

Netzröhre für W-Helzung
indirekt geheizt
Parallelspeisung
AC-Heating
indirectly heated
connected in parallel

TELEFUNKEN

EL 34

Endpentode
Power pentode

Meßwerte · Measuring values

	U_f I_f	6,3 1,5	V A
U_a	250	V	
U_{g3}	0	V	
U_{g2}	265	V	
U_{g1}	-13,5	V	
I_a	100	mA	
I_{g2}	14,9	mA	
S	11	mA/V	
R_i	15	k Ω	
$\mu_{g2/g1}$	11		
U_{g1e} ($I_{g1} = +0,3 \mu A$)	-1,3	V	

Betriebswerte · Typical operation

Eintakt-A-Betrieb · Class A-amplifier

U_b	265	265	V
U_a	250	250	V
U_{g3}	0	0	V
R_{g2}	2	—	k Ω
U_{g1}	-14,5	-13,5	V
I_a	70	100	mA
I_{g2}	10	14,9	mA
R_a	3	2	k Ω
U_{g1eff} (N)	9,3	8,7	V
N (10 %)	8	11	W
U_{g1eff} (50 mW)	0,65	0,5	V

Als Triode geschaltet

Connected as Triode

g_2 an a, g_3 an k

U_{ag2}	375	V
R_k	370	Ω
$I_a + I_{g2}$	70	mA
$I_a + I_{g2(ausgest.)}$	74	mA
R_a	3	k Ω
U_{g1eff} (N)	18,9	V
N (8 %)	6	W
U_{g1eff} (50 mW)	1,7	V

Betriebswerte · Typical operation

2 Röhren in Gegentakt-AB-Betrieb

2 tubes push-pull, class AB

U_b	375	V
$U_a + U_{Rk}$	355	V
U_{g3}	0	V
$R_{g2}^{1)}$	470	Ω
$R_k^{1)}$	130	Ω
I_a	2×75	mA
$I_{a(ausgest.)}$	2×95	mA
I_{g2}	2×11,5	mA
$I_{g2(ausgest.)}$	2×22,5	mA
R_{aa}	3,4	k Ω
U_{g1eff} (N)	21	V
N (5 %)	35	W

Als Trioden geschaltet

Connected as Triode

g_2 an a, g_3 an k

U_{ag2}	400	V
$R_k^{1)}$	220	Ω
$I_a + I_{g2}$	2×65	mA
$I_a + I_{g2(ausgest.)}$	2×71	mA
R_{aa}	5	k Ω
U_{g1eff} (N)	22	V
N (3 %)	16,5	W

1) gemeinsam · common.



2 Röhren in Gegentakt-B-Betrieb
2 tubes push-pull, class B

U_b	350	375	400	425	V
U_a	325	350	375	400	V
U_{g3}	0	0	0	0	V
$R_{g2}^{1)}$	470	470	1000	1000	Ω
U_{g1}	-32	-32	-38	-38	V
I_a	2×35	2×35	2×30	2×30	mA
$I_{a \text{ ausgest.}}$	2×93	2×120	2×100	2×120	mA
I_{g2}	2×4,7	2×4,7	2×4,4	2×4,4	mA
$I_{g2 \text{ ausgest.}}$	2×25	2×25	2×25	2×25	mA
R_{aa}	3,8	2,8	4	3,4	k Ω
$U_{g1 \text{ eff}} (N)$	22,7	22,7	27	27	V
N	36	44	45	55	W
k_{ges}	6	5	6	5	%

U_{ba}	475	500	750	800	V
U_a	450	475	725	775	V
U_{bg2}	375	400	375	400	V
$R_{g2}^{1)}$	750	750	750	750	Ω
U_{g3}	0	0	0	0	V
U_{g1}	-36	-36	-39	-39	V
I_a	2×30	2×30	2×25	2×25	mA
$I_{a \text{ ausgest.}}$	2×102	2×125	2×84	2×91	mA
I_{g2}	2×4	2×4	2×3	2×3	mA
$I_{g2 \text{ ausgest.}}$	2×25	2×25	2×19	2×19	mA
R_{aa}	5	4	11	11	k Ω
$U_{g1 \text{ eff}} (N)$	25,8	25,8	23,4	23,4	V
N	58	70	90	100	W
k_{ges}	6	5	6	5	%

1) R_{g2} gemeinsam.
 R_{g2} common.



