹⁾ on page 2; voir la note ¹⁾ feuille 2; siehe Fußnote ¹⁾ Seite 2

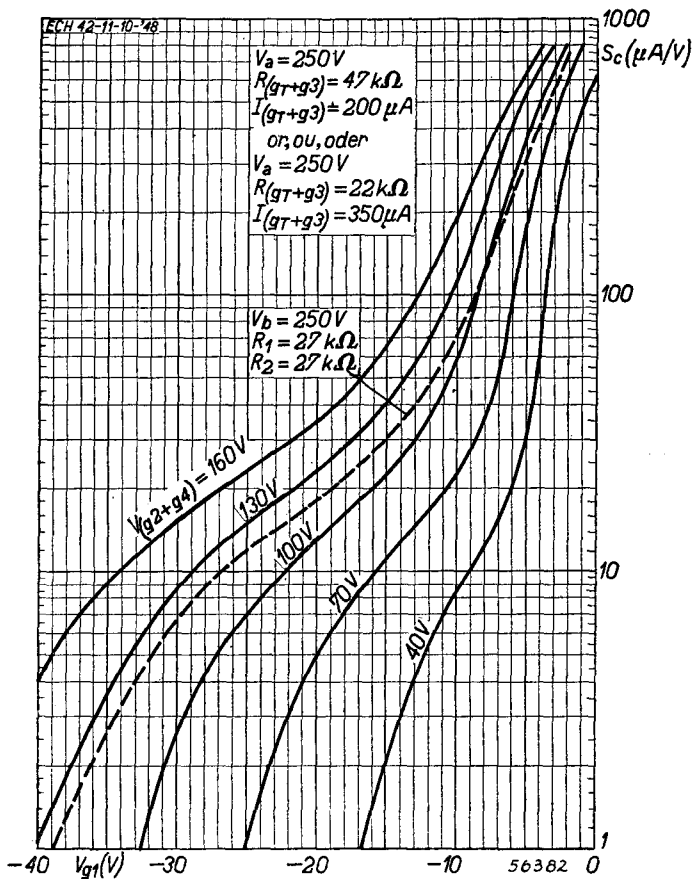
Limiting values of the hexode section
 Caractéristiques limites de la partie hexode
 Grenzdaten des Hexodenteiles

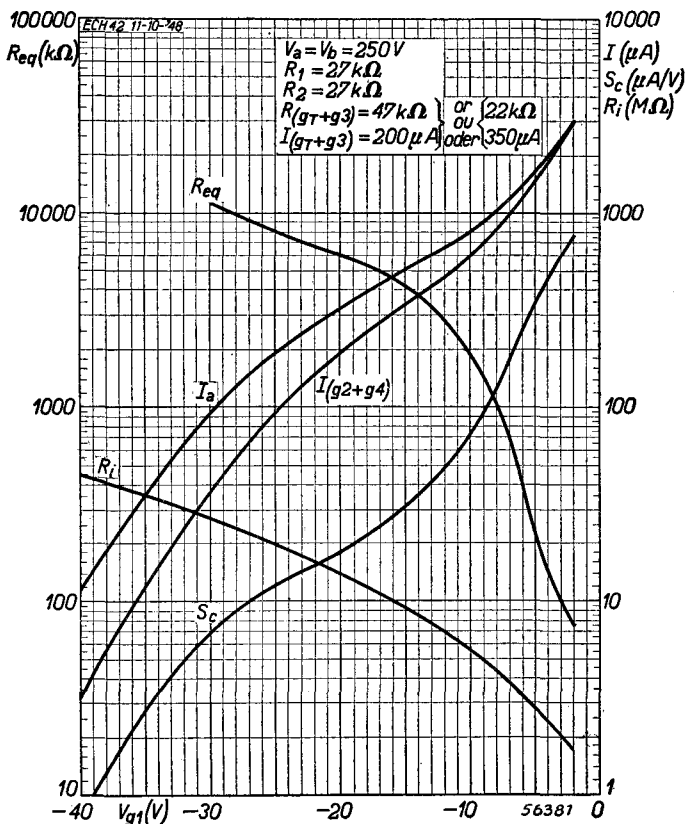
V_{a0}	= max.	550 V
V_a	= max.	300 V
W_a	= max.	1,5 W
$V(g2+g4)_0$	= max.	550 V
$V_{g2+g4} (I_a = 3 \text{ mA})$	= max.	125 V
$V_{g2+g4} (I_a < 1 \text{ mA})$	= max.	300 V
W_{g2+g4}	= max.	0,3 W
$V_{g1} (I_{g1} = +0,3 \text{ } \mu\text{A})$	= max.	-1,3 V
I_k	= max.	10 mA
R_{g1}	= max.	3 M Ω
R_{g3}	= max.	3 M Ω
R_{fk}	= max.	20 k Ω
V_{fk}	= max.	100 V

