

Netzröhre für GW-Heizung  
indirekt geheizt  
Serienspeisung

DC-AC-heating  
indirectly heated  
connected in series

# TELEFUNKEN

**PL 95**

**Endpentode**  
**Power Pentode**

$I_f$  **300** mA  
 $U_f$  ca. 4,5 V

Normierte Anheizzeit · Normalized heater warm-up time

## Meßwerte · Measuring values

$U_a$	<b>250</b>	V
$U_{g2}$	<b>250</b>	V
$U_{g1}$	-9	V
$I_a$	<b>24</b>	mA
$I_{g2}$	4,5	mA
S	5	mA/V
$R_i$	80	k $\Omega$
$\mu_{g2/g1}$	17	

## Betriebswerte · Typical operation

### Eintakt-A-Betrieb · Class A-amplifier

$U_a$	<b>200</b>	<b>250</b>	V
$U_{g2}$	<b>200</b>	<b>250</b>	V
$R_k$	<b>230</b>	<b>320</b>	$\Omega$
$I_a$	23	24	mA
$I_{g2}$	4,2	4,5	mA
$R_a$	8	10	k $\Omega$
$U_{g1 \text{ eff (N)}}$	4,5	5	V
N (12%)	2,3	3	W
$U_{g1 \text{ eff (50 mW)}}$	0,5	0,5	V

### 2 Röhren in Gegentakt-AB-Betrieb

2 tubes push-pull, class AB

$U_a$	<b>200</b>	<b>250</b>	V
$U_{g2}$	<b>200</b>	<b>250</b>	V
$R_k$	<b>360*)</b>	<b>360*)</b>	$\Omega$
$I_{a0}$	2×17,5	2×22	mA
$I_a \text{ ausgest.}$	2×20	2×26	mA
$I_{g20}$	2×3,2	2×4,2	mA
$I_{g2 \text{ ausgest.}}$	2×5,2	2×7,5	mA
$R_{aa}$	10	10	k $\Omega$
$U_{g1 \text{ eff (N)}}$	7*)	9*)	V
N	4,1	7	W
k	4,5	5	%
$U_{g1 \text{ eff (50 mW)}}$	0,5*)	0,5*)	V

### 2 Röhren in Gegentakt-B-Betrieb

2 tubes push-pull, class B

$U_a$	<b>200</b>	<b>250</b>	V
$U_{g2}$	<b>200</b>	<b>250</b>	V
$U_{g1}$	-10	-13	V
$I_{a0}$	<b>2x7</b>	<b>2x8</b>	mA
$I_a \text{ ausgest.}$	2×19	2×24	mA
$I_{g20}$	2×1,2	2×1,2	mA
$I_{g2 \text{ ausgest.}}$	2×5	2×7,2	mA
$R_{aa}$	10	10	k $\Omega$
$U_{g1 \text{ eff (N)}}$	7*)	9*)	V
N	4	6,5	W
k	3,5	3,5	%
$U_{g1 \text{ eff (50 mW)}}$	0,7*)	0,7*)	V

\*) pro Röhre · each tube



**Betriebswerte · Typical operation**  
**Nennwert-Grenzdaten · Design centre ratings**

2 Röhren in Gegentakt-AB-Betrieb

$R_k$  gemeinsam  
 2 tubes push-pull, class AB

$U_a$	<b>250</b>	V
$U_{g2}$	<b>250</b>	V
$R_k$	<b>220</b>	$\Omega$
$I_{a0}$	$2 \times 19$	mA
$I_a$	$2 \times 24$	mA
$I_{g20}$	$2 \times 3,2$	mA
$I_{g2}$	$2 \times 7,2$	mA
$R_{aa}$	10	k $\Omega$
$U_{g1 \text{ eff}} (N)^1$	9,5	V
N	6	W
k	5	%

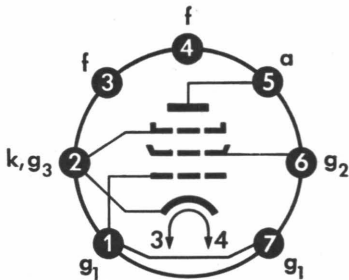
$U_{a0}$	<b>550</b>	V
$U_a$	<b>300</b>	V
$N_a$	<b>6</b>	W
$N_{a^2)}$	<b>5</b>	W
$U_{g20}$	<b>550</b>	V
$U_{g2}$	<b>300</b>	V
$N_{g2}$	<b>1,25</b>	W
$N_{g2 \text{ ausgest.}}$	<b>2,5</b>	W
$I_k$	<b>35</b>	mA
$R_{g1}$	<b>2</b>	M $\Omega$
$U_{g1e} (I_{g1} \leq +0,3 \mu A)$	<b>-1,3</b>	V
$U_{f/k}$	<b>200</b>	V
$R_{f/k}$	<b>20</b>	k $\Omega$