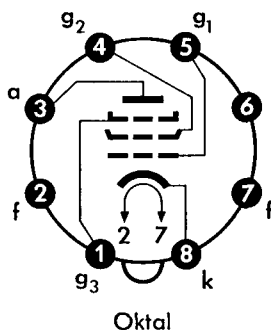
Grenzwerte · Maximum ratings

U_{ao}	2000	V
U_a	800	V
N_a	25	W
$N_{a \text{ ausgest.}}$	27,5	W
U_{g2o}	800	V
U_{g2}	425	V
N_{g2}	8	W
I_k	150	mA
$R_{g1}^{1)}$	0,7	M Ω
$R_{g1}^{2)}$	0,5	M Ω
$U_{f/k}$	100	V
$R_{f/k}$	20	k Ω
t_{Kolben}	245	°C

1) A-Betrieb, AB-Betrieb

2) B-Betrieb

Sockelschaltbild
Base connection



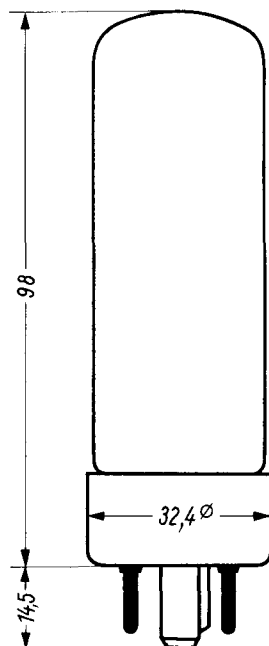
Freie Stifte bzw. freie Fassungskontakte
dürfen nicht als Stützpunkte für Schalt-
mittel benutzt werden.

Free pins not to be connected externally.