Limiting values of the triode section
 Caractéristiques limites de la partie 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
R_{fk}	= max.	20 k Ω
V_{fk}	= max.	100 V

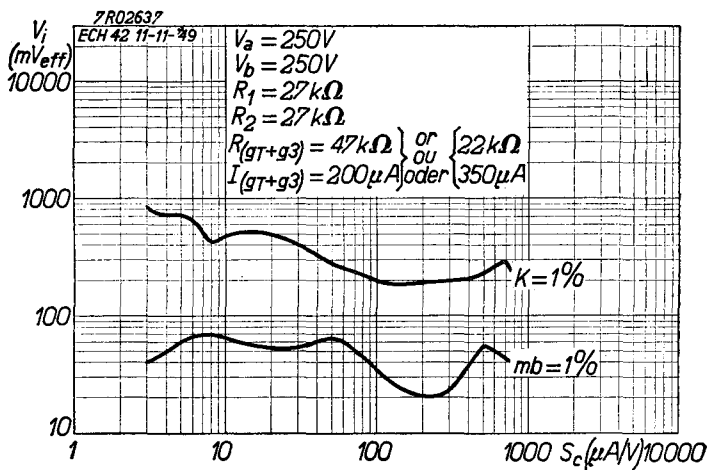




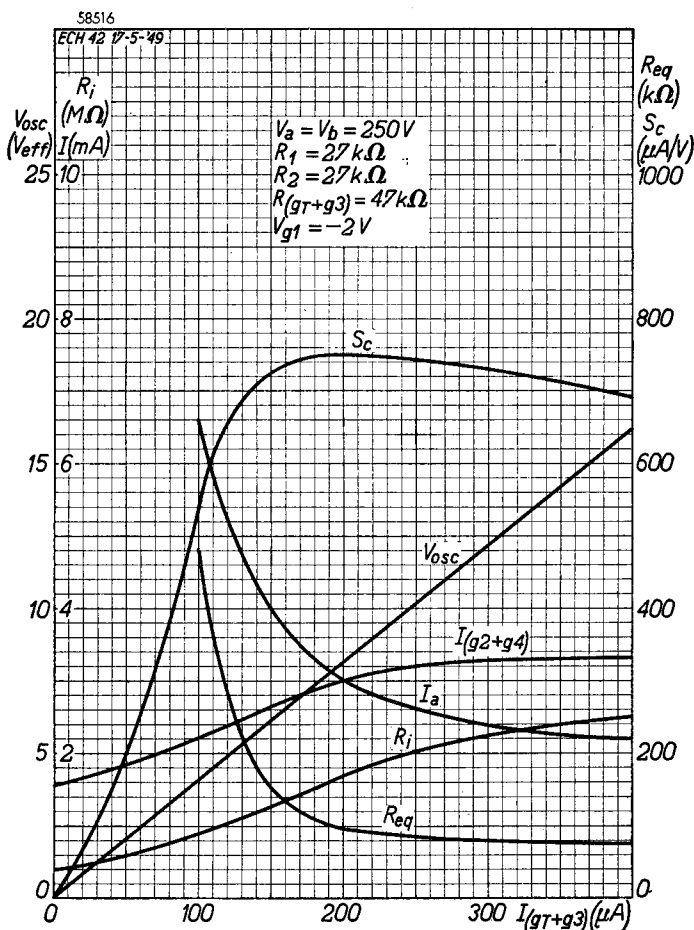


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ECH 42**PHILIPS**

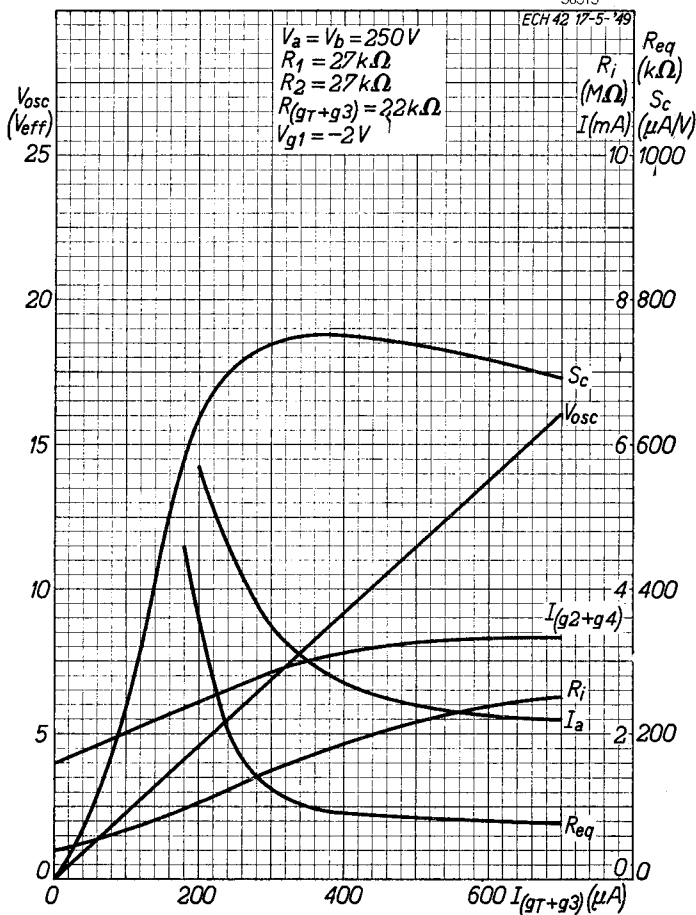
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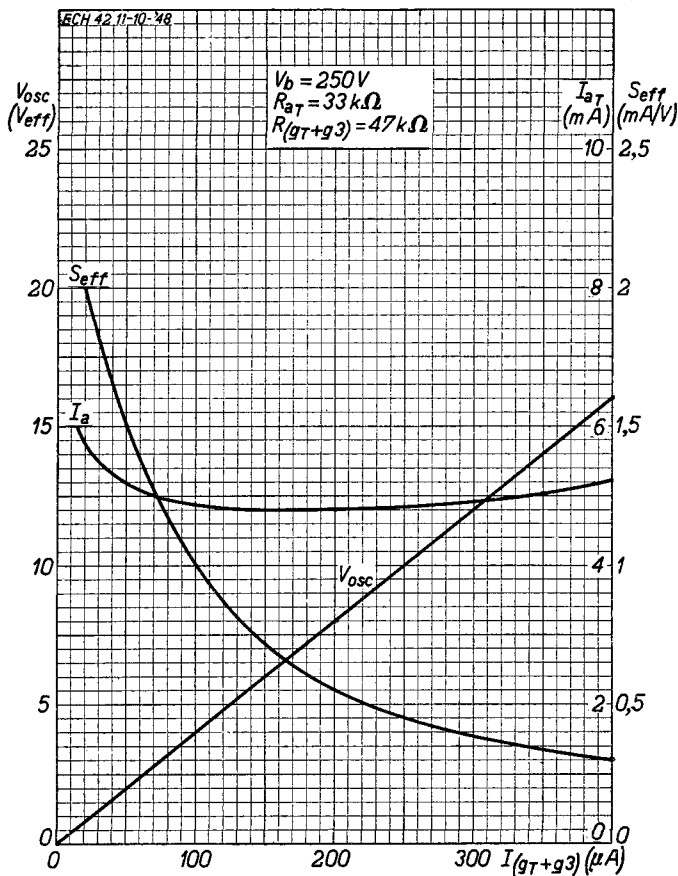