<sup>1)</sup> pro Röhre · each tube  
<sup>2)</sup>  $R_k$  gemeinsam ·  $R_k$  common

**Kapazitäten · Capacitances**

$C_{g1}$	ca. 5,3	pF
$C_a$	ca. 3,5	pF
$C_{g1/a}$	< 0,4	pF
$C_{g1/f}$	< 0,2	pF

**Sockelschaltbild**  
 Basing diagram

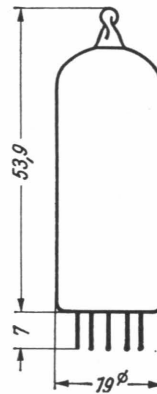


Pico 7 · Miniatur

Einbau: beliebig  
 Mounting position: any

max. Abmessungen  
 max. dimensions

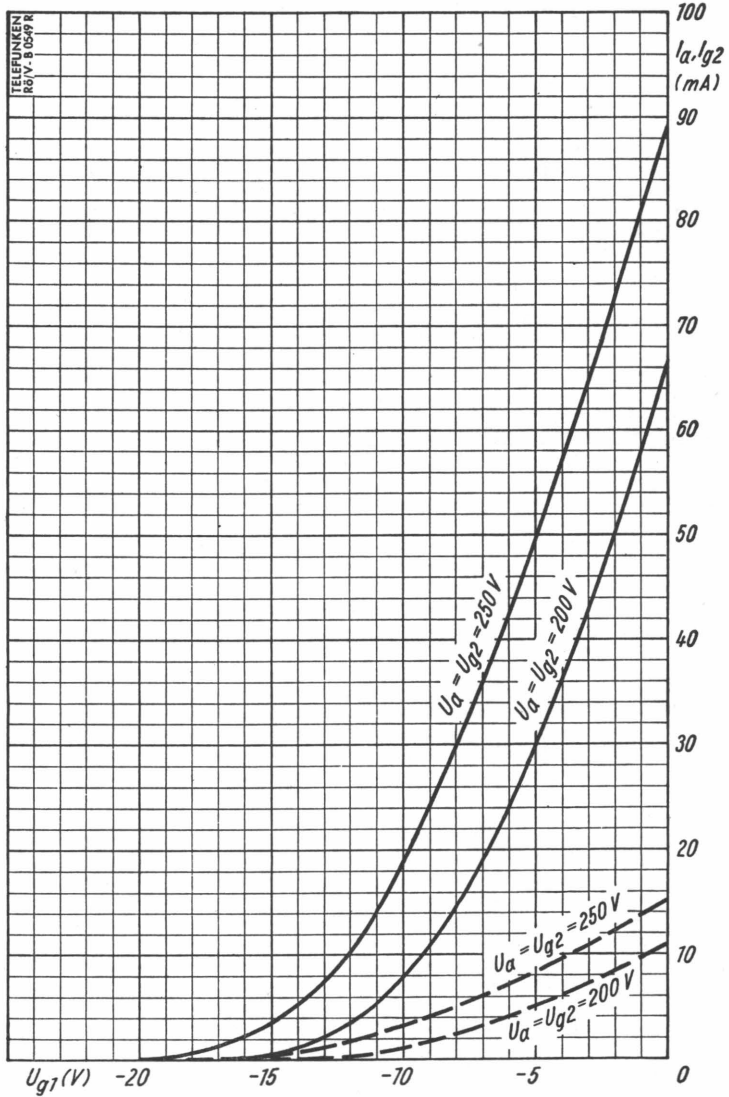
DIN 41 537, Nenngröße 44, Form A



Gewicht · Weight  
 max. 10 g

Wenn notwendig, muß gegen Herausfallen der Röhre aus der Fassung Vorsorge getroffen werden.  
 If necessary special precautions must be taken to prevent the tube from becoming dislodged from the socket.