Kapazitäten · Capacitances

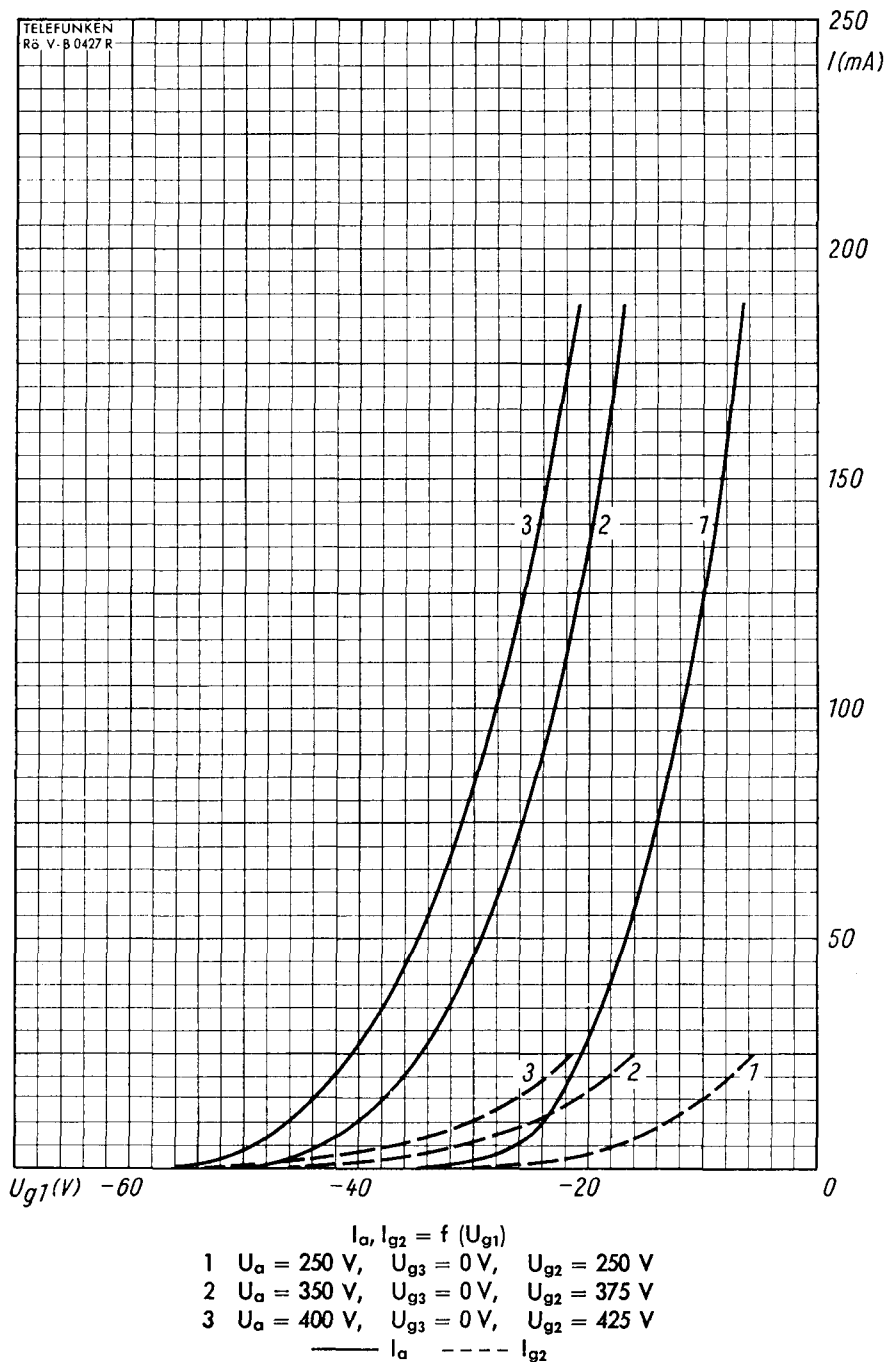
C_{g1}	ca. 15,2	pF
C_a	ca. 8,4	pF
$C_{g1/a}$	< 1,1	pF
$C_{g1/f}$	< 1	pF
$C_{k/f}$	ca. 10	pF