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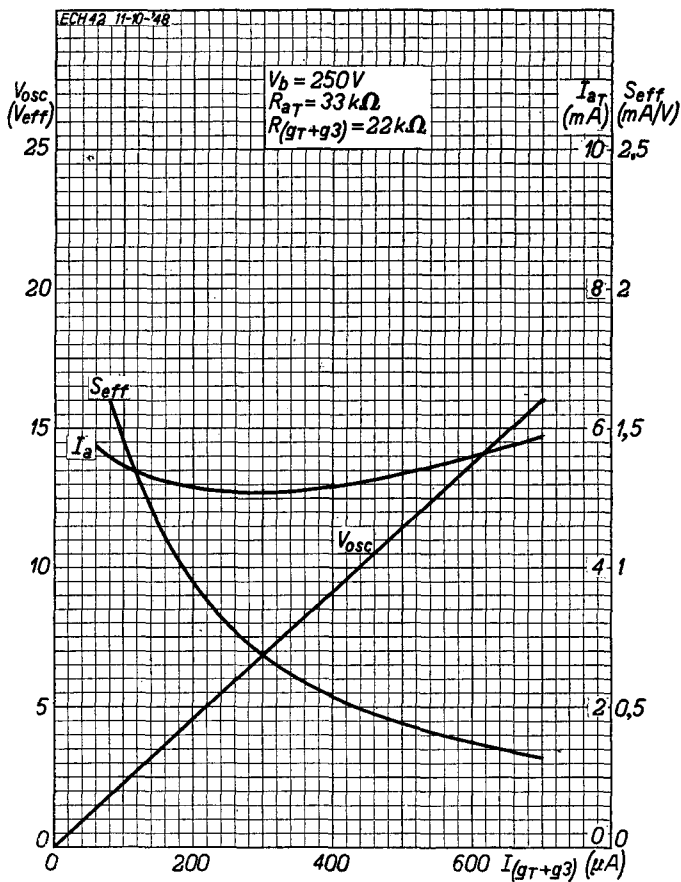
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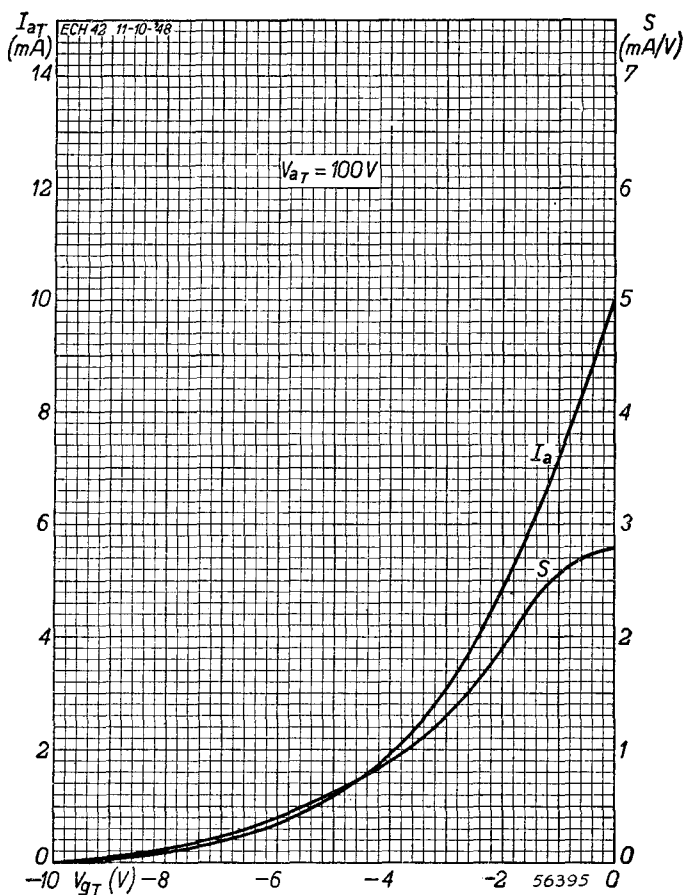