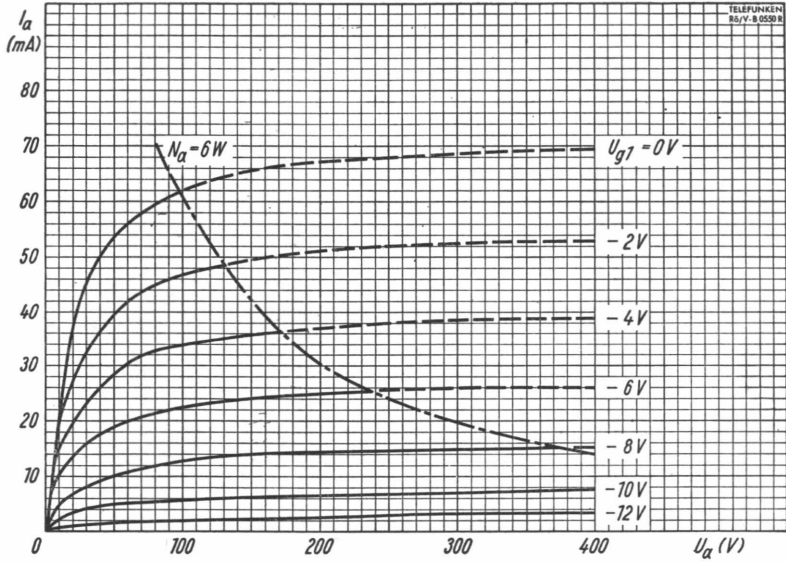




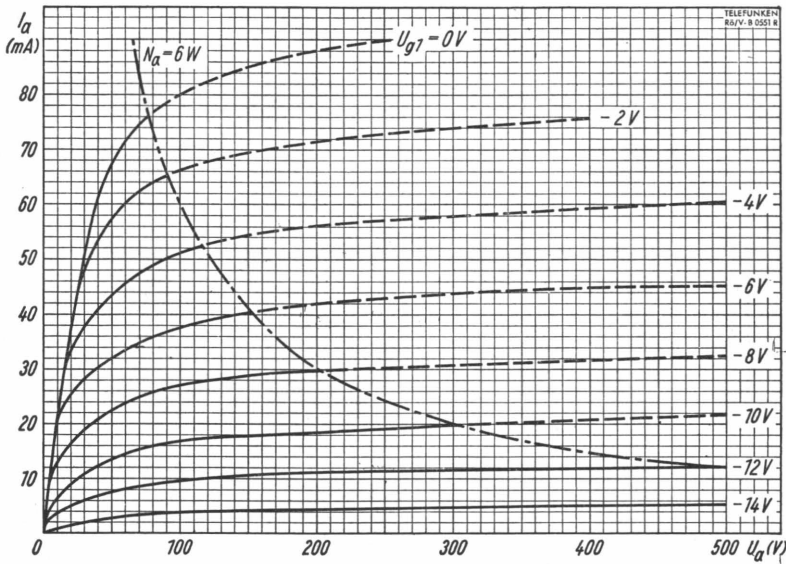
—  $I_{\alpha}$     - - -  $I_{g2}$   
 $I_{\alpha}, I_{g2} = f(U_{g1})$   
 $U_{\alpha} = U_{g2} = \text{Parameter}$