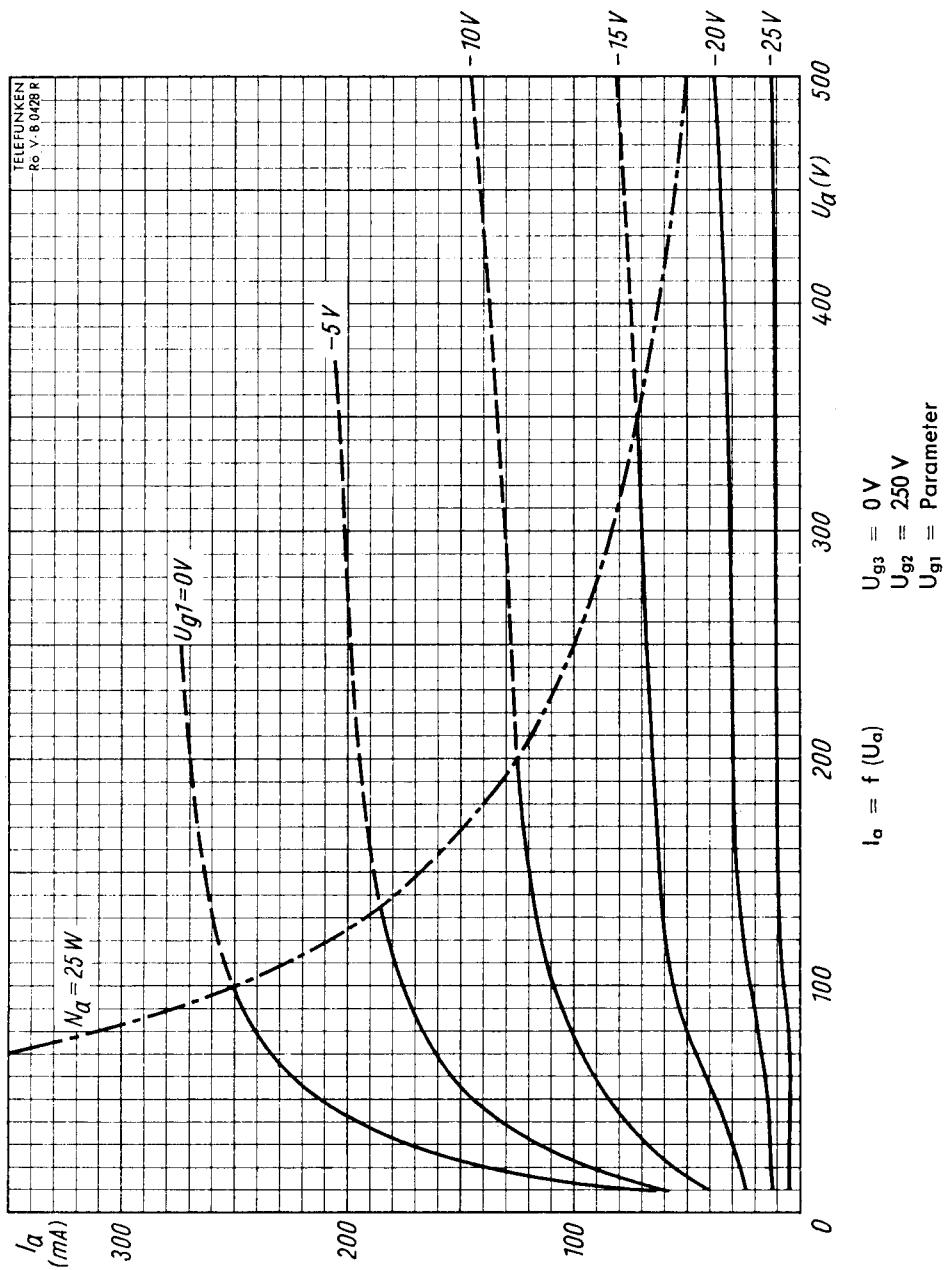
max. Abmessungen
max. dimensions

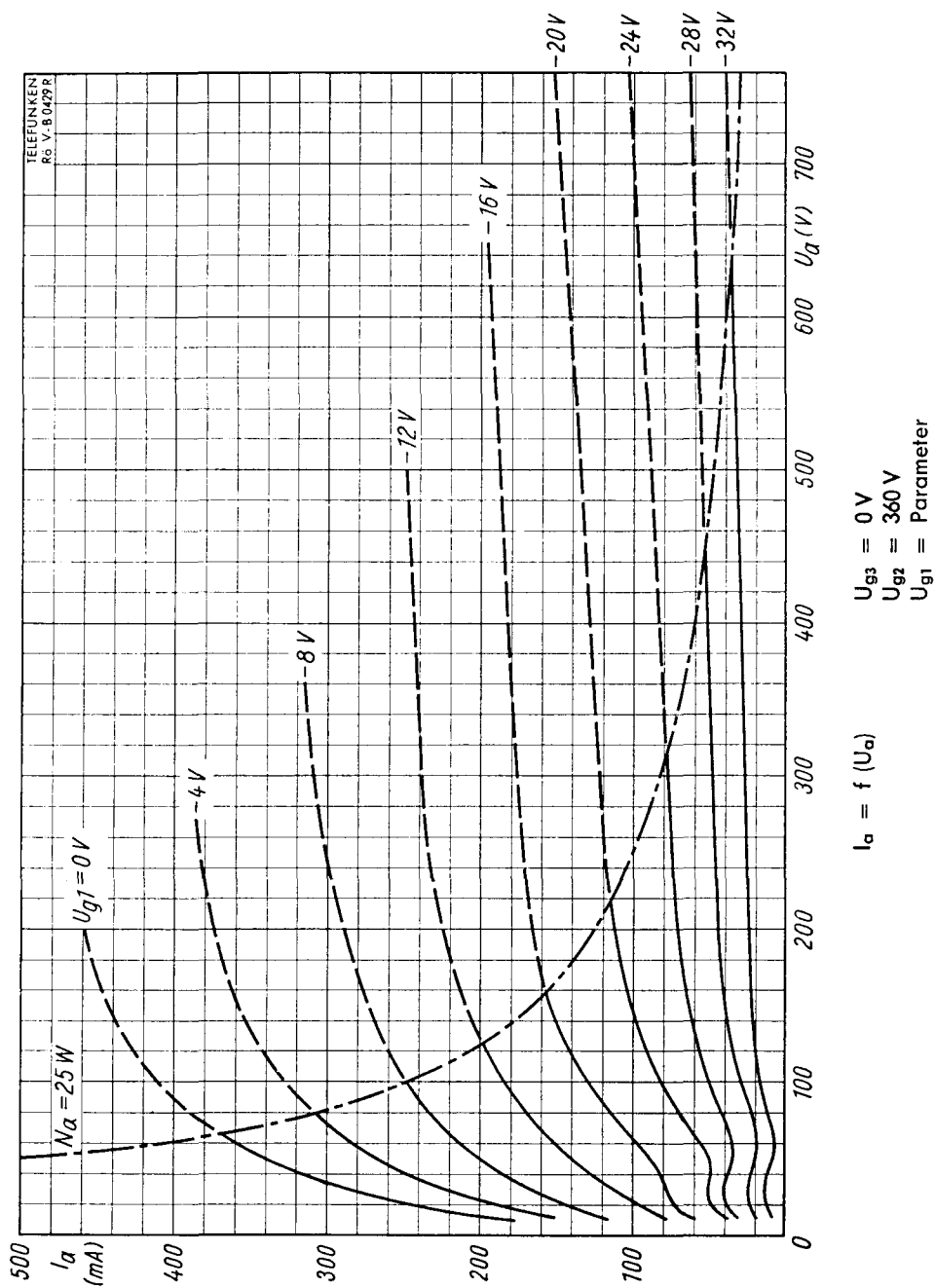


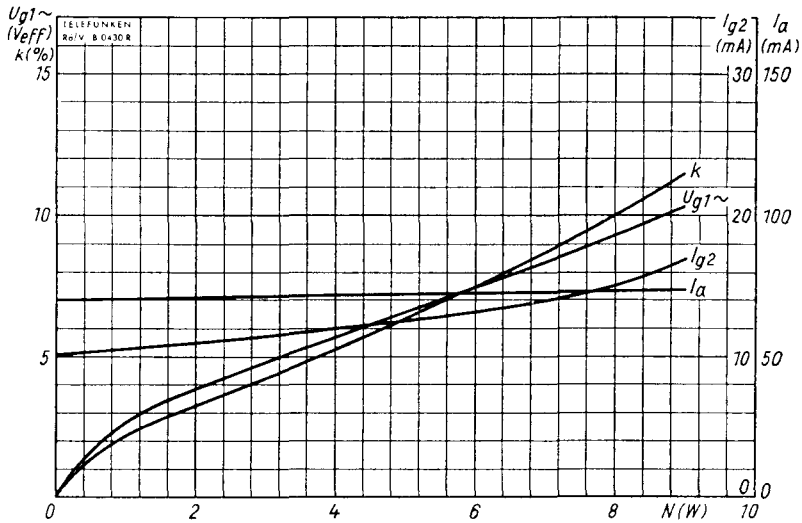
Gewicht · Weight
max. 50 g



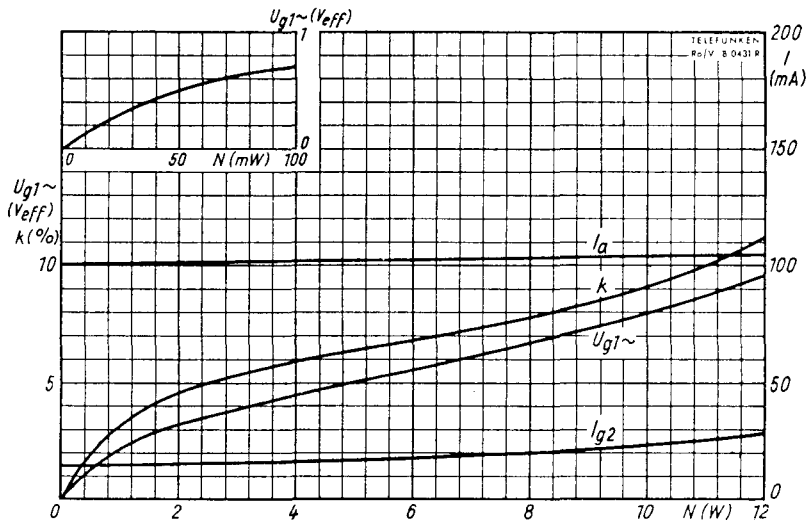




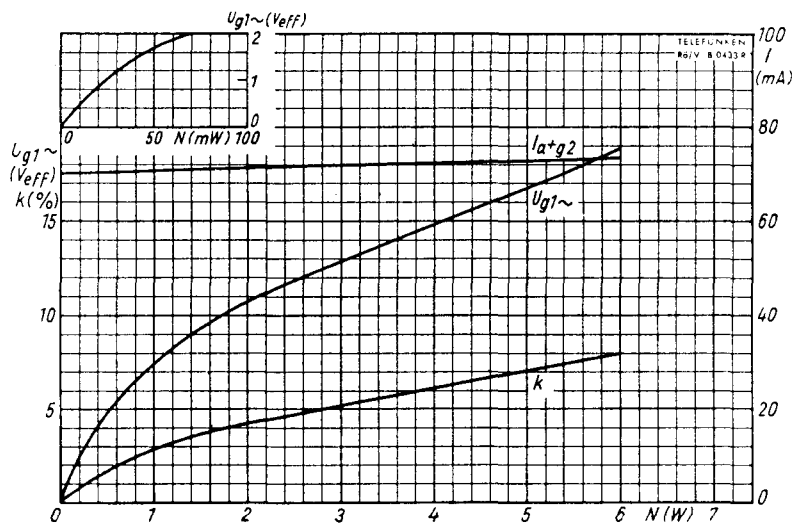