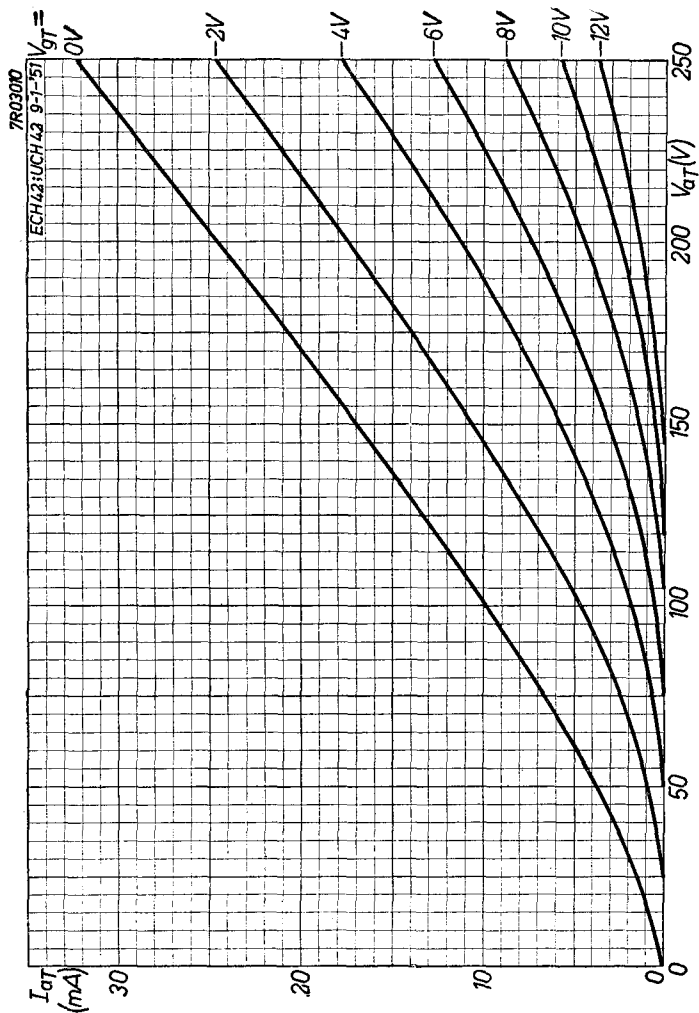


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ECH 42**PHILIPS**

PHILIPS

Electronic Tube

HANDBOOK

page	ECH42 sheet	date
1	1	1953.10.10
2	2	1953.10.10
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4	3	1960.10.10
5	4	1953.10.10
6	5	1953.10.10
7	A	1949.01.25
8	B	1949.01.25
9	C	1949.11.11
10	D	1949.11.11
11	E	1949.06.06
12	F	1949.06.06
13	G	1848.11.12
14	H	1848.11.12
15	I	1950.12.12
16	J	1950.12.12
17	FP	2005.05.06