# TELEFUNKEN

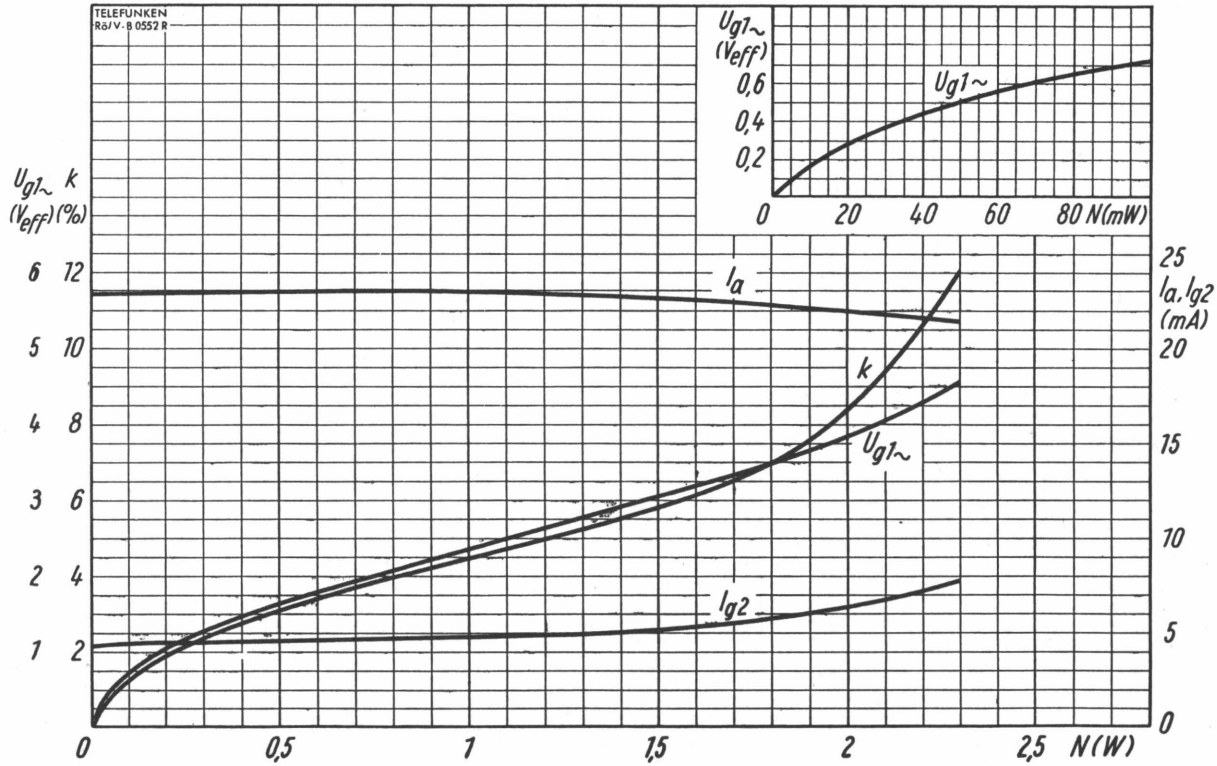


$I_a = f(U_a)$   
 $U_{g2} = 200V$   
 $U_{g1} = \text{Parameter}$



$I_a = f(U_a)$   
 $U_{g2} = 250V$   
 $U_{g1} = \text{Parameter}$





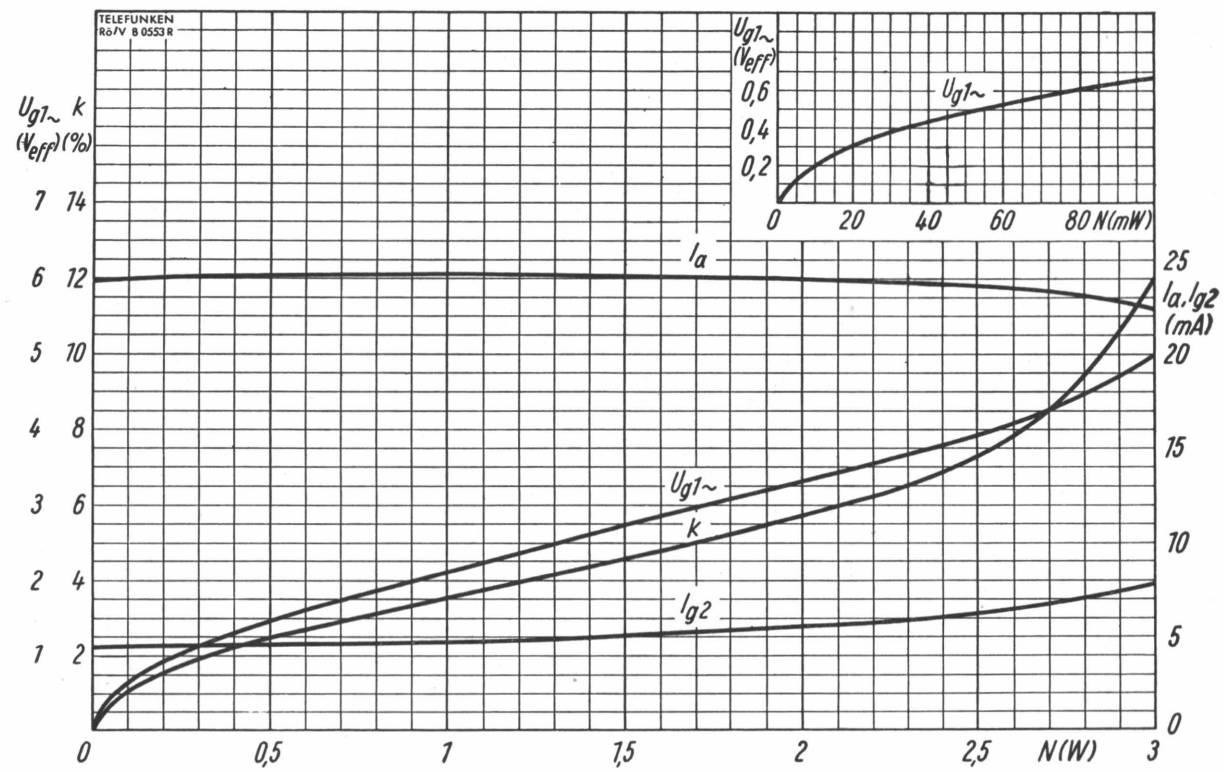
Eintakt-A-Betrieb · Class A-amplifier