Eintakt-A-Betrieb · Class-A-amplifier

$U_b = 265 \text{ V}$ $U_{g3} = 0 \text{ V}$ $R_a = 3 \text{ k}\Omega$
 $U_a = 250 \text{ V}$ $U_{g1} = -14,5 \text{ V}$ $R_{g2} = 2 \text{ k}\Omega$


Eintakt-A-Betrieb · Class-A-amplifier

$U_b = 265 \text{ V}$ $U_{g3} = 0 \text{ V}$ $R_a = 2 \text{ k}\Omega$
 $U_a = 250 \text{ V}$ $U_{g1} = -13,5 \text{ V}$ $R_{g2} = 0 \text{ k}\Omega$



Eintakt-A-Betrieb als Triode, g_2 an a

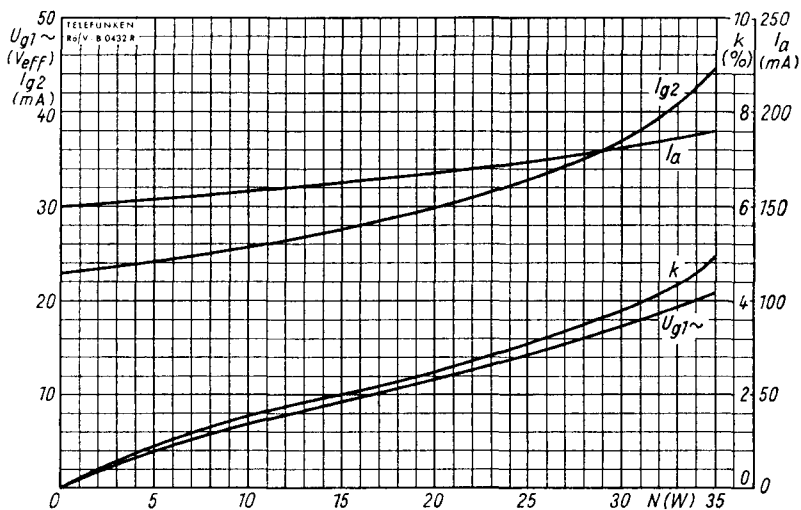
Connected as triode, g_2 to a, class-A-amplifier