$$I_a, I_{g2}, U_{g1 \text{ eff}}, k = f(N)$$

$$U_a = U_{g2} = 200 \text{ V}$$

$$R_a = 8 \text{ k}\Omega$$

$$R_k = 230 \Omega$$



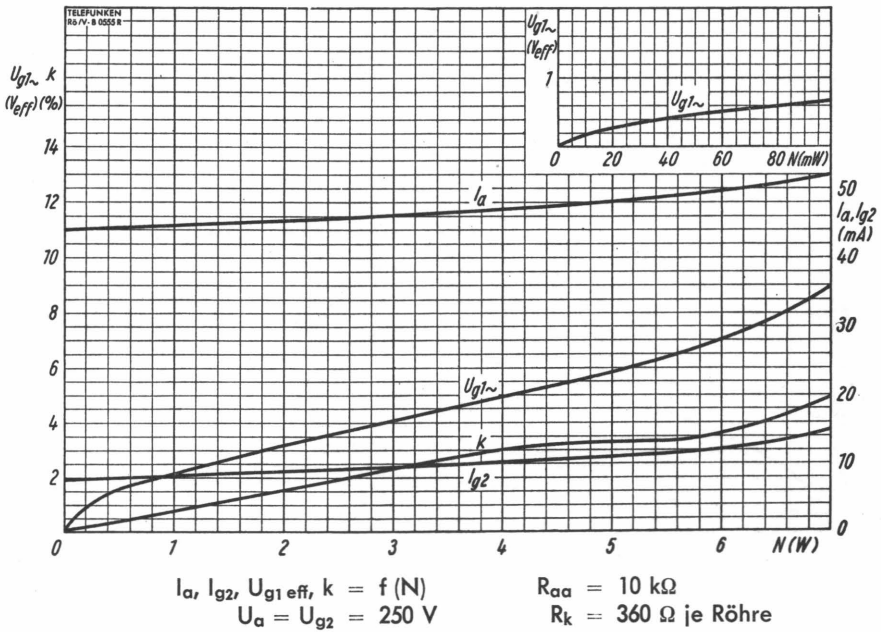
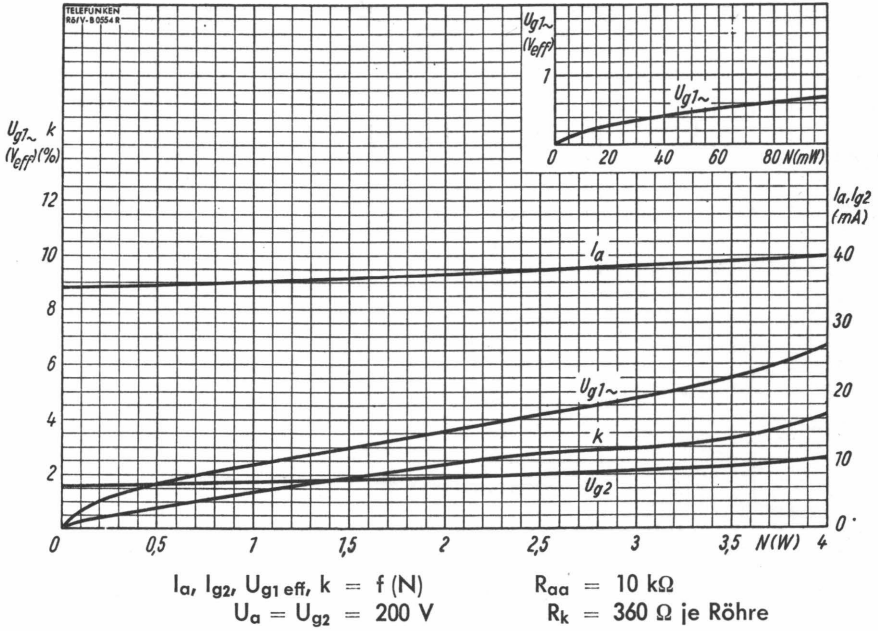
Eintakt-A-Betrieb · Class A-amplifier

$$I_a, I_{g2}, U_{g1\text{ eff}}, k = f(N)$$

$$U_a = U_{g2} = 250 \text{ V}$$

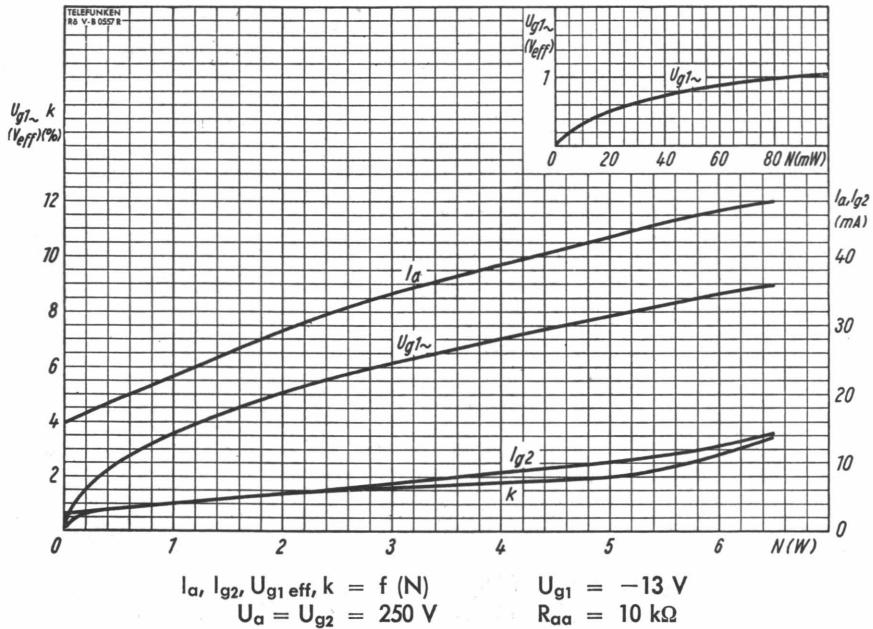
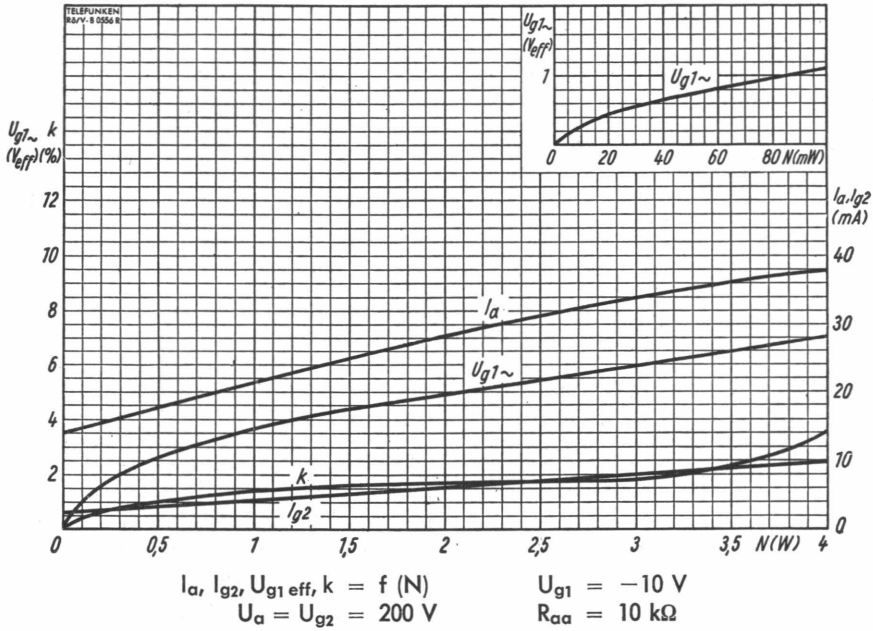
$$R_a = 10 \text{ k}\Omega$$