$$U_b = 375 \text{ V}$$

$$R_k = 370 \Omega$$

$$U_{g3} = 0 \text{ V}$$

$$R_a = 3 \text{ k}\Omega$$



2 Röhren in Gegentakt-AB-Betrieb • 2 tubes push-pull, class AB

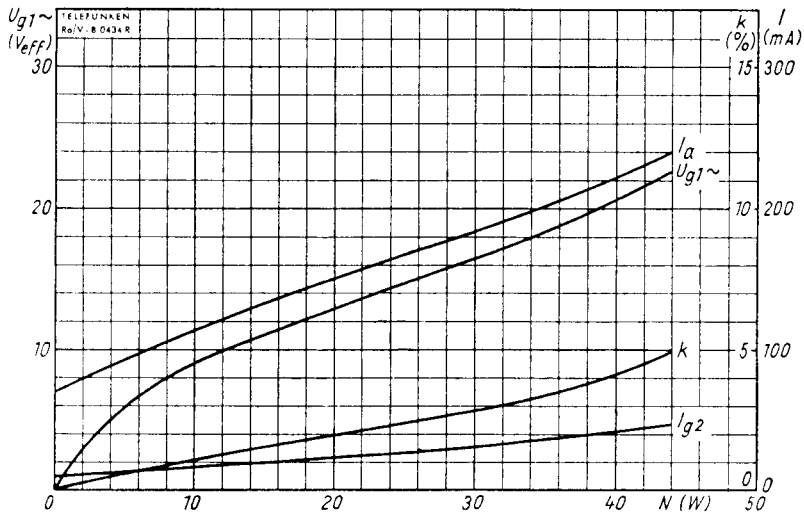
$$U_b = 375 \text{ V}$$

$$R_k = 130 \Omega$$

$$R_{g2} = 470 \Omega$$

$$R_{aa} = 3,4 \text{ k}\Omega$$





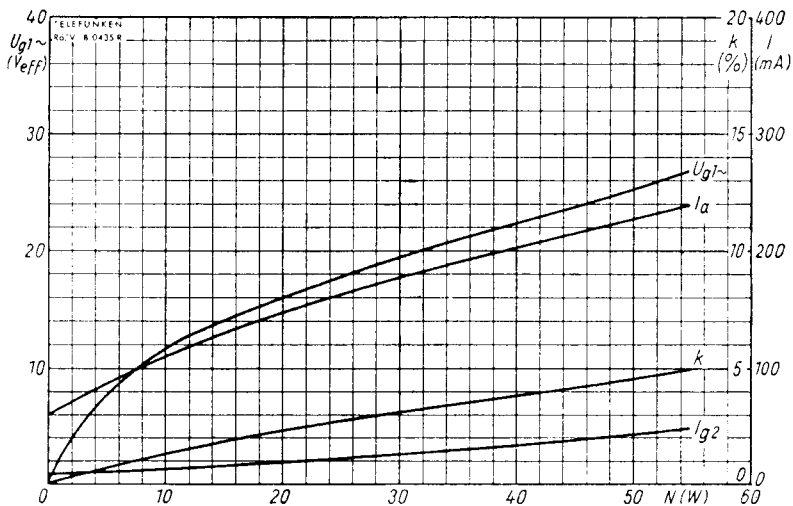
2 Röhren in Gegentakt-B-Betrieb · 2 tubes push-pull, class B