$$R_k = 320 \Omega$$



2 Röhren in Gegentakt-AB-Betrieb · 2 tubes push-pull class AB

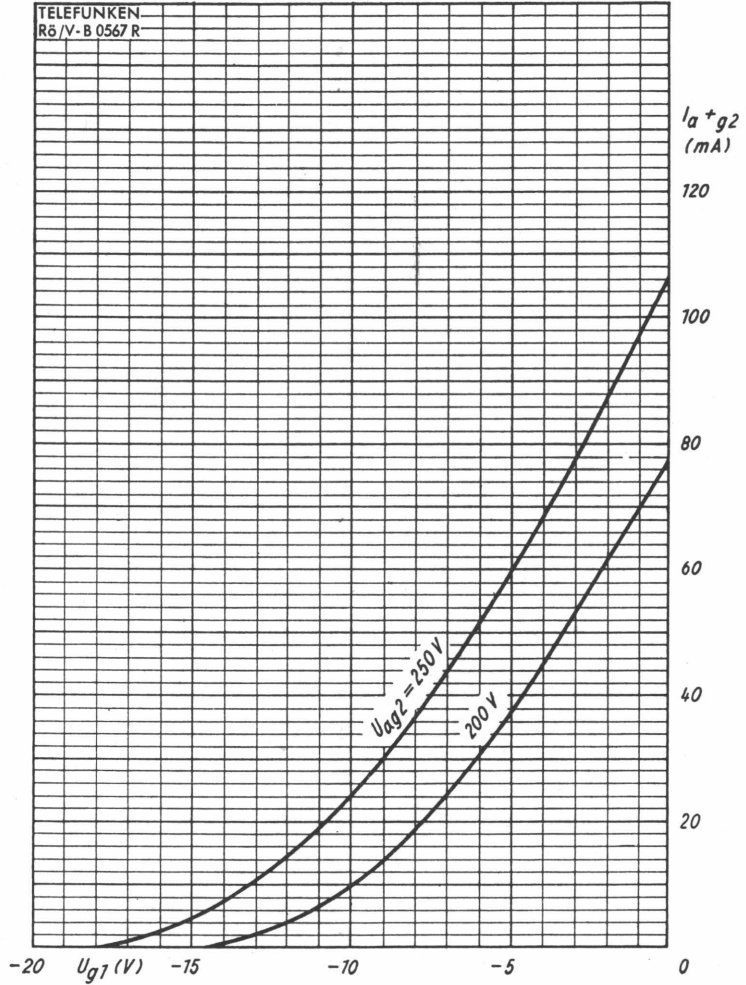




2 Röhren in Gegentakt-B-Betrieb • 2 tubes push-pull class B







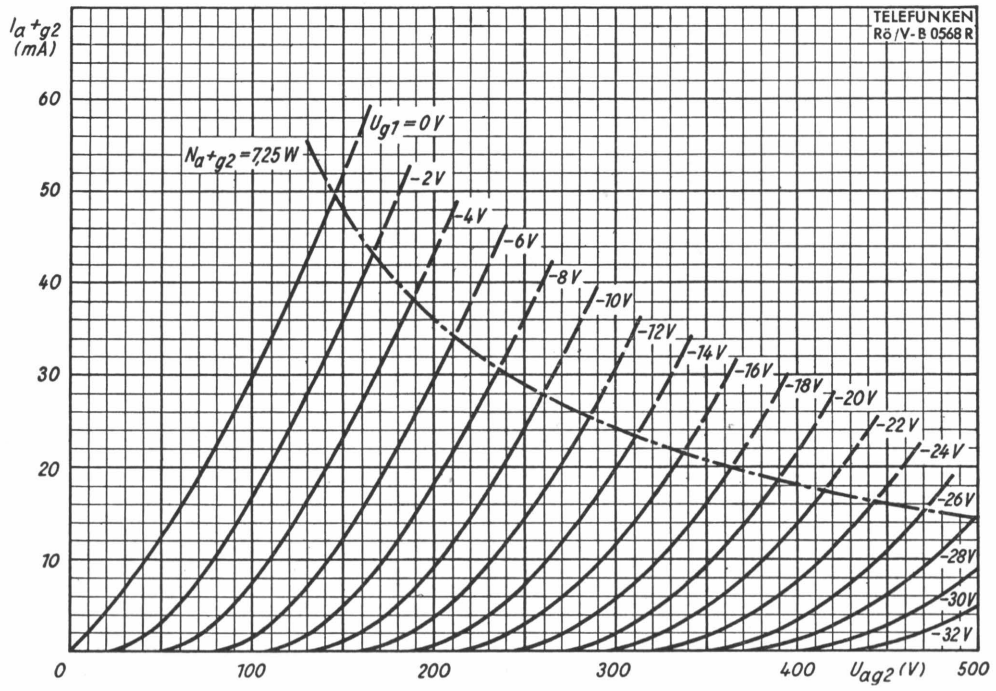
Als Triode geschaltet · As triode connected

$g_2$  an  $a$

$$I_{a+g2} = f(U_{g1})$$

$$U_{ag2} = \text{Parameter}$$



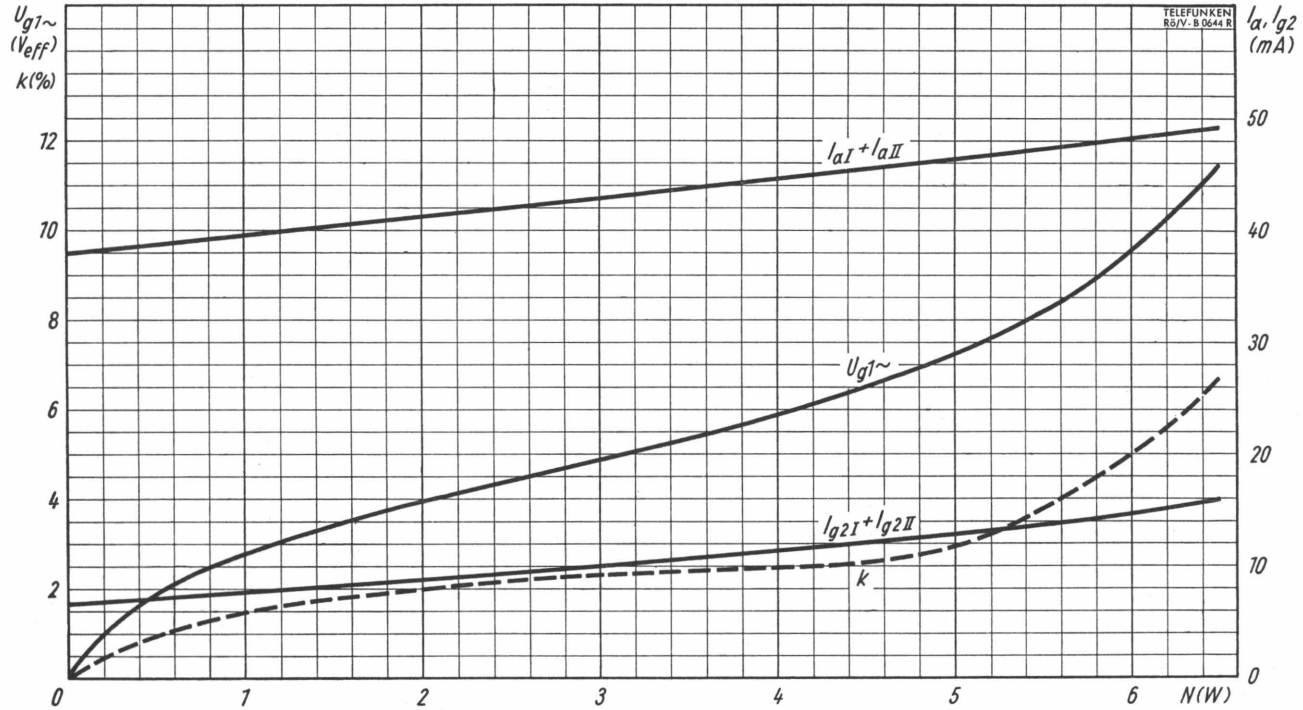


Als Triode geschaltet · As triode connected

$g_2$  an a

$$I_{a+g2} = f(U_{ag2})$$

$$U_{g1} = \text{Parameter}$$



### 2 Röhren in Gegentakt-AB-Betrieb, $R_k$ gemeinsam

2 tubes push-pull class AB,  $R_k$  common

$U_a = 250 V$        $R_k = 220 \Omega$

$U_{g2} = 250 V$        $R_{aa} = 10 k\Omega$