$$U_b = 375 \text{ V}$$

$$R_{g2} = 470 \, \Omega$$

$$U_{g1} = -32 \text{ V}$$

$$R_{aa} = 2,8 \text{ k}\Omega$$



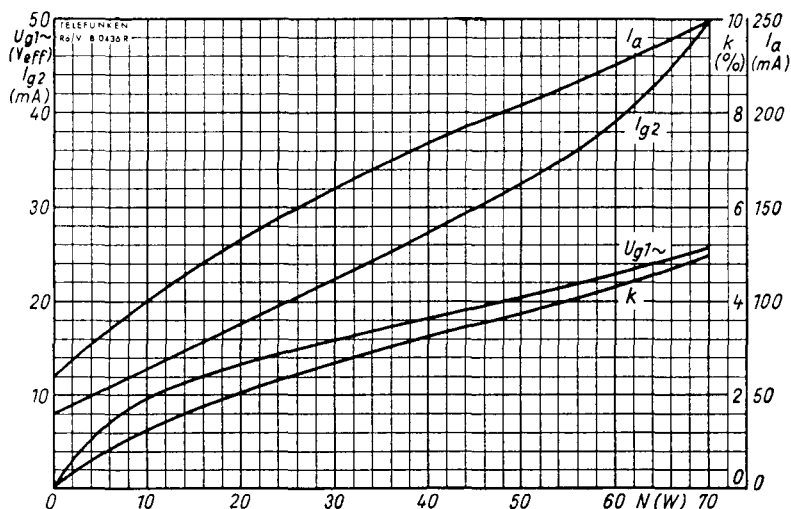
2 Röhren in Gegentakt-B-Betrieb · 2 tubes push-pull, class B

$$U_b = 425 \text{ V}$$

$$R_{g2} = 1 \text{ k}\Omega$$

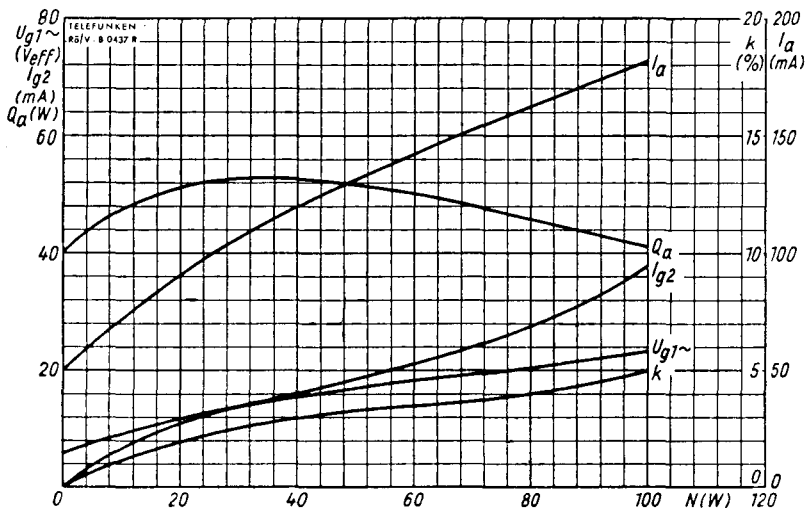
$$U_{g1} = -38 \text{ V}$$

$$R_{aa} = 3,4 \text{ k}\Omega$$



2 Röhren in Gegentakt-B-Betrieb • 2 tubes push-pull, class B

$U_{ba} = 500 V$ $U_{g3} = 0 V$ $R_{g2} = 750 \Omega$
 $U_{bg2} = 400 V$ $U_{g1} = -36 V$ $R_{aa} = 4 k\Omega$



2 Röhren in Gegentakt-B-Betrieb • 2 tubes push-pull, class B

$U_{ba} = 800 V$ $U_{g3} = 0 V$ $R_{g2} = 750 \Omega$
 $U_{bg2} = 400 V$ $U_{g1} = -39 V$ $R_{aa} = 11 k\Omega$

